



# City of Cotati Energy/Water Audit and Implementation Projects

August 22, 2024

**Prepared For:**  
City of Cotati  
201 West Sierra Avenue  
Cotati, CA 94931

**Prepared By:**  
ENGIE Services U.S.  
500 12th Street, Suite 300  
Oakland, CA 94607





Proposal

# City of Cotati

Energy/Water Audit and Implementation Projects

---

August 22, 2024

**Prepared For:**

Damien O'Bid, City Manager  
City of Cotati  
201 West Sierra Avenue  
Cotati, CA 94931

**Prepared By:**

ENGIE Services U.S.  
500 12th Street, Suite 300  
Oakland, CA 94607

Amar Tiwari  
Senior Program Development Manager  
415-264-2642  
Amar.Tiwari@engie.com



This proposal, in whole or in part, is to be used only for evaluation purposes. If the proposal is accepted and a contract entered into then, to the extent, federal or state law requires disclosure, advance notice to ENGIE Services U.S. Inc. is requested with a right to oppose or seek to narrow the disclosure. The data subject to this restriction is contained in all sheets marked, "Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal or quotation."

ENGIE Services U.S. Inc. is not a municipal advisor and cannot give advice with respect to municipal securities or municipal financial products. This information is provided for educational purposes about possible financing options and is not the provision of advice, or a recommendation to pursue, any financing option. Consult with your municipal advisor or financial advisor about the financing option appropriate for your situation.

ENGIE Services U.S. Inc. can provide information to your municipal advisor or financial advisor about the hypothetical assumptions and educational scenarios used in these materials. To ensure compliance with requirements imposed by the IRS under Circular 230, we inform you that any U.S. federal tax advice contained in this communication (including any attachments), unless otherwise specifically stated, was not intended or written to be used, and cannot be used, for the purpose of (1) avoiding penalties under the Internal Revenue Code or (2) promoting, marketing or recommending to another party any matters addressed herein.

The information contained herein is general in nature and based on authorities that are subject to change. ENGIE Services U.S. Inc. recommends that you consult your tax adviser to understand its applicability to specific situations. ENGIE Services U.S. Inc., the Respondent, is a wholly owned subsidiary of ENGIE Holdings Inc.



# Table of Contents

Table of Contents .....	i
Cover Letter .....	ii
1. Background.....	1
1.1 Unique Qualifications .....	1
2. Project Team & Management Structure.....	3
2.1 Team Organizational Chart .....	3
2.2 Resumes .....	3
2.3 Key Individuals .....	8
3. Project History & References.....	9
3.1 Capabilities, Experience, and Approach.....	9
4. Project Approach.....	15
4.1 Approach to Performing Services.....	15
4.2 Additional Benefits and Value Added Elements .....	20
5. Contract.....	23
6. Acknowledgement of Addenda.....	24
Appendix A – Audited Financial Report	
Appendix B – M&V Report	
Appendix C – Sample Performance Energy Contract	



# Cover Letter

August 22, 2024

Damien O'Bid, City Manager  
 City of Cotati  
 201 West Sierra Avenue  
 Cotati, CA 94931

**RE: Request for Proposals for Energy/Water Audit and Implementation Projects**

*With its storied history, the City of Cotati has thrived over time and deserves a partner who will carry forward this legacy of longevity and innovation, much like the City's distinctive hexagonal plaza. We bring 50 years of successful partnerships with Bay Area municipalities and are committed to delivering an outstanding project for you!*

Dear Mr. O'Bid:

The City of Cotati's (City or Cotati) dedication to fighting climate change is clear, and your Climate Protection Measures since 2001 show your commitment. We commend you for your fiscally responsible program that supports residents and meets sustainability goals.

The Respondent, **ENGIE Services U.S. Inc. (ENGIE)**, is part of the **ENGIE Group**, a global company in **low-carbon energy services**.

We are excited to respond to your energy and water audit RFP and would be honored to partner with you. Our extensive experience in the public sector allows us to align with your vision, offer expert support, and provide tailored funding solutions. We aim to help you achieve the City Council's **strategic goals to protect Cotati's quality of life, ensure fiscal sustainability, and promote community engagement and increased equity and inclusion**, while advancing the County's Climate Action 2020 and Beyond Plan.

Below is a summary of our experience with similar technologies and public agency partners.

- **Solar PV:** ENGIE has installed more than **300 MW of customer-sited solar PV systems in California** and our solar PV projects performed at over **105% of their stated outputs** for the most recently reconciled year. We have installed more public sector solar than any other builder.
- **Microgrids:** With a dedicated team of microgrid and BESS subject matter experts (SMEs) that focus on resiliency solutions for our customers, ENGIE currently has over 190 MW in operation and 23 MW under construction. In California, our microgrid experience includes Solano County, City of Milpitas, Santa Rita Jail, Chula Vista ESD, SSWC Anza Electric, and Borrego Springs.
- **Battery Energy Storage Systems (BESS):** We have built over **190 BESS, providing 57.9 MWh of storage capacity with 30 MWh enrolled and participating in 8 grid services** programs throughout the country.
- **Electric Vehicle Charging Stations (EVCS):** ENGIE has **installed EVCS** alongside our solar projects, **procured incentives** on behalf of our customers, and have a **full e-Mobility** team to support the City's efforts to provide clean transportation options.

Additional distinguishing features include:

- **Track Record of Outstanding Local Projects:** ENGIE has undertaken numerous projects around the Bay Area. Figure 1 on the next page highlights relevant projects constructed in the last 5 years in the adjacent map. We have outstanding references and post-construction customer satisfaction scores. In Northern CA, we are currently in construction in Solano County and the cities of Menlo Park, and Milpitas and developing projects for San Joaquin County and the cities of American Canyon (phase 2) and Pittsburg.



- More resources in California than any of our competitors:
  - 190+ personnel dedicated to the public sector in CA
  - 35 licensed engineering professionals in CA
  - 31 employees providing Operations & Maintenance (O&M) in CA managing 158 contracts with the longest guarantee contract term of 25 years

- Secured over \$100 million in state and utility incentives or rebate funding on behalf of our customers in California. ENGIE will help Cotati maximize the game-changing Inflation Reduction Act funding in the coming months and years. The expanded Investment Tax Credit will provide the City with the opportunity to obtain tax credits and potentially more credits depending on whether the project meets the domestic content, energy community and/or disadvantaged community guidelines.

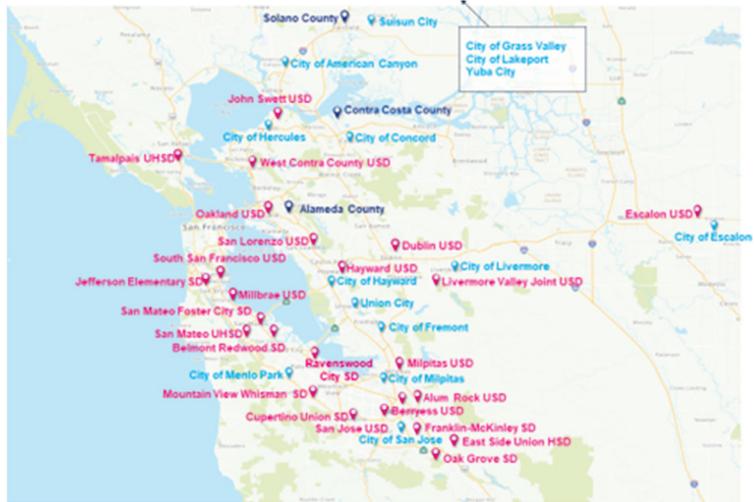


Figure 1. Map of Local Area Projects Constructed in Last 5 Years

- ENGIE's Community Engagement team will work with the City to engage the broader community around clean energy and sustainability. The team is prepared to support the creation of program for disadvantaged communities, engage youth around STEM, and spearhead innovative technology pilots to improve public safety.

As you review this response, you'll see that we focus entirely on providing municipal solutions tailored to the City's specific needs. Our team is prepared to handle every aspect of the project from start to finish, ensuring successful implementation.

Our goal is to deliver a comprehensive program that the City of Cotati community can take pride in, and that complements the outstanding work that has already been done to achieve the goals of the City.

**“With a single project, the city will reduce our energy costs and save \$12 million over the life of the project that can be reinvested into other city and neighborhood services.”**

*Mayor Lori Wilson, City of Suisun City*

Thank you for the opportunity to respond to the City of Cotati Energy/Water Audit and Implementation project. For questions regarding our response, please contact Amar Tiwari, Senior Program Development Manager at 415-264-2642 or [Amar.Tiwari@engie.com](mailto:Amar.Tiwari@engie.com).

Sincerely,

DocuSigned by:  
  


**Courtney Jenkins**  
 President  
*Authorized to Sign on Behalf of  
 ENGIE Services U.S. Inc.*



## Section 1 – Background





# 1. Background

## 1.1 Unique Qualifications

Our unique qualifications set us apart in the industry, combining specialized expertise with innovative solutions. The following list contains a few of the differentiators detailed in the cover letter:

- Track Record of Outstanding Local Projects:
- More resources in California than any of our competitors
- Secured over \$100 million in state and utility incentives or rebate funding on behalf of our customers in California
- ENGIE's Community Engagement Team

### 1.1.1 Years in Business

We have been involved in the energy-efficiency related business for 50 years; and has offered performance contracting services for 50 years nationally and in the state of California.



### 1.1.2 Fiscal Strength

ENGIE is a financially secure and stable company—backed by the global financial strength of ENGIE Group. We have a proven record as a globally trusted and financially solid partner with an investment grade credit rating and significant balance sheet strengths. ENGIE Group is listed on the Euronext Paris, Euronext Brussels, Regulated Market of the Luxembourg Stock Exchanges, and Dow Jones Stoxx 600, just to mention a few.

#### 1.1.2.1 Most Recent Audited Financial Report

Our 2023 Audited Financial Report is in Appendix A.

### 1.1.3 Meeting Minimum Qualifications

ENGIE not only meets the minimum qualifications, but be also exceed them, as demonstrated below. Exceeding minimum qualifications means not just meeting basic requirements but also delivering exceptional value and performance. We enhance project outcomes through innovative solutions, superior quality, and proactive service.

This approach reflects our commitment to not only fulfill but surpass expectations, ensuring greater efficiency, satisfaction, and long-term success. Our dedication to excellence drives us to offer more than what's required, creating added benefits and delivering results that truly stand out.

#### 1.1.3.1 Current NAESCO accreditation

We are accredited at the Energy Services Provider level, the highest level an ESCO can attain.



#### 1.1.3.2 On the U.S. DOE's qualified list of ESCOs

ENGIE is an approved performance contractor for the DOE for many years.

#### 1.1.3.3 Active G.C. license in CA

We have been a general contractor for 50 years and maintained the same license in California under license #995037. ENGIE has General A, B, C10, and C46 licenses.

#### 1.1.3.4 Minimum of \$30 million in bonding capacity

ENGIE has a \$75 million single project bonding limit, with an aggregate bonding capacity of \$300 million.

#### 1.1.3.5 Successful implementation of similar projects

Please refer to Section 3 – Project History & References for details and references.



### *1.1.3.6 Demonstrated experience in retrofitting municipal infrastructure to reduce energy and water consumption*

ENGIE excels in retrofitting municipal infrastructure to cut energy and water usage. We have a proven history of upgrading systems and applying innovative solutions, which helps municipalities lower operational costs and boost sustainability. Notable projects include work with the Cities of Milpitas, Hercules, and Suisun City.

We focus on your unique needs, crafting tailored strategies to optimize resource use and achieve measurable improvements. Our practical, hands-on experience guarantees that we implement effective, proven methods to enhance efficiency and support your sustainability goals.

### *1.1.3.7 Proven ability to provide a team of California licensed mechanical, electrical, structural, and civil engineers as may be necessary*

Our team includes **35 registered California PEs** with experience in mechanical, electrical, and civil engineering.

### *1.1.3.8 IPMVP and M&V Reports*

Section 4.1.3 discusses IPMVP. The M&V Reports are in Appendix B.

### *1.1.3.9 Pending or recent litigation*

No pending or recent litigation in the past 36 months associated with the savings performance and/or M&V of a guaranteed energy savings project.



## Section 2 - Project Team & Management Structure

---

## 2. Project Team & Management Structure

### 2.1 Team Organizational Chart

ENGIE's team members for the City's Project are shown in Figure 2 below.

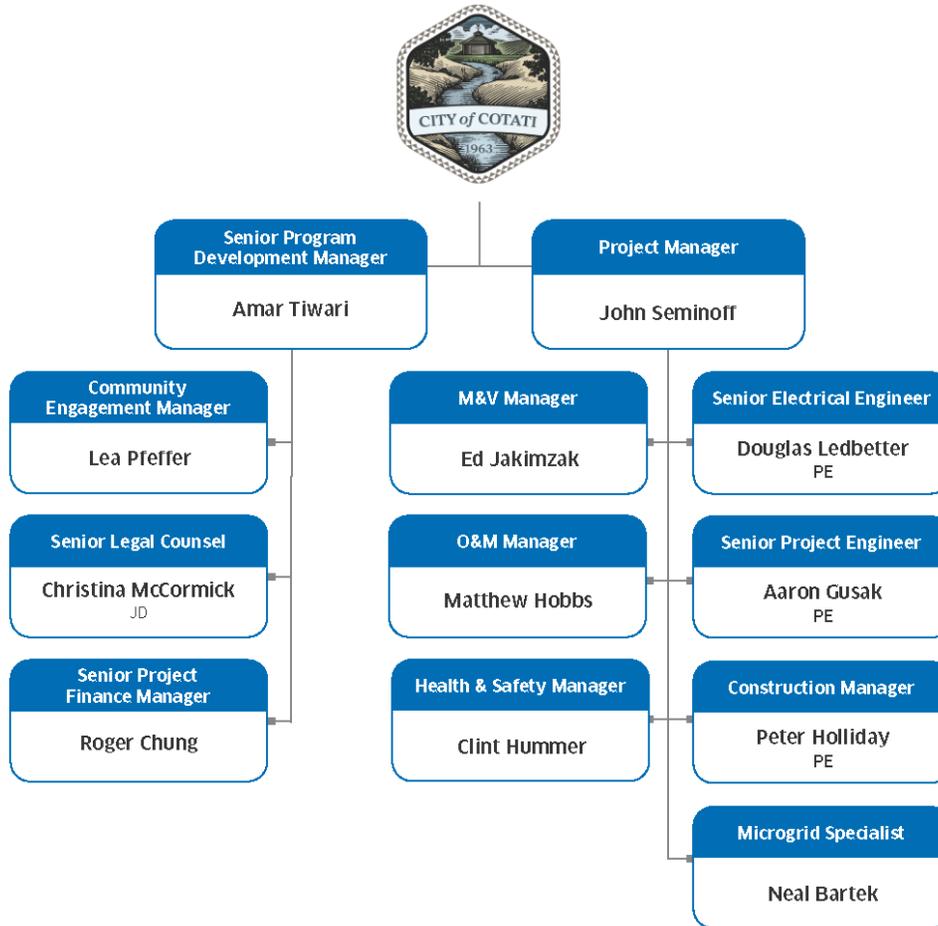


Figure 2. Team Organizational Chart

### 2.2 Resumes

ENGIE prides itself on our dedicated and experienced team members. We have a talented and robust team dedicated to this Project. Every key personnel listed on the following pages is familiar and readily available to support this Project.



**Amar Tiwari**

*Senior Program  
Development  
Manager*

**Role:** Amar brings over 15 years of experience as a Process Design Engineer and Project Manager. He manages the customer lifecycle from project development through to post-construction.

Amar supports new business development initiatives and keeps up to date on new technologies available, giving him a strong comprehension of energy saving technologies.

**Years of Experience:** 15 years

**Education:** MBA, University of California, Berkeley, CA  
BS, Chemical Engineering, Auburn University, Auburn, AL

**Relevant California Experience:**

- Adventist Health West
- City of Hercules
- County of Solano
- Contra Costa County Fire Protection District
- Dublin USD
- Milpitas USD
- Salinas City ESD
- San Mateo-Foster City SD
- San Mateo UHSD
- Tamalpais UHSD



**John Seminoff**

*Project Manager*

**Role:** John provides design solutions, estimates of implementation-costs, develops construction schedules, and manages the construction and implementation processes. His central concerns are the client's understanding and satisfaction with the systems and improvements.

**Years of Experience:** 30+ years

**Education:** BS, Energy Management and Design, Sonoma State University, Rohnert Park, CA

**License(s)/Registration:** Licensed Contractor – C-46

**Relevant California Experience:**

- Alameda County Fairgrounds
- Adventist Health
- City of Hayward
- City of Menlo Park
- DeSoto Next Generation Solar Energy Center
- Quinto Solar Project
- Solar Star Projects
- State Compensation Insurance Fund
- Sutter Health



**Doug Ledbetter, PE**

*Senior Electrical  
Engineer*

**Role:** Doug develops power distribution, power transmission, power system protection, substation engineering, and power generation systems, including interconnection of power plants to public utility grids.

**Education:** BS, Electrical Engineering, University of California Santa Barbara

**License(s)/Registration(s):** Registered Professional Engineer—Electrical, CA: 22601

**Relevant California Experience:**

- City of American Canyon
- City of Firebaugh
- City of Fremont
- City of Gonzales
- City of Grass Valley
- City of Hayward
- City of Livermore
- City of Madera
- City of Marysville
- City of Menlo Park
- City of Milpitas
- City of Salinas
- City of Yuba City



**Aaron Gusak,**  
**PE**

*Senior Project Engineer*

**Role:** Aaron provides engineering support for energy efficiency and renewable energy projects for public sector customers such as school districts, universities, and cities in Northern California. These projects allow customers to use energy more efficiently and provide long-term cost savings.

**Years of Experience:** 15 years

**Education:** BS, Mechanical Engineering, California State University, Sacramento, CA

**License(s)/Registration(s):** Professional Engineer – Electrical, CA: 23632

**Relevant California Experience:**

- Adventist Health West
- City of Firebaugh
- City of Madera
- City of Mendota
- El Dorado UHSD
- Escalon USD
- Gustine USD
- Merced UHSD
- Salinas UHSD
- State Fund
- Sutter Health



**Lea Pfeffer**

*Community Engagement Manager*

**Role:** Lea develops programs that complement and build on the energy work. She collaborates with the customer at every phase of the project, serving as an ongoing point of contact and resource for the customer with our education and engagement programs.

**Years of Experience:** 8 years

**Education:** MS, International Relations, Sciences Po Doctoral School, Paris  
BS, Political Science, University of California, Los Angeles

**Relevant California Experience:**

- Adventist Health West
- City of Hercules
- City of Milpitas
- Cupertino USD
- Hayward USD
- John Swett USD
- Livermore JUSD
- Mountain View-Whisman
- Santa Clara County COE



**Neal Bartek**

*Microgrid Specialist*

**Role:** Neal delivers solutions that improve customers' resiliency and continuity of critical operations and services. He is responsible for tracking ever-evolving technology and organizational best practices for the competitive design, procurement, construction, and operation of microgrids.

**Years of Experience:** 26 years

**Education:** Operations Research & Industrial Engineering, Cornell University, Ithaca, NY

**Relevant California Experience:**

- Adventist Health Portfolio, Statewide CA
- City of Menlo Park
- City of Milpitas
- County of Solano
- Sierra Southwest Cooperative
- West County Wastewater District
- Yucaipa Valley Water District



**Peter Holliday,**  
**PE**

*Construction  
Manager*

**Role:** Peter has extensive construction industry management experience in building shell and core, complicated renovations, and energy efficient upgrades. His responsibilities on this project will include on-site supervision, client interactions, and contract negotiations.

**Years of Experience:** 30+ years

**Education:** BS, Construction Management Technology, California State University, Sacramento

**License(s)/Certifications(s):** 30 hour OSHA Certified First Aid – AED  
Certified Fall Protection

**Relevant California Experience:**

- City of Dublin
- West County Wastewater District
- Travis USD
- Hayward USD
- Mountain House New College Campus
- Wasco Prison
- Valley Village Santa Clara



**Matthew Hobbs**

*O&M Manager*

**Role:** Matthew has over 24 years of industry experience. His diverse background in various roles includes PV installer, Superintendent, Lead Electrician, and O&M Field Manager. He holds certifications in OSHA 30, CPR, NFPA 70E, and is a California Certified Journeyman since 2018, highlighting his commitment to safety and excellence in the industry.

**Years of Experience:** 26 years

**Certification(s):** CPR and First aid certified  
OSHA Certified Equipment Trainer  
OSHA 30

**Relevant California Experience:**

- City of Dublin
- County of Santa Cruz
- County of Shasta
- County of Sutter
- South San Francisco USD



**Roger Chung**

*Commercial & Risk  
Director (Project  
Finance)*

**Role:** Roger has arranged more than \$400 million in paid from savings project financings in various structures. He is responsible for analyzing client needs/ concerns and then structuring and coordinating all project financing activities to assure the optimal form and cost of financing is obtained.

**Years of Experience:** 20 years

**Education:** BS, Management Science, University of California San Diego, CA

**Relevant California Experience:**

- Adventist Health West
- Alisal USD
- City of Milpitas
- East Side UHSD
- El Dorado UHSD
- Hayward USD
- Merced UHSD
- Mountain View-Whisman SD
- Salinas UHSD
- Santa Barbara USD
- State Fund



**Christina  
McCormick, JD**

*Senior Legal  
Counsel*

**Role:** Chris drafts and negotiates various legal agreements with customers, vendors, and subcontractors, including program development agreements, energy services agreements, operations and maintenance agreements, engineering, procurement and construction agreements, subcontracts, and purchase orders.

**Years of Experience:** 30 years

**Education:** JD, University of Michigan Law School, Ann Arbor, MI, 1994

BA, Finance, University of Illinois, Champaign-Urbana, 1989

**Relevant California Experience:**

- Adventist Health West
- City of Milpitas
- East Side UHSD
- El Dorado UHSD
- Franklin McKinley USD
- Gustine USD
- Hayward USD
- Merced UHSD
- Mountain View-Whisman SD
- North Monterey County USD
- Salinas UHSD
- State Fund



**Ed Jakimzak**

*M&V Manager*

**Role:** Ed manages M&V work and ongoing customer services for ENGIE's west region. He coordinates and performs all physical measurements and creates the reports in accordance with the IPMVP.

**Years of Experience:** 18 years

**Education:** MS, Energy Management, New York Institute of Technology, Old Westbury, NY

BS, Electrical Engineering, California State University, Northridge, CA

**Relevant California Experience:**

- Adventist Health West
- City of Milpitas
- El Dorado UHSD
- East Side UHSD
- Escalon USD
- Gustine USD
- Hayward USD
- Merced UHSD
- Mountain View-Whisman SD
- North Monterey County USD
- Salinas CESD
- Salinas UHSD



**Clint Hummer**

*Health & Safety  
Manager*

**Role:** Clint specializes in construction safety consulting, risk assessment, training, and regulatory compliance. He provides a broad spectrum of loss control, risk management, environmental and safety services.

**Years of Experience:** 17 years

**Education:** BA, Public Administration, Rutgers University, Camden, NJ

**Relevant California Experience:**

- Adventist Health West
- City of Milpitas
- East Side UHSD
- El Dorado UHSD
- Escalon USD
- Gustine USD
- Hayward USD
- Mountain View-Whisman SD
- North Monterey County USD
- Paso Robles JUSD
- Salinas CESD
- Salinas UHSD



## 2.3 Key Individuals

Name	Role	Percentage of Full-time Commitment
Amar Tiwari	Senior Program Development Manager	100%
John Seminoff	Project Manager	100%
Doug Ledbetter, PE	Senior Electrical Engineer	50%
Neal Bartek	Microgrid Specialist	50%

*Table 1. Our Key Individuals*

ENGIE's management team is committed to ensuring that the key staff members listed in Table 1 will be dedicated to the project according to the percentage of their time or effort specified.



## Section 3 - Project History & References





### 3. Project History & References

As one of only a handful of companies that offers true design-build general construction services specializing in energy and water conservation, building system retrofits, and renewable energy projects, ENGIE has the people, processes, technology, and delivery model to meet and exceed the City of Cotati needs.

#### 3.1 Capabilities, Experience, and Approach

##### 3.1.1 Capabilities

During the auditing phase, viable energy savings opportunities for the facilities – control systems, air conditioning, heating systems, lighting, building structure (envelope), water and sewer systems, process equipment and compressed air, plug loads, and scheduling procedures – are further scrutinized.

A major reason for ENGIE’s success with energy efficiency projects is the quality of our technical site analysis. The audit process is not only our opportunity to learn how a building operates, but more importantly, to understand what challenges the staff and community face, and how we can help solve them.

We have extensive and unparalleled experience conducting similar audits. On average, we audit 150 million square feet a year. In the past year in California alone, ENGIE audited hundreds of municipal facilities, covering over 7 million total square feet of space in cities both large and small. The data and experience gained through conducting these audits across a broad spectrum of public agencies will be leveraged to apply industry-leading best practices to the benefit of the City of Cotati.



On average, ENGIE audits  
**150 million**  
square feet a year

##### 3.1.2 Highlighted Projects

We provide detailed project information for 5 references on the following pages.



3.1.2.1 Project 1

<p><b>City of Milpitas</b> Milpitas, CA</p>		
<p>Project Description</p>	<ul style="list-style-type: none"> <li>• Facilities Water Fixture Retrofits</li> <li>• Water Meter Upgrades</li> <li>• SCADA &amp; Remote Communication, Pumping, and Automated Water Treatment</li> <li>• Upgraded Facilities and Pumping Stations Lighting</li> <li>• Upgraded Parks Lighting</li> <li>• Upgraded 4,453 street light controls</li> <li>• Retrofitted 2,185 City-wide LED streetlights</li> <li>• Upgraded Sports Field Lighting</li> <li>• Installed 200 kW of solar PV</li> <li>• Provided BESS and microgrid solution for backup resiliency at critical community facilities</li> <li>• Installed EV Charging Stations</li> <li>• Improved HVAC Ventilation</li> </ul>	
<p>Proximity to City of Cotati</p>	<p>86 miles</p>	
<p>Benefits &amp; Payback</p>	<ul style="list-style-type: none"> <li>• 4.2 million kWh reduction in annual utility electricity consumption</li> <li>• \$1.5 million saved in energy and water costs annually</li> <li>• \$30 million net lifetime savings through ENGIE's program</li> <li>• Improves city services and infrastructure for residents and businesses</li> <li>• Energy resiliency (backup power) for community centers</li> <li>• Addresses safety, efficiency, and climate action goals</li> <li>• Provides workforce and education opportunities</li> </ul>	
<p>Key Staff that worked on the project</p>	<p>Amar Tiwari, Doug Ledbetter, Neal Bartek</p>	
<p>Total Annual Energy/Water Savings Cost Savings/Avoidance</p>	<ul style="list-style-type: none"> <li>• Year 1 – \$1,508,673</li> <li>• Year 2 – \$1,576,170</li> <li>• Year 3 – \$1,646,688</li> <li>• Year 4 – \$1,720,365</li> <li>• Year 5 – \$1,797,340</li> </ul>	
<p>Project Size</p>	<p>\$35,048,004</p>	
<p>Additional Value Created</p>	<ul style="list-style-type: none"> <li>• Sponsored CivicSpark fellow</li> <li>• Created Water Meter and Sustainability Web pages and outreach campaigns</li> <li>• Dashboard of streaming solar data</li> <li>• Community Earth Day celebration</li> <li>• Developed City Sustainability bike tour</li> </ul>	
<p>Finance and Funding Approach</p>	<ul style="list-style-type: none"> <li>• Bond Funds/COP</li> <li>• Cash Contribution (GF, CIP, etc.)</li> <li>• Incentive Rebates/Loans/On-Bill</li> <li>• Tax Exempt Bonds and Leases</li> </ul>	
<p>Client reference name and current contact information</p>	<p>Elaine Marshall Deputy Director of Public Works City of Milpitas 408-586-2603 <a href="mailto:emarshall@milpitas.gov">emarshall@milpitas.gov</a></p>	



3.1.2.2 Project 2

<p><b>City of Hercules</b> Hercules, CA</p>	
<p>Project Description</p>	<ul style="list-style-type: none"> <li>• One new solar PV canopy array provides 257 kW of electricity to city hall, the senior center, and the library</li> <li>• Another new solar PV canopy array provides 126 kW to the community center's pool, gym, and teen center</li> <li>• LED lighting retrofit throughout interior and exterior of city facilities</li> <li>• Retrofitting of 576 streetlights to LEDs, so that 95% of streetlights throughout Hercules are now LEDs</li> <li>• HVAC modernization through repair/replacement of legacy systems at city hall, the library, and the senior center</li> <li>• Installation of smart thermostats and software controls throughout city buildings</li> </ul>
<p>Proximity to City of Cotati</p>	<p>52 miles</p>
<p>Benefits &amp; Payback</p>	<ul style="list-style-type: none"> <li>• 500,000 kWh reduction in annual utility electricity consumption</li> <li>• \$200k saved in energy and O&amp;M costs annually</li> <li>• \$3 million net lifetime savings through ENGIE's program</li> <li>• Improves city infrastructure for residents</li> <li>• Addresses safety, efficiency, and climate action goals</li> <li>• Provides education opportunities</li> </ul>
<p>Key Staff that worked on the project</p>	<p>Amar Tiwari</p>
<p>Total Annual Energy/Water Savings Cost Savings/Avoidance</p>	<ul style="list-style-type: none"> <li>• Year 1 – \$192,941</li> <li>• Year 2 – \$201,982</li> <li>• Year 3 – \$211,447</li> <li>• Year 4 – \$221,355</li> <li>• Year 5 – \$231,727</li> </ul>
<p>Project Size</p>	<p>\$4,005,348</p>
<p>Additional Value Created</p>	<ul style="list-style-type: none"> <li>• Dashboard of streaming solar data</li> <li>• STEM for preschool and after school care</li> </ul>
<p>Finance and Funding Approach</p>	<ul style="list-style-type: none"> <li>• Tax Exempt Lease Purchase</li> </ul>
<p>Client reference name and current contact information</p>	<p>Mike Roberts Public Works Director 510-799-8241 <a href="mailto:mikeroberts@ci.hercules.ca.us">mikeroberts@ci.hercules.ca.us</a></p>

3.1.2.3 Project 3

<p><b>City of American Canyon</b> American Canyon, CA</p>	
<p>Project Description</p>	<ul style="list-style-type: none"> <li>• 1.2 MW of solar PV canopies and ground-mounts across 3 sites</li> <li>• 120 kW BESS at Water Reclamation Facility for energy arbitrage and future islanding</li> <li>• 4 emergency generators installed at critical facilities</li> <li>• LED lighting upgrades (over 2,000 fixtures) and 168 occupancy sensors</li> <li>• HVAC upgrades</li> <li>• EV charging stations at City Hall</li> </ul>
<p>Proximity to City of Cotati</p>	<p>37 miles</p>
<p>Benefits &amp; Payback</p>	<ul style="list-style-type: none"> <li>• 1.7 million kWh reduction in annual utility electricity consumption</li> <li>• \$400k saved in energy and O&amp;M costs annually</li> <li>• \$9 million net lifetime savings through ENGIE's program</li> <li>• Reduce energy consumption and utility costs at city facilities</li> <li>• Replace or upgrade end-of-life equipment and/or inefficient systems at no out-of-pocket cost</li> <li>• Reduce greenhouse gas (GHG) emissions</li> <li>• Where relevant, phase-in reliability and resiliency measures to address grid de-energization risks at critical facilities</li> </ul>
<p>Key Staff that worked on the project</p>	<p>Doug Ledbetter</p>
<p>Total Annual Energy/Water Savings Cost Savings/Avoidance</p>	<ul style="list-style-type: none"> <li>• Year 1 – \$401,262 (includes SGIP rebate)</li> <li>• Year 2 – \$386,021 (includes SGIP rebate)</li> <li>• Year 3 – \$401,103 (includes SGIP rebate)</li> <li>• Year 4 – \$415,799 (includes SGIP rebate)</li> <li>• Year 5 – \$418,269</li> </ul>
<p>Project Size</p>	<p>\$6,785,442</p>
<p>Additional Value Created</p>	<ul style="list-style-type: none"> <li>• Paid high school and community college internships</li> <li>• Parks &amp; Rec Nature Camps</li> <li>• Earth Day Home Kids</li> <li>• Community energy savings tips and pollution prevention week</li> </ul>
<p>Finance and Funding Approach</p>	<ul style="list-style-type: none"> <li>• TELP</li> <li>• Cal OES (Office of Emergency Services) Grant</li> <li>• Enterprise Funds</li> </ul>
<p>Client reference name and current contact information</p>	<p>Jason Holley City Manager 707-647-5323 jholley@cityofamericancanyon.org</p>



3.1.2.4 Project 4

<p><b>State Compensation Insurance Fund</b> Various Locations, CA</p>	
<p>Project Description</p>	<ul style="list-style-type: none"> <li>• 9.8 MW of solar across 6 sites</li> <li>• 120 EV chargers</li> <li>• 4.2 MWh of battery storage at 3 sites</li> </ul>
<p>Proximity to City of Cotati</p>	<p>Various Locations throughout California</p>
<p>Benefits &amp; Payback</p>	<ul style="list-style-type: none"> <li>• 311 GWh over 20 years, projected solar energy production, enough to power 26,500 homes.</li> <li>• 230,000 tons of GHG emissions offset over 20 years</li> </ul>
<p>Key Staff that worked on the project</p>	<p>John Seminoff, Doug Ledbetter, Aaron Gusak, Roger Chung, Chris McCormick, Ed Jakimzak, Clint Hummer</p>
<p>Total Annual Energy/Water Savings Cost Savings/Avoidance</p>	<ul style="list-style-type: none"> <li>• Year 1 – \$2,351,968 (0% rate escalation years 1-5)</li> <li>• Year 2 – \$2,340,207</li> <li>• Year 3 – \$2,328,505</li> <li>• Year 4 – \$2,316,864</li> <li>• Year 5 – \$2,305,279</li> </ul>
<p>Project Size</p>	<p>\$50,478,763</p>
<p>Additional Value Created</p>	<ul style="list-style-type: none"> <li>• Hedge against rising utility costs</li> </ul>
<p>Finance and Funding Approach</p>	<ul style="list-style-type: none"> <li>• Cash</li> </ul>
<p>Client reference name and current contact information</p>	<p>Teresa Navarec Program Manager, State Fund 707-975-6858 <a href="mailto:tnavarec@scif.com">tnavarec@scif.com</a></p>

3.1.2.5 Project 5

## Mountain View-Whisman School District

Mountain View, CA



Project Description	<ul style="list-style-type: none"> <li>• Installed 1589 kW of canopy and roof-mount solar PV</li> <li>• Installation of EV charging stations</li> </ul>
Proximity to City of Cotati	86 miles
Benefits & Payback	<ul style="list-style-type: none"> <li>• 2.3 million kWh reduction in annual utility electricity consumption</li> <li>• \$600k saved in energy and O&amp;M costs annually</li> <li>• Improves school infrastructure for children and teachers</li> <li>• Addresses safety, efficiency, and climate action goals</li> <li>• Provides education opportunities</li> </ul>
Key Staff that worked on the project	Roger Chung, Chris McCormick, Ed Jakimzak, Clint Hummer
Total Annual Energy/Water Savings Cost Savings/Avoidance	<ul style="list-style-type: none"> <li>• Year 1 – \$586,681</li> <li>• Year 2 – \$615,243</li> <li>• Year 3 – \$641,066</li> <li>• Year 4 – \$664,005</li> <li>• Year 5 – \$691,898</li> </ul>
Project Size	\$10,843,710
Additional Value Created	<ul style="list-style-type: none"> <li>• STEAM Literacy support</li> <li>• Elementary Summer School support</li> <li>• Hands-on Solar lessons and kits for each school</li> <li>• Professional Development</li> </ul>
Finance and Funding Approach	<ul style="list-style-type: none"> <li>• Bond Financing</li> </ul>
Client reference name and current contact information	Rebecca Westover 650-526-3550 <a href="mailto:rwestover@mvwsd.org">rwestover@mvwsd.org</a>



## Section 4 - Project Approach



## 4. Project Approach

### 4.1 Approach to Performing Services

As one of only a handful of companies that offers true design-build general construction services specializing in energy and water conservation, building system retrofits, and renewable energy projects, ENGIE has the people, processes, technology, and delivery model to meet and exceed the City's needs.

#### 4.1.1 Phase I: Audit and Project Development

Our approach for developing the City's energy and water savings program includes the following steps shown in Figure 3:

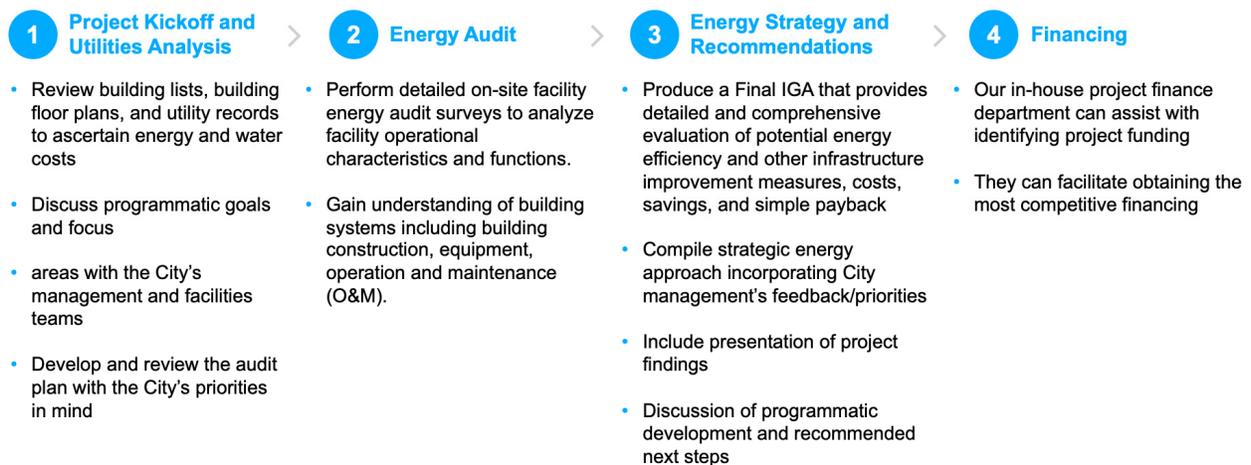


Figure 3. Audit and Project Development

##### 4.1.1.1 Project Kickoff and Utilities Analysis

Our team will create an energy and utility usage index for the selected buildings, facilities, and equipment to prioritize savings opportunities using available electricity, gas, and water usage/billing data. We then benchmark the usage data and the dollar cost to building square footage to gain an advanced picture of the opportunities present for energy, water, and resource reduction.

##### 4.1.1.2 Energy Audit

###### Energy and Water Audit Capabilities

During the auditing phase, viable energy savings opportunities for the facilities – control systems, air conditioning, heating systems, lighting, building structure (envelope), water and sewer systems, process equipment and compressed air, plug loads, and scheduling procedures – are further scrutinized.

A major reason for our success with energy efficiency projects is the quality of our technical site analysis. The audit process is not only our opportunity to learn how a building operates, but more importantly, to understand what challenges the staff and community face, and how we can help solve them.

ENGIE has extensive and unparalleled experience conducting similar audits. On average, we audit 150 million square feet a year. In the past year in California alone, we audited hundreds of municipal facilities, covering over 7 million total square feet of space in cities both large and small. The data and experience gained through conducting these audits across a broad spectrum of public agencies will be leveraged to apply industry-leading best practices to the benefit of the City of Cotati.



On average, ENGIE audits  
**150 million**  
square feet a year

### Energy and Water Audit Plan

We created the following preliminary audit management plan, shown in Figure 4, for the City of Cotati. This is, of course, subject to feedback and direction from the City staff and leadership and will be discussed during the kickoff phase.

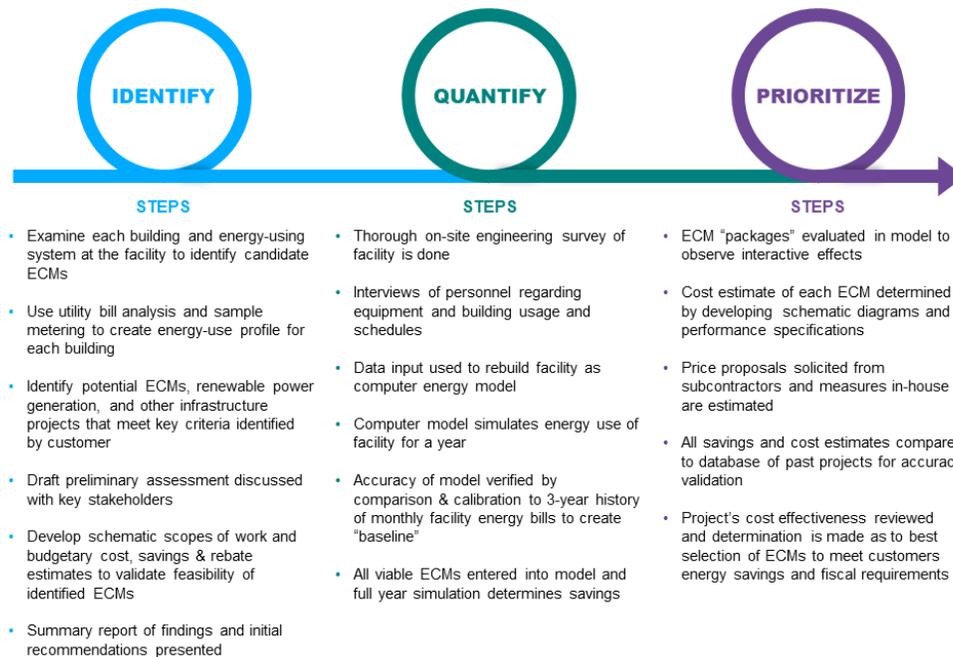


Figure 4. Energy Conservation Measure (ECM) Selection and Validation

#### 4.1.1.3 Recommendations

To support your goals, we'll present a detailed plan for enhancing energy and water savings. This plan will outline specific measures, associated costs, anticipated savings, and the scope of work involved. Our recommendations will be included in the Final IGA, reflecting both the audit findings and your input. Throughout the project, you'll have key roles in (decision-making, including selecting the most effective energy conservation measures, evaluating their payback periods, exploring funding options, and determining the best methods for measuring and verifying energy savings.

#### 4.1.1.4 Financing

Our customers benefit from access to our highly experienced project finance team, who bring decades of expertise in public and energy finance. We offer a range of financing options to meet your needs, including municipal tax-exempt leases with non-appropriation clauses, Certificates of Participation (COPs), Power Purchase Agreements (PPAs), revenue and other bonds, and on-bill financing (OBF) options like those provided by PG&E. We also support financing through internal cash flow. Our goal is to help you choose the best financial solution for your project's success.

As part of our commitment to service, we charge no fee for the provision of information to customers about its financing options. Our project finance team brings decades of experience in energy and public finance. Furthermore, just as we are not tied to a single manufacturer for the purchase of project equipment, neither is it partial to a single funding source. Instead, our project finance team can help educate you about, and connect you to, a broad spectrum of options, allowing the City to select the financing source with the best rates, terms and conditions for your project and budgetary needs.

### 4.1.2 Phase II: Construction and Implementation

At ENGIE, we prioritize your project's success by managing every aspect of design and compliance. Our team handles all necessary permits and is backed by 35 licensed professional design engineers and a



network of highly qualified consultants. We specialize in developing comprehensive plans and specifications, ensuring robust construction support.

Our extensive experience with neighboring public agencies equips us with a deep understanding of relevant codes, standards, and legal requirements, particularly for energy conservation and generation programs.

To deliver top-notch quality and cost-effective solutions, we blend our in-house expertise with carefully selected subcontracted installation labor. As a local company with our corporate headquarters within 50 miles from Cotati, we are deeply invested in preserving the City’s heritage while advancing its energy and infrastructure objectives. We are committed to engaging local subcontractors and taking full responsibility for the entirety of your project—regardless of its scope, site, or number of components.

#### 4.1.2.1 Procurement and Installation of New Equipment/Refurbishment of Existing Equipment

We pride ourselves on being the global leader in energy efficiency services. As a major buyer of lighting, HVAC equipment, and automation systems, we have a proven track record. In 2023, **over \$100 million in lighting construction** was completed across Federal, County, City, and School districts nationwide, with even more projected for 2024. Each year, we also secure over 1 GW of solar PV modules.

**ENGIE  
VENDOR NEUTRAL  
APPROACH**

ENGIE is not locked into technologies, suppliers, or contractors. Our impartial procurement approach means that we can be trusted to deliver the best solution tailored to your needs – not a sales quota.

Our procurement specialists are committed to finding the best solutions for you. By evaluating your needs through evaluating your needs through an overall cost assessment, we ensure you receive top-quality equipment at the most competitive prices.

As a design-build firm, ENGIE is dedicated exclusively to energy efficiency and renewable power generation services. Unlike equipment manufacturers or suppliers, our vendor-neutral stance prevents any conflicts of interest, allowing us to focus solely on delivering the best solutions for our clients.

Our commitment to providing superior solutions at optimal prices sets us apart and ensures we help you achieve the greatest energy savings possible.

#### 4.1.2.2 Construction Management

We prioritize your convenience and project success with our comprehensive design-build approach. Unlike many competitors, we offer a streamlined experience by providing a single point of contact throughout both the development and construction phases. You can have peace of mind knowing that a dedicated ENGIE construction manager (CM) will be on-site whenever work is underway, ensuring everything runs smoothly.

We are committed to **completing projects on time and within budget while minimizing disruption** to your facility’s occupants. To keep your project efficient and cost-effective, we develop a site survey schedule that aims to reduce on-site time, thereby accelerating your savings. We identify opportunities to perform work outside of regular business hours or in ways that cause minimal disruption during business hours.

*“I have been impressed with the quality of subcontractors and ENGIE Services’ ability to schedule construction to minimize impacting occupants of adjacent structures. The ability to make change was remarkable and smooth.”*

– Joe Kuderca, Engineering Manager,  
City of Livermore, CA

When any work might impact building occupants, we coordinate closely with your facilities maintenance staff to ensure a smooth and considerate process. Clear communication is central to our approach, helping us deliver a seamless implementation and achieve the best results for you.

During the implementation phase, our on-site CM holds weekly or bi-weekly construction meetings with designated facilities maintenance staff and contractors. These meetings consist of reviewing the previous week’s construction progress, outstanding issues, and action items. It will also cover the anticipated schedule for the next few weeks.



The CM will coordinate the anticipated installation/retrofit of equipment with the City's facilities maintenance staff. In addition, we use proven construction methods to ensure ongoing operations are maintained to extent possible, including:

During the implementation phase, we ensure seamless communication and coordination through regular construction meetings. Our on-site CM will hold weekly or bi-weekly meetings with your designated facilities maintenance staff and contractors. These meetings will review progress, address any outstanding issues, and outline the upcoming schedule, keeping everyone informed and aligned.

Our CM will closely coordinate with your facilities maintenance team to plan and schedule equipment installations or retrofits. We are committed to maintaining your facility's ongoing operations with minimal disruption by using proven construction methods, including:

- **Strict Safety Protocols:** We adhere to OSHA safety guidelines for all work, especially hazardous tasks like roof work, ensuring the safety of our workers and the secure handling of materials.
- **On-Site Supervision:** We monitor contractor attendance and enforce the use of personal protective equipment to maintain a safe work environment.
- **Compliance with Protocols:** We are experienced in fingerprinting and documenting site workers and will fully comply with your City's protocols and procedures.
- **Efficient Installation:** Our accelerated installation process is designed to minimize the impact on local activities and keep the project moving swiftly.
- **Enhanced Security:** If needed, we deploy security personnel to monitor job sites overnight and manage traffic changes, such as during street light installations, to ensure safety and smooth flow.
- **Minimized Disruption:** Any work that affects parking availability will be carefully scheduled in coordination with the City to limit disruption to daily activities.

Our goal is to ensure a smooth and efficient construction process, with minimal impact on your operations and maximum attention to detail.

### 4.1.3 Phase III: Commissioning, Guarantee, and Monitoring

#### 4.1.3.1 Projecting and Proving Energy Savings

For the success of any energy services performance contracting program, having a robust Measurement and Verification (M&V) plan is crucial. We understand the importance of this and adhere to the International Performance M&V Protocol (IPMVP), the industry standard recognized by NAESCO for accurately measuring energy savings from conservation projects.

Our M&V professionals will collaborate closely with the City to create a customized M&V plan that aligns with IPMVP guidelines. This ensures that your energy savings are measured effectively and with the highest level of confidence. The IPMVP provides various options for measuring and verifying savings, which we will review and select the best approach to fit your specific needs.

By following these best practices, we ensure transparency and reliability in tracking the success of your energy projects, giving you clear insights and assurance that **your goals are being met**.

The IPMVP options are categorized in Figure 5 on the next page.

	Option A	Option B	Option C	Option D
<b>Savings Calculation</b>	<b>Engineering Calculations:</b> Short-term or continuous post-retrofit measurements	<b>Engineering Calculations:</b> Short-term or continuous measurements	<b>Analysis of Whole Facility:</b> Utility meter/sub-meter data	<b>Energy Use Simulation:</b> Calibrated with hourly or monthly utility billing data of end-use metering
<b>Example Application</b>	Measure power draw periodically for a lighting retrofit.	Apply controls to vary the load on a constant speed pump using a variable speed drive. A kWh meter is installed to measure actual energy use of the drive.	Multifaceted energy management program affecting many systems in a building. Measure energy use via gas and electric utility meters for a 12 month base-year period and throughout the post-retrofit period.	Multifaceted energy management program affecting many systems in a building, but where no base year data is available. Measure post-retrofit energy use by utility meters and base year energy use is determined by simulation using a calibrated model.

Figure 5. IPMVP Options

#### 4.1.3.2 Methodology, Formulas, and Reporting of Savings

We guarantee performance by establishing a baseline energy use, predicting the savings reduction by using industry established building modeling and calculations, and monitoring and verifying the energy reduction throughout the guarantee. Our goal is to select a straightforward M&V approach that can be easily verified by the customer and/or their third-party reviewer.

#### 4.1.3.3 Monitoring Services Available After Installation to Ensure Continued Savings

ENGIE has one of the largest, most experienced M&V teams in the industry. A Certified M&V Professional (CMVP) with more than 25 years in performance contracting leads a team of full-time dedicated staff, with 7 certified staff members, and an average time in performance contracting of over 15 years each. The team has overseen hundreds of guarantees and currently has more than 240 clients with ongoing guarantees.

**The team has one of the highest success rates in the industry — 109% for the most recently reconciled year — for achieving our guaranteed performance on projects.** If project performance does not meet or exceed our guaranteed performance, ENGIE writes the customer a check for the difference, without delay or hassle. **This outstanding monitoring department sets ENGIE apart from other companies that engage in performance-based energy programs.**

Our M&V team has extensive expertise in commissioning, monitoring, and troubleshooting over 16 different types of energy management control systems. Not only is this team responsible for delivering a functional system, but they also continue to train and support our customers on that system for the duration of the contract.

#### 4.1.3.4 “Energy Intelligent” M&V

The exact scope for monitoring required for the City is determined during the design phase and tailored to the energy measures to be implemented. ENGIE uses a proprietary web-based system, Utilityvision™, to monitor data acquired from our energy projects. As a standard, we provide monthly value reports from Utilityvision that we customize based on project and customer needs. Administrative personnel can use the software to create summary reports, while facility managers can set alarms and run trend analysis diagrams with the click of a button. Figure 6 displays a screenshot example of Utilityvision.

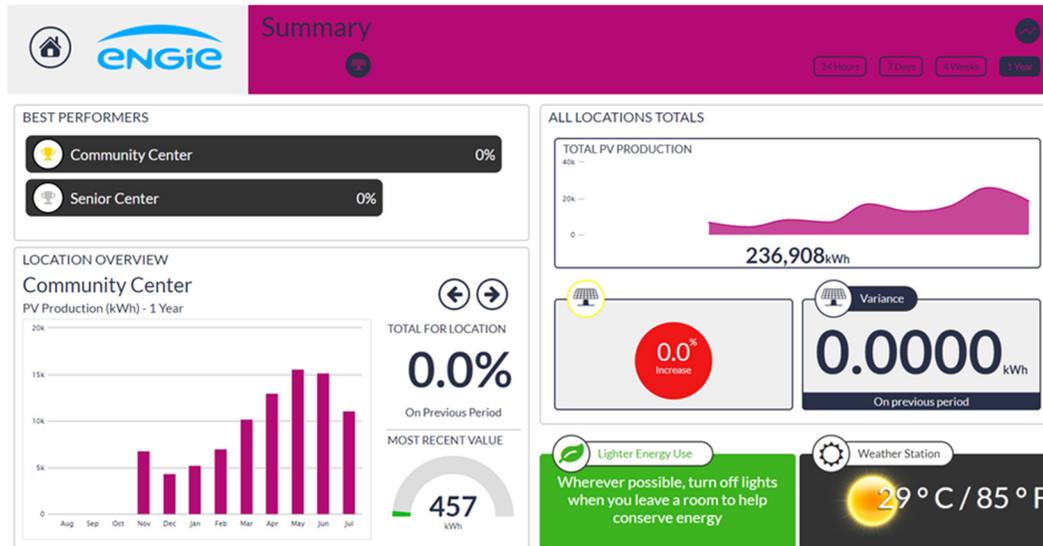


Figure 6. Utilityvision Summary Page

## 4.2 Additional Benefits and Value Added Elements

### 4.2.1 Our Approach

ENGIE's business model is tailored for successful partnerships in the public sector. We actively manage projects to ensure clear communication with stakeholders and timelines that align with your needs. Our expert team is here to tackle the City's challenges and partner with you to create a program that delivers real results for both your business and the community.

Our community impact team, made up of former educators, nonprofit leaders, and outreach experts, is dedicated to understanding and addressing your goals. We collaborate closely with you to design and implement programs that meet your specific needs. For example, we can help educate your staff and residents about the climate crisis and strategies for mitigation as outlined in your 2019 Climate Emergency Resolution. Our team's expertise and creativity can support various departments within the City, ensuring a tailored and impactful approach.

Other cities have met their specific goals in the following ways: a CivicSpark Fellow working on organic waste reduction and processing for County of Solano; providing workforce development internships for City of Ventura in partnership with the Boys and Girls Club; or supporting community placemaking through murals in City of Oceanside and City of Vacaville. Below are examples of various engagement scopes for energy programs we have designed and implemented to meet needs in California.

#### 4.2.1.1 City of Milpitas

With a water infrastructure program ranging from residential and business AMI to automated water testing and treatment, to secure web-based systems, ENGIE enhanced the project with:

- Successful application for an international Smart 50 award for the smart city work done around wastewater, residential water, and overall energy and resiliency.
- Development of an informational web page, 24-hour call center, and multi-lingual print outreach for the smart water meter roll out to residents and businesses.
- Creation of educational signage at the community center to explain the installed microgrid technology and its benefits to residents.
- Field trip for local middle and high school students to learn about the energy project

#### 4.2.1.2 *City of American Canyon*

Supporting their Marketing Department of one and building an employee pipeline for their Wastewater Department by attracting local talent; ENGIE partnered with the City to deliver:

- Paid internships to support the City's Wastewater and Marketing departments
- Communications support through City newsletter articles and project updates
- Supporting City Earth Day events over multiple years with youth activities and hands-on materials, energy savings tips, and other handouts and giveaways.

#### 4.2.1.3 *City of Hercules*

With the goal of supporting City youth, ENGIE partnered with the City to provide:

- After School Program including 5 STEM challenges, hands-on materials and professional development for facilitators
- Preschool STEM support including 5 activities, hands-on materials and PD for teachers

### 4.2.2 Potential Community Engagement Program Elements

#### 4.2.2.1 *Greenhouse Gas Reduction & Carbon Mitigation*

Our core approach is to provide our customers the opportunity to make the transition to a zero-carbon footprint. Innovative energy solutions, renewable development and environmental stewardship will reduce energy consumption, minimize emissions and lead to a sustainable future. We are committed to continual improvement as we will never waver in our adherence to social responsibility as a core ethic.

#### 4.2.2.2 *Living Laboratory*

Our community facing dashboards provide real-time data to explain your energy projects to residents. The dashboards can highlight project impact, provide energy saving tips to residents, and visualize the GHG reduction and impact to your project.

The Living Laboratory Online Dashboard features data such as:

- Carbon Dioxide offset
- Solar electricity production
- Solar insolation
- Multiple timescales

#### 4.2.2.3 *Reduced Operational Costs*

At ENGIE, centering around your most important goals allows us to create a program that not only brings efficiency to your operations, but also optimizes the usability of your built environment with long-term benefits. Depending upon the scope of ECMs installed, there will be savings to the City for reduced operational costs associated with older technology and equipment.

#### 4.2.2.4 *STEM Education*

We can enhance the County's existing youth programs, like Summer Camp and after-school activities, by providing hands-on STEM activities. This support includes materials, printed facilitator guides, and professional development for facilitators, all aimed at reducing program costs.

ENGIE can support programs for preschool through high school as shown in Figure 7. We can work with the City to incorporate important themes to the City such as music or agriculture.



Figure 7. Youth STEM Engagement



### 4.2.2.5 Technical Training

ENGIE can provide a training program for City of Cotati personnel and/or contractors for each installed ECMs. This encompasses instruction on operation, troubleshooting, maintenance, and repair of ECMs, and all maintenance plans and manuals. Trainings can also be filmed or designed from inception to be video based trainings to easily bring new employees and contractors up to speed.

## 4.2.3 Economic Development Within the City

### 4.2.3.1 Local Subcontractor Workshops

To support local subcontractors, ENGIE invites local companies to learn about the project, meet the project team, learn about our procurement process, and pre-qualify their companies. Our June 2024 event in City of Oceanside has already resulted in the hiring of a local roofing contractor for the project.

### 4.2.3.2 Civic Spark Fellow

ENGIE can leverage our partnership with CivicSpark, a resiliency focused division of AmeriCorps, to bring a full-time fellow to the District. CivicSpark Fellows, recruited from the country’s top sustainability-focused undergraduate programs, spend 11 months with agencies to help build capacity for research, planning, and implementation of projects looking at sustainability, climate change, energy, and water.

### 4.2.3.3 Paid Internships

Our internship program gives local high school, community college and university students the same challenging work as our own team members on energy projects for our customers. We have put time and thought into developing an internship program that provides youth with real work experience, enriching and networking engagement with mentors, and communication with interns nationwide.

## 4.2.4 Publicity, Branding, & Marketing

### 4.2.4.1 Award Identification and Application

ENGIE wants to share your sustainability leadership and impacts with the broader community. Bringing attention to your sustainability work both inspires other communities and recognizes and rewards your dedication and work for your residents.

We research award opportunities, develop a strong and comprehensive application, and handle the submission, fees, and follow-up process. Figure 8 shows a few of the awards our clients have received with our input.



Figure 8. Customer Awards

### 4.2.4.2 Communications

We provide presentations at Board meetings or community events, develop social media posts, utility bill inserts, flyers or postcards for community centers and events, create museum quality signage, and even videos to educate residents about the energy project. From updates about our project to articles about climate change and sustainability topics, we can support your outreach and communication goals.

### 4.2.4.3 Community Events

ENGIE is happy to support community events, from providing planning support, booths, and activities for existing events to creating a new custom outreach event for the City. The City of Vacaville wanted to develop, implement, and publicize a Tree Infusion Program to mitigate the necessary tree removal for energy upgrade work, so ENGIE provided residents with smaller trees to ensure the program message and benefits were reaching residents across the City.



## Section 5 – Pricing





## 5. Contract

A sample Performance Energy Contract is located in Appendix C.

### PE/IGA Pricing Proposal RFP DESIGN-BUILD ENERGY SERVICE

Pursuant to and in compliance with your Notice Requesting Proposals and all other documents relating thereto, the undersigned respondent, having familiarized him/herself with the terms and conditions of the proposal documents, hereby proposes and agrees to perform the work to be done and to provide all labor and materials necessary to perform the work.

Name of Respondent: ENGIE Services U.S. Inc.

#### Preliminary Evaluation (PE)

If the respondent charges fees to perform a preliminary evaluation, please provide the price and indicate if it's waived if the City proceeds to the IGA.

\$0 Fees waived if the City proceeds to IGA?

#### Investment Grade Audit (IGA):

**Does the respondent require an IGA agreement to be entered into before a Guaranteed Savings Agreement scope of work, price and savings can be finalized?**

NO

If an IGA agreement is required, does it include exit fees and/or penalties in the event the City chooses to not implement some or all of the IGA findings?

NO

If the City implements some or all of the IGA findings with the proposer, is the price of the IGA waived?

YES

What is the respondent's price to complete an IGA?

\$0

#### Certification by proposer

I hereby certify that I am able to commit the firm to the proposal submitted.

Company: ENGIE Services U.S. Inc.

Name (printed): Courtney Jenkins

Title: President

Signature:   Date: August 22, 2024



## Section 6 – Acknowledgement of Addenda





## 6. Acknowledgement of Addenda

ENGIE confirms that we did not receive any responses to written questions during the proposal period.



## Appendix A – Audited Financial Report





**2023 MANAGEMENT REPORT  
AND ANNUAL CONSOLIDATED  
FINANCIAL STATEMENTS**

# CONTENTS

## 01 MANAGEMENT REPORT

1	ENGIE 2023 RESULTS.....	6
2	OTHER INCOME STATEMENT ITEMS.....	17
3	CHANGES IN NET FINANCIAL DEBT.....	19
4	OTHER ITEMS IN THE STATEMENT OF FINANCIAL POSITION.....	23
5	PARENT COMPANY FINANCIAL STATEMENTS.....	24

## 02 CONSOLIDATED FINANCIAL STATEMENTS

INCOME STATEMENT.....	26
STATEMENT OF COMPREHENSIVE INCOME.....	27
STATEMENT OF FINANCIAL POSITION.....	28
STATEMENT OF CHANGES IN EQUITY.....	30
STATEMENT OF CASH FLOWS.....	32

## 03 NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Note 1 ACCOUNTING FRAMEWORK AND BASIS FOR PREPARING THE CONSOLIDATED FINANCIAL STATEMENTS.....	35
Note 2 MAIN SUBSIDIARIES AT DECEMBER 31, 2023.....	40
Note 3 INVESTMENTS IN EQUITY METHOD ENTITIES.....	46
Note 4 MAIN CHANGES IN GROUP STRUCTURE.....	54
Note 5 FINANCIAL INDICATORS USED IN FINANCIAL COMMUNICATION.....	56
Note 6 SEGMENT INFORMATION.....	61
Note 7 REVENUES.....	65
Note 8 OPERATING EXPENSES.....	69
Note 9 OTHER ITEMS OF NET INCOME/(LOSS) FROM OPERATING ACTIVITIES.....	71
Note 10 NET FINANCIAL INCOME/(LOSS).....	74
Note 11 INCOME TAX EXPENSE.....	75
Note 12 EARNINGS PER SHARE.....	79
Note 13 FIXED ASSETS.....	80
Note 14 FINANCIAL INSTRUMENTS.....	94
Note 15 RISKS ARISING FROM FINANCIAL INSTRUMENTS.....	111
Note 16 EQUITY.....	131

Note 17 PROVISIONS .....	134
Note 18 POST-EMPLOYMENT BENEFITS AND OTHER LONG-TERM BENEFITS .....	143
Note 19 SHARE-BASED PAYMENTS.....	152
Note 20 RELATED PARTY TRANSACTIONS .....	153
Note 21 EXECUTIVE COMPENSATION .....	155
Note 22 WORKING CAPITAL REQUIREMENTS, INVENTORIES, OTHER ASSETS AND OTHER LIABILITIES.....	156
Note 23 LEGAL AND ANTI-TRUST PROCEEDINGS .....	158
Note 24 SUBSEQUENT EVENTS.....	165
Note 25 FEES PAID TO THE STATUTORY AUDITORS AND TO MEMBERS OF THEIR NETWORKS .....	166
Note 26 INFORMATION REGARDING LUXEMBOURG AND DUTCH COMPANIES EXEMPTED FROM THE REQUIREMENTS TO PUBLISH ANNUAL FINANCIAL STATEMENTS.....	167



# 01 MANAGEMENT REPORT

- 1 ENGIE 2023 RESULTS.....6
- 2 OTHER INCOME STATEMENT ITEMS ..... 17
- 3 CHANGES IN NET FINANCIAL DEBT ..... 19
- 4 OTHER ITEMS IN THE STATEMENT OF FINANCIAL POSITION..... 23
- 5 PARENT COMPANY FINANCIAL STATEMENTS ..... 24

# 1 ENGIE 2023 RESULTS

## ENGIE FY 2023 results

Another year of strong growth in results underpinned by successful execution of our strategy

Proposed dividend of €1.43 per share for 2023

Robust medium-term outlook 2024 – 2026

### Business highlights

- High pace of growth in Renewables with 3.9 GW of additional installed capacity in 2023 reaching a total of 41.4 GW
- Acceleration in battery storage with the acquisition of BRP in the United States and the commissioning of Hazelwood in Australia
- Visibility reinforced on the contribution of Networks in France
- Continued progress in Net Zero 2045 trajectory with a 54% reduction vs. 2017 in GHG emissions from energy production to 52Mt in 2023  
Signature of the final agreement on Belgian nuclear, thereby fundamentally de-risking the Group

### Financial performance

- *Guidance* 2023 achieved with NRIGs of €5.4 billion
- EBIT excluding nuclear of €9.5 billion, an organic increase of 18%, driven mainly by GEMS and Renewables
- Cash Flow From Operations<sup>(1)</sup> sharply up by €5 billion supported by improvement in working capital
- Growth capex up 48% to €8.1 billion
- Solid balance sheet with economic net debt to EBITDA at 3.1x
- Net financial debt at €29.5 billion, up €5.4 billion, economic net debt at €46.5 billion, up €7.7 billion
- 2024 NRIGs<sup>(2)</sup> expected in the range of €4.2 to €4.8 billion
- Proposed dividend of €1.43 per share for 2023, corresponding to a pay-out ratio of 65%

## 1.1 Key financial figures at December 31, 2023

In billions of euros	Dec. 31, 2023	Dec. 31, 2022	% change (reported basis)	% change (organic basis)
Revenues	82.6	93.9	-12.0%	-11.4%
EBITDA (excluding Nuclear)	13.7	12.2	+12.5%	+12.7%
EBITDA	15.0	13.7	+9.5%	+9.7%
EBIT (excluding Nuclear)	9.5	8.0	+18.2%	+18.3%
Net recurring income of continuing activities, Group share	5.4	5.2	+2.8%	+2.7%
Net income, Group share	2.2	0.2		
CAPEX <sup>(1)</sup>	10.6	7.9	+17.4%	
Cash Flow From Operations (CFFO)	13.1	8.0	+63.1%	
Net financial debt	29.5	-€5.4 billion versus Dec. 31, 2022		
Economic net debt	46.5	+€7.7 billion versus Dec. 31, 2022		
Net financial debt	3.1x	+0.3X versus Dec. 31, 2022		

(1) Net of DBSO sell down (Develop, Build, Share & Operate), US tax equity proceeds, including net debt acquired.

(1) Cash Flow From Operations: Free Cash Flow before maintenance Capex and nuclear phase-out expenses

(2) Net recurring income Group share.

## 1.2 2024-2026 outlook and guidance

The objectives for the financial years ending December 31, 2024, 2025 and 2026 presented below are based on data, assumptions and estimates considered reasonable by the Group at the date of publication of this document.

These data and assumptions may change or be modified as a result of uncertainties relating to the financial, accounting, competitive, regulatory and tax environments, or other factors of which the Group is unaware at the date of registration of this document. Furthermore, the realization of forecasts depends on the success of the Group's strategy. Consequently, the Group neither undertakes nor gives any guarantee that the forecasts set out in this section will be achieved.

The objectives presented below and underlying assumptions have also been established in accordance with the provisions of Delegated Regulation (EU) No. 2019/980, a supplement to Regulation (EU) No. 2017/1129, and the ESMA recommendations on forecasts.

These objectives result from the budget and medium-term plan processes described in Note 13 to the consolidated financial statements; they have been established on a basis comparable to historical financial information and in accordance with the accounting policies applied to the Group's consolidated financial statements for the year ended December 31, 2023 described in the consolidated financial statements.

### 1.2.1. 2024-2026 outlook and guidance

ENGIE continues actively to roll out its Strategic Plan aimed at achieving carbon Net Zero by 2045.

Despite decrease in market prices in the last quarters and given the now embedded growth of GEMS contribution to our activities, ENGIE upgrades net recurring income Group share guidance for 2024 to a range of €4.2 to 4.8 billion compared to the previous range of €3.8 to 4.4 billion. EBIT excluding Nuclear is expected within an indicative range of €7.5 to 8.5 billion (compared to €7.2 to 8.2 billion previously announced).

#### 2026: a pivotal year for ENGIE

By 2026, the Group anticipates growth in Renewables fuelled by investments, in Energy Solutions driven by additional capacity and improved margins as well as a higher contribution from Networks and GEMS with a normalized yearly EBIT upgraded from €1.0 billion to €1.5 billion, which allows to offset the impact of the decrease in commodity prices and spreads in Europe, occurred in the second half of last year, on activities exposed to market prices. Batteries activities are also expected to make an increasing contribution to the Group's results from 2024 onwards. Furthermore, as anticipated, ENGIE expects a decrease in Nuclear results following the shutdown of several power plants in Belgium by 2025 and the LTO of Doel 4 and Tihange 3 reactors.

Therefore, ENGIE outlook for 2024 – 2026 is:

<i>In billions of euros</i>	2024	2025	2026
<b>EBIT excluding Nuclear (new)</b>	<b>7.5 - 8.5</b>	<b>7.9 - 8.9</b>	<b>8.2 - 9.2</b>
EBIT excluding Nuclear (previous)	7.2 - 8.2	7.5 - 8.5	n/a
<b>NRIGs guidance (new)</b>	<b>4.2 - 4.8</b>	<b>3.9 - 4.5</b>	<b>3.7 - 4.3</b>
NRIGs guidance (previous)	3.8 - 4.4	4.1 - 4.7	n/a

Price assumptions for the 2024-2026 guidance are based on forward prices in Europe as of 29 December 2023.

ENGIE is committed to a strong investment grade credit rating and continues to target a ratio below or equal to 4.0x economic net debt to EBITDA over the long-term.

Main drivers for 2024-2026 EBIT evolution by activity:

2021	2023	Activity	Expectations for main EBIT evolution drivers	vs. 2021 <sup>(1)</sup>	vs. 2023 <sup>(1)</sup>	2026
		<b>Renewables</b>	Investments contribution, lower prices	++	+	
		<b>Networks</b>	Regulated tariffs reflecting inflation, cost and revenue clawback from previous period in France, new investments	++	++	
EBIT excluding Nuclear €5,2 billion	EBIT excluding Nuclear €9,5 billion	<b>Energy Solutions</b>	Investments contribution, continued improvement of performance, negative one-offs in 2023	==+	+	EBIT excluding Nuclear indication €8.2 billion to €9.2 billion
		<b>FlexGen</b>	Prices & volatility normalization, lower thermal volumes partially offset by acceleration in batteries	==	-	
		<b>Retail</b>	Portfolio management and optimization, high comparison basis in 2023	==+	==	
		<b>GEMS</b>	Normalization of prices and volatility	++	----	
		<b>Nuclear</b>	Plant shutdowns and LTO impact from 2026	-	-	

Convention: each "+" sign amounts to c. €+500m, each "-" sign amounts to c. €-500m, "==" sign amounts to a variation between 0 and +250, "==" sign amounts to a variation between -250 to 0.

ENGIE forecasts an EBIT excluding nuclear between €8.2 and 9.2 billion in 2026 compared to €9.5 billion in 2023 (and €5.2 billion in 2021). Expected contribution from investments (+€1.6-2.0 billion) and performance (+€0.5-0.7 billion) should be offset by negative price effects of circa -€2.9-3.5 billion and other effects such as exchange rates, scope effects or climate.

The average annual growth rate of EBIT excluding nuclear between 2021 and 2026 is expected to reach 10% to 12%.

### Capex

ENGIE confirms its €22-25 billion growth Capex target over 2023 to 2025 and expects to invest a similar yearly amount on average in 2026. Capital allocation is based on strict discipline respecting financial and ESG criteria.

### Performance

ENGIE continues its efforts towards efficiency by significantly controlling its general and administrative expenses, improving the efficiency of support functions, and restructuring underperforming activities. The Group aims for a positive impact of these measures on EBIT amounting to circa €200 million p.a. over the period 2024-26.

### Disposals

After successfully completing its previous disposal plan with €11 billion over the period 2021-22, the Group significantly reduced the amount of disposals in 2023 (€0.3 billion). ENGIE expects a limited portfolio turnover until 2026, with disposals estimated at less than €1 billion per year in average.

## 1.2.2. Assumptions

The assumptions used are as follows:

- Guidance and indications based on continuing operations;
- No change in accounting policies;
- No major regulatory or macro-economic changes;

- Inframarginal rent caps based on current legal texts;
- Updated regulatory framework for 2024-2027 on French networks;
- Full pass through of supply costs in French B2C retail tariffs;
- Average temperature in France;
- Average hydro, wind, and solar productions;
- Average forex:
  - €/USD: 1.11 for 2024, 1.13 for 2025 and 1.15 for 2026,
  - €/BRL: 5.34 over 2024-26;
- Belgian nuclear availability: c. 92% in 2024 and c. 94% in 2025, based on reactors availabilities as published on REMIT as of 01/01/2024, excluding LTO;
- Contingencies on Belgian operations of €0.2 billion in 2024 and €0.1 billion in 2025;
- Market commodity prices as at 29 December 2023;
- Recurring net financial costs of €(2.5)-(2.8) billion over 2024-26;
- Recurring effective tax rate: 25-27% over 2024-26.

### 1.3 Dividend policy reaffirmed and €1.43 per share proposal for 2023

The Board has reaffirmed the Group's dividend policy with a payout ratio of 65-75% of net recurring income Group share, and a floor of €0.65 per share for the 2024 to 2026 period.

For 2023, the Board has proposed a payout ratio of 65%. This translates to a dividend of €1.43 per share, which will be proposed for shareholder approval at the Annual General Meeting on 30 April 2024.

### 1.4 Successful roll-out of the strategic plan

#### Renewables

ENGIE added 3.9 GW of renewable capacity in 2023, comprising 1.9 GW in Northern America, 0.8 GW in Europe, 0.7 GW in Latin America and 0.4 GW in the rest of the world. Total installed capacity of Renewables at ENGIE is now 41.4 GW. As of 31 December 2023, the Group reported 6.3 GW of capacity under construction from 60 projects. The Group signed more than 70 PPA contracts in 2023 for a total of 2.7 GW, of which 2.0 GW with a duration longer than five years, being the world leader in corporate PPAs.

In 2023, ENGIE strengthened its renewable energy platform in South Africa with the acquisition of BTE Renewables (340 MW in operation with a 3 GW pipeline) and the consolidation of Kathu, a 100 MW concentrated solar power plant.

The Group confirms its total installed capacity target of 50 GW by 2025 and 80 GW by 2030. This ambition is supported by a pipeline of 92 GW at the end of December 2023, up 12 GW compared to end-December 2022.

#### Networks - Renewable gas

The French Energy Regulatory Commission (CRE) has set the remuneration for gas transport, storage and distribution infrastructure for the period 2024-27. The CRE considers, for this regulatory period, a weighted average cost of capital of 4.10% for transport (compared to 4.25% previously), 4.60% for storage (compared to 4.75%) and 4.00% for distribution (compared to 4.10%). This decision reflects the regulator's desire to maintain the long-term sustainability of tariffs. These tariffs also allow for the recovery of a significant amount related to the regulatory period ending in 2024.

In Brazil, ENGIE Brasil Energia sold 15% of its stake in TAG to CDPQ. The main objective of this partial sale is to promote asset rotation and focus attention on the company's investment plan in renewables and transmission lines. Also in Brazil, ENGIE strengthened its electricity transmission activity by winning, at the beginning of 2023, a new 30-year concession for the construction and operation of 1,000 km of high-voltage lines in the states of Bahia, Minas Gerais and Espírito Santo.

Biomethane development in France continued its progress with an annual production capacity of up to 10.8 TWh connected to ENGIE networks, an increase of 2.6 TWh compared to end-2022. ENGIE enlarged its biomethane presence in Europe

with the acquisition of Ixora Energy Ltd, a leading biomethane producer based in the United Kingdom. The Group confirms its target of 10 TWh of biomethane production per year by 2030.

ENGIE has the ambition to develop green hydrogen production capacity of 4 GW by 2035.

### **FlexGen - Battery Energy Storage Systems (BESS)**

In 2023, ENGIE accelerated its development in batteries with the commissioning of Hazelwood in Australia, its largest battery energy storage system in operation, and the acquisition of Broad Reach Power (BRP) in the United States.

ENGIE also obtained the construction permit for a 200 MW / 800 MWh battery energy storage system at the Vilvoorde site in Belgium, to be commissioned in 2025, with a 15-year capacity contract with Elia, the Belgian transmission network operator, from 2027.

At the end of December 2023, ENGIE had 1.3 GW of BESS in operation and 3.6 GW secured under development, mainly in the United States, Chile, Australia, Belgium and UK, in line with the objective to reach 10 GW of batteries installed by 2030.

### **Energy Solutions**

Energy Solutions has achieved major wins in District Heating and Cooling (DHC). Backlog in French concessions stood at €21.3 billion in 2023, compared to €19.8 billion last year.

In line with ENGIE's objective of accelerating the transition to a carbon-neutral economy through environmentally friendly solutions, the Group was awarded several decarbonization contracts during the year as part of the on-site production activity.

The Group's ambition is to produce 20 TWh of Green Distributed Heat, Cooling and Power by 2030 for its DHC and on-site production activities.

### **Disciplined capital allocation**

In 2023, gross Capex amounted to €10.6 billion. Growth Capex came to €8.1 billion, of which 83% in Renewables, Energy Solutions and FlexGen, in line with ENGIE's strategic roadmap.

### **Performance plan**

Performance plan results contributed €178 million in 2023, with operational excellence across GBUs and improvement of loss-making entities partly offset by an increase in support function costs driven by a highly inflationary context. The Group reached €687 million in the cumulated performance plan between 2021 and 2023, above the €600 million target.

## **1.5 Belgian nuclear agreement**

On December 13, 2023, ENGIE and the Belgian government signed the final agreements<sup>(1)</sup> for related to the 10-year extension of the Tihange 3 and Doel 4 nuclear reactors as well as all obligations related to nuclear waste. These transaction documents endorse the key principles of the framework agreement signed on July 21, 2023. It allows a balanced sharing of risks associated with the extended operation of the two nuclear units and eliminates uncertainties for the ENGIE Group related to the evolution of nuclear waste liabilities.

---

(1) Subject to the approval by the European Commission under state aid and the adoption of legislative amendments relating to the Belgian nuclear legal and regulatory framework.

## 1.6 Update on European proposals for windfall taxes

In December 2023, the French government extended the inframarginal rent cap until 31 December 2024.

The Finance Bill for 2024 provides for a rent cap applicable over a period of twelve months, from 1 January 2024 until 31 December 2024. The cap ranges from €42/MWh to €183/MWh depending on the power production technology. The excess revenue is subject to a tax rate of 50%. ENGIE is mainly impacted through the drawing rights on two EDF nuclear power plants (Chooz B and Tricastin, 1.2 GW, 9 TWh of annual output at an availability rate of 85%) subject to a €94/MWh cap and the gas power plants (1.4 GW capacity) subject to a €42/MWh cap on the clean spark spread.

## 1.7 Progress on key ESG targets

In 2023, greenhouse gas (GHG) emissions from energy production amounted to 52 million tons, down 54% from 2017. This represents 78% of the reduction target to 43 million tons to 2030 compared to 2017. In addition to the structural levers of decarbonisation, this better-than-expected performance is also the result of a lower utilisation rate of the combined cycle gas plants in Europe under the combined effect of mild temperatures and the normalisation of market conditions.

The share of renewables in ENGIE's total power generation capacity increased from 38% at the end of 2022 to 41% at the end of 2023, mainly thanks to the addition of 3.9 GW of renewable capacity during the year.

Concerning gender diversity target, ENGIE had 31% women in management positions at the end of 2023, another increase compared to the previous year. The Group continues to implement action plans to achieve the objective of managerial parity of 40% to 60% between women and men.

Finally, Moody's has assessed the Group's transition plan and given an overall rating of NZ-2, with an ambition aligned with a 1.5°C trajectory and a "solid" level on the implementation of objectives.

## 1.8 Health & Safety

In 2023, ENGIE completed a crucial turning point through the implementation of a global transformation plan, ENGIE One Safety, aimed at the long-term elimination of serious and fatal accidents. This plan strengthens our governance and oversight, as well as reinforces an ambitious engagement and communications program. Despite the roll-out of the transformation plan, six individuals lost their lives while working for or on behalf of the Group. Achieving the zero-fatality goal will be at the heart of priority in 2024. In addition, the Group continued to improve the prevention of lost-time accidents, as the frequency rate of these accidents fell from 2.0 at the end of 2022 to 1.8 at the end of 2023.

## 1.9 Full year 2023 financial review

### 1.9.3. Revenue

**Revenue** at €82.6 billion was down 12.0% on a gross basis and down 11.4% on an organic basis.

**Contributive revenue, after elimination of intercompany operations, by activity:**

<i>In millions of euros</i>	<b>Dec.31, 2023</b>	<b>Dec. 31, 2022</b>	<b>% change (reported basis)</b>	<b>% change (organic basis)</b>
Renewables	5,512	6,216	-11.3%	-13.0%
Networks	6,873	6,961	-1.3%	+0.1%
Energy Solutions	11,033	11,441	-3.6%	-2.8%
FlexGen	5,264	7,126	-26.1%	-24.5%
Retail	16,443	16,810	-2.2%	-1.6%
Others	37,322	45,277	-17.6%	-17.0%
<i>of which GEMS</i>	37,221	45,137	-17.5%	-16.9%

<b>TOTAL REVENUES (excluding Nuclear)</b>	<b>82,447</b>	<b>93,830</b>	<b>+12.1%</b>	<b>-11.5%</b>
Nuclear	118	35	+237.6%	+237.6%
<b>TOTAL REVENUES</b>	<b>82,565</b>	<b>93,865</b>	<b>-12.0%</b>	<b>-11.4%</b>

Revenue for **Renewables** amounted to €5,512 million, -11.3% on a gross basis and -13.0% on an organic basis. Organically, revenue decreased mainly in Europe notably in France due to lower spot power prices compared to last year.

Revenue for **Networks** amounted to €6,873 million, -1.3% on a gross basis and +0.1% on an organic basis. Gross decrease included positive foreign exchange effects mainly in Latin America and scope out effects in Argentina. Organically, revenue increased driven by auctions of capacities for gas transport, favourable market for storage activities in Germany and in the UK and full commissioning of Novo Estado power transmission lines in Brazil partly offset by lower distributed volumes in French distribution.

Revenue for **Energy Solutions** amounted to €11,033 million, -3.6% on a gross basis and -2.8% on an organic basis. The gross decrease included scope out effect in France. Organically, decrease of commodity prices impacted negatively revenues mainly in France.

Revenue for **FlexGen** amounted to €5,264 million, -26.1% on a gross basis and -24.5% on an organic basis. Impact from foreign exchange amounts to €-98 million, mainly in Pakistan and Chile. The organic change is largely explained by Europe, mainly due to lower ancillaries and lower spreads in a normalizing market. In Latin America, revenue increased due to indexation of PPA contracts in Chile and higher generation and prices in Peru.

Revenue for **Retail** amounted to €16,443 million, -2.2% on a gross basis and -1.6% on an organic basis. Impact from foreign exchange amounts to €-93 million, mainly in Australia. Organically, the decrease was mainly driven by lower gas and power volumes due to sobriety and decrease of gas portfolio, partially offset by growth of power contracts and a higher average price of the portfolio.

Revenue for **Others** amounted to €37,332 million. The decrease compared to last year was mainly driven by GEMS, essentially impacted by a negative net impact of commodity prices and lower delivered volumes.

**Nuclear** reported almost no external revenue post-elimination of intercompany operations.

#### 1.9.4. EBITDA

**EBITDA** (ex. Nuclear) at €13.7 billion, was up 12.5% on a gross basis and up 12.7% on an organic basis.

#### 1.9.5. EBIT

**EBIT** (ex. Nuclear) at €9.5 billion was up 18.2% on a gross basis and up 18.3% on an organic basis.

- Foreign exchange: a net effect of €-26 million mainly driven by the depreciation of the US dollar and the UK pound sterling partly offset by the appreciation of the Brazilian real and the Australian dollar.
- Scope: net effect of €+31 million
- French temperatures: compared to the average, the temperature effect was a negative €182 million, generating a positive year-on-year variation of €7 million compared to FY 2022 across Networks, Retail and GEMS.

**EBIT contribution by activity: growth mainly driven by GEMS, Renewables and Retail**

<i>In millions of euros</i>	Dec.31, 2023	Dec. 31, 2022	% change (reported basis)	% change (organic basis)	o/w temp. effect (France) vs. 2021
Renewables	2,005	1,627	+23.2%	+19.5%	
Networks	2,265	2,371	-4.5%	-4.5%	10
Energy Solutions	386	523	-26.2%	-26.2%	
FlexGen	1,513	1,768	-14.4%	-11.8%	
Retail	569	(6)	-	-	8
Others	2,741	1,736	+57.9%	+57.7%	2
<i>of which GEMS</i>	3,551	2,618	+35.7%	+35.6%	2
<b>TOTAL EBIT (excluding Nuclear)</b>	<b>9,479</b>	<b>8,019</b>	<b>+18.2%</b>	<b>+18.3%</b>	<b>20</b>
Nuclear	605	1,026	-41.0%	-41.0%	
<b>TOTAL EBIT</b>	<b>10,084</b>	<b>9,045</b>	<b>+11.5%</b>	<b>+11.5%</b>	<b>20</b>

**Activity/geography matrix**

<i>In millions of euros</i>	France	Rest of Europe	Latin America	USA & Canada	Middle East, Asia & Africa	Others	Dec. 31, 2023
Renewables	574	282	925	216	34	(27)	2,005
Networks	1,415	64	800	(5)	-	(9)	2,265
Energy Solutions	343	190	(1)	(142)	24	(27)	386
FlexGen	-	891	202	35	419	(34)	1,513
Retail	380	145	-	-	64	(20)	569
Others	32	1	1	(9)	-	2,716	2,741
<i>Of which GEMS</i>	32	-	-	-	-	3,519	3,551
<b>TOTAL EBIT (excluding Nuclear)</b>	<b>2,744</b>	<b>1,573</b>	<b>1,927</b>	<b>96</b>	<b>541</b>	<b>2,599</b>	<b>9,479</b>
Nuclear	-	605	-	-	-	-	605
<b>TOTAL EBIT</b>	<b>2,744</b>	<b>2,178</b>	<b>1,927</b>	<b>96</b>	<b>541</b>	<b>2,599</b>	<b>10,084</b>

<i>In millions of euros</i>	France	Rest of Europe	Latin America	USA & Canada	Middle East, Asia & Africa	Others	Dec. 31, 2022
Renewables	368	318	796	172	9	(36)	1,627
Networks	1,700	24	658	(3)	-	(8)	2,371
Energy Solutions	311	148	(5)	23	58	(11)	523
FlexGen	-	1,278	50	44	417	(22)	1,768
Retail	(164)	115	6	-	49	(12)	(6)
Others	(1)	(16)	-	(11)	-	1,763	1,736
<i>Of which GEMS</i>	-	-	-	-	-	2,618	2,618
<b>TOTAL EBIT (excluding Nuclear)</b>	<b>2,215</b>	<b>1,867</b>	<b>1,506</b>	<b>226</b>	<b>532</b>	<b>1,674</b>	<b>8,019</b>
Nuclear	-	1,026	-	-	-	-	1,026
<b>TOTAL EBIT</b>	<b>2,215</b>	<b>2,893</b>	<b>1,506</b>	<b>226</b>	<b>532</b>	<b>1,674</b>	<b>9,045</b>

**1.9.5.1. Renewables: strong growth mainly driven by contribution of new capacity commissioned as well as higher volumes and prices in Europe**

<i>In millions of euros</i>	Dec.31, 2023	Dec. 31, 2022	% change (reported basis)	% change (organic basis)
EBIT	2,005	1,627	+23.2%	+19.5%
Total CAPEX	4,130	3,333	+23.9%	
CNR achieved prices (€/MWh) <sup>(1)</sup>	100	60	66.7%	
DBSO Margins (EBIT level)	19	102	-81.3%	
<b>Operational KPIs</b>				
Capacity additions (GW at 100%)	3.9	3.8		
Hydro volumes France (TWh at 100%)	14.6	12.8	1.8	

(1) Before hydro tax on CNR.

Renewables reported 19.5% organic EBIT growth, driven by the contribution of new capacity commissioned (€+167 million) mainly in the US, Europe and Latin America and by a positive volume effect (€+112 million) due to higher hydro volumes in France and Portugal. EBIT also benefitted from a positive price effect (€+75 million) with higher captured prices mainly for French hydro including the reversal of 2022 buybacks, partly offset by the increase in hydro taxes in France. These positive effects largely offset lower DBSO margins in 2023 (€-83 million).

### 1.9.5.2. Networks: lower distributed volumes and higher energy costs in France, growth in international activities

<i>In millions of euros</i>	Dec.31, 2023	Dec. 31, 2022	% change (reported basis)	% change (organic basis)
EBITDA	4,151	4,212	-1.5%	-1.3%
EBIT	2,265	2,371	-4.5%	-4.5%
Total CAPEX	2,173	2,321	+6.4%	
<b>Operational KPIs</b>				
Normative temp. effect (EBIT - France)	(129)	(139) <sup>(1)</sup>	10	
Smart meters (m)	11.3	10.9	0.4	

(1) Considering ~8€/MWh vs ~7€/MWh used in FY2022 publication.

Networks EBIT was down 4.5% on an organic basis due to lower distributed volumes in France mainly related to energy sobriety as well as higher energy and staff costs driven by inflation. Part of this impact will be mitigated during the forthcoming regulatory period. These effects were partly offset by tariff increase in France, Germany and Romania, an additional contribution from capacity subscribed for gas transit between France and Germany as well as a favourable environment in storage activities mainly in the UK and Germany. Outside Europe, EBIT was up 22% due to full commissioning of Novo Estado power transmission lines in Brazil and good performance mainly from TAG.

### 1.9.5.3. Energy Solutions: impacted by one-offs, partly offset by better performance in other activities

<i>In millions of euros</i>	Dec.31, 2023	Dec. 31, 2022	% change (reported basis)	% change (organic basis)
Revenues	11,033	11,441	-3.6%	-2.8%
EBIT	386	523	-26.2%	-26.2%
Total CAPEX	1,102	864	+27.5%	
<b>Operational KPIs</b>				
Distrib. Infra installed cap. (GW)	25.3	25	+0.4%	
EBIT margin (excluding one-off)	5.2%	4.6%	+63 pb	
EBIT margin	3.5%	4.6%	-107 pb	
Backlog - French concessions (bn€)	21.3	19.8	1.5	

Energy Solutions EBIT was down 26.2% on an organic basis. EBIT decreased mainly due to two one-offs, cost overruns in the construction of two cogeneration plants in the US (€150 million) and the recognition of a deferred tax liability on Tabreed (€38 million) following the introduction of a corporate income tax in the UAE. Excluding these one-offs, Energy Solutions EBIT was up 10% organically. For local energy networks and on-site energy production, this was driven by improved operational performance, higher contributions from cogeneration units in France and contribution from new commissioning. These elements were partly offset by negative impacts of strikes in France in the first half of 2023 and lower DBSO margins in US solar linked to a change in business model towards full consolidation. For energy performance management activities, EBIT benefitted from contract optimization and increased selectivity in business development.

#### 1.9.5.4. FlexGen: market normalization in Europe partly offset by positive comparison impacts and improvement in Chile

<i>In millions of euros</i>	Dec.31, 2023	Dec. 31, 2022	% change (reported basis)	% change (organic basis)
EBITDA	1,929	2,235	-13.7%	-11.2%
EBIT	1,513	1,768	-14.4%	-11.8%
<b>Operational KPIs</b>				
Average captured CSS Europe (€/MWh)	37.0	28.0	+30.0%	
Capacity (GW at 100%)	59.0	59.5	(0.5)	

FlexGen EBIT was down 11.8% on an organic basis. This fall was mainly driven by price effects (€-377 million) on the back of lower utilization of the assets in Europe following market normalization, partly offset by improvement in Chile (reduction of short positions and lower sourcing prices). EBIT was also weighed by a lower contribution from ancillary services in Europe after very high levels of earnings in 2022. On the positive side, EBIT benefitted from two favourable comparison impacts, as the Group recognised an extraordinary tax in Italy in the first half of 2022 and was also impacted by the cost of unplanned outages on French gas assets last year.

#### 1.9.5.5. Retail: strong performance due to higher margins and portfolio optimization

<i>In millions of euros</i>	Dec.31, 2023	Dec. 31, 2022	% change (reported basis)	% change (organic basis)
EBITDA	821	259		
EBIT	569	(6)		
Normative temp. effect (EBIT - France)	(45)	(53)	8	

Retail EBIT amounted to €569 million in 2023 compared to €(6) million in 2022. Organically, the EBIT increase was mainly driven by price effects due to portfolio management optimization resulting in higher margins as well as timing effects in sourcing. These positive factors were partly offset by mild winter and customer sobriety leading to long positions sold at low prices in 2023 versus long positions sold at high prices in 2022.

#### 1.9.5.6. Others: significant contribution from GEMS

GEMS EBIT amounted to €3,551 million, up €933 million year-on-year, driven by the H1 2023 effects:

- the negative impact related to Gazprom contracts considering the risk of physical gas disruption in H1 2022, which did not repeat in 2023,
- the strong performance of energy management activities in Europe, still benefiting from good market conditions, albeit less favorable than in 2022,
- the gradual normalization of market conditions, leading to continuous reversal of market reserves,
- the good performance of the B2B business, in a market environment that allows full valuation of the cost of risk,
- the continued effect of deals signed in 2022 at good conditions which materialize at delivery date.

In the second half, GEMS' contribution decreased significantly compared to last year, as expected, due to a very elevated basis of comparison, the reduction of volumes and margins since the summer, positive timing effects in the first half that reversed in the second half, as well as the contribution from high-margin transactions locked in during 2022 which materialize at delivery date that have been smoothed over time. Excluding timing effects and variations in technical reserves, GEMS' operational performance in the second semester remains at a significantly higher level than in the years preceding the crisis.

### 1.9.5.7. Nuclear: negatively impacted by shutdowns and higher taxes, partly offset by higher captured prices and increased availability

<i>En millions d'euros</i>	Dec.31, 2023	Dec. 31, 2022	% change (reported basis)	% change (organic basis)
EBITDA	1,285	1,510	-14.9%	-14.9%
EBIT	605	1,026	-41.0%	-41.0%
Total Capex	174	229	-24.0%	
<b>Operational KPIs</b>				
Output (BE + FR, @ share, TWh)	32.0	42.1	-24.0%	
Availability (Belgium at 100%)	+88.8%	+83.6%	+520 pb	

Nuclear EBIT decreased 41.0% organically, driven by the phase-out of the reactors Doel 3 in September 2022 and Tihange 2 in February 2023 (€-538 million), the nuclear inframarginal tax and Belgian nuclear taxes (€-333 million) as well as higher D&A following the increase of the dismantling assets resulting from the 2022 CPN triennial provision review. These negative effects were partly offset by a positive volume effect (€+425 million) mainly due to higher availability for Belgian assets at 88.8% and higher captured prices (€+363 million).

### 1.9.6. Comparable basis organic growth analysis

<i>In millions of euros</i>	Dec.31, 2023	Dec. 31, 2022	% change (reported/organic basis)
<b>Revenues</b>	<b>82,565</b>	<b>93,865</b>	<b>-12.0%</b>
Scope effect	(220)	(399)	-
Exchange rate effect	-	(491)	-
<b>Comparable data</b>	<b>82,345</b>	<b>92,977</b>	<b>-11.4%</b>

<i>In millions of euros</i>	Dec.31, 2023	Dec. 31, 2022	% change (reported/organic basis)
<b>EBITDA</b>	<b>15,017</b>	<b>13,713</b>	<b>+9.5%</b>
Scope effect	(96)	(65)	-
Exchange rate effect	-	(43)	-
<b>Comparable data</b>	<b>14,922</b>	<b>13,606</b>	<b>+9.7%</b>

<i>In millions of euros</i>	Dec.31, 2023	Dec. 31, 2022	% change (reported/organic basis)
<b>EBIT</b>	<b>10,084</b>	<b>9,045</b>	<b>+11.5%</b>
Scope effect	(76)	(45)	-
Exchange rate effect	-	(26)	-
<b>Comparable data</b>	<b>10,008</b>	<b>8,974</b>	<b>+11.5%</b>

The calculation of organic growth aims to present comparable data both in terms of the exchange rates used to convert the financial statements of foreign companies and in terms of contributing entities (consolidation method and contribution in terms of comparable number of months). Organic growth in percentage terms represents the ratio between the data for the current year (N) and the previous year (N-1) restated as follows:

- the N-1 data is corrected by removing the contributions of entities transferred during the N-1 period or prorata temporis for the number of months after the transfer in N;
- the N-1 data is converted at the exchange rate for the period N;  
the N data is corrected with the N acquisition data or prorata temporis for the number of months prior to the N-1 acquisition.

## 2 OTHER INCOME STATEMENT ITEMS

The reconciliation between EBIT and Net income/(loss) is presented below:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022	% change (reported basis)
<b>EBIT</b>	<b>10,084</b>	<b>9,045</b>	<b>+11,5%</b>
(+) Mark-to-Market on commodity contracts other than trading instruments	2,430	(3,661)	
(+) Non-recurring share in net income of equity method entities	(22)	(17)	
<b>Current operating income including operating MtM and share in net income of equity method entities</b>	<b>12,493</b>	<b>5,367</b>	<b>+132.7%</b>
Impairment losses	(1,318)	(2,774)	
Restructuring costs	(47)	(230)	
Changes in scope of consolidation	(85)	91	
Other non-recurring items	(4,945)	(1,328)	
<b>Income/(loss) from operating activities</b>	<b>6,098</b>	<b>1,127</b>	<b>+441.3%</b>
Net financial income/(loss)	(2,163)	(3,003)	
Income tax benefit/(expense)	(1,031)	83	
<b>NET INCOME/(LOSS)</b>	<b>2,903</b>	<b>390</b>	<b>+644.9%</b>
<b>Net recurring income/(loss) relating to continuing operations, Group share</b>	<b>5,366</b>	<b>5,223</b>	
<b>Net recurring income/(loss) Group share per share</b>	<b>2.18</b>	<b>2.24</b>	
<b>Net income/(loss) Group share</b>	<b>2,208</b>	<b>216</b>	
<b>Non-controlling interests</b>	<b>695</b>	<b>173</b>	

The reconciliation between Net recurring income/(loss) Group share and Net income/(loss) Group share is presented below:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
<b>Net recurring income/(loss) relating to continuing operations, Group share</b>	<b>5,366</b>	<b>5,223</b>
Impairment & Others	(5,456)	(1,494)
Restructuring costs	(47)	(230)
Changes in scope of consolidation	(85)	91
Mark-to-Market on commodity contracts other than trading instruments	2,430	(3,661)
Net recurring income/(loss) relating to discontinued operations, Group share	-	287
<b>Net income/(loss) Group share</b>	<b>2,208</b>	<b>216</b>

**Income from operating activities** amounted to €6,098 million, representing a strong increase compared to 2022, mainly due to the change in unrealized gains and losses on commodity financial instruments not qualified as hedges, lower impairment losses and EBIT growth, partly offset by the impact of the revision of nuclear provisions.

Income from operating activities was affected by:

- net impairment losses of €1,318 million (compared with €2,774 million in 2022), mainly relating to renewable energy production assets in North America and assets affected by the Group's exit from coal (see Note 9.1);
- restructuring costs of €47 million (compared with €230 million in 2022) (see Note 9.2);
- negative scope effects of €85 million (compared with a positive €91 million in 2022) (see Note 9.3);
- other non-recurring items amounting to a negative €4,945 million (compared with a negative €1,328 million in 2022), mainly comprising the effects of the revision of nuclear provisions to take into account the agreement signed with the Belgian government on June 29, 2023, which became binding following the signature of supplements to the initial agreement on July 21, 2023 and the implementation of which was set out in the transaction documents signed on December 13, 2023 (see Note 9.4).

The **net financial loss** amounted to €2,163 million in 2023, compared with €3,003 million in 2022 (see Note 10), mainly due to the rise in the cost of debt.

Adjusted for non-recurring items, the net financial loss amounted to €1,975 million in 2023, compared with €1,819 million in 2022. This €156 million deterioration is due to the €96 million increase in other financial expenses (notably the increase in the unwinding adjustment) and the €60 million rise in the cost of net debt.

**Income tax** for 2023 amounted to a benefit of €1,031 million (compared with a benefit of €83 million in 2022).

Adjusted for these non-recurring items, the recurring effective tax rate was 27.1% at December 31, 2023 compared with 22.6% at December 31, 2022, mainly due to:

- the change in the tax situation in certain countries that only partially recognize, in 2023 and/or 2022, their deferred tax assets (notably Belgium, Italy, Luxembourg, Germany and the Netherlands) – approximately +8.3 points;
- the unfavorable impact in 2022 of the non-deductibility of the one-off tax contribution, recognized as an operating expense, and the temporary solidarity contribution voted in Italy – approximately -3.3 points.

**Net recurring income, Group share** relating to continuing operations amounted to €5,366 million compared with €5,223 million in 2022. This increase was mainly driven by the growth in EBIT, partly offset by the increase in the tax expense.

**Net income, Group share** amounted to €2,208 million, up sharply compared to 2022, mainly due to the change in unrealized gains and losses on commodity financial instruments not qualified as hedges, partially offset by the impact of the revision of nuclear provisions.

**Net income attributable to non-controlling interests** amounted to €695 million, an improvement on the 2022 figure (up €521 million), notably in Renewables in the United States.

### 3 CHANGES IN NET FINANCIAL DEBT

**Net financial debt** stood at €29.5 billion, up €5.4 billion compared to December 31, 2022.

This increase was mainly driven by:

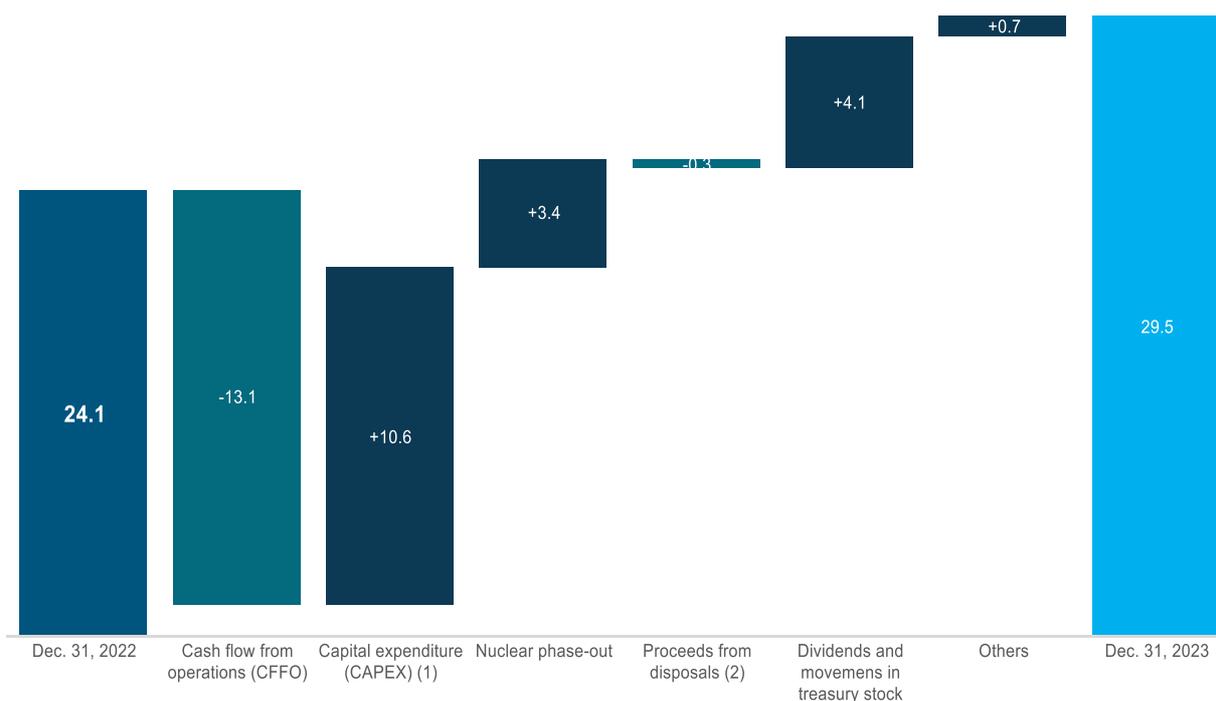
- capital expenditure over the period of €10.6 billion;
- dividends paid to ENGIE SA shareholders and to non-controlling interests of €4.1 billion;
- Belgian nuclear phase-out funding and expenses<sup>(1)</sup> of €3.4 billion;
- other elements of €0.7 billion.

These elements were partly offset by:

- Cash Flow From Operations of €13.1 billion;
- disposals of €0.3 billion.

Changes in net financial debt break down as follows:

*In billions of euros*



(1) Capital expenditure net of DBSO and tax equity proceeds.

(2) Including scope effects relating to disposals and acquisitions.

(1) Synatom funding previously reported in gross Capex and waste/dismantling expenses previously reported in CFFO.

3 CHANGES IN NET FINANCIAL DEBT

**Economic net debt** stood at €46.5 billion, up €7.7 billion compared to December 31, 2022, mostly due to the increase in Asset Retirement Obligation provisions (+€5.6 billion, mainly the increase of nuclear provisions following the agreement reached with the Belgian State) and higher financial net debt (+€5.4 billion), partly offset by the change in nuclear provision assets related to additional funding (-€3.4 billion).

Changes in economic net debt break down as follows:

*In billions of euros*



(1) Increase in nuclear provisions following the agreement signed with the Belgian government

The **net financial debt to EBITDA ratio** stood at 2.0x, up 0.2x compared to December 31, 2022. The average cost of gross debt was 4.31%.

<i>In millions of euros</i>	Dec 31, 2023	Dec 31, 2022
Net financial debt	29,493	24,054
EBITDA	15,017	13,713
<b>NET DEBT/EBITDA RATIO</b>	<b>1.96</b>	<b>1.75</b>

The **economic net debt to EBITDA ratio** stood at 3.1x, up 0.3x compared to December 31, 2022, and in line with the target ratio of below or equal to 4.0x.

<i>In millions of euros</i>	Dec 31, 2023	Dec 31, 2022
Economic net debt	46,517	38,808
EBITDA	15,017	13,713
<b>ECONOMIC NET DEBT/EBITDA RATIO</b>	<b>3.10</b>	<b>2.83</b>

### 3.1 Cash flow from operations (CFFO)

**Cash Flow From Operations (CFFO)** amounted to €13.1 billion, up €5.1 billion compared to 2022. This increase was mainly supported by an improvement in change in Working Capital Requirements (€+2.8 billion).

**Working Capital Requirements** were positive at €0.4 billion, with a positive year-on-year variation of €2.8 billion mainly driven by price effects due to gas withdrawal at higher prices (€+3.9 billion), unbilled energy volumes (€+3.5 billion), margin calls (€+1.3 billion) and the positive timing effect on tariff shields (€+0.9 billion). These positive effects were partly offset by the impact of reversal of market reserves at GEMS (€-2.2 billion) which is neutral on CFFO, net receivables (€-1.9 billion) and nuclear impacts (€-2.1 billion) of which mainly taxes.

### 3.2 Liquidity

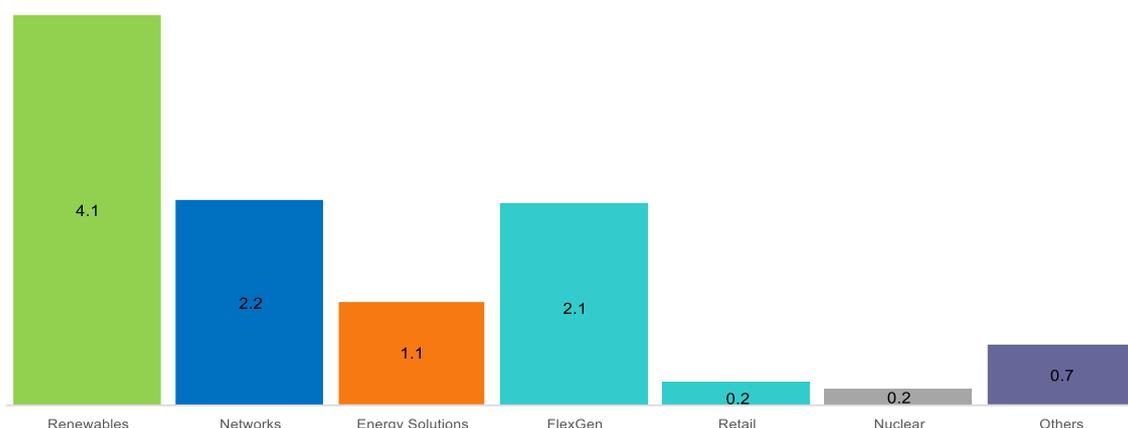
**Liquidity** stood at €23.6 billion at December 3, 2023, including €17.0 billion of cash<sup>(1)</sup>.

### 3.3 Capital expenditure (CAPEX)

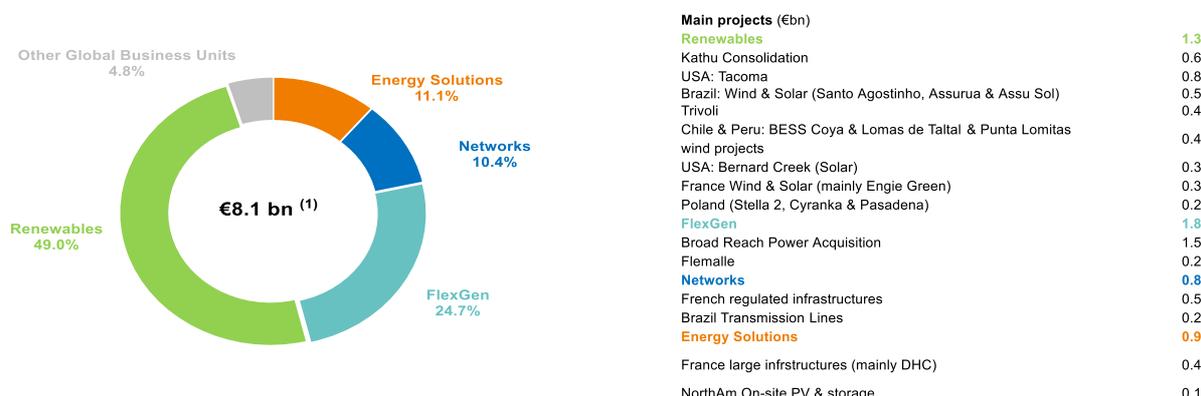
**Total Capex** amounted to €10.6 billion, including growth CAPEX of €8.1 billion.

#### Capital expenditure (CAPEX) by activity

*In billions of euros*



**Growth capital expenditure** amounted to €8.1 billion, breaking down as follows by activity:



(1) Net of disposals under DBSO operations, excluding Corporat, and tax equity proceeds.

(1) Cash and cash equivalents plus liquid debt instruments held for cash investment purposes minus bank overdrafts.

The **geography/activity matrix** for growth capital expenditure is presented below:

<i>In millions of euros</i>	France	Rest of Europe	Latin America	USA & Canada	Middle East, Asia & Africa	Others	Dec. 31, 2023
Renewables	323	481	1,103	994	1,059	7	3,966
Networks	501	163	174	-	-	-	839
Energy Solutions	477	155	4	136	79	47	897
FlexGen	-	341	14	1,492	(8)	5	1,843
Retail	53	45	-	-	8	54	160
Nuclear	-	-	19	-	-	-	19
Others	-	8	-	1	6	352	368
<i>Of which GEMS</i>	-	-	-	-	-	82	82
<b>TOTAL GROWTH CAPEX</b>	<b>1,354</b>	<b>1,193</b>	<b>1,314</b>	<b>2,622</b>	<b>1,144</b>	<b>464</b>	<b>8,090</b>

<i>In millions of euros</i>	France	Rest of Europe	Latin America	USA & Canada	Middle East, Asia & Africa	Others	Dec. 31, 2022
Renewables	361	1,094	876	648	214	10	3,202
Networks	669	174	245	-	-	-	1,087
Energy Solutions	354	122	19	66	75	58	694
FlexGen	-	181	9	34	(9)	6	220
Retail	62	42	-	-	7	62	173
Nuclear	-	-	-	-	-	-	-
Others	-	4	-	-	-	103	108
<i>Of which GEMS</i>	-	-	-	-	-	63	63
<b>TOTAL GROWTH CAPEX</b>	<b>1,445</b>	<b>1,617</b>	<b>1,148</b>	<b>748</b>	<b>287</b>	<b>240</b>	<b>5,484</b>

### 3.4 Dividends and movements in treasury stock

Dividends paid and movements in treasury stock during the period amounted to €4.1 billion and mainly include ENGIE's dividend payment in April for the 2022 fiscal year for €3.4 billion, and dividends paid by various subsidiaries to their non-controlling interests in an amount of €0.5 billion.

### 3.5 Net financial debt at December 31, 2023

Excluding amortized cost but including the impact of foreign currency derivatives, at December 31, 2023 a total of 65% of net financial debt was denominated in euros, 19% in US dollars and 10% in Brazilian real.

Including the impact of financial instruments, 89% of net debt was at fixed rates.

The average maturity of the Group's net financial debt is 13.2 years.

At December 31, 2023, the Group had total undrawn confirmed credit lines of €12.2 billion.

### 3.6 Rating

On 23 November 2023, S&P reaffirmed ENGIE SA long-term issuer rating at BBB+ and short-term rating at A-2 with stable outlook.

On 13 July 2023, Moody's confirmed ENGIE SA long-term issuer rating at Baa1 and short-term rating at P-2 with stable outlook.

On 18 July 2023, Fitch reaffirmed ENGIE SA long-term issuer rating at A- and short-term rating at F1 with stable outlook.

## 4 OTHER ITEMS IN THE STATEMENT OF FINANCIAL POSITION

<i>In millions of euros</i>	<b>Dec. 31, 2023</b>	<b>Dec. 31, 2022</b>	<b>Net change</b>
<b>Non-current assets</b>	<b>119,023</b>	<b>131,521</b>	<b>(12,498)</b>
<i>Of which goodwill</i>	12,864	12,854	10
<i>Of which property, plant and equipment and intangible assets, net</i>	66,399	62,853	3,547
<i>Of which derivative instruments</i>	12,764	33,134	(20,370)
<i>Of which investments in equity method entities</i>	9,213	9,279	(66)
<b>Current assets</b>	<b>75,617</b>	<b>103,969</b>	<b>(28,352)</b>
<i>Of which trade and other payables</i>	20,092	31,310	(11,218)
<i>Of which derivative instruments</i>	8,481	15,252	(6,772)
<i>Of which assets classified as held for sale</i>	-	428	(428)
<b>Total equity</b>	<b>35,724</b>	<b>39,285</b>	<b>(3,560)</b>
Provisions	32,593	27,027	5,566
Borrowings	47,287	40,591	6,696
Derivative instruments	24,561	51,276	(26,715)
Other liabilities	54,475	77,311	(22,835)
<i>Of which liabilities directly associated with assets classified as held for sale</i>	-	371	(371)

The **carrying amount of property, plant and equipment** and intangible assets was €66.4 billion, up €3.5 billion compared with December 31, 2022. This change is mainly due to capital expenditure over the period (positive €8.8 billion), changes in the scope of consolidation (positive €1.9 million), partially offset by depreciation (negative €4.9 billion) and impairment losses recognized over the period (negative €1.2 billion) (see Note 13).

**Goodwill** amounted to €12.9 billion, stable compared with December 31, 2022 (see Note 13).

**Investments in equity method entities** increased by €0.1 billion (see Note 4.2).

**Total equity** amounted to €35.7 billion, a decrease of €3.6 billion compared with December 31, 2022. This decrease stemmed mainly from dividends distributed (negative €3.9 billion), and other comprehensive income (negative €2.6 billion, including a negative €3.1 billion of cash flow hedges on commodities, a negative €0.6 billion of actuarial gains and losses and a positive €0.9 billion of deferred taxes) partially offset by net income for the period (positive €2.9 billion).

**Provisions** increased by €5.6 billion to €32.6 billion compared with December 31, 2022. This increase is mainly due to the effects of the revision of nuclear provisions to take into account the interim agreement signed with the Belgian government on June 29, 2023, which became binding following the signature of the supplements to the initial agreements on July 21, 2023 and the implementation of which was set out in the transaction documents signed on December 13, 2023 as well as the final opinion of the Commission for Nuclear Provisions (CNP) on July 7, 2023 (see Note 17).

The decrease in **derivative instruments** is mainly due to the extreme volatility in commodity prices over the period.

## 5 PARENT COMPANY FINANCIAL STATEMENTS

The figures provided below relate to the financial statements of ENGIE SA, prepared in accordance with French GAAP and applicable regulations.

Revenues for ENGIE SA in 2023 totaled €54,149 million, a decrease compared to 2022 (€68,500 million) on the gas market.

The company reported a net operating loss of €987 million in 2023, a sharp deterioration of €2,038 million compared with income of €1,051 million in 2022. The energy margin deteriorated by €1,042 million.

Net financial income amounted to €662 million, down €1,125 million compared to 2022, mainly due to lower dividends received.

Non-recurring items represented income of €578 million in 2023, mainly comprising changes in the value of equity interests (including Electrabel).

The income tax benefit amounted to €247 million, versus an income tax benefit of €321 million in 2022, including a tax consolidation benefit of €233 million.

Net income for the year came in at €500 million.

Shareholders' equity amounted to €28,376 million compared with €31,118 million at the end of 2022. The €2,742 million decrease was mainly due to the 2022 net income of €500 million, and to the 2022 dividend payment of €3,449 million.

At December 31, 2023, borrowings and debt stood at €47,084 million, and cash and cash equivalents totaled €14,004 million (of which €7,828 million relating to subsidiaries' current accounts).

### Information relating to payment terms

Pursuant to Articles L.441-14 and D.441-6 of the French Commercial Code, companies whose annual financial statements are subject to a statutory audit must publish information regarding supplier and customer payment terms. The purpose is to demonstrate that there is no significant failure to comply with such terms.

### Information relating to supplier and customer payment terms mentioned in Articles L.441-10 to L.441-16 of the French Commercial Code

	Articles L441-10 to L441-16 : Invoices received, unpaid and overdue at the reporting date						Articles L441-10 to L441-16 : Invoices issued, unpaid and overdue at the reporting date					
	0 day (indicative)	1 to 30 days	31 to 60 days	61 to 90 days	91 days or more	Total (1 day or more)	0 day (indicative)	1 to 30 days	31 to 60 days	61 to 90 days	91 days or more	Total (1 day or more)
<i>In millions of euros</i>												
<b>(A) By aging category</b>												
Number of invoices	-					69,321	-					5,900,621
Aggregate invoice amount (incl.	-	15.7	11.1	0.8	716.7	744.3	-	29.9	26.8	51.5	1,130.4	1,238.6
Percentage of total amount of	-	0.02%	0.02%	0.00%	1.14%	1.18%	-	0.05%	0.04%	0.08%	1.77%	1.94%
Percentage of total revenues												
<b>(B) Invoices excluded from (A) relating to disputed or unrecognized receivables and payables</b>												
Number of excluded invoices			501						682			
Aggregate amount of excluded			(66.9)						1.8			
<b>(C) Standard payment terms used (contractual or legal terms - Article L. 441-6 or Article L. 443-1 of the French Commercial Code)</b>												
Payment terms used to calculate late payments			Legal payment terms: 30 days						Contractual payment terms: 14 days Legal payment terms: 30 days			

# 02 CONSOLIDATED FINANCIAL STATEMENTS

INCOME STATEMENT .....	26
STATEMENT OF COMPREHENSIVE INCOME .....	27
STATEMENT OF FINANCIAL POSITION.....	28
STATEMENT OF CHANGES IN EQUITY .....	30
STATEMENT OF CASH FLOWS .....	32

## INCOME STATEMENT

<i>In millions of euros</i>	Notes	Dec. 31, 2023	Dec. 31, 2022
<b>REVENUES</b>	<b>6.2 &amp; 7</b>	<b>82,565</b>	<b>93,865</b>
Purchases and operating derivatives	8.1	(56,992)	(74,535)
Personnel costs	8.2	(8,149)	(8,078)
Depreciation, amortization and provisions	8.3	(4,911)	(5,187)
Taxes	8.4	(2,627)	(3,380)
Other operating income		1,541	1,624
<b>Current operating income including operating MtM</b>		<b>11,427</b>	<b>4,309</b>
Share in net income of equity method entities	6.2	1,066	1,059
<b>Current operating income including operating MtM and share in net income of equity method entities</b>		<b>12,493</b>	<b>5,367</b>
Impairment losses	9.1	(1,318)	(2,774)
Restructuring costs	9.2	(47)	(230)
Changes in scope of consolidation	9.3	(85)	91
Other non-recurring items	9.4	(4,945)	(1,328)
<b>NET INCOME/(LOSS) FROM OPERATING ACTIVITIES</b>		<b>6,098</b>	<b>1,127</b>
Financial expenses		(3,340)	(3,700)
Financial income		1,177	697
<b>NET FINANCIAL INCOME/(LOSS)</b>	<b>10</b>	<b>(2,163)</b>	<b>(3,003)</b>
Income tax benefit/(expense)	11	(1,031)	83
<b>NET INCOME/(LOSS) RELATING TO CONTINUING OPERATIONS</b>		<b>2,903</b>	<b>(1,793)</b>
<b>NET INCOME/(LOSS) RELATING TO DISCONTINUED OPERATIONS <sup>(1)</sup></b>		<b>-</b>	<b>2,183</b>
<b>NET INCOME/(LOSS)</b>		<b>2,903</b>	<b>390</b>
<b>Net income/(loss) Group share</b>		<b>2,208</b>	<b>216</b>
<i>Of which Net income/(loss) relating to continuing operations, Group share</i>		<i>2,208</i>	<i>(1,965)</i>
<i>Of which Net income/(loss) relating to discontinued operations, Group share</i>		<i>-</i>	<i>2,182</i>
<b>Non-controlling interests</b>		<b>695</b>	<b>173</b>
<i>Of which Non-controlling interests relating to continuing operations</i>		<i>695</i>	<i>172</i>
<i>Of which Non-controlling interests relating to discontinued operations</i>		<i>-</i>	<i>1</i>
<b>BASIC EARNINGS/(LOSS) PER SHARE (EUROS)</b>	<b>12</b>	<b>0.88</b>	<b>0.06</b>
<i>Of which Basic earnings/(loss) relating to continuing operations per share</i>		<i>0.88</i>	<i>(0.84)</i>
<i>Of which Basic earnings/(loss) relating to discontinued operations per share</i>		<i>-</i>	<i>0.90</i>
<b>DILUTED EARNINGS/(LOSS) PER SHARE (EUROS)</b>	<b>12</b>	<b>0.87</b>	<b>0.06</b>
<i>Of which Diluted earnings/(loss) relating to continuing operations per share</i>		<i>0.87</i>	<i>(0.84)</i>
<i>Of which Diluted earnings/(loss) relating to discontinued operations per share</i>		<i>-</i>	<i>0.90</i>

(1) Net income from discontinued operations for 2022 corresponds to the share of income from Equans.

NB: The amounts shown in the tables are expressed in millions of euros. In certain cases, rounding may cause non-material discrepancies in the totals.

## STATEMENT OF COMPREHENSIVE INCOME

<i>In millions of euros</i>	Notes	Dec. 31, 2023	Dec. 31, 2022
<b>NET INCOME/(LOSS)</b>		<b>2,903</b>	<b>390</b>
Debt instruments	14.1	325	(378)
Net investment hedges	15	148	(15)
Cash flow hedges (excl. commodity instruments)	15	(83)	938
Commodity cash flow hedges <sup>(1)</sup>	15	(3,162)	(4,719)
Deferred tax on recyclable or recycled items		765	951
Share of equity method entities in recyclable items, net of tax		36	871
Translation adjustments		(343)	848
Recyclable items relating to discontinued operations, net of tax		-	(118)
<b>TOTAL RECYCLABLE ITEMS</b>		<b>(2,315)</b>	<b>(1,622)</b>
Equity instruments	14.1	120	(685)
Actuarial gains and losses		(580)	2,718
Deferred tax on non recyclable items		135	(613)
Share of equity method entities in actuarial gains and losses, net of tax		1	5
Non-recyclable items relating to discontinued operations, net of tax		-	48
<b>TOTAL NON-RECYCLABLE ITEMS</b>		<b>(324)</b>	<b>1,472</b>
<b>TOTAL RECYCLABLE ITEMS AND NON-RECYCLABLE ITEMS</b>		<b>(2,639)</b>	<b>(150)</b>
<b>TOTAL COMPREHENSIVE INCOME/(LOSS)</b>		<b>264</b>	<b>240</b>
<i>Of which owners of the parent</i>		<i>(717)</i>	<i>(257)</i>
<i>Of which non-controlling interests</i>		<i>981</i>	<i>497</i>

(1) The fall in commodity market prices during 2023 contributed to significant changes in the fair value of financial instruments, impacting other comprehensive income. In 2023, the hedging of electricity supply activities in France, Belgium and the Netherlands and sales resulting from the production of some of our assets in these same areas qualified as cash flow hedging instruments in accordance with IFRS 9. Unrealized gains and losses on the effective portion of the hedges are now recorded in Other comprehensive income, as are hedges of our gas supply activities in Europe that already qualified, and are recycled to operating income at the same time as the hedged transactions to which they relate.

NB: The amounts shown in the tables are expressed in millions of euros. In certain cases, rounding may cause non-material discrepancies in the totals.

## STATEMENT OF FINANCIAL POSITION

### ASSETS

<i>In millions of euros</i>	Notes	Dec. 31, 2023	Dec. 31, 2022
<b>Non-current assets</b>			
Goodwill	13.1	12,864	12,854
Intangible assets, net	13.2	8,449	7,364
Property, plant and equipment, net	13.3	57,950	55,488
Other financial assets	14	14,817	10,599
Derivative instruments	14	12,764	33,134
Assets from contracts with customers	7	1	9
Investments in equity method entities	3	9,213	9,279
Other non-current assets	22	990	766
Deferred tax assets	11	1,974	2,029
<b>TOTAL NON-CURRENT ASSETS</b>		<b>119,023</b>	<b>131,521</b>
<b>Current assets</b>			
Other financial assets	14	2,170	2,394
Derivative instruments	14	8,481	15,252
Trade and other receivables, net	7	20,092	31,310
Assets from contracts with customers	7	9,530	12,575
Inventories	22	5,343	8,145
Other current assets	22	13,424	18,294
Cash and cash equivalents	14	16,578	15,570
Assets classified as held for sale		-	428
<b>TOTAL CURRENT ASSETS</b>		<b>75,617</b>	<b>103,969</b>
<b>TOTAL ASSETS</b>		<b>194,640</b>	<b>235,490</b>

NB: The amounts shown in the tables are expressed in millions of euros. In certain cases, rounding may cause non-material discrepancies in the totals.

## EQUITY AND LIABILITIES

<i>In millions of euros</i>	Notes	Dec. 31, 2023	Dec. 31, 2022
Shareholders' equity		30,057	34,253
Non-controlling interests	2	5,667	5,032
<b>TOTAL EQUITY</b>	<b>16</b>	<b>35,724</b>	<b>39,285</b>
<b>Non-current liabilities</b>			
Provisions	17	18,792	24,663
Long-term borrowings	14	37,920	28,083
Derivative instruments	14	16,755	39,417
Other financial liabilities	14	82	90
Liabilities from contracts with customers	7	93	121
Other non-current liabilities	22	3,614	3,646
Deferred tax liabilities	11	5,632	6,408
<b>TOTAL NON-CURRENT LIABILITIES</b>		<b>82,889</b>	<b>102,427</b>
<b>Current liabilities</b>			
Provisions	17	13,801	2,365
Short-term borrowings	14	9,367	12,508
Derivative instruments	14	7,806	11,859
Trade and other payables	14	22,976	39,801
Liabilities from contracts with customers	7	3,960	3,292
Other current liabilities	22	18,118	23,583
Liabilities directly associated with assets classified as held for sale		-	371
<b>TOTAL CURRENT LIABILITIES</b>		<b>76,027</b>	<b>93,778</b>
<b>TOTAL EQUITY AND LIABILITIES</b>		<b>194,640</b>	<b>235,490</b>

NB: The amounts shown in the tables are expressed in millions of euros. In certain cases, rounding may cause non-material discrepancies in the totals.

## STATEMENT OF CHANGES IN EQUITY

<i>In millions of euros</i>	Share capital	Additional paid-in capital	Consolidated reserves	Deeply-subordinated perpetual notes	Changes in fair value and other	Translation adjustments	Treasury stock	Shareholders' equity	Non-controlling interests	Total
<b>EQUITY AT DECEMBER 31, 2021</b>	<b>2,435</b>	<b>26,058</b>	<b>5,238</b>	<b>3,767</b>	<b>1,711</b>	<b>(2,017)</b>	<b>(199)</b>	<b>36,994</b>	<b>4,986</b>	<b>41,980</b>
Net income/(loss)			216					216	173	390
Other comprehensive income/(loss)			1,311		(2,379)	595		(474)	324	(150)
<b>TOTAL COMPREHENSIVE INCOME/(LOSS)</b>			<b>1,527</b>		<b>(2,379)</b>	<b>595</b>		<b>(257)</b>	<b>497</b>	<b>240</b>
Share-based payment	-	3	45					48	-	48
Dividends paid in cash <sup>(1)</sup>		(394)	(1,689)					(2,082)	(482)	(2,565)
Purchase/disposal of treasury stock			(43)				10	(33)	-	(33)
Operations on deeply-subordinated perpetual notes <sup>(1)</sup>			(77)	(374)				(451)		(451)
Transactions between owners <sup>(1) (2)</sup>			154					154	56	210
Transactions with an impact on non-controlling interests			-					-	(41)	(41)
Share capital increases and decreases								-	19	19
Normative changes <sup>(3)</sup>			(116)					(116)	(6)	(121)
Other changes		-	(5)		-			(5)	3	(1)
<b>EQUITY AT DECEMBER 31, 2022</b>	<b>2,435</b>	<b>25,667</b>	<b>5,036</b>	<b>3,393</b>	<b>(668)</b>	<b>(1,422)</b>	<b>(189)</b>	<b>34,253</b>	<b>5,032</b>	<b>39,285</b>

(1) Transactions of the period are listed in Note 16 "Equity" to the consolidated financial statements for the year ended December 31, 2022.

(2) Mainly relates to the sale of part of the renewable assets portfolio in the United States (see Note 16.2.4 "Other transactions" to the consolidated financial statements for the year ended December 31, 2022).

(3) SaaS arrangement (see Note 1.1.2 "Other text" to the consolidated financial statements for the year ended December 31, 2022).

NB: The amounts shown in the tables are expressed in millions of euros. In certain cases, rounding may cause non-material discrepancies in the totals.

CONSOLIDATED FINANCIAL STATEMENTS

STATEMENT OF CHANGES IN EQUITY

<i>In millions of euros</i>	Share capital	Additional paid-in capital	Consolidated reserves	Deeply-subordinated perpetual notes	Changes in fair value and other	Translation adjustments	Treasury stock	Shareholders' equity	Non-controlling interests	Total
<b>EQUITY AT DECEMBER 31, 2022</b>	<b>2,435</b>	<b>25,667</b>	<b>5,036</b>	<b>3,393</b>	<b>(668)</b>	<b>(1,422)</b>	<b>(189)</b>	<b>34,253</b>	<b>5,032</b>	<b>39,285</b>
Net income/(loss)			2,208					2,208	695	2,903
Other comprehensive income/(loss)			(307)		(2,348)	(270)		(2,925)	286	(2,639)
<b>TOTAL COMPREHENSIVE INCOME/(LOSS)</b>			<b>1,901</b>	<b>-</b>	<b>(2,348)</b>	<b>(270)</b>	<b>-</b>	<b>(717)</b>	<b>981</b>	<b>264</b>
Share-based payment	-	-	53					53	-	53
Dividends paid in cash <sup>(1)</sup>		(1,752)	(1,675)					(3,427)	(522)	(3,949)
Purchase/disposal of treasury stock			(69)				12	(57)	-	(57)
Operations on deeply-subordinated perpetual notes			(80)	-				(80)	-	(80)
Transactions between owners <sup>(2)</sup>			(99)					(99)	(68)	(168)
Transactions with an impact on non-controlling interests									40	40
Share capital increases and decreases									201	201
Normative change			(5)					(5)	-	(5)
Other changes <sup>(3)</sup>			-	137	-	-	-	137	4	140
<b>EQUITY AT DECEMBER 31, 2023</b>	<b>2,435</b>	<b>23,916</b>	<b>5,198</b>	<b>3,393</b>	<b>(3,015)</b>	<b>(1,693)</b>	<b>(177)</b>	<b>30,057</b>	<b>5,667</b>	<b>35,724</b>

(1) Transactions of the period are listed in Note 16 "Equity".

(2) Mainly concerns the acquisition of the minority interest held by Mitsui & Co, Ltd ("Mitsui") in International Power (Australia) Holdings Pty Limited ("IPAH") (see Note 4 "Main changes in Group structure").

(3) Mainly concerns the resolution of the dispute with the French tax authorities on the withholding tax receivable assigned without recourse by the Group in 2005. This dispute is presented in Note 23 "Legal and anti-trust proceedings".

NB: The amounts shown in the tables are expressed in millions of euros. In certain cases, rounding may cause non-material discrepancies in the totals.

## STATEMENT OF CASH FLOWS

<i>In millions of euros</i>	Notes	Dec. 31, 2023	Dec. 31, 2022
<b>NET INCOME/(LOSS)</b>		<b>2,903</b>	<b>390</b>
- Net income/(loss) relating to discontinued operations		-	2,183
<b>NET INCOME/(LOSS) RELATING TO CONTINUING OPERATIONS</b>		<b>2,903</b>	<b>(1,793)</b>
- Share in net income/(loss) of equity method entities		(1,066)	(1,059)
+ Dividends received from equity method entities		1,031	713
- Net depreciation, amortization, impairment and provisions		11,020	8,057
- Impact of changes in scope of consolidation and other non-recurring items		136	74
- Mark-to-market on commodity contracts other than trading instruments		(2,430)	3,661
- Other items with no cash impact		(382)	(157)
- Income tax expense	11	1,031	(83)
- Net financial income/(loss)	10	2,163	3,003
<b>Cash generated from operations before income tax and working capital requirements</b>		<b>14,407</b>	<b>12,415</b>
+ Tax paid		(1,687)	(1,504)
<b>Change in working capital requirements</b>	<b>22.1</b>	<b>397</b>	<b>(2,424)</b>
<b>CASH FLOW FROM OPERATING ACTIVITIES RELATING TO CONTINUING OPERATIONS</b>		<b>13,117</b>	<b>8,488</b>
<b>CASH FLOW FROM OPERATING ACTIVITIES RELATING TO DISCONTINUED OPERATIONS</b>		<b>-</b>	<b>98</b>
<b>CASH FLOW FROM OPERATING ACTIVITIES</b>		<b>13,117</b>	<b>8,586</b>
Acquisitions of property, plant and equipment and intangible assets	13.2 & 13.3	(7,328)	(6,379)
Acquisitions of controlling interests in entities, net of cash and cash equivalents acquired	4 & 14	(1,392)	(289)
Acquisitions of investments in equity method entities and joint operations	4 & 14	(237)	(407)
Acquisitions of equity and debt instruments	14	(1,675)	175
Disposals of property, plant and equipment, and intangible assets	13.2 & 13.3	122	173
Loss of controlling interests in entities, net of cash and cash equivalents sold	4 & 14	27	6,728
Disposals of investments in equity method entities and joint operations	4 & 14	131	1,461
Disposals of equity and debt instruments	14	(8)	268
Interest received on financial assets		118	(37)
Dividends received on equity instruments		9	18
Change in loans and receivables originated by the Group and other	5.6	(1,585)	(2,877)
<b>CASH FLOW FROM (USED IN) INVESTING ACTIVITIES RELATING TO CONTINUING OPERATIONS</b>		<b>(11,818)</b>	<b>(1,167)</b>
<b>CASH FLOW FROM (USED IN) INVESTING ACTIVITIES RELATING TO DISCONTINUED OPERATIONS</b>		<b>-</b>	<b>(3,123)</b>
<b>CASH FLOW FROM (USED IN) INVESTING ACTIVITIES</b>		<b>(11,818)</b>	<b>(4,290)</b>
Dividends paid <sup>(1)</sup>		(4,067)	(2,665)
Repayment of borrowings and debt		(6,671)	(10,972)
Change in financial assets held for investment and financing purposes		15	188
Interest paid		(1,058)	(822)
Interest received on cash and cash equivalents		569	194
Cash flow on derivatives qualifying as net investment hedges and compensation payments on derivatives and on early buyback of borrowings		134	(216)
Increase in borrowings		10,716	8,669
Increase/decrease in capital		200	(259)
Purchase and/or sale of treasury stock		(57)	(115)
<b>CASH FLOW FROM (USED IN) FINANCING ACTIVITIES RELATING TO CONTINUING OPERATIONS</b>		<b>(218)</b>	<b>(5,997)</b>
<b>CASH FLOW FROM (USED IN) FINANCING ACTIVITIES RELATING TO DISCONTINUED OPERATIONS</b>		<b>-</b>	<b>3,019</b>
<b>CASH FLOW FROM (USED IN) FINANCING ACTIVITIES</b>		<b>(218)</b>	<b>(2,979)</b>
Effects of changes in exchange rates and other relating to continuing operations		(73)	356
Effects of changes in exchange rates and other relating to discontinued operations		-	7
Effects of changes in exchange rates and other		(73)	363
<b>TOTAL CASH FLOW FOR THE PERIOD</b>		<b>1,008</b>	<b>1,680</b>
<b>CASH AND CASH EQUIVALENTS AT BEGINNING OF PERIOD</b>		<b>15,570</b>	<b>13,890</b>
<b>CASH AND CASH EQUIVALENTS AT END OF PERIOD</b>		<b>16,578</b>	<b>15,570</b>

(1) The line "Dividends paid" includes the coupons paid to owners of deeply-subordinated perpetual notes (see Note 16 "Equity").

NB: The amounts shown in the tables are expressed in millions of euros. In certain cases, rounding may cause non-material discrepancies in the totals.



# 03 NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Note 1	ACCOUNTING FRAMEWORK AND BASIS FOR PREPARING THE CONSOLIDATED FINANCIAL STATEMENTS .....	35
Note 2	MAIN SUBSIDIARIES AT DECEMBER 31, 2023.....	40
Note 3	INVESTMENTS IN EQUITY METHOD ENTITIES .....	46
Note 4	MAIN CHANGES IN GROUP STRUCTURE .....	54
Note 5	FINANCIAL INDICATORS USED IN FINANCIAL COMMUNICATION.....	56
Note 6	SEGMENT INFORMATION.....	61
Note 7	REVENUES .....	65
Note 8	OPERATING EXPENSES .....	69
Note 9	OTHER ITEMS OF NET INCOME/(LOSS) FROM OPERATING ACTIVITIES.....	71
Note 10	NET FINANCIAL INCOME/(LOSS) .....	74
Note 11	INCOME TAX EXPENSE.....	75
Note 12	EARNINGS PER SHARE .....	79
Note 13	FIXED ASSETS.....	80
Note 14	FINANCIAL INSTRUMENTS.....	94
Note 15	RISKS ARISING FROM FINANCIAL INSTRUMENTS.....	111
Note 16	EQUITY .....	131
Note 17	PROVISIONS .....	134
Note 18	POST-EMPLOYMENT BENEFITS AND OTHER LONG-TERM BENEFITS.....	143
Note 19	SHARE-BASED PAYMENTS.....	152
Note 20	RELATED PARTY TRANSACTIONS .....	153
Note 21	EXECUTIVE COMPENSATION .....	155
Note 22	WORKING CAPITAL REQUIREMENTS, INVENTORIES, OTHER ASSETS AND OTHER LIABILITIES.....	156
Note 23	LEGAL AND ANTI-TRUST PROCEEDINGS.....	158
Note 24	SUBSEQUENT EVENTS.....	165
Note 25	FEEs PAID TO THE STATUTORY AUDITORS AND TO MEMBERS OF THEIR NETWORKS .....	166
Note 26	INFORMATION REGARDING LUXEMBOURG AND DUTCH COMPANIES EXEMPTED FROM THE REQUIREMENTS TO PUBLISH ANNUAL FINANCIAL STATEMENTS.....	167

ENGIE SA, the parent company of the Group, is a French société anonyme with a Board of Directors that is subject to the provisions of Book II of the French Commercial Code (Code du commerce), as well as to all other provisions of French law applicable to French commercial companies. It was incorporated on November 20, 2004 for a period of 99 years.

It is governed by current and future laws and by regulations applicable to *sociétés anonymes* and its bylaws.

The Group is headquartered at 1 place Samuel de Champlain, 92400 Courbevoie (France).

ENGIE shares are listed on the Paris, Brussels and Luxembourg stock exchanges.

On February 21, 2024, the Group's Board of Directors approved and authorized for issue the consolidated financial statements of the Group for the year ended December 31, 2023.

## NOTE 1 ACCOUNTING FRAMEWORK AND BASIS FOR PREPARING THE CONSOLIDATED FINANCIAL STATEMENTS

### 1.1 Accounting standards

Pursuant to European Regulation (EU) 2019/980 dated March 14, 2019, financial information concerning the assets, liabilities, financial position and profit and loss of ENGIE has been provided for the last two reporting periods (ended December 31, 2022 and 2023). This information was prepared in accordance with European Regulation (EC) 1606/2002 "on the application of international accounting standards" dated July 19, 2002. The Group's consolidated financial statements for the year ended December 31, 2023 have been prepared in accordance with IFRS Standards as published by the International Accounting Standards Board and endorsed by the European Union <sup>(1)</sup>.

The accounting standards applied in the consolidated financial statements for the year ended December 31, 2023 are consistent with the policies used to prepare the consolidated financial statements for the year ended December 31, 2022, except for those described below.

#### 1.1.1 IFRS Standards, amendments or IFRIC Interpretations applicable as from 2023

- IFRS 17 - *Insurance Contracts* (including amendments).
- Amendments to IAS 1 – *Presentation of Financial Statements* and the Materiality Practice Statement: Disclosure of Accounting Policies.
- Amendments to IAS 8 – *Accounting Policies, Changes in Accounting Estimates and Errors*: Definition of Accounting Estimates.
- Amendments to IAS 12 – *Income Taxes*: Deferred Tax related to Assets and Liabilities arising from a Single Transaction.
- Amendments to IAS 12 – *Income Taxes*: International Tax Reform - Pillar 2 Model.

This standard and these amendments have no material impact on the Group's consolidated financial statements.

---

(1) Available on the European Commission's website:

<http://eur-lex.europa.eu/legal-content/FR/TXT/?uri=CELEX:02002R1606-20080410>

## 1.1.2 IFRS Standards, amendments or IFRIC Interpretations effective from 2024 and that the Group has elected not to early adopt

- Amendments to IAS 1 – *Presentation of Financial Statements*: Classification of Liabilities as Current or Non-Current.
- Amendments to IFRS 16 – *Leases*: Lease Liability in a Sale and Leaseback.
- Amendments to IAS 7 – *Statement of Cash Flows* and IFRS 7 – *Financial Instruments: Disclosures* – Supplier Finance Arrangements <sup>(1)</sup>.
- Amendments to IAS 21 – *The Effects of Changes in Foreign Exchange Rates*: Lack of Exchangeability <sup>(1)</sup>.

The impact of these amendments is currently being assessed.

## 1.2 Measurement and presentation basis

### 1.2.1 Historical cost convention

The Group's consolidated financial statements are presented in euros and have been prepared using the historical cost convention, except for financial instruments, which are accounted for under the financial instrument categories defined by IFRS 9.

### 1.2.2 Chosen options

#### 1.2.2.1 Reminder of IFRS 1 transition options

The Group used some of the options available under IFRS 1 for its transition to IFRS in 2005. The options that continue to have an impact on the consolidated financial statements are:

- translation adjustments: the Group elected to reclassify cumulative translation adjustments within consolidated equity at January 1, 2004;
- business combinations: the Group elected not to restate business combinations that took place prior to January 1, 2004 in accordance with IFRS 3.

#### 1.2.2.2 Business combinations

Business combinations carried out prior to January 1, 2010 were accounted for in accordance with IFRS 3 prior to the revision. In accordance with IFRS 3 revised, these business combinations have not been restated.

Since January 1, 2010, the Group applies the purchase method as defined in IFRS 3 revised, which consists in recognizing the identifiable assets acquired and liabilities assumed at their fair values at the acquisition date, as well as any non-controlling interests in the acquiree. Non-controlling interests are measured either at fair value or at the entity's proportionate interest in the net identifiable assets of the acquiree. The Group determines on a case-by-case basis which measurement option to be used to recognize non-controlling interests.

---

(1) These standards and amendments have not yet been adopted by the European Union.

### 1.2.2.3 Consolidated statement of cash flows

The consolidated statement of cash flows is prepared using the indirect method starting from net income.

“Interest received on non-current financial assets” is classified within investing activities because it represents a return on investments. “Interest received on cash and cash equivalents” is shown as a component of financing activities because the interest can be used to reduce borrowing costs. This classification is consistent with the Group's internal organization, where debt and cash are managed centrally by the Group treasury department.

As impairment losses on current assets are considered to be definitive losses, changes in current assets are presented net of impairment.

Cash flows relating to the payment of income tax are presented on a separate line.

## 1.2.3 Foreign currency transactions

### 1.2.3.1 Translation of foreign currency transactions

Foreign currency transactions are recorded in the functional currency at the exchange rate prevailing on the date of the transaction.

Functional currency is the currency of the primary economic environment in which an entity operates, which in most cases corresponds to local currency. However, certain entities may have a functional currency different from the local currency when that other currency is used for an entity's main transactions and better reflects its economic environment.

At each reporting date:

- monetary assets and liabilities denominated in foreign currencies are translated at year-end exchange rates. The resulting translation gains and losses are recorded in the consolidated income statement for the year to which they relate;
- non-monetary assets and liabilities denominated in foreign currencies are recognized at the historical cost applicable at the date of the transaction.

### 1.2.3.2 Translation of the financial statements of subsidiaries with a functional currency other than the euro (the presentation currency)

The statements of financial position of these subsidiaries are translated into euros at the official year-end exchange rates. Income statement and cash flow statement items are translated using the average exchange rate for the year. Any differences arising from the translation of the financial statements of these subsidiaries are recorded under “Translation adjustments” as other comprehensive income.

Goodwill and fair value adjustments arising on the acquisition of foreign entities are classified as assets and liabilities of those foreign entities and are therefore denominated in the functional currencies of the entities and translated at the year-end exchange rate.

## 1.3 Use of estimates and judgment

### 1.3.1 Estimates

The preparation of consolidated financial statements requires the use of estimates and assumptions to determine the value of assets and liabilities and contingent assets and liabilities at the reporting date, as well as income and expenses reported during the period.

Developments in the economic and financial environment, particularly relating to volatile commodities markets, and the war in Ukraine have prompted the Group to step up its risk oversight procedures, mainly in measuring financial instruments and assessing counterparty and liquidity risk. The estimates used by the Group, among other things, to test for impairment and to measure provisions, also take into account this environment and the market volatility.

Accounting estimates are made in a context that remains sensitive to energy market developments, therefore making it difficult to apprehend medium- and short-term economic prospects. Particular attention has been paid to the consequences of fluctuations in the price of gas and electricity.

Due to uncertainties inherent in the estimation process, the Group regularly revises its estimates in light of currently available information. Final outcomes could differ from those estimates.

The key estimates used in preparing the Group's consolidated financial statements relate mainly to:

- measurement of the recoverable amount of goodwill (*see Note 13.1*), other intangible assets (*see Note 13.2*) and property, plant and equipment (*see Note 13.3*);
- measurement of the fair value of financial assets and liabilities, and, in the current context, factoring in the uncertainty surrounding the key assumptions used, in particular updating the main valuation inputs of commodity derivatives, in particular the "bid ask" reserve, to reflect the volatility of commodity prices (*see Notes 14 and 15*);
- assessment of expected credit losses, particularly in order to update probabilities of default and other inputs, mainly for calculating the CVA (Credit Valuation Adjustment) in a context of market price uncertainty and volatility (*see Note 15*);
- the measurement of provisions, in particular those relating to the treatment of nuclear waste under the agreement signed on June 29, 2023 with the Belgian government on the extension of the Tihange 3 and Doel 4 nuclear reactors and on all nuclear waste-related obligations, which became binding following the signature of supplements to the initial agreements on July 21, 2023. Transaction documents signed on December 13, 2023 specify the practical implementation of the first agreements of June and July. These estimates also concern provisions for dismantling facilities, disputes, and pensions and other employee benefits (*see Notes 17 and 18*);
- measurement of un-metered revenues (energy in the meter), for which the valuation techniques have been impacted by changes in certain customers' consumption habits in a context of fluctuations in commodity prices (*see Note 7*);
- measurement of recognized tax loss carry-forwards, taking into account, where applicable, taxable income revisions and projections (*see Note 11*).

### 1.3.2 Judgment

As well as relying on estimates, Group management also makes judgments to define the appropriate accounting policies to apply to certain activities and transactions, particularly when the IFRS Standards and IFRIC Interpretations in force do not specifically deal with the related accounting issues.

In particular, the Group exercised its judgment in:

- assessing the nature of control (*see Notes 2 and 3*);
- identifying the performance obligations of sales contracts (*see Note 7*);
- determining how revenues are recognized for distribution or transmission services invoiced to customers (*see Note 7*);
- recognizing support measures granted by certain governments, particularly in France and Romania ("tariff shield"), aimed at protecting both consumers and suppliers of gas and electricity against sharp fluctuations in commodity prices (*see Note 7*);
- identifying "own use contracts" as defined by IFRS 9 within non-financial purchase and sale contracts (electricity, gas, etc.) (*see Note 14*);
- identifying offsetting arrangements that meet the criteria set out in IAS 32 *Financial Instruments: Presentation* (*see Note 14*);
- determining whether arrangements are or contain a lease (*see Note 13.3*);
- recognizing contributions in the energy sector in Europe (*see Note 8*).

Entities for which judgment on the nature of control has been exercised are listed in Note 2 “Main subsidiaries at December 31, 2023” and Note 3 “Investments in equity method entities”.

### 1.3.3 Consideration of climate issues in the preparation of the Group's financial statements

In addition to the operational and financial issues and risks taken into account in determining future cash flows, the discount rate net of inflation and projected growth, the Group has also exercised its judgment to use assumptions reflecting climate change issues, in order to determine their potential impact on the consolidated financial statements. In particular, the Group checked whether there were any indications that non-financial assets might be impaired:

- the commitments made by France, Europe and various countries at international level, in particular with regard to long-term carbon neutrality, are taken into account (i) in assessing the value of the Group's assets, in particular through the long-term price scenarios used in impairment tests (see Note 13.4), and (ii) in assessing dismantling provisions, in particular by assessing the useful life of gas infrastructures in France based on the expected change in the energy mix (see Note 17);
- the commitments made specifically by ENGIE are also reflected in the assessment of the value of the Group's assets (see Note 13.4.1), in particular (i) the complete withdrawal from coal activities by 2027, which primarily concerns South America, depending on each asset's specific prospects (closure, conversion or disposal) and (ii) the gradual decarbonization of the Group's power generation activities to net zero by 2045 and, more broadly, the Group's investment strategy in favor of the energy transition by expanding its renewable energy fleet, substituting natural gas with renewable gas, thereby confirming a mixed gas/electricity scenario in the Group's long-term projections under the present regulation/remuneration methods for regulated assets (in France in particular), and developing low-carbon services offerings.

As a reminder, the management of climate and environmental risks and their challenges for the Group are presented in Chapter 2 “Risk factors” and Chapter 3 “Non-Financial Statement and CSR Information” of the Universal Registration Document.

## NOTE 2 MAIN SUBSIDIARIES AT DECEMBER 31, 2023

### Accounting standards

Controlled entities (subsidiaries) are fully consolidated in accordance with IFRS 10 – *Consolidated Financial Statements*. An investor (the Group) controls an entity and therefore must consolidate it if all of the following three criteria are met:

- it has the ability to direct the relevant activities of the entity;
- it has the rights and is exposed to variable returns from its involvement with the entity;
- it has the ability to use its power over the entity to affect the investor's return.

### 2.1 List of main subsidiaries at December 31, 2023

The following lists are made available by the Group to third parties, pursuant to Regulation No. 2016-09 of the French accounting standards authority (ANC) issued on December 2, 2016:

- list of companies included in consolidation;
- list of companies excluded from consolidation because their individual and cumulative incidence on the Group's consolidated financial statements is not material. They correspond to entities deemed not significant as regards the Group's main key figures (revenues, total equity, etc.) or entities that have ceased all activities and are undergoing liquidation/closure proceedings;
- list of main non-consolidated interests.

This information is available on the Group's website ([www.engie.com](http://www.engie.com), Investors/Regulated information section). Non-consolidated companies are classified as non-current financial assets (see *Note 14.1.1.1*) under "Equity instruments at fair value".

The list of the main subsidiaries consolidated under the full consolidation method presented below was determined, as regards operating entities, based on their contribution to Group revenues, EBITDA, net income and net debt. The main equity-accounted investments (associates and joint ventures) are presented in Note 3 "Investments in equity method entities".

Some entities such as ENGIE SA, ENGIE Énergie Services SA or Electrabel SA comprise both operating activities and headquarters functions which report to management teams of different reportable segments. In the following tables, these operating activities and headquarters functions are shown within their respective reportable segments under their initial company name followed by a (\*) sign.

## Renewables

Company name	Activity	Country	% interest	
			Dec. 31, 2023	Dec. 31, 2022
BTE Renewables	Electricity distribution and generation	South Africa	60.0	-
Compagnie Nationale du Rhône	Electricity distribution and generation	France	50.0	50.0
ENGIE Energía Perú *	Electricity distribution and generation	Peru	61.8	61.8
ENGIE Green	Electricity distribution and generation	France	100.0	100.0
ENGIE Renouvelables	Electricity distribution and generation	France	100.0	100.0
ENGIE Romania <sup>*(1)</sup>	Natural gas distribution, Energy sales	Romania	51.0	51.0
ENGIE Solar	Solar EPC	France	100.0	100.0
Groupe ENGIE Brasil Energia *	Electricity distribution and generation	Brazil	68.7	68.7
Groupe ENGIE Energía Chile *	Electricity distribution and generation	Chile	60.0	60.0
Jupiter Equity Holding LLC	Electricity distribution and generation	United States	51.0	51.0
Mercury Equity Holding LLC	Electricity distribution and generation	United States	51.0	51.0
Saturn Equity Holding LLC	Electricity distribution and generation	United States	100.0	100.0
Kathu Solar Park <sup>(2)</sup>	Electricity distribution and generation	South Africa	57.7	48.5

(1) On February 20, 2024, ENGIE finalized the acquisition of an additional 12% stake in ENGIE Romania.

(2) Following the acquisition of an additional stake in 2023, the Group now fully consolidates Kathu Solar Park (see Note 4.2).

## Networks

Company name	Activity	Country	% interest	
			Dec. 31, 2023	Dec. 31, 2022
Eelogy	Natural gas, LNG	France	60.8	60.8
ENGIE Romania <sup>*(1)</sup>	Natural gas distribution, Energy sales	Romania	51.0	51.0
Fosmax LNG	Natural gas, LNG	France	60.8	60.8
GRDF	Natural gas distribution	France	100.0	100.0
ENGIE Brazil Energia Group *	Electricity distribution and generation	Brazil	68.7	68.7
ENGIE Energía Chile Group *	Electricity distribution and generation	Chile	60.0	60.0
GRTgaz Group (excluding Eelogy)	Natural gas transportation	France, Germany	60.8	60.8
Storengy Deutschland GmbH	Underground natural gas storage	Germany	100.0	100.0
Storengy SAS	Underground natural gas storage	France	100.0	100.0

(1) On February 20, 2024, ENGIE finalized the acquisition of an additional 12% stake in ENGIE Romania.

## Energy Solutions

Company name	Activity	Country	% interest	
			Dec. 31, 2023	Dec. 31, 2022
Cofely Besix	Systems, facilities and maintenance	UAE	100.0	100.0
CPCU	Urban heating networks	France	66.5	66.5
Energie SaarLorLux AG	Energy services	Germany	51.0	51.0
ENGIE Deutschland GmbH	Energy services	Germany	100.0	100.0
ENGIE Energie Services SA *	Energy services, Networks	France	100.0	100.0
ENGIE Servizi S.p.A	Energy services	Italy	100.0	100.0
Tractebel Engineering	Engineering	Belgium	100.0	100.0

## FlexGen

Company name	Activity	Country	% interest	
			Dec. 31, 2023	Dec. 31, 2022
Group Broad Reach Power	Battery storage	United States	100.0	-
Electrabel SA *	Electricity generation, Energy sales	Belgium	100.0	100.0
ENGIE Energía Perú *	Electricity distribution and generation	Peru	61.8	61.8
ENGIE Energie Nederland N.V. *	Electricity generation, Energy sales	Netherlands	100.0	100.0
ENGIE Italia S.p.A *	Electricity generation, Energy sales	Italy	100.0	100.0
ENGIE SA *	Electricity generation, Energy sales	France	100.0	100.0
ENGIE Thermique France	Electricity generation	France	100.0	100.0
First Hydro Holdings Company	Electricity generation	United Kingdom	75.0	75.0
ENGIE Energía Chile Group *	Electricity distribution and generation	Chile	60.0	60.0
Pelican Point Power Limited	Electricity generation	Australia	100.0	72.0
UCH Power Limited	Electricity generation	Pakistan	100.0	100.0

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

NOTE 2 MAIN SUBSIDIARIES AT DECEMBER 31, 2023

**Retail**

Company name	Activity	Country	% interest	
			Dec. 31, 2023	Dec. 31, 2022
Electrabel SA *	Electricity generation, Energy sales	Belgium	100.0	100.0
ENGIE Italia S.p.A *	Electricity generation, Energy sales	Italy	100.0	100.0
ENGIE Romania <sup>*(1)</sup>	Natural gas distribution, Energy sales	Romania	51.0	51.0
ENGIE SA *	Electricity generation, Energy sales	France	100.0	100.0
Simply Energy	Energy sales	Australia	100.0	72.0

(1) On February 20, 2024, ENGIE finalized the acquisition of an additional 12% stake in ENGIE Romania.

**Nuclear**

Company name	Activity	Country	% interest	
			Dec. 31, 2023	Dec. 31, 2022
Electrabel SA *	Electricity generation, Energy sales	Belgium	100.0	100.0
Synatom	Managing provisions relating to power plants and nuclear fuel	Belgium	100.0	100.0

**Others**

Company name	Activity	Country	% interest	
			Dec. 31, 2023	Dec. 31, 2022
Cogac	Holding	France	100.0	100.0
Electrabel SA *	Electricity generation, Energy sales	Belgium	100.0	100.0
ENGIE CC	Financial subsidiaries, Central	Belgium	100.0	100.0
ENGIE Deutschland AG *	Holding, Energy management trading	Germany	100.0	100.0
ENGIE Energie Nederland Holding B.V. *	Holding, Energy management trading	Netherlands	100.0	100.0
ENGIE Energie Nederland N.V.	Electricity generation, Energy sales	Netherlands	100.0	100.0
ENGIE Energy Services International SA	Holding	Belgium	100.0	100.0
ENGIE Energie Services SA *	Energy services, Networks	France	100.0	100.0
ENGIE Energy Management *	Energy management trading	France, Belgium,	100.0	100.0
ENGIE Finance SA	Financial subsidiaries	France	100.0	100.0
ENGIE Global Markets	Energy management trading	France, Belgium, Singapore	100.0	100.0
ENGIE Holding Inc.	Holding - parent company	United States	100.0	100.0
ENGIE Italia S.p.A *	Holding, Energy management trading	Italy	100.0	100.0
ENGIE North America	Electricity distribution and generation, Natural gas, LNG, Energy services	United States	100.0	100.0
ENGIE Resources Inc.	Energy sales	United States	100.0	100.0
ENGIE Romania <sup>*(1)</sup>	Natural gas distribution, Energy sales	Romania	51.0	51.0
ENGIE SA *	Holding - parent company, Energy management trading, energy sales	France	100.0	100.0
GDF International	Holding	France	100.0	100.0
Genfina	Holding	Belgium	100.0	100.0
ENGIE Energía Chile Group *	Electricity distribution and generation	Chile	60.0	60.0
International Power Limited	Holding	United Kingdom	100.0	100.0

(1) On February 20, 2024, ENGIE finalized the acquisition of an additional 12% stake in ENGIE Romania.

## 2.2 Significant judgments exercised when assessing control

The Group primarily considers the following information and criteria when determining whether it has control over an entity:

- governance arrangements: voting rights and whether the Group is represented in the governing bodies, majority rules and veto rights;
- the nature of substantive or protective rights granted to shareholders, relating to the entity's relevant activities;
- deadlock resolution mechanisms;
- whether the Group is exposed, or has rights, to variable returns from its involvement with the entity.

The Group exercised its judgment regarding the entities and sub-groups described below.

### Entities in which the Group has the majority of the voting rights

#### **GRTgaz (France Infrastructures): 60.8%**

The analysis of the shareholders' agreement concluded with Société d'Infrastructures Gazières, a subsidiary of *Caisse des Dépôts et Consignations* (CDC), which holds 38.6% of the share capital of GRTgaz, was completed by an assessment of the rights granted to the French Energy Regulatory Commission (*Commission de Régulation de l'Énergie* – CRE). As a regulated activity, GRTgaz has a dominant position on the gas transportation market in France. Accordingly, since the transposition of the Third European Directive of July 13, 2009 into French law (*Code de l'énergie* – Energy Code) on May 9, 2011, GRTgaz has been subject to independence rules as regards its directors and senior management team. The French Energy Code confers certain powers on the CRE in the context of its duties to control the proper functioning of the gas markets in France, including verifying the independence of the members of the Board of Directors and senior management and assessing the choice of investments. The Group considers that it exercises control over GRTgaz and its subsidiaries (including Elengy) based on the Group's ability to appoint the majority of the members of the Board of Directors and take decisions about the relevant activities, especially in terms of the level of investment and planned financing.

### Entities in which the Group does not have the majority of the voting rights

For entities in which the Group does not have the majority of the voting rights, judgment is exercised with regard to the following items, in order to assess whether there is a situation of *de facto* control:

- dispersion of the shareholding structure: number of voting rights held by the Group relative to the number of rights held respectively by the other holders of voting rights and their dispersion;
- voting patterns at shareholders' meetings: the percentages of voting rights exercised by the Group at shareholders' meetings in recent years;
- governance arrangements: representation in the governing body with strategic and operational decision-making power over the relevant activities;
- rules for appointing key management personnel;
- contractual relationships and material transactions.

The main fully consolidated entity in which the Group does not have the majority of the voting rights at December 31, 2022 is Compagnie Nationale du Rhône (49.98%).

#### **Compagnie Nationale du Rhône (“CNR” – Renewables France): 49.98%**

The Group holds 49.98% of the share capital of CNR, with CDC holding 33.2%, and the balance of 16.82% being dispersed among around 200 local authorities. In view of the current provisions of the French “Murcef” law, under which a majority of CNR's share capital must remain under public ownership, the Group is unable to hold more than 50% of the share capital. However, the Group considers that it exercises *de facto* control as it holds the majority of the voting rights exercised at shareholders' meetings due to the widely dispersed shareholding structure and the absence of evidence of the minority shareholders acting in concert.

## 2.3 Main subsidiaries with non-controlling interests

The following table shows the subsidiaries with non-controlling interests that are deemed to be material, the respective contributions to equity and to net income at December 31, 2023 and December 31, 2022, as well as the dividends paid to non-controlling interests:

Company name	Activity	Percentage interest of non-controlling interests		Net income/(loss) of non-controlling interests		Equity of non-controlling interests		Dividends paid to non-controlling interests	
		Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
<i>In millions of euros</i>									
GRTgaz Group (France Infrastructures, France)	Regulated gas transportation activities and management of LNG terminals	39.2	39.2	158	190	1,611	1,614	194	168
ENGIE Energía Chile Group (Latin America, Chile) <sup>(1)</sup>	Electricity distribution and generation - thermal power plants	40.0	40.0	(147)	(158)	504	680	-	-
ENGIE Romania Group (Rest of Europe, Romania) <sup>(2)</sup>	Distribution of natural gas, Energy sales	49.0	49.0	70	31	671	607	-	-
ENGIE Brasil Energia Group (Latin America, Brazil) <sup>(1)</sup>	Electricity distribution and generation	31.3	31.3	145	116	569	296	58	112
ENGIE Energía Perú (Latin America, Peru) <sup>(1)</sup>	Electricity distribution and generation - thermal and hydroelectric power plants	38.2	38.2	5	21	412	433	12	12
Other subsidiaries with non-controlling interests <sup>(3)</sup>				464	(27)	1,900	1,401	258	190
<b>TOTAL</b>				<b>695</b>	<b>173</b>	<b>5,667</b>	<b>5,032</b>	<b>522</b>	<b>482</b>

(1) ENGIE Energía Chile, ENGIE Brasil Energia and ENGIE Energía Perú are listed in their respective countries.

(2) On February 20, 2024, ENGIE finalized the acquisition of an additional 12% stake in ENGIE Romania.

(3) The net income/(loss) of other non-controlling interests is mainly impacted by the net income of the operating MtMs for an amount of €386 million in 2023 and a net loss of €158 million in 2022.

### 2.3.1 Condensed financial information on main subsidiaries with non-controlling interests

The condensed financial information concerning these subsidiaries presented in the table below is based on a 100% interest and is shown before intragroup eliminations.

In millions of euros	GRTgaz Group		ENGIE Energía Chile Group		ENGIE Romania Group <sup>(1)</sup>	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
<b>Income statement</b>						
Revenues	2,623	2,535	1,732	1,648	2,111	2,819
Net income/(loss)	403	485	(367)	(395)	142	63
Net income/(loss) Group share	245	295	(220)	(237)	72	32
Other comprehensive income/(loss) – Group share	56	54	(43)	85	(7)	(15)
<b>TOTAL COMPREHENSIVE INCOME/(LOSS) –</b>	<b>301</b>	<b>349</b>	<b>(264)</b>	<b>(152)</b>	<b>65</b>	<b>17</b>
<b>Statement of financial position</b>						
Current assets	1,189	1,319	1,170	1,108	796	1,091
Non-current assets	9,780	9,961	3,058	3,210	1,062	975
Current liabilities	(1,325)	(1,360)	(655)	(540)	(398)	(753)
Non-current liabilities	(5,532)	(5,803)	(2,325)	(2,091)	(102)	(86)
<b>TOTAL EQUITY</b>	<b>4,112</b>	<b>4,116</b>	<b>1,247</b>	<b>1,688</b>	<b>1,358</b>	<b>1,227</b>
<b>TOTAL EQUITY OF NON-CONTROLLING</b>	<b>1,611</b>	<b>1,614</b>	<b>504</b>	<b>680</b>	<b>671</b>	<b>607</b>
<b>Statement of cash flows</b>						
Cash flow from operating activities	1,090	1,117	482	(320)	412	(365)
Cash flow from (used in) investing activities	(486)	(450)	(424)	(384)	(148)	(121)
Cash flow from (used in) financing activities	(616)	(663)	86	635	(254)	317
<b>TOTAL CASH FLOW FOR THE PERIOD <sup>(2)</sup></b>	<b>(13)</b>	<b>4</b>	<b>144</b>	<b>(68)</b>	<b>11</b>	<b>(169)</b>

(1) On February 20, 2024, ENGIE finalized the acquisition of an additional 12% stake in ENGIE Romania.

(2) Excluding effects of changes in exchange rates and other.

In millions of euros	ENGIE Brasil Energia Group		ENGIE Energía Perú	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
<b>Income statement</b>				
Revenues	1,979	2,164	704	525
Net income/(loss)	434	370	12	56
Net income/(loss) Group share	288	254	8	34
Other comprehensive income/(loss) – Group share	(73)	72	(24)	51
<b>TOTAL COMPREHENSIVE INCOME/(LOSS) – GROUP SHARE</b>	<b>216</b>	<b>326</b>	<b>(17)</b>	<b>85</b>
<b>Statement of financial position</b>				
Current assets	1,691	1,322	543	384
Non-current assets	5,571	4,731	1,778	1,923
Current liabilities	(1,081)	(1,019)	(372)	(257)
Non-current liabilities	(4,875)	(4,213)	(870)	(915)
<b>TOTAL EQUITY</b>	<b>1,306</b>	<b>822</b>	<b>1,079</b>	<b>1,135</b>
<b>TOTAL EQUITY OF NON-CONTROLLING INTERESTS</b>	<b>569</b>	<b>296</b>	<b>412</b>	<b>433</b>
<b>Statement of cash flows</b>				
Cash flow from operating activities	1,309	1,027	162	62
Cash flow from (used in) investing activities	(711)	(685)	(94)	(186)
Cash flow from (used in) financing activities	(39)	(1,010)	(72)	17
<b>TOTAL CASH FLOW FOR THE PERIOD <sup>(1)</sup></b>	<b>559</b>	<b>(668)</b>	<b>(4)</b>	<b>(107)</b>

(1) Excluding effects of changes in exchange rates and other.

## NOTE 3 INVESTMENTS IN EQUITY METHOD ENTITIES

### Accounting standards

The Group accounts for its investments in associates and joint ventures using the equity method. Under IFRS 11 – *Joint Arrangements*, a joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. An associate is an entity over which the Group has significant influence.

The respective contributions of associates and joint ventures in the statement of financial position, the income statement and the statement of comprehensive income at December 31, 2023 and December 31, 2022 are as follows:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
<b>Statement of financial position</b>		
Investments in associates	4,259	4,187
Investments in joint ventures	4,954	5,092
<b>INVESTMENTS IN EQUITY METHOD ENTITIES</b>	<b>9,213</b>	<b>9,279</b>
<b>Income statement</b>		
Share in net income/(loss) of associates	486	400
Share in net income/(loss) of joint ventures	580	659
<b>SHARE IN NET INCOME/(LOSS) OF EQUITY METHOD ENTITIES</b>	<b>1,066</b>	<b>1,059</b>
<b>Statement of comprehensive income</b>		
Share of associates in "Other comprehensive income/(loss)"	11	510
Share of joint ventures in "Other comprehensive income/(loss)"	26	366
<b>SHARE OF EQUITY METHOD ENTITIES IN "OTHER COMPREHENSIVE INCOME/(LOSS)"</b>	<b>37</b>	<b>876</b>

### Significant judgments

The Group primarily considers the following information and criteria in determining whether it has joint control or significant influence over an entity:

- governance arrangements: whether the Group is represented in the governing bodies, majority rules and veto rights;
- the nature of substantive or protective rights granted to shareholders, relating to the entity's relevant activities. This can be difficult to determine in the case of "project management" or "one-asset" entities, as certain decisions concerning the relevant activities are made upon the creation of the joint arrangement and remain valid throughout the project. Accordingly, the analysis of rights relates to the relevant residual activities of the entity (those that significantly affect the variable returns of the entity);
- deadlock resolution mechanisms;
- whether the Group is exposed, or has rights, to variable returns from its involvement with the entity. This can also involve analyzing the Group's contractual relations with the entity, in particular the conditions in which these contracts are entered into, their duration as well as the management of conflicts of interest that may arise when the entity's governing body casts votes.

The Group exercised its judgment regarding the following entities and sub-groups:

### Project management entities in the Middle East and in Africa

The significant judgments made in determining the consolidation method to be applied to these project management entities related to the risks and rewards relating to contracts between ENGIE and the entity concerned, as well as an analysis of the residual relevant activities over which the entity retains control after its creation. The Group considers that it exercises significant influence or joint control over these entities, since the decisions taken throughout the term of the project about the relevant activities such as refinancing, or the renewal or amendment of significant contracts (sales, purchases, operating and maintenance services) require, depending on the case, the unanimous consent of two or more parties sharing control.

### Joint ventures in which the Group holds an interest of more than 50%

#### Tihama (60%)

ENGIE holds a 60% stake in the Tihama cogeneration plant in Saudi Arabia and its partner Saudi Oger holds 40%. The Group considers that it has joint control over Tihama since decisions about its relevant activities, including for example the approval of the budget and amendments to major contracts, etc., require the unanimous consent of the parties sharing control.

#### Transportadora Asociada de Gás S.A. (“TAG” - Latin America): 65.0% holding interest representing a net interest in TAG of 54.8% <sup>(1)</sup>

The Group exercises joint control over TAG since decisions about its relevant activities, including, for example, the preparation of the budget and medium-term plan, investments, operations and maintenance, etc., are taken by a majority vote requiring the agreement of ENGIE and *Caisse de dépôt et placement du Québec* (CDPQ).

### Joint control – difference between joint ventures and joint operations

Classifying a joint arrangement requires the Group to use its judgment to determine whether the entity in question is a joint venture or a joint operation. IFRS 11 requires an analysis of “other facts and circumstances” when determining the classification of jointly controlled entities.

The IFRS Interpretations Committee (IFRS IC) (November 2014) decided that for an entity to be classified as a joint operation, other facts and circumstances must give rise to direct enforceable rights to the assets, and obligations for the liabilities, of the joint arrangement.

In view of this position and its application to our analyses, the Group has no material joint operations at December 31, 2023.

## 3.1 Investments in associates

### 3.1.1 Contribution of material associates and of associates that do not have a material impact on the Group’s financial statements taken individually

The table below shows the contribution of each material associate along with the aggregate contribution of associates deemed not material taken individually, in the consolidated statement of financial position, income statement, statement of comprehensive income, and the “Dividends received from equity method entities” line of the statement of cash flows.

(1) In January 2024, the Group completed the sale of a 15% stake in TAG to CDPQ (current partner). On completion of this transaction the Group no longer holds any potential voting rights. The Group’s holding in TAG amounts to 50%, resulting in a net interest of 44.5% (the impact of this partial disposal on net financial debt 2024 amounts to €0.5 billion).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

NOTE 3 INVESTMENTS IN EQUITY METHOD ENTITIES

The Group used qualitative and quantitative criteria to determine material associates. These criteria include the contribution to the consolidated line items “Share in net income/(loss) of associates” and “Investments in associates”, the total assets of associates in Group share, and associates carrying major projects in the study or construction phase for which the related investment commitments are material.

Company name	Activity	Capacity	Consolidation percentage of investments in associates		Carrying amount of investments in associates		Share in net income/(loss) of associates		Other comprehensive income/(loss) of associates		Dividends received from associates	
			Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
<i>In millions of euros</i>												
Project management entities in the Middle East (Middle-East, Asia & Africa, Saudi Arabia, Bahrain, Qatar, United Arab Emirates, Oman, Kuwait) <sup>(1)</sup>	Gas-fired power plants and seawater desalination facilities		-	-	1,346	1,378	176	181	24	411	143	145
Movhera	Hydro power plant	1 688 MW	40.00	40.00	556	521	31	(13)	11	41	8	-
Energia Sustentável do Brasil (Brazil)	Hydro power plant	3 750 MW	40.00	40.00	596	567	10	(3)	-	-	-	-
GASAG (Germany)	Gas and heat networks		31.57	31.58	255	279	26	26	(36)	(62)	15	17
Eolia Renovables	Wind power plant	943 MW	40.00	40.00	343	359	14	33	(3)	2	28	-
Other investments in associates that are not material taken individually					1,163	1,082	227	176	15	118	123	109
<b>INVESTMENTS IN ASSOCIATES</b>					<b>4,259</b>	<b>4,187</b>	<b>486</b>	<b>400</b>	<b>11</b>	<b>510</b>	<b>316</b>	<b>271</b>

(1) Investments in associates operating gas-fired power plants and seawater desalination facilities in the Arabian Peninsula have been grouped together under “Project management entities in the Middle East”. This mainly includes around 40 associates operating thermal power plants with a total installed capacity of 26,388 MW (at 100%).

These associates have fairly similar business models and joint arrangements: the project management entities selected as a result of a competitive bidding process develop, build and operate power generation plants and seawater desalination facilities. The entire output of these facilities is sold to government-owned companies under power and water purchase agreements, over periods generally spanning 20 to 30 years.

In accordance with their contractual arrangements, the corresponding plants are recognized in accordance with IFRIC 12, IFRS 16 or IAS 16 as property, plant and equipment or as financial receivables. The shareholding structure of these entities systematically includes a government-owned company based in the same country as the project management entity. The Group’s percentage interest and percentage voting rights in each of these entities varies between 20% and 50%.

The share in net income/(loss) of associates includes a net non-recurring income of €18 million in 2023 (compared to a net non-recurring loss of €18 million in 2022), mainly including changes in the fair value of derivative instruments, impairment losses and disposal gains and losses, net of tax (see Note 5.3 “Net recurring income Group share (NriGs)”).

### 3.1.2 Financial information regarding material associates

The tables below provide condensed financial information for the Group's main associates. The amounts shown have been determined in accordance with IFRS, before the elimination of intragroup transactions and after (i) adjustments made in line with Group accounting policies and (ii) fair value measurements of the assets and liabilities of the associate performed at the acquisition date at the level of ENGIE, as required by IAS 28. All amounts are presented based on a 100% interest with the exception of "Total equity attributable to ENGIE".

<i>In millions of euros</i>	Revenues	Net income/ (loss)	Other comprehensive income/ (loss)	Total comprehensive income/ (loss)	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Total equity	Consolidation % of Group	Total equity attributable to ENGIE
<b>AT DECEMBER 31, 2023</b>											
Project management entities in the Middle East	4,886	714	88	802	2,635	18,229	2,856	12,785	5,223	-	1,346
Energia Sustentável do Brasil	625	24	-	24	286	3,276	2,077	(5)	1,489	40.00	596
Movhera	434	78	28	106	249	2,055	85	829	1,390	40.00	556
GASAG	2,283	84	(112)	(28)	1,640	2,058	2,643	247	809	31.57	255
Eolia Renovables	177	36	(7)	29	138	2,165	226	1,219	858	40.00	343
<b>AT DECEMBER 31, 2022</b>											
Project management entities in the Middle East	5,067	764	1,695	2,459	2,824	19,711	3,343	13,781	5,411	-	1,378
Energia Sustentável do Brasil	581	(7)	-	(7)	239	3,275	2,098	-	1,416	40.00	567
Movhera	384	(33)	103	70	147	2,124	699	269	1,303	40.00	521
GASAG	1,606	82	(196)	(114)	1,491	2,140	2,462	284	885	31.57	279
Eolia Renovables	216	82	4	86	297	2,097	340	1,155	900	40.00	359

### 3.1.3 Transactions between the Group and its associates

The data below set out the impact of transactions with associates on the Group's 2023 consolidated financial statements.

<i>In millions of euros</i>	Purchases of goods and services	Sales of goods and services	Net financial income (excluding dividends)	Trade and other receivables	Loans and receivables at amortized cost	Trade and other payables	Borrowings and debt
Project management entities in the Middle East	-	200	10	28	147	-	-
Contassur <sup>(1)</sup>	-	-	-	242	2	-	-
Energia Sustentável do Brasil	133	-	-	-	-	14	-
Movhera	-	42	11	7	119	1	3
Other	116	30	-	34	126	47	(36)
<b>AT DECEMBER 31, 2023</b>	<b>248</b>	<b>271</b>	<b>22</b>	<b>311</b>	<b>395</b>	<b>62</b>	<b>(33)</b>

(1) Contassur is a life insurance company accounted for using the equity method. Contassur offers insurance contracts, chiefly with pension funds that cover post-employment benefit obligations for Group employees and also employees of other companies mainly engaged in regulated activities in the electricity and gas sector in Belgium. Insurance contracts entered into by Contassur represent reimbursement rights recorded within "Other assets" in the statement of financial position. These reimbursement rights totaled €242 million at December 31, 2023 (€208 million at December 31, 2022).

## 3.2 Investments in joint ventures

### 3.2.1 Contribution of joint ventures to the Group

The table below shows the contribution of each material joint venture along with the aggregate contribution of joint ventures deemed not material taken individually to the consolidated statement of financial position, income statement, statement of comprehensive income, and the “Dividends received from equity method entities” line of the statement of cash flows.

The Group used qualitative and quantitative criteria to determine material joint ventures. These criteria include the contribution to the line items “Share in net income/(loss) of joint ventures” and “Investments in joint ventures”, the Group’s share in the total assets of joint ventures, and joint ventures conducting major projects in the study or construction phase for which the related investment commitments are material.

Company name	Activity	Capacity	Consolidation percentage of investments in joint ventures		Carrying amount of investments in joint ventures		Share in net income/(loss) of joint ventures		Other comprehensive income/(loss) of joint ventures		Dividends received from joint ventures	
			Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
<i>In millions of euros</i>												
Transportadora Asociada de Gás S.A. (TAG) (Brazil) <sup>(1)</sup>	Gas transmission network		65.00	65.00	1,059	1,129	368	267	29	153	387	184
National Central Cooling Company "Tabreed" (Middle-East, Asia & Africa, Abu Dhabi)	District cooling networks		40.00	40.00	872	874	34	53	35	-	39	18
EcoEléctrica (Puerto Rico)	Combined-cycle gas-fired power plant and LNG terminal	534 MW	50.00	50.00	293	314	52	42	-	-	61	60
Portfolio of power generation assets in Portugal	Electricity generation	2,396 MW	50.00	50.00	218	240	34	33	(2)	15	40	61
WSW Energie und Wasser AG (Germany)	Electricity distribution and generation		33.10	33.10	197	249	(33)	19	-	1	19	11
Iowa University partnership (United States)	Energy services		39.10	39.10	222	229	6	6	(1)	2	4	1
Ocean Winds	Electricity generation	1,462 MW	50.00	50.00	415	431	6	80	(47)	124	-	-
Georgetown University partnership (United States)	Energy services		50.00	50.00	200	203	7	6	-	3	-	-
Tihama Power Generation Co (Saudi Arabia)	Electricity generation	1,544 MW	60.00	60.00	91	94	24	21	(2)	5	21	29
Ohio State Energy Partners (United States)	Energy services		50.00	50.00	50	82	(25)	4	9	8	17	16
Megal GmbH (Germany)	Gas transmission network		49.00	49.00	55	61	-	2	-	-	6	9
Transmisora Eléctrica del Norte (Chile) <sup>(2)</sup>	Electricity transmission line		50.00	50.00	114	116	3	5	(3)	19	-	-
Other investments in joint ventures that are not material taken individually					1,169	1,071	104	120	7	37	121	53
<b>INVESTMENTS IN JOINT VENTURES</b>					<b>4,954</b>	<b>5,092</b>	<b>580</b>	<b>659</b>	<b>26</b>	<b>366</b>	<b>715</b>	<b>442</b>

(1) The Group’s interest in Transportadora Asociada de Gás S.A. (TAG) is 54.83%. In January 2024, the Group completed the sale of a 15% stake in TAG to CDPQ (current partner). On completion of this transaction, the Group’s holding stands at 50%, resulting in a net interest of 44.5% (the impact of this partial disposal on net financial debt in 2024 amounts to €0.5 billion).

(2) The Group’s interest in Transmisora Eléctrica del Norte is 30%.

The share in net income/(loss) of joint ventures includes a non-recurring loss of €39 million in 2023 (non-recurring gain of €1 million in 2022), resulting chiefly from changes in the fair value of derivatives, impairment losses and disposal gains and losses, net of tax (see Note 5.3 "Net recurring income Group share (NriGs)").

### 3.2.2 Financial information regarding material joint ventures

The amounts shown have been determined in accordance with IFRS before the elimination of intragroup items and after (i) adjustments made in line with Group accounting policies and (ii) fair value measurements of the assets and liabilities of the joint venture performed at the date of acquisition at the level of ENGIE, as required by IAS 28. All amounts are presented based on a 100% interest with the exception of "Total equity attributable to ENGIE" in the statement of financial position.

#### 3.2.2.1 Information on the income statement and statement of comprehensive income

<i>In millions of euros</i>	Revenues	Depreciation and amortization of intangible assets and property, plant and equipment	Net financial income/(loss)	Income tax benefit/(expense)	Net income/(loss)	Other comprehensive income/(loss)	Total comprehensive income/(loss)
<b>AT DECEMBER 31, 2023</b>							
Transportadora Asociada de Gás S.A. (TAG)	1,672	(234)	(308)	(295)	566	45	610
National Central Cooling Company "Tabreed"	-	(8)	(5)	39	84	89	173
EcoEléctrica	185	(31)	2	(6)	104	-	104
Portfolio of power generation assets in Portugal	456	(48)	(19)	(28)	97	(7)	90
WSW Energie und Wasser AG	2,338	(19)	(4)	8	(118)	-	(118)
Iowa University partnership	89	-	(21)	-	15	5	20
Ocean Winds	39	(7)	124	(5)	13	(94)	(81)
Georgetown University	81	(2)	(21)	(1)	13	5	18
Tihama Power Generation Co	114	(5)	(8)	(6)	40	(4)	36
Ohio State Energy Partners	188	(1)	(66)	-	(50)	15	(35)
Megal GmbH	122	(70)	(4)	2	-	-	-
Transmisora Eléctrica del Norte	71	-	(32)	(5)	9	(4)	4
<b>AT DECEMBER 31, 2022</b>							
Transportadora Asociada de Gás S.A. (TAG)	1,549	(292)	(386)	(215)	411	235	647
National Central Cooling Company "Tabreed"	167	-	(35)	-	133	-	133
EcoEléctrica	166	(32)	1	(4)	85	-	85
Portfolio of power generation assets in Portugal	512	(50)	(14)	(27)	74	48	122
WSW Energie und Wasser AG	1,213	(14)	-	(28)	50	3	53
Iowa University partnership	87	-	(21)	-	16	6	22
Ocean Winds	40	(9)	(23)	(1)	160	247	407
Georgetown University	60	(1)	(22)	-	12	5	17
Tihama Power Generation Co	119	(6)	(9)	(6)	35	9	45
Ohio State Energy Partners	180	(1)	(65)	(2)	7	15	22
Megal GmbH	122	(67)	(4)	1	5	-	5
Transmisora Eléctrica del Norte	70	-	(27)	(7)	13	19	32

### 3.2.2.2 Information on the statement of financial position

<i>In millions of euros</i>	Cash and cash equivalents	Other current assets	Non-current assets	Short-term borrowings	Other current liabilities	Long-term borrowings	Other non-current liabilities	Total equity	Consolidation % of Group	Total equity attributable to ENGIE
<b>AT DECEMBER 31,</b>										
Transportadora Asociada de Gas S.A. (TAG)	269	479	6,119	569	299	2,672	1,699	1,629	65.00	1,059
National Central Cooling Company "Tabreed"	450	254	3,713	-	233	1,737	94	2,352	40.00	872
EcoEléctrica	4	76	543	3	17	-	17	587	50.00	293
Portfolio of power generation assets in Portugal	285	403	550	101	236	372	51	479	50.00	218
WSW Energie und	68	422	878	211	277	222	96	562	33.10	197
Iowa University	1	17	1,146	4	7	586	-	568	39.10	222
Ocean Winds	313	-	3,786	1,670	514	773	314	830	50.00	415
Georgetown University	-	6	964	-	-	569	2	399	50.00	200
Tihama Power	54	62	206	72	42	46	11	152	60.00	91
Ohio State Energy	12	71	1,452	-	64	1,353	19	99	50.00	50
Megal GmbH	48	15	644	170	39	341	46	112	49.00	55
Transmisora Eléctrica del Norte	75	12	625	36	7	585	-	83	50.00	42
<b>AT DECEMBER 31,</b>										
Transportadora Asociada de Gas S.A. (TAG)	124	367	6,216	668	71	2,771	1,460	1,737	65.00	1,129
National Central Cooling Company "Tabreed"	402	150	2,631	-	194	805	-	2,184	40.00	874
EcoEléctrica	6	79	580	3	15	-	18	629	50.00	314
Portfolio of power generation assets in Portugal	247	514	733	99	278	500	60	557	50.00	240
WSW Energie und	82	518	950	263	260	147	150	731	33.10	249
Iowa University	2	17	1,162	7	7	581	-	586	39.10	229
Ocean Winds	337	-	2,425	1,149	189	137	424	863	50.00	431
Georgetown University	5	3	954	-	-	555	3	404	50.00	203
Tihama Power	49	145	221	78	51	119	11	156	60.00	94
Ohio State Energy	14	65	1,441	-	10	1,331	17	162	50.00	82
Megal GmbH	18	14	696	-	44	511	49	125	49.00	61
Transmisora Eléctrica del Norte	41	34	770	35	3	574	-	233	50.00	116

### 3.2.3 Transactions between the Group and its joint ventures

The data below set out the impact of transactions with joint ventures on the Group's 2023 consolidated financial statements.

<i>In millions of euros</i>	Purchases of goods and services	Sales of goods and services	Net financial income (excluding dividends)	Trade and other receivables	Loans and receivables at amortized cost	Trade and other payables	Borrowings and debt
EcoEléctrica	-	-	-	-	-	-	22
WSW Energie und Wasser AG	(3)	17	-	3	-	-	-
Megal GmbH	65	-	-	-	-	6	-
Futures Energies Investissements Holding	69	25	11	4	182	8	-
Ocean Winds	-	-	28	3	535	-	-
Other	96	140	10	55	141	11	7
<b>AT DECEMBER 31, 2023</b>	<b>226</b>	<b>182</b>	<b>48</b>	<b>65</b>	<b>857</b>	<b>27</b>	<b>29</b>

## 3.3 Other information on investments accounted for using the equity method

### 3.3.1 Unrecognized share of losses of associates and joint ventures

Cumulative unrecognized losses of associates (corresponding to the cumulative amount of losses exceeding the carrying amount of investments in the associates concerned) including other comprehensive income/(loss), amounted to €37 million in 2023 (versus €6 million in 2022).

These unrecognized losses correspond to the negative fair value of derivative instruments designated as interest rate and commodity hedges ("Other comprehensive income/(loss)") contracted by associates in the Middle-East, Africa and Asia in connection with the financing of construction projects for power generation plants.

### 3.3.2 Commitments and guarantees given by the Group in respect of equity method entities

At December 31, 2023, the main commitments and guarantees given by the Group in respect of equity method entities concern:

- Energia Sustentável do Brasil ("Jirau"), for an aggregate amount of BRL 4,008 million (€742 million). At December 31, 2023, the loans granted by Banco Nacional de Desenvolvimento Econômico e Social, the Brazilian Development Bank, to Energia Sustentável do Brasil amounted to BRL 10,021 million (€1,855 million). Each partner stands as guarantor for this debt to the extent of its ownership interest in the consortium;
- TAG, mainly for bank guarantees for an amount of €143 million;
- The project management entities for an aggregate amount of €1,695 million. Commitments and guarantees given by the Group in respect of these project management entities chiefly correspond to:
  - equity contribution commitments for projects in the construction phase for an amount of € 1,088 million,
  - letters of credit to guarantee debt service reserve accounts for an aggregate amount of €167 million. The project financing set up in certain entities can require those entities to maintain a certain level of cash within the company (usually enough to service its debt for six months). This is particularly the case when the financing is without recourse. However, this level of cash may be replaced by letters of credit,
  - collateral given to lenders in the form of pledged shares in the project management entities, for an aggregate amount of €270 million,
  - performance bonds and other guarantees for an amount of €135 million.

## NOTE 4 MAIN CHANGES IN GROUP STRUCTURE

### Accounting standards

In accordance with IFRS 5 – *Non-Current Assets Held for Sale and Discontinued Operations*, assets or groups of assets held for sale are presented separately on the face of the statement of financial position and are measured and accounted for at the lower of their carrying amount and fair value less costs to sell.

An asset is classified as “held for sale” when its sale is highly probable within twelve months from the date of classification, when it is available for immediate sale under its present condition and when management is committed to a plan to sell the asset and an active program to locate a buyer and complete the plan has been initiated. To assess whether a sale is highly probable, the Group takes into consideration among other things indications of interest and offers received from potential buyers as well as specific execution risks attached to certain transactions.

If an asset classified as “held for sale” no longer meets the above conditions it will be reclassified in accordance with the standard.

Furthermore, assets or groups of assets are presented as discontinued operations in the Group’s consolidated financial statements when they are classified as “held for sale” and represent a separate major line of business under IFRS 5.

### 4.1 Disposals carried out in 2023

The table below shows the impact of the main disposals and sale agreements of 2023 on the Group’s net financial debt, excluding partial disposals with respect to DBSO <sup>(1)</sup> activities:

<i>In millions of euros</i>	Disposal price	Reduction in net debt
Disposal of a thermal plant - Brazil	75	-
Other disposals that are not material taken individually	192	246
<b>TOTAL</b>	<b>267</b>	<b>246</b>

On May 31, 2023, ENGIE finalized the sale of its entire stake in the Pampa Sul thermal power plant to Grafito Fundo de Investimento em Participações Infraestrutura and Perfin Space X Fundo de Investimento em Participações em Infraestrutura.

Given the classification of this investment within “Assets held for sale” in 2022 and the deferral to 2025 of the payment of the contractual sale price, this transaction has no material impact on the Group’s net financial debt at December 31, 2023. The disposal loss before tax amounted to €47 million in 2023.

No Group assets are classified within “Assets held for sale” at December 31, 2023.

(1) *Develop, Build, Share and Operate*, a model used in renewable energies based on continuous rotation of capital employed.

## 4.2 Acquisitions carried out in 2023

In total, acquisitions carried out in 2023 (including financial investments in entities accounted for under the equity method) had an impact of €3,348 million on net financial debt. The main acquisitions carried out in 2023 are as follows:

- in October 2023, ENGIE finalized the acquisition of 100% of Broad Reach Power, a Houston-based company specialized in battery storage, from private equity funds EnCap and Apollo. The transaction involves 350 MW of operating assets, 880 MW of under-construction assets with a commissioning expected before the end of 2024, 1.7 GW of advanced stage projects and a significant pipeline of early stage projects. The projects are located in Texas, California and the central states of the United States. This investment is fully consolidated. This transaction had an impact of €1.4 billion on the Group's net financial debt (of which €0.1 billion in January 2024). The Group carried out a preliminary purchase price allocation, which will be finalized in the first half of 2024;
- in September 2023, ENGIE purchased an additional stake in Kathu Solar Park (RF) Proprietary Trading from Lereko Metier REIPPP Fund Trust, increasing its holding from 48.5% to 57.725%. Following this transaction, Kathu Solar Park (RF) Proprietary Trading is now fully consolidated by ENGIE (previously accounted for under the equity method). This transaction had an impact of approximately €0.6 billion on the Group's net financial debt, taking into account the consolidation of external debt;
- in December 2023, ENGIE and Meridiam purchased from ACTIS the full scope of BTE Renewables, a developer, owner and operator of renewable assets on the African continent, with an operating presence in South Africa and Kenya. The deal also included a carve-out of the Kenyan assets by ENGIE to Meridiam at closing. Following this transaction, BTE Renewables (South-African assets) has been fully consolidated by ENGIE. This transaction had an impact of approximately €0.4 billion on the Group's net financial debt;
- in December 2023, ENGIE finalized the acquisition of the minority stake (28%) held by Mitsui & Co, Ltd ("Mitsui") in International Power (Australia) Holdings Pty Limited ("IPAH"), a fully consolidated company in which the Group had a 72% stake. On completion of the transaction, the Group holds 100% of IPAH. The impact of this transaction on the Group's net financial debt amounted to around 0.2 billion euros;
- in September 2023, ENGIE also purchased the biomethane producer Ixora Energy Ltd. This investment is fully consolidated. This transaction had an impact of approximately €0.1 billion on the Group's net financial debt.

## NOTE 5 FINANCIAL INDICATORS USED IN FINANCIAL COMMUNICATION

The purpose of this note is to present the main non-GAAP financial indicators used by the Group as well as their reconciliation with the indicators of the IFRS consolidated financial statements.

### 5.1 EBITDA

The reconciliation between EBITDA and current operating income including operating MtM and share in net income of equity method entities is as follows:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
<b>Current operating income including operating MtM and share in net income of equity method entities</b>	<b>12,493</b>	<b>5,367</b>
Mark-to-market on commodity contracts other than trading instruments	(2,430)	3,661
Net depreciation and amortization/Other	4,886	4,576
Share-based payments (IFRS 2)	47	92
Non-recurring share in net income of equity method entities	22	17
<b>EBITDA</b>	<b>15,017</b>	<b>13,713</b>
Nuclear	1,285	1,510
<b>EBITDA excluding Nuclear</b>	<b>13,732</b>	<b>12,204</b>

### 5.2 EBIT

The reconciliation between EBIT and current operating income including operating MtM and share in net income of equity method entities is as follows:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
<b>Current operating income including operating MtM and share in net income of equity method entities</b>	<b>12,493</b>	<b>5,367</b>
Mark-to-market on commodity contracts other than trading instruments	(2,430)	3,661
Non-recurring share in net income of equity method entities	22	17
<b>EBIT</b>	<b>10,084</b>	<b>9,045</b>
Nuclear	605	1,026
<b>EBIT excluding Nuclear</b>	<b>9,479</b>	<b>8,019</b>

## 5.3 Net recurring income Group share (NriGs)

Net recurring income Group share is a financial indicator used by the Group in its financial reporting to present net income Group share adjusted for unusual, abnormal or non-recurring items.

The reconciliation of net income/(loss) with net recurring income Group share is as follows:

<i>In millions of euros</i>	Notes	Dec. 31, 2023	Dec. 31, 2022
<b>NET INCOME/(LOSS) GROUP SHARE</b>		<b>2,208</b>	<b>216</b>
<b>NET INCOME/(LOSS) RELATING TO DISCONTINUED OPERATIONS, GROUP SHARE</b>		-	<b>2,182</b>
<b>NET INCOME/(LOSS) RELATING TO CONTINUING OPERATIONS, GROUP SHARE</b>		<b>2,208</b>	<b>(1,965)</b>
Net income attributable to non-controlling interests relating to continuing operations		695	172
<b>NET INCOME/(LOSS) RELATING TO CONTINUING OPERATIONS</b>		<b>2,903</b>	<b>(1,793)</b>
<b>Reconciliation items between "Current operating income including operating MtM and share in net income of equity method entities" and "Net income/(loss) from operating activities"</b>		<b>6,395</b>	<b>4,241</b>
<i>Impairment losses</i>	9.1	1,318	2,774
<i>Restructuring costs</i>	9.2	47	230
<i>Changes in scope of consolidation</i>	9.3	85	(91)
<i>Other non-recurring items</i>	9.4	4,945	1,328
<b>Other adjusted items</b>		<b>(3,092)</b>	<b>3,389</b>
<i>Mark-to-market on commodity contracts other than trading instruments</i>	8	(2,430)	3,661
<i>Ineffective portion of derivatives qualified as fair value hedges</i>	10	-	(7)
<i>Gains/(losses) on debt restructuring and early unwinding of derivative financial instruments</i>	10	(8)	(46)
<i>Change in fair value of derivatives not qualified as hedges and ineffective portion of derivatives qualified as cash flow hedges</i>	10	13	(16)
<i>Non-recurring income/(loss) from debt instruments and equity instruments</i>	10	183	1,254
<i>Other adjusted tax impacts</i>		(872)	(1,474)
<i>Non-recurring income/(loss) included in share in net income of equity method entities</i>		22	17
<b>NET RECURRING INCOME/(LOSS) RELATING TO CONTINUING OPERATIONS</b>		<b>6,206</b>	<b>5,836</b>
Net recurring income/(loss) attributable to non-controlling interests		839	614
<b>NET RECURRING INCOME/(LOSS) RELATING TO CONTINUING OPERATIONS, GROUP SHARE</b>		<b>5,366</b>	<b>5,223</b>
Net recurring income/(loss) relating to discontinued operations, Group share		-	287
<b>NET RECURRING INCOME/(LOSS) GROUP SHARE</b>		<b>5,366</b>	<b>5,510</b>

## 5.4 Industrial capital employed

The reconciliation of industrial capital employed with items in the statement of financial position is as follows:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022	
(+)	Property, plant and equipment and intangible assets, net	66,399	62,853
(+)	Goodwill	12,864	12,854
(-)	<i>Goodwill Gaz de France - SUEZ and International Power</i> <sup>(1)</sup>	(7,229)	(7,241)
(+)	IFRS 16 and IFRIC 12 receivables	3,348	2,521
(+)	Investments in equity method entities	9,213	9,279
(-)	<i>Goodwill arising on the International Power combination</i> <sup>(1)</sup>	(39)	(40)
(+)	Financial assets covering nuclear provisions <sup>(2)</sup>	9,984	6,626
(+)	Initial Margins <sup>(2)</sup>	1,276	1,741
(+)	Trade and other receivables, net	20,092	31,310
(-)	<i>Margin calls</i> <sup>(1) (3)</sup>	(3,207)	(5,405)
(+)	Inventories	5,343	8,145
(+)	Assets from contracts with customers	9,531	12,584
(+)	Other current and non-current assets	14,414	19,060
(+)	Deferred tax	(3,658)	(4,379)
(+)	<i>Cancellation of deferred tax on other recyclable items</i> <sup>(1) (3)</sup>	(745)	(14)
(-)	Provisions	(32,593)	(27,027)
(+)	<i>Actuarial gains and losses in shareholders' equity (net of deferred tax)</i> <sup>(1)</sup>	1,500	1,058
(-)	Trade and other payables	(22,976)	(39,801)
(+)	<i>Margin calls</i> <sup>(1) (3)</sup>	3,269	6,351
(-)	Liabilities from contracts with customers	(4,053)	(3,412)
(-)	Other current and non-current liabilities	(21,777)	(27,279)
	<b>INDUSTRIAL CAPITAL EMPLOYED</b>	<b>60,957</b>	<b>59,782</b>

(1) For the purpose of calculating industrial capital employed, the amounts recorded in respect of these items have been adjusted from those appearing in the statement of financial position.

(2) The Group changed the definition of industrial capital employed from January 1, 2023 to include financial assets hedging nuclear provisions and Initial Margins required by certain market activities.

(3) Margin calls included in "Trade and other receivables, net" and "Trade and other payables" correspond to advances received or paid as part of collateralization agreements set up by the Group to manage counterparty risk on commodity transactions.

## 5.5 Cash flow from operations (CFFO)

The reconciliation of cash flow from operations (CFFO) with items in the statement of cash flows is as follows:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022	
	Cash generated from operations before income tax and working capital requirements	14,407	12,415
	Tax paid	(1,687)	(1,504)
	Change in working capital requirements	397	(2,424)
	Interest received on financial assets	118	(37)
	Dividends received on equity investments	9	18
	Interest paid	(1,058)	(822)
	Interest received on cash and cash equivalents	569	194
	Nuclear - expenditure on power plant dismantling and reprocessing, fuel storage	321	163
	Change in financial assets held for investment or financing purposes	15	188
	(+) Change in financial assets held for investment or financing purposes recorded in the statement of financial position and other	(15)	(176)
	<b>CASH FLOW FROM OPERATIONS (CFFO)</b>	<b>13,075</b>	<b>8,016</b>

## 5.6 Capital expenditure (CAPEX) and growth CAPEX

The reconciliation of capital expenditure (CAPEX) with items in the statement of cash flows is as follows:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
Acquisitions of property, plant and equipment and intangible assets	7,328	6,379
Acquisitions of controlling interests in entities, net of cash and cash equivalents acquired	1,392	289
(+) <i>Cash and cash equivalents acquired</i>	204	14
Acquisitions of investments in equity method entities and joint operations	237	407
Acquisitions of equity and debt instruments	1,675	(175)
Change in loans and receivables originated by the Group and other	1,585	2,877
(+) <i>Other</i>	-	(10)
(-) Disposal impacts relating to DBSO <sup>(1)</sup> activities	(62)	(472)
(-) Financial investments Synatom / Disposal of financial assets Synatom	(3,082)	(1,822)
(+) Change in scope - Acquisitions	1,338	371
<b>TOTAL CAPITAL EXPENDITURE (CAPEX)</b>	<b>10,614</b>	<b>7,858</b>
(-) Maintenance CAPEX	(2,524)	(2,373)
<b>TOTAL GROWTH CAPEX</b>	<b>8,090</b>	<b>5,485</b>

(1) *Develop, Build, Share & Operate; including Tax equity financing received (See Note 22 "Working capital requirements, inventories, other assets and other liabilities").*

## 5.7 Net financial debt

The reconciliation of net financial debt with items in the statement of financial position is as follows:

<i>In millions of euros</i>	Notes	Dec. 31, 2023	Dec. 31, 2022
(+) Long-term borrowings	14.2 & 14.3	37,920	28,083
(+) Short-term borrowings	14.2 & 14.3	9,367	12,508
(+) Derivative instruments - carried in liabilities	14.4	24,561	51,276
(-) <i>Derivative instruments hedging commodities and other items</i>		(23,973)	(50,542)
(-) Other financial assets	14.1	(16,987)	(12,992)
(+) <i>Loans and receivables at amortized cost not included in net financial debt</i>		8,891	6,720
(+) <i>Equity instruments at fair value</i>		2,124	1,495
(+) <i>Debt instruments at fair value not included in net financial debt</i>		4,558	3,394
(-) Cash and cash equivalents	14.1	(16,578)	(15,570)
(-) Derivative instruments - carried in assets	14.4	(21,245)	(48,386)
(+) <i>Derivative instruments hedging commodities and other items</i>		20,854	48,067
<b>NET FINANCIAL DEBT</b>		<b>29,493</b>	<b>24,054</b>

## 5.8 Economic net debt

Economic net debt is as follows:

<i>In millions of euros</i>	Notes	Dec. 31, 2023	Dec. 31, 2022
<b>NET FINANCIAL DEBT</b>	14.3	<b>29,493</b>	<b>24,054</b>
Provisions for back-end of the nuclear fuel cycle and dismantling of nuclear facilities	17	23,887	19,017
Other nuclear liabilities <sup>(1)</sup>	17	816	-
Provisions for dismantling of non-nuclear facilities	17	1,384	1,330
Post-employment benefits - Pensions	18	957	452
<i>(-) Infrastructures regulated companies</i>		253	272
Post-employment benefits - Reimbursement rights	18	(242)	(208)
Post-employment benefits - Other benefits	18	3,962	3,704
<i>(-) Infrastructures regulated companies</i>		(2,578)	(2,392)
Deferred tax assets for pensions and related obligations	11	(1,013)	(812)
<i>(-) Infrastructures regulated companies</i>		541	490
Plan assets relating to nuclear provisions, inventories of uranium and receivables of Electrabel towards EDF <sup>(1)</sup>	17 & 22	(10,944)	(7,098)
<b>ECONOMIC NET DEBT</b>		<b>46,517</b>	<b>38,808</b>

(1) Following the agreements with the Belgian government on the extension of the Tihange 3 and Doel 4 nuclear reactors and on all obligations related to nuclear waste, economic net debt now includes all existing nuclear liabilities, including payables and receivables previously recognized under working capital. The impact on the indicator at December 31, 2022 would have been an increase in economic net debt of around € 556 million.

## NOTE 6 SEGMENT INFORMATION

### 6.1 Operating segment and reportable segment

ENGIE is organized around:

- four Global Business Units (GBUs) representing the Group's four strategic activities: Renewables GBU, Networks GBU, Energy Solutions GBU, and FlexGen & Retail GBU;
- two operating entities: Nuclear and Global Energy Management & Sales ("GEMS");
- an Other group mainly comprising the Corporate functions and certain Holdings.

The reportable segments are identical to the operating segments and correspond to the activities of the GBUs.

- **Renewables:** comprises all centralized renewable energy generation activities, including financing, construction, operation and maintenance of renewable energy facilities, using various energy sources such as hydroelectric, onshore wind, photovoltaic solar, offshore wind, and battery storage combined with a renewable asset. The energy produced is fed into the grid and sold either on the open or regulated market or to third parties through electricity sale agreements.
- **Networks:** comprises the Group's electricity and gas infrastructure activities and projects. These activities include the management and development of (i) gas and electricity transportation networks and natural gas distribution networks in and outside of Europe, (ii) underground natural gas storage in Europe, and (iii) regasification infrastructure in France and Chile. Apart from the historical infrastructure management activities, its asset portfolio also contributes to energy decarbonization and network greening (gradual integration of green gas, hydrogen-based projects, etc.).
- **Energy Solutions:** encompasses the construction and management of decentralized energy networks to produce energy (heating and cooling networks, distributed power generation plants, distributed solar power parks, low-carbon mobility, low-carbon cities and public lighting, etc.) and related services (energy efficiency, technical maintenance, sustainable development consulting).
- **FlexGen:** includes activities to compensate for the intermittent nature of renewable energy by providing upstream flexibility (flexible thermal generation and electricity, pumping or battery storage) and downstream flexibility (shaving or shifting consumption for BtoC customers). They also provide solutions for decarbonizing industry with low-carbon hydrogen. The GBU plays a key role in the energy transition. It also includes the financing, construction and operation of desalination plants, whether or not coupled with power generation plants.
- **Retail:** encompasses all the Group's activities relating to the sale of gas and electricity to end customers, whether professional or individual. It also includes all the Group's activities in services for residential clients.
- **Nuclear:** encompasses all of the Group's nuclear activities, with seven reactors in Belgium (four in Doel and three in Tihange) among which five in operation and drawing rights in France.
- **Others:** encompasses the activities of GEMS as well as Corporate and holding companies. The GEMS operating entity is responsible, at the global level, for the supply of energy and the management of risk and optimization of assets on the markets. It sells energy to companies and offers energy management services and solutions to support the decarbonization of the Group and its customers.

## 6.2 Key indicators by reportable segment

### REVENUES

In millions of euros	Dec. 31, 2023			Dec. 31, 2022 <sup>(1)</sup>		
	External revenues	Intra-Group Revenues	Total	External revenues	Intra-Group Revenues	Total
Renewables	5,512	172	5,684	6,216	136	6,352
Networks	6,873	1,032	7,905	6,961	961	7,922
Energy Solutions	11,033	381	11,414	11,441	262	11,703
FlexGen	5,264	2,508	7,772	7,126	1,144	8,271
Retail	16,443	367	16,810	16,810	534	17,344
Nuclear	118	2,325	2,444	35	2,653	2,688
Others	37,322	6,808	44,129	45,277	2,007	47,283
Of which GEMS <sup>(2)</sup>	37,221	6,776	43,997	45,137	1,979	47,115
Elimination of internal transactions	-	(13,593)	(13,593)	-	(7,697)	(7,697)
<b>TOTAL REVENUES</b>	<b>82,565</b>	<b>-</b>	<b>82,565</b>	<b>93,865</b>	<b>-</b>	<b>93,865</b>

(1) Certain internal reclassifications, which have no impact on the total, have been made between the business lines at January 1, 2023. The main internal reclassifications concern the transfer of EV Box from Energy Solutions to Others.

(2) Of which a negative price effect of around €6.3 billion compared to 2022.

### EBITDA

In millions of euros	Dec. 31, 2023	Dec. 31, 2022 <sup>(1)</sup>
Renewables	2,665	2,202
Networks	4,151	4,212
Energy Solutions	868	985
FlexGen	1,929	2,235
Retail	821	259
Others	3,297	2,310
Of which GEMS	3,829	2,837
<b>TOTAL EBITDA excluding Nuclear</b>	<b>13,732</b>	<b>12,204</b>
Nuclear	1,285	1,510
<b>TOTAL EBITDA</b>	<b>15,017</b>	<b>13,713</b>

(1) Certain internal reclassifications, which have no impact on the total, have been made between the business lines at January 1, 2023. The main internal reclassifications concern the transfer of EV Box from Energy Solutions to Others.

### EBIT

In millions of euros	Dec. 31, 2023	Dec. 31, 2022 <sup>(1)</sup>
Renewables	2,005	1,627
Networks	2,265	2,371
Energy Solutions	386	523
FlexGen	1,513	1,768
Retail	569	(6)
Others	2,741	1,736
Of which GEMS	3,551	2,618
<b>TOTAL EBIT excluding Nuclear</b>	<b>9,479</b>	<b>8,019</b>
Nuclear	605	1,026
<b>TOTAL EBIT</b>	<b>10,084</b>	<b>9,045</b>

(1) Certain internal reclassifications, which have no impact on the total, have been made between the business lines at January 1, 2023. The main internal reclassifications concern the transfer of EV Box from Energy Solutions to Others.

## SHARE IN NET INCOME/(LOSS) OF EQUITY METHOD ENTITIES

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
Renewables	203	217
Networks	446	323
Energy Solutions	22	118
FlexGen	355	397
Retail	-	-
Nuclear	-	-
Others	40	4
<i>Of which GEMS</i>	32	(1)
<b>TOTAL SHARE IN NET INCOME/(LOSS) OF EQUITY METHOD ENTITIES</b>	<b>1,066</b>	<b>1,059</b>

Associates and joint ventures accounted for €486 million and €580 million respectively in the share of net income of equity method entities at December 31, 2023 (compared to €400 million and €659 million at December 31, 2022).

## INDUSTRIAL CAPITAL EMPLOYED

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
Renewables	20,001	16,588
Networks	25,198	25,221
Energy Solutions	7,593	7,575
FlexGen	9,289	8,091
Retail	390	1,023
Nuclear	(11,210)	(9,855)
Others	9,696	11,139
<i>Of which GEMS</i>	6,596	9,060
<b>TOTAL INDUSTRIAL CAPITAL EMPLOYED</b>	<b>60,957</b>	<b>59,782</b>

## CAPITAL EXPENDITURE

<i>In millions of euros</i>	Dec. 31, 2023	31 déc. 2022 <sup>(1)</sup>
Renewables	4,130	3,333
Networks	2,173	2,322
Energy Solutions	1,102	864
FlexGen	2,135	481
Retail	247	270
Nuclear	174	229
Others	652	360
<i>Of which GEMS</i>	182	149
<b>TOTAL CAPEX</b>	<b>10,614</b>	<b>7,858</b>

(1) Certain internal reclassifications, which have no impact on the total, have been made between the business lines at January 1, 2023. The main internal reclassifications concern the transfer of EV Box from Energy Solutions to Others.

## GROWTH CAPEX

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022 <sup>(1)</sup>
Renewables	3,966	3,202
Networks	839	1,087
Energy Solutions	897	694
FlexGen	1,843	220
Retail	160	173
Nuclear	19	1
Others	368	108
<i>Of which GEMS</i>	82	63
<b>TOTAL GROWTH CAPEX</b>	<b>8,091</b>	<b>5,485</b>

(1) Certain internal reclassifications, which have no impact on the total, have been made between the business lines at January 1, 2023. The main internal reclassifications concern the transfer of EV Box from Energy Solutions to Others.

## 6.3 Key indicators by geographic area

The amounts set out below are analyzed by:

- destination of products and services sold for revenues;
- geographic location of consolidated companies for industrial capital employed.

<i>In millions of euros</i>	Revenues		Industrial capital employed	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
France	36,676	34,248	32,802	33,912
Belgium	8,408	12,705	(9,259)	(7,575)
Other EU countries	18,303	22,687	9,713	9,261
Other European countries	4,480	4,202	1,991	1,610
North America	5,329	6,133	8,989	7,264
Asia, Middle East & Oceania	4,366	8,875	3,830	3,667
South America	4,715	4,778	11,212	11,095
Africa	289	237	1,679	548
<b>TOTAL</b>	<b>82,565</b>	<b>93,865</b>	<b>60,957</b>	<b>59,782</b>

Due to the variety of its businesses and their geographical location, the Group operates in a very diverse range of situations and for a variety of customer types (industry, local authorities and individual customers). Accordingly, no external customer represents individually 10% or more of the Group's consolidated revenues.

## NOTE 7 REVENUES

### 7.1 Revenues

#### Accounting standards

Revenues from contracts with customers concern revenues from contracts that fall within the scope of IFRS 15 – *Revenue from Contracts with Customers*. Revenues are recognized when the customer obtains control of goods or services promised in the contract, for the amount of consideration to which an entity expects to be entitled in exchange for said promised goods or services.

A contractual analysis of the Group's sale contracts has led to the application of the following revenue recognition principles:

- **Gas, electricity and other energies**  
Revenues from sales of gas, electricity and other energies are recognized upon delivery of the power to the retail, business or industrial customer.  
Power deliveries are monitored in real time or on a deferred basis for those customers whose energy consumption is metered during the accounting period, in which case the portion of not yet metered revenues "in the meter" is estimated on the closing date.
- **Gas, electrical and other energy infrastructures**  
Revenues derived by gas and electricity infrastructure operators upon providing transportation or distribution or storage capacities, are recognized on a straight-line basis over the contract term.  
In the countries where the Group acts as an energy provider (supplier) without being in charge of its distribution or transportation, mainly in France and Belgium, an analysis of the energy sales contracts and of the related regulatory framework is carried out to determine whether the distribution or transportation services invoiced to the customers have to be excluded from the revenues recognized under IFRS 15.  
Judgment may be exercised by the Group for this analysis in order to determine whether the energy provider acts as an agent or a principal for the gas or electricity distribution or transportation services re-invoiced to the customers. The main criteria used by the Group to exercise its judgment and conclude, in certain countries, that the energy provider acts as an agent of the infrastructure operator are as follows: who is primarily responsible for fulfillment of the distribution or transportation services? Does the energy provider have the ability to commit to capacity reservation contracts towards the infrastructure operator? To what extent does the energy provider have discretion in establishing the price for the distribution or transportation services?
- **Constructions, installations, Operations and Maintenance (O&M)**  
Construction and installation contracts mainly concern assets built on the premises of customers such as cogeneration units, heaters or other energy-efficiency assets. The related revenues are usually recognized according to the percentage of completion on the basis of the costs incurred where the contracts fall within the scope of IFRS 15.  
O&M contracts generally require the Group to perform services ensuring the availability of power generating facilities. These services are performed over time and the related revenues are recognized according to the percentage of completion on the basis of the costs incurred.

If it is not possible to conclude from the contractual analysis that the contract falls within the scope of IFRS 15, the revenues are accounted for as non-IFRS 15 revenues.

Revenues from other contracts, corresponding to revenues from operations that do not fall within the scope of IFRS 15, presented in the "Others" column include trading, lease and concession income, as well as any financial component of operating services, and the effects of the tariff shield mechanisms

NOTE 7 REVENUES

The table below shows a breakdown of revenues by type:

<i>In millions of euros</i>	Sales of gas	Sales of electricity and other energies	Sales of services linked to infrastructures	Constructions, installations, and O&M	Others	Dec. 31, 2023
Renewables	-	5,010	106	261	135	5,512
Networks	138	5	6,068	434	228	6,873
Energy Solutions	268	4,163	88	6,434	80	11,033
FlexGen	92	4,332	274	400	166	5,264
Retail	7,631	6,229	82	1,003	1,497	16,443
Nuclear	-	4	7	28	79	118
Others	13,943	19,619	246	142	3,372	37,322
<i>Of which GEMS</i>	13,943	19,619	241	46	3,372	37,221
<b>TOTAL REVENUES</b>	<b>22,072</b>	<b>39,362</b>	<b>6,872</b>	<b>8,703</b>	<b>5,557</b>	<b>82,565</b>

The significant change in natural gas and electricity prices has led some governments to introduce a “tariff shield” for natural gas and electricity, particularly in France and Romania.

The measures having the most significant impact on the Group's consolidated financial statements are those introduced by the French government for natural gas and electricity. The Finance Act for 2023 (Law no. 2022-1726 of December 30, 2022) extended and modified the tariff shield arrangements for gas (until June 30, 2023) and electricity (until January 31, 2024). The loss of revenue borne by ENGIE constitutes an expense attributable to public service obligations, and is subject to State-guaranteed compensation calculated in accordance with the application procedures published by the French Energy Regulatory Commission (*Commission de Régulation de l'Énergie*).

These effects are mainly included in the “Others” column (“Revenues excluding IFRS 15”) of the “Retail” business.

<i>In millions of euros</i>	Sales of gas	Sales of electricity and other energies	Sales of services linked to infrastructures	Constructions, installations, and O&M	Others	Dec. 31, 2022
Renewables	-	5,797	88	242	89	6,216
Networks	232	1	6,021	478	230	6,961
Energy Solutions	246	4,713	96	6,424	73	11,552
FlexGen	22	4,522	1,601	396	588	7,129
Retail	7,793	5,372	153	958	2,534	16,810
Nuclear	-	5	8	24	(3)	35
Others	21,405	19,595	170	70	3,923	45,163
<i>Of which GEMS</i>	21,405	19,595	170	45	3,923	45,137
<b>TOTAL REVENUES</b>	<b>29,697</b>	<b>40,004</b>	<b>8,135</b>	<b>8,593</b>	<b>7,435</b>	<b>93,865</b>

## 7.2 Trade and other receivables, assets and liabilities from contracts with customers

### Accounting standards

On initial recognition, trade and other receivables are recorded at their transaction price as defined in IFRS 15.

A contract asset is an entity's right to consideration in exchange for goods or services that have been transferred to a customer but for which payment is not yet due or is contingent on the satisfaction of a specific condition stipulated in the contract. When an amount becomes due, it is transferred to receivables.

A receivable is recorded when the entity has an unconditional right to consideration. A right to consideration is unconditional if only the passage of time is required before payment of that consideration.

A contract liability is an entity's obligation to transfer goods or services to a customer for which the entity has already received consideration from the customer. The liability is derecognized upon recognition of the corresponding revenue.

Trade and other receivables and assets from contracts with customers are tested for impairment in accordance with the provisions of IFRS 9 on expected credit losses.

The impairment model for financial assets is based on the expected credit loss model. To calculate expected losses, the Group uses a matrix for trade receivables and assets from contracts with customers, for which the change in credit risk is monitored on a portfolio basis. The change in credit risk of for large customers and other large counterparties is monitored on an individual basis.

See Note 15 "Risks arising from financial instruments" for the Group's assessment of counterparty risk.

### 7.2.1 Trade and other receivables and assets from contracts with customers

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
Trade and other receivables, net	20,092	31,310
<i>Of which IFRS 15</i>	8,083	7,587
<i>Of which non-IFRS15</i>	12,009	23,723
Assets from contracts with customers	9,531	12,584
<i>Accrued income and unbilled revenues</i>	6,989	9,513
<i>Energy in the meter <sup>(1)</sup></i>	2,542	3,071

(1) *Net of advance payments.*

In 2023, the most significant assets from contracts mainly concerned GEMS (€3,766 million), Energy Solutions (€2,516 million) and Retail (€1,922 million).

<i>In millions of euros</i>	Dec. 31, 2023			Dec. 31, 2022		
	Gross	Allowances and expected credit losses	Net	Gross	Allowances and expected credit losses	Net
Trade and other receivables, net	22,160	(2,068)	20,092	33,282	(1,973)	31,310
Assets from contracts with customers	9,558	(27)	9,531	12,632	(48)	12,584
<b>TOTAL</b>	<b>31,718</b>	<b>(2,095)</b>	<b>29,623</b>	<b>45,914</b>	<b>(2,020)</b>	<b>43,894</b>

### Gas and electricity in the meter

For customers whose energy consumption is metered during the accounting period, the gas supplied but not yet metered at the reporting date is estimated based on historical data, consumption statistics and estimated selling prices.

For sales on networks used by a large number of grid operators, the Group is allocated a certain volume of energy transiting through the networks by the grid managers. As the final allocations are sometimes only known several months down the line, revenue figures cannot be determined with absolute certainty. However, the Group has developed measuring and modeling tools allowing it to estimate revenues with a reasonable degree of accuracy and subsequently ensure that risks of error associated with estimating quantities sold and the related revenues can be considered as immaterial.

In France and Belgium, un-metered revenues (“gas in the meter”) are calculated using a direct method taking into account customers’ estimated consumption based on the last invoice or metering not yet billed. These estimates are in line with the volume of energy allocated by the grid managers over the same period. The average price is used to measure “gas in the meter” and takes account of the category of customer and the age of the delivered unbilled “gas in the meter”. The portion of unbilled revenues at the reporting date varies according to the assumptions about volume and average price.

“Electricity in the meter” is also determined using a direct allocation method similar to that used for gas, but taking into account specific factors related to electricity consumption. It is also measured on a customer-by-customer basis or by customer type.

Realized but not yet metered revenues (“un-metered revenues”) mainly related to France and Belgium for an amount of €5,279 million at December 31, 2023 (€5,883 million at December 31, 2022).

### 7.2.2 Liabilities from contracts with customers

<i>In millions of euros</i>	Dec. 31, 2023			Dec. 31, 2022		
	Non-current	Current	Total	Non-current	Current	Total
Liabilities from contracts with customers	93	3,960	4,053	121	3,292	3,412
Advances and downpayments received	23	2,998	3,020	53	2,201	2,253
Deferred revenues	71	963	1,033	68	1,091	1,159

In 2023, the Global Business Units reporting the greatest amounts of liabilities from contracts with customers were Retail (€1,563 million) and Energy Solutions (€1,638 million).

### 7.3 Revenues relating to performance obligations not yet satisfied

Revenues relating to performance obligations only partially satisfied at December 31, 2023 amounted to €867 million. They mainly concern Energy Solutions (€849 million) which handle a large number of construction, installation, and maintenance contracts under which revenues are recognized over time.

## NOTE 8 OPERATING EXPENSES

### Accounting standards

Operating expenses include:

- purchases and operating derivatives including:
  - the purchase of commodities and associated costs (infrastructure, transport, storage, etc.),
  - the realized impact, as well as the change in fair value (MtM), of commodity transactions, with or without physical delivery, that fall within the scope of IFRS 9 – *Financial Instruments* and that do not qualify as trading or hedging. These contracts are set up as part of economic hedges of operating transactions in the energy sector;
- purchases of services and other items such as subcontracting and interim expenses, lease expenses (short-term lease contracts, leases with a low underlying asset value or leases with variable expenses), concession expenses, etc.;
- personnel costs;
- depreciation, amortization, and provisions; and
- taxes.

### 8.1 Purchases and operating derivatives

<i>In millions of euros</i>	Dec 31, 2023	Dec 31, 2022
Purchases and other income and expenses on operating derivatives other than trading <sup>(1)</sup>	(49,650)	(67,676)
Service and other purchases <sup>(2)</sup>	(7,342)	(6,860)
<b>PURCHASES AND OPERATING DERIVATIVES</b>	<b>(56,992)</b>	<b>(74,535)</b>

- (1) Of which net income of €2,430 million in 2023 relating to MtM on commodity contracts other than trading (compared to a net expense of €3,661 million in 2022), notably on certain economic gas and electricity hedging positions not documented as cash flow hedges.
- (2) Of which €75 million in lease expenses not included in the IFRS 16 lease liability (compared to €56 million in lease expenses in 2022).

The decrease in purchases and operating derivatives is mainly due to changes in commodity prices over the period.

### 8.2 Personnel costs

<i>In millions of euros</i>	Notes	Dec 31, 2023	Dec 31, 2022
Short-term benefits		(7,688)	(7,623)
Share-based payments	19	(47)	(104)
Costs related to defined benefit plans	18.3.4	(322)	(261)
Costs related to defined contribution plans	18.4	(92)	(91)
<b>PERSONNEL COSTS</b>		<b>(8,149)</b>	<b>(8,078)</b>

### 8.3 Depreciation, amortization and provisions

<i>In millions of euros</i>	Notes	Dec 31, 2023	Dec 31, 2022
Depreciation and amortization	13	(4,886)	(4,576)
Net change in write-downs of inventories, trade receivables and other assets		(203)	(768)
Net change in provisions	17	178	157
<b>DEPRECIATION, AMORTIZATION AND PROVISIONS</b>		<b>(4,911)</b>	<b>(5,187)</b>

At December 31, 2023, depreciation and amortization mainly break down as €1,124 million for intangible assets and €3,762 million for property, plant and equipment.

### 8.4 Taxes

<i>In millions of euros</i>	Dec 31, 2023	Dec 31, 2022
<b>TAXES</b>	<b>(2,627)</b>	<b>(3,380)</b>

Taxes at December 31, 2023 include the Belgian nuclear tax and the inframarginal rent caps from electricity generation for a total of €969 million, including €329 million for the nuclear tax (compared with approximately €1,348 million and €917 million respectively at December 31, 2022). In addition, in 2022, the Group recognized an expense of €308 million corresponding to the exceptional tax on the energy sector introduced by the Italian authorities (the temporary Italian solidarity contribution was recognized in income tax and amounted to €132 million).

## NOTE 9 OTHER ITEMS OF NET INCOME/(LOSS) FROM OPERATING ACTIVITIES

### Accounting standards

Other items of Net income/(loss) from operating activities include:

- “Impairment losses”: this line includes impairment losses on goodwill, other intangible assets, property, plant and equipment and investments in entities consolidated using the equity method;
- “Restructuring costs”: this line concerns costs corresponding to a restructuring program planned and controlled by management that materially changes either the scope of a business undertaken by the entity, or the manner in which that business is conducted, based on the criteria set out in IAS 37;
- “Changes in the scope of consolidation”. This line includes:
  - direct costs related to acquisitions of controlling interests,
  - in a business combination achieved in stages, remeasurement at fair value at the acquisition date of the previously held interest,
  - subsequent changes in the fair value of contingent consideration,
  - gains or losses from disposals of investments which result in a change of consolidation method, as well as any impact from the remeasurement of retained interests with the exception of gains and losses arising from transactions realized in the framework of “Develop, Build, Share & Operate” (DBSO) or “Develop, Share, Build & Operate” (DSBO) business models. As they are part of the recurring rotation of the Group’s capital employed, these transactions are recognized in current operating income subject to certain criteria being met (notably their recurrence).
- “Other non-recurring items”: this line includes other elements of an unusual, abnormal or infrequent nature.

### 9.1 Impairment losses

<i>In millions of euros</i>	Notes	Dec. 31, 2023	Dec. 31, 2022
<b>Impairment losses:</b>			
Goodwill	13.1	(94)	-
Property, plant and equipment and other intangible assets	13.2 & 13.3	(1,587)	(2,306)
Investments in equity method entities and related provisions		(72)	(536)
<b>TOTAL IMPAIRMENT LOSSES</b>		<b>(1,753)</b>	<b>(2,841)</b>
<b>Reversal of impairment losses:</b>			
Property, plant and equipment and other intangible assets		435	67
<b>TOTAL REVERSALS OF IMPAIRMENT LOSSES</b>		<b>435</b>	<b>67</b>
<b>TOTAL</b>		<b>(1,318)</b>	<b>(2,774)</b>

#### 9.1.1 Impairment losses recognized in 2023

Net impairment losses recognized at December 31, 2023 amounted to €1,318 million and relate notably to:

- renewable energy production assets in North America (€714 million), due to very specific operational difficulties linked to turbine performance on a wind asset, and the fall in long-term market prices affecting certain projects exposed to the SPP market in particular. It should be noted that for these projects, the fall in market prices had a positive impact on the fair value of VPPA (Virtual Power Purchase Agreement) contracts of around €+0.3 billion,

with these mark-to-market changes, over the period covered by these contracts, recognized in operating expenses (see Note 8.1 "Operating expenses");

- coal-fired generation assets in South America, for which the Group has decided to accelerate decommissioning from end 2025, in line with the Group's decarbonization plan (€515 million);
- other production or support assets for less significant amounts taken individually.

In addition, following the review procedure initiated by the Commission for Nuclear Provisions (CNP) in September 2022, the industrial scenario and all the technical and financial assumptions were approved on July 7, 2023. This resulted in a €646 million decrease in the dismantling asset provision (see Note 17 "Provisions"), against a reduction in dismantling assets. Given the impairment losses recognized on some of these assets at the end of the last year, an impairment reversal of €400 million was recorded in 2023.

These impairment losses mainly concern property, plant and equipment and intangible assets. Considering the effects of deferred taxes and the portion of impairment losses attributable to non-controlling interests, the impact of the impairment losses on net income Group share amounted to €642 million.

With the exception of the effects of decisions to dispose of non-strategic assets, no impairment losses were recognized on non-financial assets as a result of measures to prevent or mitigate climate risks or to achieve the 2045 net zero-carbon objective.

Impairment tests are carried out in accordance with the procedures described in Note 13.4.

### 9.1.2 Impairment losses recognized in 2022

Net impairment losses recognized at December 31, 2022 amounted to €2,774 million and related mainly to:

- the effects of the triennial revision of nuclear provisions on assets to be recognized against nuclear power plant dismantling provisions;
- the effects of the ongoing program to exit coal activities;
- the consequences of negotiations initiated or finalized during the year in connection with the renegotiation of PPA contracts or the disposal of non-strategic assets.

## 9.2 Restructuring costs

In 2023, restructuring costs totaled € 47 million (versus €230 million in 2022). Restructuring costs in both years mainly included costs related to staff reduction plans and measures to adapt to the economic situation in 2023 and 2022, as well as the shutdown or sale of operations, the closure or restructuring of certain facilities as well as other miscellaneous restructuring costs.

## 9.3 Changes in scope of consolidation

At December 31, 2023, the impact of changes in the scope of consolidation was a negative €85 million and mainly comprised the disposal of a coal-fired generation unit in Brazil (a negative €47 million).

At December 31, 2022, the impact of changes in the scope of consolidation was a positive €91 million and mainly comprised:

- a positive impact of €280 million relating to the disposal of shares held in Gaztransport et Technigaz (GTT) for a total representing approximately 24.6% of its share capital. This result includes the effects of the almost full conversion of the exchangeable bond issued by the Group in June 2021;
- a positive impact of €111 million relating to the disposal of geothermal assets in Indonesia;
- a negative impact of €127 million relating to the disposal of the Energy Solutions activities in Africa and France;

- a negative impact of €110 million relating to the purchase of shares in renewable assets in India with refinancing obligations carried out in 2023;
- a negative impact of €63 million relating to miscellaneous disposals that are not individually significant.

## 9.4 Other non-recurring items

Other non-recurring items amounted to a negative €4,945 million at December 31, 2023 and include the €-4,750 million impact of the revision of nuclear provisions to take account of the agreement reached with the Belgian government on June 29, 2023, which became binding following the signature of the supplements to the initial agreements on July 21, 2023 and whose implementation was specified in the transaction documents signed on December 13, 2023 (see Note 17 "Provisions"). This amount includes the additional provisions set aside under the agreement (€-5.1 billion), diminished by the effects of recognizing the receivable relating to Electrabel's partners' share in certain power plants (€0.4 billion).

Other non-recurring items also include the impact of the revision of the dismantling provision of the Hazelwood site in Australia for around €90 million.

Other non-recurring items at December 31, 2022 totaled a negative €1,328 million and mainly comprised:

- a negative impact of €979 million related to the triennial review of provisions for the management of the back-end nuclear cycle;
- a negative impact of €205 million related to provisions set up to cover clean-up obligations in France;
- a negative impact of €161 million related to the write-off of intangible assets and property, plant and equipment, mainly in France.

## NOTE 10 NET FINANCIAL INCOME/(LOSS)

<i>In millions of euros</i>	Expense	Income	Dec. 31, 2023	Expense	Income	Dec. 31, 2022
<i>Interest expense on gross debt and hedges</i>	(1,708)	-	(1,708)	(1,104)	-	(1,104)
<i>Cost of lease liabilities</i>	(105)	-	(105)	(73)	-	(73)
<i>Foreign exchange gains/losses on borrowings and hedges</i>	(10)	-	(10)	(28)	-	(28)
<i>Ineffective portion of derivatives qualified as fair value hedges</i>	-	-	-	-	7	7
<i>Gains and losses on cash and cash equivalents and liquid debt instruments held for cash investment purposes</i>	-	596	596	-	197	197
<i>Capitalized borrowing costs</i>	268	-	268	109	-	109
<b>Cost of net debt</b>	<b>(1,557)</b>	<b>596</b>	<b>(961)</b>	<b>(1,097)</b>	<b>205</b>	<b>(893)</b>
<i>Cash payments made on the unwinding of swaps</i>	-	-	-	(9)	-	(9)
<i>Reversal of the negative fair value of these early unwound derivative financial instruments</i>	-	-	-	-	-	-
<i>Gains/(losses) on debt restructuring transactions</i>	-	8	8	-	55	55
<b>Gains/(losses) on debt restructuring and early unwinding of derivative financial instruments</b>	<b>-</b>	<b>8</b>	<b>8</b>	<b>(9)</b>	<b>55</b>	<b>46</b>
<i>Net interest expense on post-employment benefits and other long-term benefits</i>	(161)	-	(161)	(92)	-	(92)
<i>Unwinding of discounting adjustments to other long-term provisions</i>	(772)	-	(772)	(617)	-	(617)
<i>Change in fair value of derivatives not qualified as hedges and ineffective portion of derivatives qualified as cash flow hedges</i>	(15)	-	(15)	(5)	-	(5)
<i>Income/(loss) from debt instruments and equity instruments</i>	(238)	-	(239)	(1,295)	36	(1,258)
<i>Interest income on loans and receivables at amortized cost</i>	-	106	106	-	69	69
<i>Other</i>	(596)	467	(130)	(585)	332	(253)
<b>Other financial income and expenses</b>	<b>(1,783)</b>	<b>573</b>	<b>(1,210)</b>	<b>(2,594)</b>	<b>438</b>	<b>(2,156)</b>
<b>NET FINANCIAL INCOME/(LOSS)</b>	<b>(3,340)</b>	<b>1,177</b>	<b>(2,163)</b>	<b>(3,700)</b>	<b>697</b>	<b>(3,003)</b>

In 2023, the average cost of debt after hedging came out at 4.31% compared to 2.73% at December 31, 2022.

Net income/(loss) from debt and equity instruments amounted to a loss of €239 million and mainly included the loss on bonds and money market funds held by Synatom for €-149 million (see Note 17.2.4 "Financial assets set aside to cover the future costs of dismantling nuclear facilities and managing radioactive fissile material").

## NOTE 11 INCOME TAX EXPENSE

### Accounting standards

The Group calculates taxes in accordance with prevailing tax legislation in the countries where income is taxable.

In accordance with IAS 12, deferred taxes are recognized according to the liability method on temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and their tax bases, using tax rates that have been enacted or substantively enacted by the reporting date. However, under the provisions of IAS 12, no deferred tax is recognized for temporary differences arising from goodwill for which impairment losses are not deductible for tax purposes, or from the initial recognition of an asset or liability in a transaction which (i) is not a business combination and (ii) at the time of the transaction, affects neither accounting income nor taxable income. In addition, deferred tax assets are only recognized to the extent that it is probable that taxable income will be available against which the deductible temporary differences can be utilized.

A deferred tax liability is recognized for all taxable temporary differences associated with investments in subsidiaries, associates, joint ventures and branches, except if the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future.

Net balances of deferred taxes are calculated based on the tax position of each company or on the total income of companies included within the relevant consolidated tax group, and are presented in assets or liabilities for their net amount per tax entity.

Deferred taxes are reviewed at each reporting date to take into account factors including the impact of changes in tax laws and the prospects of recovering deferred tax assets arising from deductible temporary differences.

Deferred tax assets and liabilities are not discounted.

Tax effects relating to coupon payments on deeply-subordinated perpetual notes are recognized in profit or loss.

### 11.1 Actual income tax expense recognized in the income statement

#### 11.1.1 Breakdown of actual income tax expense recognized in the income statement

The income tax expense recognized in the income statement for 2023 amounted to €1,031 million (€83 million income tax benefit in 2022). It breaks down as follows:

<i>In millions of euros</i>	<b>Dec. 31, 2023</b>	<b>Dec. 31, 2022</b>
Current income taxes	(833)	(1,762)
Deferred taxes	(198)	1,845
<b>TOTAL INCOME TAX BENEFIT/(EXPENSE) RECOGNIZED IN INCOME</b>	<b>(1,031)</b>	<b>83</b>

### 11.1.2 Reconciliation of theoretical income tax expense with actual income tax expense

A reconciliation of theoretical income tax expense with the Group's actual income tax expense is presented below:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
<b>Net income/(loss)</b>	<b>2,903</b>	<b>390</b>
Share in net income of equity method entities	993	523
Net income/(loss) from discontinued operations	-	2,183
Income tax expense	(1,031)	83
<b>Income/(loss) before income tax of consolidated companies (A)</b>	<b>2,941</b>	<b>(2,400)</b>
<i>Of which French companies</i>	<i>1,532</i>	<i>(2,130)</i>
<i>Of which companies outside France</i>	<i>1,409</i>	<i>(270)</i>
Statutory income tax rate of the parent company (B)	25.8%	25.8%
<b>THEORETICAL INCOME TAX BENEFIT/(EXPENSE) (C) = (A) X (B)</b>	<b>(759)</b>	<b>620</b>
<b>Reconciling items between theoretical and actual income tax expense</b>		
Difference between statutory tax rate applicable to the parent and statutory tax rate in force in jurisdictions in France and abroad	(14)	(8)
Permanent differences <sup>(1)</sup>	(120)	(313)
Income taxed at a reduced rate or tax-exempt <sup>(2)</sup>	(22)	427
Additional tax expense <sup>(3)</sup>	(60)	(327)
Effect of unrecognized deferred tax assets on tax loss carry-forwards and other tax-deductible temporary differences <sup>(4)</sup>	(430)	(940)
Recognition or utilization of tax income on previously unrecognized tax loss carry-forwards and other tax-deductible temporary differences <sup>(5)</sup>	93	643
Impact of changes in tax rates <sup>(6)</sup>	8	(37)
Tax credits and other tax reductions <sup>(7)</sup>	360	20
Other <sup>(8)</sup>	(86)	(1)
<b>INCOME TAX BENEFIT/(EXPENSE) RECOGNIZED IN INCOME</b>	<b>(1,031)</b>	<b>83</b>

- (1) *Mainly includes disallowable impairment losses on goodwill, disallowed operating expenses and the deduction of interest expenses arising from hybrid debt.*
- (2) *Mainly includes capital gains on disposals of securities exempt from tax or taxed at a reduced rate in some tax jurisdictions, the impact of the specific tax regimes used by some entities, disallowable impairment losses and capital losses on securities, and the impact of untaxed income from remeasuring previously-held (or retained) equity interests in connection with acquisitions and changes in consolidation methods.*
- (3) *Mainly includes tax on dividends resulting from the parent company tax regime, withholding tax on dividends and interest levied in several tax jurisdictions, allocations to provisions for income tax, and regional and flat-rate corporate taxes. In 2022, this line also included the temporary Italian solidarity contribution (€132 million).*
- (4) *Includes (i) the cancellation of the net deferred tax asset position for some tax entities in the absence of sufficient profit being forecast and (ii) the impact of disallowable impairment losses on fixed assets.*
- (5) *Includes the impact of the recognition of net deferred tax asset positions for some tax entities.*
- (6) *Mainly includes the impact of tax rate changes on deferred tax balances in the United Kingdom for 2023 and for 2022.*
- (7) *Mainly includes reversals of provisions for tax litigation in Luxembourg, tax credits in France and in Singapore and other tax reductions.*
- (8) *Mainly includes the correction of previous tax charges.*

With regard to the future implementation of the OECD Pillar 2 rules, the Group does not have significant operations in countries where a minimum tax may be due, and therefore does not expect from this reform any material impacts on its income tax expense.

### 11.1.3 Analysis of the deferred tax income/(expense) recognized in the income statement, by type of temporary difference

<i>In millions of euros</i>	Impact in the income statement	
	Dec. 31, 2023	Dec. 31, 2022
<b>Deferred tax assets:</b>		
Tax loss carry-forwards and tax credits	(103)	1,051
Pension and related obligations	(3)	(1)
Non-deductible provisions	976	55
Difference between the carrying amount of PP&E and intangible assets and their tax bases	(84)	454
Measurement of assets and liabilities at fair value (IAS 32/IFRS 9)	(2,373)	(1,260)
Other	265	(135)
<b>TOTAL</b>	<b>(1,322)</b>	<b>164</b>
<b>Deferred tax liabilities:</b>		
Difference between the carrying amount of PP&E and intangible assets and their tax bases	61	(545)
Measurement of assets and liabilities at fair value (IAS 32/IFRS 9)	1,326	1,781
Other	(263)	398
<b>TOTAL</b>	<b>1,124</b>	<b>1,634</b>
<b>DEFERRED TAX INCOME/(EXPENSE)</b>	<b>(198)</b>	<b>1,798</b>
<i>Of which continuing activities</i>	(198)	1,845

## 11.2 Deferred tax income/(expense) recognized in “Other comprehensive income”

Net deferred tax income/(expense) recognized in “Other comprehensive income” is broken down by component as follows:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
Equity and debt instruments	(6)	33
Actuarial gains and losses	141	(646)
Net investment hedges	(41)	11
Cash flow hedges on other items	802	943
Cash flow hedges on net debt	4	(3)
<b>TOTAL EXCLUDING SHARE OF EQUITY METHOD ENTITIES AND DISCONTINUED OPERATIONS</b>	<b>900</b>	<b>338</b>
Share of equity method entities	(28)	(132)
Discontinued operations	-	(21)
<b>TOTAL</b>	<b>872</b>	<b>185</b>

## 11.3 Deferred taxes presented in the statement of financial position

### 11.3.1 Change in deferred taxes

Changes in deferred taxes recognized in the statement of financial position, after netting deferred tax assets and liabilities by tax entity, break down as follows:

<i>In millions of euros</i>	Assets	Liabilities	Net position
<b>AT DECEMBER 31, 2022</b>	<b>2,029</b>	<b>(6,408)</b>	<b>(4,379)</b>
Impact on net income for the year	(1,322)	1,124	(198)
Impact on other comprehensive income items	1,559	(665)	894
Impact of changes in scope of consolidation	215	(214)	-
Impact of translation adjustments	(13)	5	(8)
Transfers to assets and liabilities classified as held for sale	(4)	4	-
Other	(210)	243	33
Impact of netting by tax entity	(279)	279	-
<b>AT DECEMBER 31, 2023</b>	<b>1,974</b>	<b>(5,632)</b>	<b>(3,658)</b>

### 11.3.2 Analysis of the net deferred tax position recognized in the statement of financial position (before netting deferred tax assets and liabilities by tax entity), by type of temporary difference

#### Accounting standards

##### Measurement of recognized tax loss carry-forwards

Deferred tax assets are recognized on tax loss carry-forwards when it is probable that taxable profit will be available against which the tax loss carry-forwards can be utilized. The probability that taxable profit will be available against which the unused tax losses can be utilized, is based on taxable temporary differences relating to the same taxation authority and the same taxable entity and estimates of future taxable profits. These estimates and utilizations of tax loss carry-forwards were prepared on the basis of profit and loss forecasts over a six-year tax projection period as included in the medium-term business plan approved by Management, subject to exceptions justified by a particular context and, if necessary, on the basis of additional forecasts.

<i>In millions of euros</i>	Statement of financial position at	
	Dec. 31, 2023	Dec. 31, 2022
<b>Deferred tax assets:</b>		
Tax loss carry-forwards and tax credits	2,121	2,202
Pension obligations	1,013	812
Non-deductible provisions	1,485	518
Difference between the carrying amount of PP&E and intangible assets and their tax bases	1,659	1,830
Measurement of assets and liabilities at fair value (IAS 32/IFRS 9)	7,649	8,346
Other	626	620
<b>TOTAL</b>	<b>14,553</b>	<b>14,328</b>
<b>Deferred tax liabilities:</b>		
Difference between the carrying amount of PP&E and intangible assets and their tax bases	(9,893)	(9,873)
Measurement of assets and liabilities at fair value (IAS 32/IFRS 9)	(7,419)	(8,141)
Other	(897)	(693)
<b>TOTAL</b>	<b>(18,210)</b>	<b>(18,707)</b>
<b>NET DEFERRED TAX ASSETS/(LIABILITIES)</b>	<b>(3,658)</b>	<b>(4,378)</b>

In accordance with the amendment to IAS 12, no deferred tax is recognized in respect of the future implementation of the OECD Pillar 2 rules.

### 11.4 Unrecognized deferred taxes

At December 31, 2023, the tax effect of tax losses and tax credits eligible for carry-forward but not utilized and not recognized in the statement of financial position amounted to €4,563 million (€4,165 million at December 31, 2022). Most of these unrecognized tax losses relate to companies based in countries which allow losses to be carried forward indefinitely (mainly Belgium, the Netherlands, Australia, and the United States). These tax losses carried forward did not give rise to the full or partial recognition of a deferred tax asset due to the absence of sufficient profit forecasts in the medium term.

The tax effect of other tax-deductible temporary differences not recorded in the statement of financial position was €1,778 million at end-December 2023 versus €1,590 million at end-December 2022.

## NOTE 12 EARNINGS PER SHARE

### Accounting standards

Basic earnings per share is calculated by dividing net income Group share for the year by the weighted average number of ordinary shares outstanding during the year. The average number of ordinary shares outstanding during the year is the number of ordinary shares outstanding at the beginning of the year, adjusted by the number of ordinary shares bought back or issued during the year.

For the diluted earnings per share calculation, the weighted average number of shares and basic earnings per share are adjusted to take into account the impact of the conversion or exercise of any dilutive potential ordinary shares (options, warrants and convertible bonds, etc.).

In compliance with IAS 33 – *Earnings per Share*, earnings per share and diluted earnings per share are based on net income/(loss) Group share after deduction of payments to bearers of deeply-subordinated perpetual notes (see Note 16.2.1 “*Issuance of deeply-subordinated perpetual notes*”).

The Group’s dilutive instruments included in the calculation of diluted earnings per share include bonus shares and performance shares granted in the form of ENGIE securities.

	Dec. 31, 2023	Dec. 31, 2022
<b>Numerator (in millions of euros)</b>		
<b>Net income/(loss) Group share</b>	<b>2,208</b>	<b>216</b>
<i>Of which Net income/(loss) relating to continuing operations, Group share</i>	2,208	(1,965)
Interest from deeply-subordinated perpetual notes	(80)	(77)
<b>Net income/(loss) used to calculate earnings per share</b>	<b>2,129</b>	<b>140</b>
<i>Of which Net income/(loss) relating to continuing operations, Group share, used to calculate earnings per share</i>	2,129	(2,042)
<b>Net recurring income/(loss) Group share</b>		
<b>Net recurring income/(loss) Group share</b>	<b>5,366</b>	<b>5,510</b>
<i>Of which Net recurring income/(loss) relating to continuing operations, Group share</i>	5,366	5,223
Interest from deeply-subordinated perpetual notes	(80)	(77)
<b>Net recurring income/(loss) used to calculate earnings per share</b>	<b>5,287</b>	<b>5,433</b>
<i>Of which Net recurring income/(loss) relating to continuing operations, Group share, used to calculate earnings per share</i>	5,287	5,146
<b>Denominator (in millions of shares)</b>		
<b>Average number of outstanding shares</b>	<b>2,422</b>	<b>2,420</b>
Impact of dilutive instruments:		
Bonus share plans reserved for employees	11	-
<b>Diluted average number of outstanding shares</b>	<b>2,433</b>	<b>2,420</b>
<b>Earnings per share (in euros)</b>		
<b>Basic earnings/(loss) per share</b>	<b>0.88</b>	<b>0.06</b>
<i>Of which Basic earnings/(loss) Group share relating to continuing operations per share</i>	0.88	(0.84)
<b>Diluted earnings/(loss) per share</b>	<b>0.87</b>	<b>0.06</b>
<i>Of which Diluted earnings/(loss) Group share relating to continuing operations per share</i>	0.88	(0.84)
<b>Basic recurring earnings/(loss) per share</b>		
<b>Basic recurring earnings/(loss) per share</b>	<b>2.18</b>	<b>2.24</b>
<i>Of which Basic recurring earnings/(loss) Group share relating to continuing operations per share</i>	2.18	2.13
<b>Diluted recurring earnings/(loss) per share <sup>(1)</sup></b>	<b>2.17</b>	<b>2.23</b>
<i>Of which Diluted recurring earnings/(loss) Group share relating to continuing operations per share <sup>(1)</sup></i>	2.17	2.12

(1) In 2022, the calculation of the denominator included 11 million potential ENGIE shares that had a dilutive effect on the NRIGs and NRIGs relating to continuing operations per share. This effect was not taken into account in the calculation of the NIgs and the NIgs relating to continuing operations per share due to the antidilutive effect on the latter.

## NOTE 13 FIXED ASSETS

### 13.1 Goodwill

#### Accounting standards

Upon a business combination, goodwill is measured as the difference between:

- on the one hand the sum of:
  - the consideration transferred;
  - the amount of non-controlling interests in the acquiree, and
  - in a business combination achieved in stages, the acquisition-date fair value of the previously held equity interest in the acquiree;
- on the other hand the net fair value of the identifiable assets acquired and liabilities assumed. The key assumptions and estimates used to determine the fair value of assets acquired and liabilities assumed include the market outlook for the measurement of future cash flows as well as applicable discount rates. These assumptions reflect management's best estimates at the acquisition date.

The amount of goodwill recognized at the acquisition date cannot be adjusted after the end of the 12-month measurement period.

Goodwill relating to interests in associates is included in the carrying amount of the investment consolidated under the equity method entities.

#### 13.1.1 Movements in the carrying amount of goodwill

<i>In millions of euros</i>	<b>Net amount</b>
<b>AT DECEMBER 31, 2022</b>	<b>12,855</b>
Impairment losses	(95)
Changes in scope of consolidation and Other	134
Translation adjustments	(29)
<b>AT DECEMBER 31, 2023</b>	<b>12,864</b>

#### 13.1.2 Information on goodwill

For the purposes of impairment testing, goodwill is allocated to operating segments, which represent the lowest level at which it is monitored for internal management purposes.

The table below shows the amount of goodwill at December 31, 2023:

<i>In millions of euros</i>	<b>Dec. 31, 2023</b>
Networks	5,366
Renewables	2,185
Retail	1,838
Energy Solutions	1,209
FlexGen	1,123
Nuclear	797
Other	346
<b>TOTAL</b>	<b>12,864</b>

## 13.2 Intangible assets

### Accounting standards

#### Initial measurement

Intangible assets are carried at cost less any accumulated amortization and any accumulated impairment losses.

#### Amortization

Intangible assets are amortized on the basis of the expected pattern of consumption of the estimated future economic benefits embodied in the asset. Amortization is calculated mainly on a straight-line basis over the following useful lives:

Main depreciation periods (years)	Useful life	
	Minimum	Maximum
Concession rights	10	30
Customer portfolio	3	20
Other intangible assets	1	50

Intangible assets with an indefinite useful life are not amortized but are tested for impairment annually.

#### Intangible rights arising on concession contracts

IFRIC 12 – *Service Concession Arrangements* deals with the treatment to be applied by the concession operator in respect of certain concession arrangements.

For a concession arrangement to fall within the scope of IFRIC 12, usage of the infrastructure must be controlled by the concession grantor. This requirement is satisfied when the following two conditions are met:

- the grantor controls or regulates what services the operator must provide with the infrastructure, to whom it must provide them, and at what price; and
- the grantor controls any residual interest in the infrastructure at the end of the term of the arrangement, for example it retains the right to take back the infrastructure at the end of the concession.

The intangible asset model according to paragraph 17 of IFRIC 12 applies if the operator receives a right (a license) to charge the users, or the grantor, depending on the use made of the public service. There is no unconditional right to receive cash, as the amounts depend on the extent to which the public uses the service.

Concession infrastructures that do not meet the requirements of IFRIC 12 are presented as property, plant and equipment. This is the case of gas distribution infrastructures in France. The related assets are recognized in accordance with IAS 16, given that GRDF operates its network under long-term concession arrangements, most of which are mandatorily renewed upon expiration pursuant to French law No. 46-628 of April 8, 1946.

#### Research and development costs

Research costs are expensed as incurred.

Development costs are capitalized when the asset recognition criteria set out in IAS 38 are met. Capitalized development costs are amortized over the useful life of the intangible asset.

### 13.2.1 Movements in intangible assets

<i>In millions of euros</i>	Intangible rights arising on concession contracts	Capacity entitlements	Others	Total
<b>GROSS AMOUNT</b>				
<b>AT DECEMBER 31, 2022</b>	<b>3,630</b>	<b>3,282</b>	<b>13,498</b>	<b>20,410</b>
Acquisitions	269	-	1,143	1,412
Disposals	(43)	-	(271)	(315)
Translation adjustments	5	-	(52)	(46)
Changes in scope of consolidation	-	-	965	965
Transfer to "Assets classified as held for sale and discontinued operations"	-	-	-	-
Other	44	11	(59)	(4)
<b>AT DECEMBER 31, 2023</b>	<b>3,906</b>	<b>3,293</b>	<b>15,223</b>	<b>22,422</b>
<b>ACCUMULATED AMORTIZATION AND IMPAIRMENT</b>				
<b>AT DECEMBER 31, 2022</b>	<b>(1,706)</b>	<b>(2,208)</b>	<b>(9,131)</b>	<b>(13,046)</b>
Amortization	(151)	(106)	(867)	(1,124)
Impairment	(8)	-	(42)	(51)
Disposals	37	-	180	217
Translation adjustments	(1)	-	22	21
Changes in scope of consolidation	-	-	(19)	(19)
Other	(9)	-	37	29
<b>AT DECEMBER 31, 2023</b>	<b>(1,838)</b>	<b>(2,314)</b>	<b>(9,821)</b>	<b>(13,973)</b>
<b>CARRYING AMOUNT</b>				
<b>AT DECEMBER 31, 2022</b>	<b>1,924</b>	<b>1,074</b>	<b>4,366</b>	<b>7,364</b>
<b>AT DECEMBER 31, 2023</b>	<b>2,067</b>	<b>979</b>	<b>5,403</b>	<b>8,449</b>

In 2023, the net increase in "Intangible assets" was mainly attributable to:

- investments during the period (€1,412 million) relating mainly to intangible assets in progress (€863 million) notably capitalized costs in connection with the renewable business in the United States (€207 million), as information technology projects (€141 million) mainly at corporate ENGIE group level in France, and as investments in the extension and maintenance of transmission and distribution networks (€215 million) mainly in France, and relating to concession contracts in the business of Energy Solutions in France (€269 million);
- a net positive impact of changes in the scope of consolidation of €946 million, relating mainly to preliminary purchase price allocation carried out for the acquisition of Broad Reach Power, a US-based company specializing in battery storage (€760 million) and to the acquisition of the group BTE Renewables, a renewable energy producer with wind and solar PV projects in South Africa (€134 million) (see Note 4 "Main changes in the Group structure");

partially offset by:

- amortization (negative €1,124 million);
- impairment losses (negative €51 million).

### 13.2.2 Capacity entitlements

The Group has acquired capacity entitlements from power stations operated by third parties. These power station capacity rights were acquired in connection with transactions or within the scope of the Group's involvement in financing the construction of certain power stations. In consideration, the Group received the right to purchase a share of the production over the useful life of the underlying assets. These rights are amortized over the useful life of the underlying right, not exceeding 50 years. The Group currently holds rights in the Chooz B and Tricastin power plants in France and in the virtual power plant (VPP) in Italy (2028 maturity).

### 13.2.3 Other

At December 31, 2023, this caption mainly relates to software and licenses for €1,436 million, as well as intangible assets in progress for €1,576 million and intangible assets (client portfolio) acquired for €2,097 million as a result of business combinations and capitalized acquisition costs for customer contracts.

### 13.2.4 Information regarding research and development costs

Research and development activities primarily relate to various studies regarding technological innovation, improvements in plant efficiency, safety, environmental protection, service quality, and the use of energy resources. Research and development priorities are focused on climate change adaptation and mitigation, including renewable energy systems (photovoltaic solar, onshore and offshore wind), the production and use of green gases (hydrogen, biomethane) or the development of decentralized energy infrastructure (district heating and cooling, decentralized solar energy, low carbon cities and mobility).

Capitalized development costs, related to projects in the development phase that meet the criteria for recognition as an intangible asset as defined in IAS 38, totaled €21 million in 2023.

## 13.3 Property, plant and equipment

### Accounting standards

#### Initial recognition and subsequent measurement

Items of property, plant and equipment are recognized at historical cost less any accumulated depreciation and any accumulated impairment losses.

The carrying amount of these items is not revalued as the Group has elected not to apply the allowed alternative method, which consists of regularly revaluing one or more categories of property, plant and equipment.

Investment subsidies are deducted from the gross value of the assets concerned.

In accordance with IAS 16, the initial cost of the item of property, plant and equipment includes an initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located, when the entity has a present, legal or constructive obligation to dismantle the item or restore the site. A corresponding provision for this obligation is recorded for the amount of the asset component.

Borrowing costs that are directly attributable to the construction of the qualifying asset are capitalized as part of the cost of that asset.

#### Leases

In accordance with IFRS 16, the Group recognizes a right-of-use asset and a corresponding lease liability with respect to contracts considered as a lease in which the Group acts as lessee, except for leases with a term of 12 months or less ("short-term leases"), and leases for which the underlying asset is of a low value ("low-value asset"). Payments associated with these leases are recognized on a straight-line basis as expenses in profit and loss. The lease contracts in the Group mainly concern real estate, vehicles, LNG vessels, an hydroelectric concession contract and other equipment.

The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The lease liability is initially measured at the present value of the remaining lease payments, discounted using the lessee's incremental borrowing rate. This rate is calculated based on the Group's incremental borrowing rate adjusted in accordance with IFRS 16, taking into account (i) the economic environment of the subsidiaries, and in particular their credit risk, (ii) the currency in which the contract is concluded and (iii) the duration of the contract at inception (or the remaining duration for contracts existing upon the initial application of IFRS 16). The methodology applied to determine the incremental borrowing rate reflects the profile of the lease payments (duration method).

The lease term is assessed, including whether a renewal option is reasonably certain to be exercised or a termination option is reasonably certain not to be exercised, on a case-by-case basis. The lease term is reassessed if a significant event or a significant change in circumstances that is within the control of the lessee occurs and may affect the assessment made. In determining the enforceable period of a lease, the Group applies a broad interpretation of the term penalty and takes into consideration not only contractual penalties arising from termination, but also ancillary costs that could arise in case of an early termination of the lease.

### **Cushion gas**

"Cushion" gas stored in underground storage facilities is essential for ensuring that reservoirs can be operated effectively, and is therefore inseparable from these reservoirs. Unlike "working" gas which is included in inventories (see Note 22.2 "Inventories"), cushion gas is reported in other property, plant and equipment.

### **Depreciation**

In accordance with the components approach, each significant component of an item of property, plant and equipment with a different useful life from that of the main asset to which it relates is depreciated separately over its own useful life.

Property, plant and equipment is depreciated mainly using the straight-line method over the following useful lives:

<i>Main depreciation periods (years)</i>	<b>Useful life</b>	
	<b>Minimum</b>	<b>Maximum</b>
Plant and equipment		
● Storage - Production - Transport - Distribution	5	60 <sup>(*)</sup>
● Installation – Maintenance	3	10
● Hydraulic plant and equipment	20	65
Solar and wind farms	25	30
Other property, plant and equipment	2	33

(\*) Excluding cushion gas.

The range of useful lives is due to the diversity of the assets in each category. The minimum periods relate to smaller equipment and furniture, while the maximum periods concern network infrastructures and storage facilities.

Fixtures and fittings relating to hydro plants operated by the Group are depreciated over the shorter of the contract term and the useful life of the assets, taking into account the renewal of the concession period if such renewal is considered to be reasonably certain.

The right-of-use asset related to leases is depreciated using the straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group by the end of the lease term. In that case the right-of-use asset is depreciated over the useful life of the underlying asset, which is determined on the same basis as that used for property, plant and equipment mentioned above.

## 13.3.1 Movements in property, plant and equipment

<i>In millions of euros</i>	Land	Buildings	Plant and equipment	Vehicles	Dismantling costs	Assets in progress	Right of use	Other	Total
<b>GROSS AMOUNT</b>									
<b>AT DECEMBER 31, 2022</b>	<b>649</b>	<b>2,762</b>	<b>96,016</b>	<b>304</b>	<b>6,038</b>	<b>5,649</b>	<b>5,094</b>	<b>1,319</b>	<b>117,831</b>
Acquisitions/Increases	10	12	711	32	-	5,921	700	38	7,425
Disposals	(2)	(18)	(821)	(20)	(8)	(23)	(280)	(166)	(1,338)
Translation adjustments	(3)	(12)	(290)	(1)	(13)	(86)	(72)	(13)	(490)
Changes in scope of consolidation	3	-	971	2	2	186	8	2	1,176
Transfer to "Assets classified as held for sale and discontinued operations"	-	-	(2)	-	-	-	-	-	(3)
Other	16	20	4,715	11	(624)	(4,930)	3	18	(771)
<b>AT DECEMBER 31, 2023</b>	<b>673</b>	<b>2,765</b>	<b>101,300</b>	<b>328</b>	<b>5,395</b>	<b>6,716</b>	<b>5,454</b>	<b>1,198</b>	<b>123,829</b>
<b>ACCUMULATED DEPRECIATION AND IMPAIRMENT</b>									
<b>AT DECEMBER 31, 2022</b>	<b>(153)</b>	<b>(1,772)</b>	<b>(52,709)</b>	<b>(226)</b>	<b>(4,155)</b>	<b>(724)</b>	<b>(1,710)</b>	<b>(895)</b>	<b>(62,343)</b>
Depreciation	(4)	(69)	(2,727)	(28)	(364)	-	(489)	(82)	(3,762)
Impairment	-	(1)	(1,474)	-	403	(50)	(10)	(1)	(1,133)
Disposals	-	18	763	18	4	6	299	165	1,272
Translation adjustments	-	5	161	1	7	4	20	7	204
Changes in scope of consolidation	-	-	(172)	(2)	-	-	2	(1)	(173)
Transfer to "Assets classified as held for sale and discontinued operations"	-	-	-	-	-	-	-	-	-
Other	(1)	26	(148)	(3)	(362)	535	(5)	14	56
<b>AT DECEMBER 31, 2023</b>	<b>(158)</b>	<b>(1,793)</b>	<b>(56,306)</b>	<b>(239)</b>	<b>(4,467)</b>	<b>(229)</b>	<b>(1,893)</b>	<b>(794)</b>	<b>(65,879)</b>
<b>CARRYING AMOUNT</b>									
<b>AT DECEMBER 31, 2022</b>	<b>497</b>	<b>991</b>	<b>43,307</b>	<b>78</b>	<b>1,883</b>	<b>4,925</b>	<b>3,384</b>	<b>424</b>	<b>55,488</b>
<b>AT DECEMBER 31, 2023</b>	<b>516</b>	<b>971</b>	<b>44,993</b>	<b>90</b>	<b>928</b>	<b>6,487</b>	<b>3,561</b>	<b>404</b>	<b>57,950</b>

In 2023, the net increase in "Property, plant and equipment" essentially takes into account:

- maintenance and development investments for a total amount of €6,724 million mainly related to the construction and the development of wind and solar farms primarily in France, the United States, Latin America and Poland (€3,450 million), as well as to the extension of the transportation and distribution networks in France, Romania and Latin America (€1,765 million), to FlexGen operating segment assets (€868 million) and to Energy Solutions operating activities (€437 million);
- a net positive impact of changes in the scope of consolidation of €1,003 million, relating mainly to the acquisition of Broad Reach Power, a US-based company specialized in battery storage (€531 million), the acquisition of BTE Renewables, one of Africa's leading renewable energy companies based in South Africa (€311 million) and the acquisition of Ixora in the UK (€22 million) in the Networks operating segment;

offset by:

- depreciation for a total amount of €3,762 million;
- a €646 million decrease in dismantling assets following the adoption of the industrial scenario and of all the technical and financial assumptions which were approved by the Commission for Nuclear Provisions (CNP) on July 7, 2023 at the end of the review procedure initiated in September 2022. This decrease was partially offset by a €403 million reversal of impairment on some of these assets (see Note 13.4 "Impairment testing of goodwill, intangible assets and property, plant and equipment");
- negative foreign exchange effects of €286 million, mainly resulting from the depreciation of the US dollar (negative €445 million), partially offset by the appreciation the Brazilian real (positive €88 million), the Mexican peso (positive €47 million) and the pound sterling (positive €33 million) against euro.

## 13.3.2 Pledged and mortgaged assets

Items of property, plant and equipment pledged by the Group to guarantee borrowings and debt amounted to €1,625 million at December 31, 2023 compared to €1,120 million at December 31, 2022.

The net increase primarily relates to the renewable assets pledged in Brazil for €392 million.

### 13.3.3 Contractual commitments to purchase property, plant and equipment

In the ordinary course of their operations, some Group companies have entered into commitments to purchase, and the related third parties to deliver plant and equipment. These commitments relate mainly to orders for equipment and material related to the construction of energy production units and to service agreements.

Contractual investment commitments made by the Group to purchase property, plant and equipment totaled €2,859 million at December 31, 2023 compared to €3,548 million at December 31, 2022.

The net reduction in contractual commitments relates mainly to renewable assets in the United States for €585 million.

### 13.3.4 Other information

Borrowing costs included in the cost of property, plant and equipment amounted to €268 million at December 31, 2023 compared to €109 million at December 31, 2022.

## 13.4 Impairment testing of goodwill, intangible assets and property, plant and equipment

### Accounting standards

#### Risk of impairment

##### **Goodwill**

Goodwill is not amortized but is tested for impairment each year in accordance with IAS 36, or more frequently where an indication of impairment is identified. All goodwill is tested for impairment based on data at the end of June, supplemented by a review of events in the second half.

Impairment tests are carried out at the level of cash-generating units (CGUs) or groups of CGUs, which constitute groups of assets which generate cash flows that are largely independent from cash flows generated by other CGUs.

Goodwill is impaired if the net carrying amount of the CGU (or group of CGUs) to which the goodwill is allocated is greater than the recoverable amount of that CGU.

Impairment losses in relation to goodwill cannot be reversed and are shown as "Impairment losses" in the income statement.

##### **Intangible assets and property, plant and equipment**

In accordance with IAS 36, impairment tests are carried out on items of property, plant and equipment and intangible assets where there is an indication that the assets may be impaired. Such indications may be based on events or changes in the market environment, or on internal sources of information. Intangible assets that are not amortized are tested for impairment annually.

Property, plant and equipment and intangible assets with finite useful lives are only tested for impairment when there is an indication that they may be impaired. This is generally the result of significant changes in the environment in which the assets are operated or when economic performance is lower than expected.

Items of property, plant and equipment and intangible assets are tested for impairment at the level of the cash-generating unit (CGU), as appropriate and determined in accordance with IAS 36. If the recoverable amount of an asset is lower than its carrying amount, the carrying amount is written down to the recoverable amount by recording an impairment

loss. Upon recognition of an impairment loss, the depreciable amount and possibly the useful life of the asset concerned is revised.

Impairment losses recorded in relation to property, plant and equipment or intangible assets may be subsequently reversed if the recoverable amount of the asset increases to exceed the carrying amount. The increased carrying amount of an item of property, plant or equipment following the reversal of an impairment loss may not exceed the carrying amount that would have been determined (net of depreciation/amortization) had no impairment loss been recognized in prior periods.

### Indicators of impairment

The main indicators of impairment used by the Group are:

- using external sources of information
  - a decline in an asset's value over the period that is significantly more than would be expected from the passage of time or normal use;
  - significant adverse changes that have taken place over the period, or will take place in the near future, in the technological market, economic or legal environment in which the entity operates or in the market to which an asset is dedicated;
  - an increase over the period in market interest rates or other market rates of return on investments if such increase is likely to affect the discount rate used in calculating an asset's value in use and decrease its recoverable amount materially;
  - the carrying amount of the net assets of the entity exceeds its market capitalization;
- using internal sources of information
  - evidence of obsolescence or physical damage to an asset;
  - significant changes in the extent to which, or manner in which, an asset is used or is expected to be used, that have taken place in the period or soon thereafter and that will adversely affect it. These changes include the asset becoming idle, plans to dispose of an asset sooner than expected, reassessing its useful life as finite rather than indefinite or plans to restructure the operations to which the asset belongs;
  - internal reports that indicate that the economic performance of an asset is, or will be, worse than expected.

### Measurement of recoverable amount

For operating entities which the Group intends to hold on a long-term and going concern basis, the recoverable amount of a CGU corresponds to the higher of its fair value less costs to sell and its value in use. Value in use is primarily determined based on the present value of future operating cash flows including a terminal value. Standard valuation techniques are used based on the following main economic assumptions:

- market perspectives and developments in the regulatory framework;
- discount rates based on the specific characteristics of the operating entities concerned;
- terminal values in line with available market data specific to the operating segments concerned and growth rates associated with these terminal values, not exceeding the inflation rate.

Discount rates are determined on a post-tax basis and applied to post-tax cash flows. The recoverable amounts calculated on the basis of these discount rates are the same as the amounts obtained by applying the pre-tax discount rates to cash flows estimated on a pre-tax basis, as required by IAS 36.

For operating entities which the Group has decided to sell, the related recoverable amount of the assets concerned is based on market value less disposal costs. Where negotiations are ongoing, this value is determined based on the best estimate of their outcome as of the reporting date.

### 13.4.1 General assumptions

The impairment tests were performed in the context of a highly volatile economic environment, as described in Note 1.3 "Use of estimates and judgments".

In most cases, the recoverable amounts are determined by reference to a value in use that is calculated using cash flow projections drawn up on the basis of the 2024 budget and the 2025-2026 medium-term business plan, as approved by the Executive Committee and the Board of Directors, and on the basis of extrapolated cash flows beyond that time frame.

Cash flow projections are determined on the basis of macroeconomic assumptions (inflation, exchange rates and growth rates), and price forecasts resulting from the Group's reference scenario for 2027-2050 as revised and validated by the Executive Committee in July 2023. The forecasts and projections included in the reference scenario were determined on the basis of the following inputs:

- forward market prices over the liquidity period for fuel (coal, oil and gas), CO<sub>2</sub> and electricity on each in a context of highly volatile energy prices;
- beyond this period, medium- and long-term energy prices were determined by the Group based on macroeconomic assumptions and fundamental supply and demand equilibrium models, the results of which are regularly compared against forecasts prepared by external energy sector specialists. Long-term projections for CO<sub>2</sub> prices are in line with the 2030 emissions reduction target of 55% and the 2050 climate neutrality objectives set by the European Commission as part of the "European Green Deal" presented in December 2019 and July 2021. Among the external scenarios, the Group's scenario is similar to that of the International Energy Agency, with its APS (Announced Pledges Scenario) model, and that of ADEME ("green technology");
- more specifically, medium- and long-term electricity prices were determined by the Group using electricity demand forecasting models, medium- and long-term forecasts of fuel and CO<sub>2</sub> prices, and expected trends in installed capacity and in the technology mix of the production assets within each power generation system. ENGIE has opted for a balanced mix, integrating renewable gas and carbon dioxide capture and storage in order to guarantee an energy system with the best levels of efficiency and resilience. This trajectory has been included in the Group's report as part of the "Task Force on Climate Related Financial Disclosures" (TCFD) initiative. The risk factors arising from climate and environmental issues are also detailed in the Group's Universal Registration Document.

Finally, as part of the Group's efforts to take climate issues into account (see Note 1.3.3 "Consideration of climate issues in the preparation of the Group's financial statements"), the Group has taken into account, in the valuation of non-financial assets, its commitment to completely withdraw from coal activities by 2027 (see Note 13.4.5).

### 13.4.2 Renewables

At December 31, 2023, goodwill amounted to €2,185 million, intangible assets to €1,756 million and property, plant and equipment to €17,124 million. Renewables comprises all centralized renewable energy generation activities, including financing, construction, operation and maintenance of renewable energy facilities, using various energy sources such as hydropower, onshore wind, photovoltaic solar, biomass, offshore wind, and battery storage linked to a renewable asset. The energy produced is fed into the grid and sold either on the open or regulated market or to third parties through electricity sale agreements.

The main assumptions and key estimates relate primarily to discount rates, assumptions as to the renewal of the hydropower concession agreements and changes in electricity prices beyond the liquidity period.

The value in use of the Compagnie Nationale du Rhône and SHEM was calculated based on assumptions including the extension or renewal through a tender process for the concession agreements.

The cash flows for the periods covered by the renewal of the concession agreements are based on a number of assumptions relating to the economic and regulatory conditions for operating these assets (royalty rates, required level of investment, etc.) during this period.

In 2023, the discount rates applied to these activities ranged between 5.3% and 10.3%. In 2022, they ranged between 4.5% and 10.2%.

### Results of the impairment tests

At December 31, 2023, no impairment losses were recognized on goodwill in consideration of the recoverable amount of the cash generating unit to which it belongs.

However, impairment losses on property, plant and equipment totaling €784 million were nevertheless recognized over the year, notably on renewable energy production assets in North America (€714 million), due to very specific operational difficulties linked to turbine performance on a wind power asset, and the fall in long-term market prices affecting certain projects exposed to the SPP market in particular. It should be noted that for these projects, the fall in market prices had a positive impact on the fair value of VPPA (Virtual Power Purchase Agreement) contracts of around €+0.3 billion, with these mark-to-market changes, on the period covered by these contracts, recognized in operating expenses (see Note 8.1 "Operating expenses").

### Sensitivity analyses

The sensitivity of the hydropower generation business in France and the renewable power generation business in North America to changes in electricity prices and changes in discount rates (impact on the recoverable amount) is shown in the table below:

In billion of euros	31 déc. 2023			
	Electricity prices		Discount rates	
	+10€/MWh	-10€/MWh	+50 bp	-50bp
Hydropower generation in France	0.2	(0.4)	(0.2)	0.2
Renewables assets in North America	0.4	(0.4)	(0.1)	0.1

*Non-linear increase or decrease due to the method of calculation of the hydro tax.*

An increase of 50 basis points in the discount rates and a decrease of €10/MWh in the electricity price have a negative impact on the recoverable amount. However, the recoverable amount of goodwill would remain above the carrying amount.

### 13.4.3 Networks

Networks comprises the Group's electricity and gas infrastructure activities and projects. These activities include the management and development of (i) gas and electricity transportation networks and natural gas distribution networks in and outside of Europe, (ii) underground natural gas storage in Europe, and (iii) regasification infrastructure in France and Chile.

Apart from the historical infrastructure management activities, its asset portfolio also contributes to the challenges of the energy transition and network greening (biomethane, hydrogen, etc.).

At December 31, 2023, goodwill amounted to €5,366 million, intangible assets to €1,090 million and property, plant and equipment to €29,975 million. Regulated infrastructure assets in France amounted to €928 million for intangible assets and €27,220 million for property, plant and equipment.

The valuation of activities in France is mainly based on cash flow projections determined on the basis of tariffs negotiated with the French energy regulator (CRE) and terminal values corresponding to the expected value of the Regulated Asset Base (RAB). The RAB is the value assigned by the CRE to the assets operated by distributors. It is the sum of the future pre-tax cash flows, discounted at the pre-tax rate of return guaranteed by the regulator.

In respect of the valuation of activities in France, the energy mix scenario for 2050, adopted by the Group and detailed in Note 17.3.1 "Dismantling obligations arising on non-nuclear plant and equipment", will not lead to any significant change in the RAB. Given the vital role of gas, a reliable energy source able to supplement renewable energy sources that are intermittent by nature, non-controllable and difficult to store, the Group is planning to maintain or convert its gas network infrastructures to allow for the transportation of green gases (biomethane, hydrogen, etc.), which will progressively replace

natural gas. This strategic role will be further strengthened by the new opportunities offered in terms of CO<sub>2</sub> storage and transportation.

To achieve this, the Group plans to maintain its current level of investment. This approach is largely supported by a rapidly developing regulatory framework supporting the rise in the use of hydrogen and biomethane in the European Union, which will result in concrete European targets. This legal framework should be in place within the next two years.

France's political and social strategy concerning the energy transition aims to achieve carbon neutrality by 2050. The priorities of the French climate and energy policy are being updated with France's future roadmap *Stratégie Française sur l'Énergie et le Climat* (SFEC), in particular with the document published on November 22, 2023 by the Ministry of Ecological Transition ahead of the consultation that was launched in December 2023. In addition, the scenario adopted by the Group is largely supported by the main conclusions of the CRE report of April 2023 on the future of gas infrastructures, as well as those of the public consultation on "decarbonizing the building industry" held during the 2023 summer, which highlighted the difficulties associated with a potential ban on the installation of new gas boilers in existing homes.

In 2023, the discount rates applied to all these activities ranged between 4.9% and 9.4%. In 2022, they ranged between 4.7% and 8.5%.

### Results of the impairment tests

At December 31, 2023, no impairment losses were recognized on goodwill in consideration of the recoverable amount of the cash generating unit to which it belongs.

However, impairment losses totaling €82 million were recognized during the year on certain biomethane production assets.

### Sensitivity analysis

Given the regulated nature of the Networks business in France, as well as the progressive transition from natural gas to green gas, a reasonable change in any of the valuation inputs (discount rate, inflation rate and rate of return on assets) would not result in any impairment losses. A very substantial change in the regulatory framework and political orientations could have a significant impact on the valuation of gas infrastructure assets in France. In this respect, the 2023 RAB of Networks assets in France, as well as the related depreciation and amortization expenses, are as follows:

<i>In millions of euros</i>	2023 RAB	Depreciation and amortization
GRDF	16,941	(1,083)
GRTgaz	9,362	(546)
Storengy	4,120	(153)
Elengy	930	(61)

#### 13.4.4 Energy Solutions

At December 31, 2023, goodwill amounted to €1,209 million, intangible assets to €2,351 million and property, plant and equipment to €2,646 million.

Energy Solutions encompasses the construction and management of decentralized energy networks to produce energy (heating and cooling networks, distributed power generation plants, distributed solar power parks, low carbon mobility, low-carbon cities and public lighting, etc.) and related services (energy efficiency, technical maintenance, sustainable development consulting).

The terminal value used to calculate the value in use of the services and energy sales businesses in France was determined by extrapolating the cash flows beyond the medium-term business plan period using a long-term growth rate of 2% per year.

The main assumptions and key estimates relate primarily to discount rates and changes in price beyond the liquidity period.

In 2023, the discount rates applied to these activities ranged between 5.3% and 9%. In 2022, they ranged between 4.9% and 8.9%.

### Results of the impairment tests

At December 31, 2023, no impairment losses were recognized on goodwill in consideration of the recoverable amount of the cash generating unit to which it belongs.

However, impairment losses totaling €137 million were recognized during the year on property, plant and equipment, mainly in connection with renegotiations of contracts due to expire shortly in France, as well as assets that were subject to revisions to their medium- and long-term forecasts or that encountered operational difficulties in Germany and North America.

### Sensitivity analyses

Given the essentially contractual nature of Energy Solutions activities, a reasonable change in any of the valuation inputs would not result in impairment losses on goodwill.

## 13.4.5 FlexGen

At December 31, 2023, goodwill amounted to €1,123 million, intangible assets to €894 million and property, plant and equipment to €5,883 million.

FlexGen encompasses all the Group's the activities involved in compensating the intermittent nature of renewable energies by providing upstream flexibility (flexible generation as well as pump- or battery- operated storage plants) and downstream flexibility (shaving or shifting the consumption of BtoC customers). They also provide solutions to decarbonize the industry with low-carbon hydrogen. The GBU plays a key role in the energy transition. It also includes the financing, construction, and operation of desalination plants, whether or not connected to power plants.

The main assumptions and key estimates relate primarily to discount rates, estimated demand for electricity and changes in the price of CO<sub>2</sub>, fuel and electricity beyond the liquidity period. These assumptions also concern the duration of tax measures involving inframarginal rent caps in France and Italy.

In 2023, the discount rates applied to these activities ranged between 6.4% and 10.4%. In 2022, they ranged between 6% and 10.3%.

### Results of the impairment tests

At December 31, 2023, no impairment losses were recognized on goodwill in consideration of the recoverable amount of the cash generating unit to which it belongs.

However, impairment losses totaling €624 million were recognized during the year on property, plant and equipment, notably on coal-fired power generation assets in South America for which the Group has decided to accelerate the end of operations by the end of 2025, in line with the Group's decarbonization plan.

### Sensitivity analyses

An increase of 50 basis points in the discount rates used would have a negative 1% impact on the recoverable amount of thermal power plants in France, Belgium, the Netherlands and Spain. However, the recoverable amount of goodwill would remain above the carrying amount. A reduction of 50 basis points in the discount rates used would have a positive 1% impact on the calculation.

A 10% decrease in the margin captured by thermal power plants in France, Belgium, the Netherlands and Spain would have a negative impact of 6% on the recoverable amount of goodwill over the carrying amount. An increase of 10% in the margin captured would have a positive 6% impact on this calculation.

### 13.4.6 Retail

At December 31, 2023, goodwill amounted to €1,838 million, intangible assets to €610 million and property, plant and equipment to €136 million.

Retail encompasses all the Group's activities relating to the sale of gas and electricity to end customers. It also includes all the Group's activities in services for residential clients.

The terminal value used to calculate the value in use of the main services and energy sales businesses in Europe was determined by extrapolating cash flows beyond the medium-term business plan period using a long-term growth rate of approximately 2% per year.

In 2023, the discount rates applied to these activities ranged between 8% and 10.6%. In 2022, these rates ranged between 7.8% and 10%.

#### Results of the impairment tests

At December 31, 2023, no impairment losses were recognized on goodwill in consideration of the recoverable amount of the cash generating unit to which it belongs.

#### Sensitivity analyses

Given the capital-light nature of Retail activities, a reasonable change in any of the valuation inputs would not result in any impairment losses on goodwill.

### 13.4.7 Nuclear

At December 31, 2023, goodwill amounted to €797 million, intangible assets to €979 million and property, plant and equipment to €1,045 million.

Nuclear encompasses the power generation activities from the Group's nuclear power plants in Belgium and drawing rights on the Chooz B and Tricastin power plants in France.

#### Key assumptions used for the impairment test

On June 29, 2023, ENGIE and the Belgian government signed an intermediate agreement defining the terms of the extension of the Doel 4 and Tihange 3 nuclear units only. This agreement became binding on July 21, 2023, following the signature of the supplements to the initial agreements. Transaction documents signed on December 13, 2023 have clarified the implementation of the first agreements of June and July (see Note 17.2 "Obligations relating to nuclear power generation activities"). This agreement also provides for the establishment of a legal structure dedicated to the two extended nuclear units, equally owned by the Belgian State and ENGIE, aligning the interests of the two parties and ensuring the sustainability of their commitments. The business model of the extension is based on a balanced allocation of risks, notably through a Contract for Difference mechanism guaranteeing the value of extension investments, with a limited incentive for the industrial operator to achieve a favorable technical and economic performance at the plants.

In addition, for the period up to the extension of the two Belgian nuclear units, and for the period covering drawing rights on nuclear power plants in France, the cash flow projections are based on a large number of key assumptions, such as prices of fuel and CO<sub>2</sub>, expected trends in electricity prices, availability of power plants, market outlook, and changes in the regulatory environment (especially concerning the extension of drawing rights agreements for French nuclear plants and the tax measures involving inframarginal rent caps). Lastly, the key assumptions also include the discount rate used to calculate the value in use of these activities, which amounted to 7% for 2023, unchanged from 2022.

Cash flow projections beyond the medium-term business plan for drawing rights on the Chooz B and Tricastin power plants have been determined on the basis of the residual term of the contracts and the assumption of a 10-year extension.

In France, the Nuclear Safety Authority authorized the start-up of Tricastin 1 on December 20, 2019 after its shutdown for its fourth 10-yearly inspection and, on December 3, 2020, published a draft decision setting out the conditions for the 900 MW reactors to continue operating beyond 40 years. Confirmation of a 10-year extension of the operating life of the 900 MW series reactors is therefore expected to be formalized in the next few years, once the conditions for continued operation have been determined by the Nuclear Safety Authority and a public inquiry has been held. The Group has therefore considered the 10-year extension of the nuclear units, and the corresponding drawing rights, beyond their fourth 10-yearly outage. The last 10-yearly inspection took place in 2021 for Tricastin (VD4) and in 2019 for Chooz B (VD3). The assumption of an extension was already considered in the impairment tests of previous years.

### Results of the impairment test

The recoverable amount of the Nuclear assets remains above the value of goodwill, particularly due to the excess value attached to the plants in France.

Following the review procedure initiated by the Commission for Nuclear Provisions (CNP) in September 2022, the industrial scenario and all the technical and financial assumptions were approved on July 7, 2023. This resulted in a €646 million decrease in the plant dismantling provision (see Note 17.2 "Obligations relating to nuclear power generation activities"), against a reduction in the dismantling assets. Given the impairment losses recognized on some of these assets at the end of the previous year, an impairment reversal of €400 million was recorded.

### Sensitivity analyses

A decrease of €10/MWh in electricity prices for nuclear power generation in France beyond the liquidity period would lead to a decrease of €0.5 billion in the recoverable amount, but without any impairment of goodwill.

Given the hedging of energy prices for electricity generated by Belgian power plants, and the implementation of the Contract for Difference mechanism as part of the extension of the Doel 4 and Tihange 3 nuclear units, the recoverable amount is not very sensitive to changes in electricity prices for nuclear-generated electricity in Belgium.

An increase of 50 basis points in the discount rates would lead to a non-material decrease in the recoverable amount on the Belgian plants.

A 5% decrease in availability of all Belgian nuclear power plants would lead to a decrease in value of around €0.3 billion on the Belgian plants. A similar decrease for the French plants would lead to a decrease of €0.2 billion in the recoverable amount, but without any impairment.

### 13.4.8 Other

Goodwill amounted to €346 million at December 31, 2023. The Other segment encompasses energy management and optimization activities, the BtoB supply activities in France of *Entreprises & Collectivités* (E&C), and the Corporate and holding activities. These entities present a significant difference between recoverable amount and the carrying amount of the segment's operating activities carrying goodwill at December 31, 2023.

## NOTE 14 FINANCIAL INSTRUMENTS

### 14.1 Financial assets

#### Accounting standards

In accordance with the principles of IFRS 9 – *Financial Instruments*, financial assets are recognized and measured either at amortized cost, at fair value through equity or at fair value through profit or loss based on the following two criteria:

- a first criterion relating to the contractual cash flow characteristics of the financial asset. The analysis of contractual cash flow characteristics makes it possible to determine whether these cash flows are “only payments of principal and interest on the outstanding amounts” (known as the “SPPI” test or Solely Payments of Principal and Interest);
- a second criterion relating to the business model used by the Group to manage its financial assets. IFRS 9 defines three different business models: a first business model whose objective is to hold assets in order to collect contractual cash flows (hold to collect), a second model whose objective is achieved by both collecting contractual cash flows and selling financial assets (hold to collect and sell), and other business models.

The identification of the business model and the analysis of the contractual cash flow characteristics require judgment to ensure that the financial assets are classified in the appropriate category.

Where the financial asset is an investment in an equity instrument and is not held for trading, the Group may irrevocably elect to present the gains and losses on that investment in other comprehensive income.

Except for trade receivables, which are measured at their transaction price in accordance with IFRS 15, financial assets are measured, on initial recognition, at fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to their acquisition.

At the end of each reporting period, financial assets measured using the amortized cost method or at fair value through other comprehensive income (with a recycling mechanism) are subject to an impairment test based on the expected credit losses method.

Financial assets also include derivatives that are measured at fair value in accordance with IFRS 9.

In accordance with IAS 1, the Group presents current and non-current assets and current and non-current liabilities separately in the statement of financial position. In view of the majority of the Group's activities, it was considered that the criterion to be used to classify assets is the expected time to realize the asset or settle the liability: the asset is classified as current if this period is less than 12 months and as non-current if it is more than 12 months after the reporting period.

The following table presents the Group's different categories of financial assets, broken down into current and non-current items:

In millions of euros	Notes	Dec. 31, 2023			Dec. 31, 2022		
		Non-current	Current	Total	Non-current	Current	Total
Other financial assets	14.1	14,817	2,170	16,987	10,599	2,394	12,992
<i>Equity instruments at fair value through other comprehensive income</i>		1,902	-	1,902	1,217	-	1,217
<i>Equity instruments at fair value through income</i>		222	-	222	278	-	278
<i>Debt instruments at fair value through other comprehensive income</i>		1,753	119	1,873	2,128	290	2,418
<i>Debt instruments at fair value through income</i>		2,915	654	3,569	1,178	568	1,745
<i>Loans and receivables at amortized cost</i>		8,024	1,397	9,421	5,798	1,537	7,334
Trade and other receivables	7.2	-	20,092	20,092	-	31,310	31,310
Assets from contracts with customers	7.2	1	9,530	9,531	9	12,575	12,584
Cash and cash equivalents		-	16,578	16,578	-	15,570	15,570
Derivative instruments	14.4	12,764	8,481	21,245	33,134	15,252	48,386
<b>TOTAL</b>		<b>27,582</b>	<b>56,850</b>	<b>84,433</b>	<b>43,741</b>	<b>77,101</b>	<b>120,843</b>

## 14.1.1 Other financial assets

### 14.1.1.1 Equity instruments at fair value

#### Accounting standards

##### Equity instruments at fair value through other comprehensive income (OCI)

Under IFRS 9 an irrevocable election can be made to present subsequent changes in the fair value of an investment in an equity instrument that is not held for trading in other comprehensive income. This choice is made on an instrument by instrument basis. Amounts presented in other comprehensive income should not be transferred to profit or loss including proceeds of disposals. However, IFRS 9 authorizes the transfer of the accumulated profits and losses to another component of equity. Dividends from such investments are recognized in profit or loss unless the dividend clearly represents the recovery of a portion of the cost of the investment.

The equity instruments recognized under this line item mainly concern investments in companies that are not controlled by the Group and for which OCI measurement has been selected given their strategic and long-term nature.

Upon initial recognition, these equity instruments are recognized at fair value, which is generally their acquisition cost, plus transaction costs.

At each reporting date, for listed securities, fair value is determined based on the quoted market price at the reporting date. For unlisted securities, fair value is measured using valuation models based primarily on the latest market transactions, the discounting of dividends or cash flows and the net asset value.

##### Equity instruments at fair value through profit or loss

Equity instruments that are held for trading or for which the Group has not elected for measurement at fair value through other comprehensive income are measured at fair value through profit or loss.

This category mainly includes investments in companies not controlled by the Group.

Upon initial recognition, these equity instruments are recognized at fair value, which is generally their acquisition cost.

At each reporting date, for listed and unlisted securities, the same measurement method as described above should be applied.

<i>In millions of euros</i>	Equity instruments at fair value through other comprehensive income	Equity instruments at fair value through income	Total
<b>AT DECEMBER 31, 2022</b>	<b>1,217</b>	<b>278</b>	<b>1,495</b>
Increase	666	84	749
Decrease	(105)	(4)	(109)
Changes in fair value	136	(49)	87
Changes in scope of consolidation, translation adjustments and other	(11)	(87)	(98)
<b>AT DECEMBER 31, 2023</b>	<b>1,902</b>	<b>222</b>	<b>2,124</b>
Dividends	2	7	8

Equity instruments break down as €1,653 million of listed equity instruments (€875 million at December 31, 2022) and €473 million of unlisted equity instruments (€620 million at December 31, 2022). Changes in fair value include in particular the impairment of the minority interest held by the Group in Nord Stream AG, now valued at zero (€90 million at December 31, 2022). This change in fair value does not affect the income statement, as it is recorded as a reduction in other items of comprehensive income.

#### 14.1.1.2 Debt instruments at fair value

##### Accounting standards

##### Debt instruments at fair value through other comprehensive income

Financial assets that are held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets and for which the contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the outstanding amount (SPPI), are measured at fair value through OCI (with a recycling mechanism). This involves a measurement through profit or loss for interest (at amortized cost using the effective interest method), impairment and foreign exchange gains and losses, and through OCI (with a recycling mechanism) for other gains or losses.

This category mainly includes bonds.

Fair value gains and losses on these instruments are recognized in other comprehensive income, except for the following items which are recognized in profit or loss:

- expected credit losses and reversals;
- foreign exchange gains and losses.

When the financial asset is derecognized, the cumulative gain or loss that was previously recognized in other comprehensive income is reclassified from equity to profit or loss.

##### Debt instruments at fair value through profit or loss

Financial assets whose contractual cash flows do not consist solely of payments of principal and interest on the amount outstanding (SPPI) or that are held in view of an “other” business model are measured at fair value through profit or loss.

The Group's investments in UCITS are accounted for in this caption. They are considered as debt instruments, according to IAS 32 – *Financial Instruments: Presentation*, given the existence of an obligation for the issuer to redeem units, at the request of the holder. They are measured at fair value through profit or loss because the contractual cash flow characteristics do not meet the SPPI test.

<i>In millions of euros</i>	Debt instruments at fair value through other comprehensive income	Liquid debt instruments held for cash investment purposes at fair value through other comprehensive income	Debt instruments at fair value through income	Liquid debt instruments held for cash investment purposes at fair value through income	Total
<b>AT DECEMBER 31, 2022</b>	<b>2,418</b>	<b>-</b>	<b>977</b>	<b>769</b>	<b>4,163</b>
Increase	2,147	-	2,942	228	5,317
Decrease	(2,717)	(24)	(1,375)	(139)	(4,255)
Changes in fair value	25	-	141	26	192
Changes in scope of consolidation, translation adjustments and other	-	24	-	-	24
<b>AT DECEMBER 31, 2023</b>	<b>1,873</b>	<b>-</b>	<b>2,685</b>	<b>884</b>	<b>5,441</b>

Debt instruments at fair value at December 31, 2023 primarily included bonds and money market funds held by Synatom for €4,536 million (see Note 17.2.4 “Financial assets set aside to cover the future costs of dismantling nuclear facilities and managing radioactive fissile material”) and liquid instruments deducted from net financial debt for €884 million (respectively €3,350 million and €769 million at December 31, 2022).

### 14.1.1.3 Loans and receivables at amortized cost

#### Accounting standards

Loans and receivables held by the Group under a business model consisting in holding the instrument in order to collect the contractual cash flows, and whose contractual cash flows consist solely of payments of principal and interest on the principal amount outstanding (SPPI test) are measured at amortized cost. Interest is calculated using the effective interest method.

The following items are recognized in profit or loss:

- interest income using the effective interest method;
- expected credit losses and reversals;
- foreign exchange gains and losses.

The Group has entered into concession agreements with certain public authorities under which the construction, extension or improvement of infrastructure is carried out in return for an unconditional right to receive payment from the concession holder in cash or other financial assets. In this case, the Group recognizes a financial receivable from the concession holders.

The Group has entered into services or take-or-pay contracts that are, or contain, a lease and under which the Group acts as lessor and its customers as lessees. Leases are analyzed in accordance with IFRS 16 in order to determine whether they constitute an operating lease or a finance lease. Whenever the terms of the lease transfer substantially all the risk and rewards of ownership of the related asset, the contract is classified as a finance lease and a finance receivable is recognized to reflect the financing deemed to be granted by the Group to the customer.

Leasing security deposits are presented in this caption and recognized at their nominal value.

Please refer to Note 15 “Risks arising from financial instruments” regarding the assessment of counterparty risk.

NOTE 14 FINANCIAL INSTRUMENTS

In millions of euros	Dec. 31, 2023			Dec. 31, 2022		
	Non-current	Current	Total	Non-current	Current	Total
Loans granted to affiliated companies and other debt instruments at amortized cost	5,021	350	5,371	3,583	427	4,010
Other receivables at amortized cost	219	648	867	261	734	995
Amounts receivable under concession contracts	2,349	211	2,559	1,564	187	1,751
Amounts receivable under finance leases	435	188	624	390	189	579
<b>TOTAL</b>	<b>8,024</b>	<b>1,397</b>	<b>9,421</b>	<b>5,798</b>	<b>1,537</b>	<b>7,334</b>

Loans granted to affiliated companies and other debt instruments at amortized cost include the cash of the debt instruments held by Synatom, awaiting investment for €3,777 million (€2,270 million at December 31, 2022) (see Note 17.2.4. "Financial assets set aside to cover the future costs of dismantling nuclear facilities and managing radioactive fissile material").

Amounts receivable under concession contracts amounted to €2,559 million at December 31, 2023 (€1,751 million at December 31, 2022). They are mainly related to the Novo Estado and Gralha Azul electric power transmission networks in Brazil, as well as Kathu's Solar Park (RF) Proprietary Trading concession in South-Africa.

Other net gains and losses recognized in the income statement relating to loans and receivables at amortized cost break down as follows:

In millions of euros	Interest income	Post-acquisition measurement	
		Foreign currency translation	Expected credit loss
<b>AT DECEMBER 31, 2023</b>	<b>280</b>	<b>(35)</b>	<b>(6)</b>
AT DECEMBER 31, 2022	211	(64)	(6)

#### Amounts receivable under finance leases

These contracts refer to lease contracts in which ENGIE acts as lessor, classified as finance leases in accordance with IFRS 16. They relate to energy purchase and sale contracts where the contract conveys an exclusive right to use a production asset, and certain contracts with industrial customers relating to assets held by the Group.

The Group has recognized finance lease receivables, notably for cogeneration plants for Wapda and NTDC (Uch - Pakistan) one of whose contracts has been extended into 2023.

In millions of euros	Dec. 31, 2023	Dec. 31, 2022
Undiscounted future minimum lease payments	1,006	758
Unguaranteed residual value accruing to the lessor	46	12
<b>TOTAL GROSS INVESTMENT IN THE LEASE</b>	<b>1,052</b>	<b>770</b>
<b>Unearned financial income</b>	<b>276</b>	<b>47</b>
<b>NET INVESTMENT IN THE LEASE (STATEMENT OF FINANCIAL POSITION)</b>	<b>776</b>	<b>723</b>
<i>Of which present value of future minimum lease payments</i>	733	718
<i>Of which present value of unguaranteed residual value</i>	43	5

Undiscounted minimum lease payments receivable under finance leases can be analyzed as follows:

In millions of euros	Dec. 31, 2023	Dec. 31, 2022
Year 1	222	137
Years 2 to 5 inclusive	360	376
Beyond year 5	423	245
<b>TOTAL</b>	<b>1,006</b>	<b>758</b>

#### 14.1.2 Trade and other receivables, assets from contracts with customers

Information on trade and other receivables and assets from contracts with customers are provided in Note 7.2. "Trade and other receivables, assets and liabilities from contracts with customers".

### 14.1.3 Cash and cash equivalents

#### Accounting standards

This item includes cash equivalents as well as short-term investments that are considered to be readily convertible into a known amount of cash and where the risk of a change in their value is deemed to be negligible based on the criteria set out in IAS 7.

Bank overdrafts are not included in the calculation of cash and cash equivalents and are recorded under “Short-term borrowings”.

Cash and cash equivalent items are subject to impairment tests in accordance with the expected credit losses model of IFRS 9.

“Cash and cash equivalents” totaled €16,578 million at December 31, 2023 (€15,570 million at December 31, 2022). This item comprises standard money market funds with daily liquidity (49%), term deposits with a maturity of less than one month (40%), and deposits with a maturity of less than three months and other products (11%).

This amount included funds related to the green bond issues, which remain unallocated to the funding of eligible projects (see section 5 of the *Universal Registration Document*).

Gains recognized in respect of “Cash and cash equivalents” amounted to €596 million in 2022 compared to €196 million in 2022.

### 14.1.4 Transfer of financial assets

At December 31, 2023, the outstanding amount of disposals without recourse of financial assets as part of transactions leading to full derecognition, amounted to approximately €1,3 billion at December 31, 2023 (compared with €3.7 billion at December 31, 2022).

### 14.1.5 Financial assets and equity instruments pledged as collateral for borrowings and debt

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
Financial assets and equity instruments pledged as collateral	3,685	3,532

This item mainly includes the carrying amount of equity instruments pledged as collateral for borrowings and debt.

## 14.2 Financial liabilities

### Accounting standards

Borrowings and other financial liabilities are measured at amortized cost using the effective interest rate method.

On initial recognition, any issue or redemption premiums and discounts and issuing costs are added to/deducted from the nominal value of the borrowings concerned. These items are taken into account when calculating the effective interest rate and are therefore recorded in the consolidated income statement over the life of the borrowings using the amortized cost method.

As regards structured debt instruments that do not have an equity component, the Group may be required to separate an “embedded” derivative instrument from its host contract. When an embedded derivative is separated from its host contract, the initial carrying amount of the structured instrument is broken down into an embedded derivative component, corresponding to the fair value of the embedded derivative, and a financial liability component, corresponding to the difference between the amount of the issue and the fair value of the embedded derivative. The separation of components upon initial recognition does not give rise to any gains or losses.

The debt is subsequently recorded at amortized cost using the effective interest method while the derivative is measured at fair value, with changes in fair value recognized in profit or loss.

Financial liabilities are recognized either:

- as “Amortized cost liabilities” for borrowings, trade payables and other creditors, and other financial liabilities;
- as “Liabilities measured at fair value through profit or loss” for derivative financial instruments and for financial liabilities designated as such.

The following table presents the Group’s different financial liabilities at December 31, 2023, broken down into current and non-current items:

In millions of euros	Notes	Dec. 31, 2023			Dec. 31, 2022		
		Non-current	Current	Total	Non-current	Current	Total
Borrowings and debt	14.3	37,920	9,367	47,287	28,083	12,508	40,591
Trade and other payables	14.2	-	22,955	22,955	-	39,801	39,801
Liabilities from contracts with	7.2	93	3,960	4,053	121	3,292	3,412
Derivative instruments	14.4	16,755	7,806	24,561	39,417	11,859	51,276
Other financial liabilities		82	-	82	90	-	90
<b>TOTAL</b>		<b>54,851</b>	<b>44,087</b>	<b>98,938</b>	<b>67,711</b>	<b>67,460</b>	<b>135,171</b>

### 14.2.1 Trade and other payables

In millions of euros	Dec. 31, 2023	Dec. 31, 2022
Trade payables	22,188	39,165
Payable on fixed assets	787	636
<b>TOTAL</b>	<b>22,976</b>	<b>39,801</b>

The carrying amount of these financial liabilities represents a reasonable estimate of their fair value.

The decrease in trade payables is mainly due to a decrease in commodity prices over the period.

## 14.2.2 Liabilities from contracts with customers

Information on liabilities from contracts with customers are provided in Note 7.2. "Trade and other receivables, assets and liabilities from contracts with customers".

## 14.3 Net financial debt

### 14.3.1 Net financial debt by type

In millions of euros	Dec. 31, 2023			Dec. 31, 2022		
	Non-current	Current	Total	Non-current	Current	Total
<b>Borrowings and debt</b>						
Bond issues	29,217	1,039	30,256	21,007	2,550	23,557
Bank borrowings	5,985	763	6,748	4,679	797	5,476
Negotiable commercial paper	-	5,606	5,606	-	7,386	7,386
Lease liabilities	2,677	470	3,147	2,482	393	2,875
Other borrowings <sup>(1)</sup>	41	1,034	1,074	(85)	768	682
Bank overdrafts and current account	-	455	455	-	615	615
<b>BORROWINGS AND DEBT</b>	<b>37,920</b>	<b>9,367</b>	<b>47,287</b>	<b>28,083</b>	<b>12,508</b>	<b>40,591</b>
<b>Other financial assets</b>						
Other financial assets deducted from net financial debt <sup>(2)</sup>	(303)	(1,111)	(1,414)	(249)	(1,133)	(1,383)
<b>Cash and cash equivalents</b>						
Cash and cash equivalents	-	(16,578)	(16,578)	-	(15,570)	(15,570)
<b>Derivative instruments</b>						
Derivatives hedging borrowings <sup>(3)</sup>	177	20	198	394	22	416
<b>NET FINANCIAL DEBT</b>	<b>37,795</b>	<b>(8,302)</b>	<b>29,493</b>	<b>28,228</b>	<b>(4,174)</b>	<b>24,054</b>

(1) This item corresponds to the revaluation of the interest rate component of debt in a qualified fair value hedging relationship for a negative €-41 million, margin calls on debt hedging derivatives carried in liabilities for €481 million and the impact of amortized cost for €268 million (compared to, respectively, a negative €200 million, a positive €364 million and a positive €144 million at December 31, 2022).

(2) This item notably corresponds to assets related to financing for €105 million, liquid debt instruments held for cash investment purposes for €884 million and margin calls (assets) on derivatives hedging borrowings for €425 million (compared to, respectively, €67 million, €769 million and €547 million at December 31, 2022).

(3) This item represents the interest rate component of the fair value of derivatives hedging borrowings in a designated fair value hedging relationship. It also represents the exchange rate and outstanding accrued interest rate components of the fair value of all debt-related derivatives irrespective of whether or not they qualify as hedges.

The fair value of gross borrowings and debt (excluding lease liabilities) amounted to €42,994 million at December 31, 2023, compared with a carrying amount of €44,111 million.

Financial income and expenses related to borrowings and debt are presented in Note 10 "Net financial income/(loss)".

### 14.3.2 Reconciliation between net financial debt and cash flow from (used in) financing activities

		Dec. 31, 2022	Cash flow from financing activities	Cash flow from operating and investing activities and change in cash and cash equivalents	Change in fair value	Translation adjustments	Change in scope of consolidation and others	Dec. 31, 2023
<i>In millions of euros</i>								
<b>Borrowings and</b>	Bond issues	23,557	6,628	-	-	24	48	30,256
	Bank borrowings <sup>(1)</sup>	5,476	(216)	-	-	5	1,483	6,748
	Negotiable commercial paper	7,386	(1,761)	-	-	(18)	-	5,606
	Lease liabilities <sup>(2) (3)</sup>	2,875	(418)	-	-	(31)	721	3,147
	Other borrowings	682	(129)	-	570	16	(65)	1,074
	Bank overdrafts and current account	615	(173)	-	-	(14)	27	455
	<b>BORROWINGS AND DEBT</b>	<b>40,591</b>	<b>3,930</b>	<b>-</b>	<b>570</b>	<b>(18)</b>	<b>2,214</b>	<b>47,287</b>
<b>Other financial assets</b>	Other financial assets deducted from net financial debt	<b>(1,383)</b>	<b>15</b>	<b>-</b>	<b>(50)</b>	<b>5</b>	<b>(1)</b>	<b>(1,414)</b>
<b>Cash and cash equivalents</b>	Cash and cash equivalents	<b>(15,570)</b>	<b>-</b>	<b>(887)</b>	<b>-</b>	<b>188</b>	<b>(309)</b>	<b>(16,578)</b>
<b>Derivative instruments</b>	Derivatives hedging borrowings	<b>416</b>	<b>118</b>	<b>-</b>	<b>(104)</b>	<b>(232)</b>	<b>-</b>	<b>198</b>
<b>NET FINANCIAL DEBT</b>		<b>24,054</b>	<b>4,063</b>	<b>(887)</b>	<b>417</b>	<b>(57)</b>	<b>1,904</b>	<b>29,493</b>

- (1) *Bank borrowings: the amount of €1,483 million in the “Change in scope of consolidation and others” column corresponds mainly to the full consolidation of Kathu Solar Park for €475 million, as well as the effect of recognizing Broad Reach Power (€436 million) and BTE Renewables (€301 million) bank borrowings following their acquisition.*
- (2) *Lease liabilities: the negative amount of €418 million included in the “Cash flow from financing activities” column corresponds to lease payments, excluding interest (total cash outflow for leases amounted to a negative €480 million, of which €62 million relating to interest).*
- (3) *Lease liabilities: the amount of €721 million in the “Change in scope of consolidation and others” column corresponds mainly to the recognition of right-of-use assets for €324 million relating to new LNG vessels leasing contract.*

### 14.3.3 Main events of the period

#### 14.3.3.1 Impact of changes in the scope of consolidation and in exchange rates on net financial debt

In 2023, changes in exchange rates resulted in a €-57 million decrease in net financial debt, including a €-179 million decrease in relation to the US dollar and a +€94 million increase in relation to the Brazilian real.

Disposals and acquisitions during 2023 (including the effects of changes in the scope of consolidation) impacted net debt by €3,102 million. This change mainly reflects:

- asset disposals during the period, resulting in a €-246 million decrease in net financial debt (see Note 4.1 “Disposals carried out in 2023”), none of which was individually significant.
- acquisitions carried out in 2023 which increased net financial debt by €3,348 million (see Note 4.2 “Acquisitions carried out in 2023”). They include:
  - the acquisition of Broad Reach Power in the USA, specialized in battery storage;
  - the full consolidation of Kathu Solar Park (RF) Proprietary Trading in South-Africa following the purchase of an additional stake;
  - the acquisition of the activities of BTE Renewables, operating in South Africa;
  - the acquisition of the biomethane producer Ixora Energy Ltd in the United Kingdom.

### 14.3.3.2 Financing and refinancing transactions

The Group carried out the following main transactions in 2023:

#### ENGIE SA

- on January 11, 2023 ENGIE SA issued a green bond for a total amount of €3,025 million, as follows:
  - a €1,000 million tranche, with a 3.625% coupon, maturing on January 11, 2030, plus an additional €100 million on August 14, 2023,
  - a €1,000 million tranche, with a 4% coupon, maturing on January 11, 2035, plus an additional €75 million on June 2, 2023, and €100 million on June 6, 2023,
  - a €750 million tranche, with a 4.25% coupon, maturing on January 11, 2043;
- on February 1, 2023 ENGIE SA redeemed at maturity €742 million worth of bonds, with a 3% coupon;
- on February 28, 2023 ENGIE SA redeemed at maturity €500 million worth of green bonds, with a 0.375% coupon;
- on April 3, 2023 ENGIE SA issued GBP650 million worth of green bonds (€752 million), maturing on April 3, 2053, with a 5.625% coupon;
- on July 3, 2023, ENGIE SA issued CHF190 million worth of green bonds (€197 million), maturing on January 4, 2027, with a 2.34% coupon, as well as a CHF225 million green bond (€233 million), maturing on July 4, 2031, with a 2.49% coupon;
- on September 6, 2023, ENGIE SA issued €3,000 million worth of bonds, as follows:
  - a €500 million tranche, with a 3.75% coupon, maturing on September 6, 2027,
  - a €800 million tranche, with a 3.875% coupon, maturing on January 6, 2031,
  - a €800 million tranche, with a 4.25% coupon, maturing on September 6, 2034,
  - a €900 million tranche green bond, with a 4.5% coupon, maturing on September 6, 2042;
- on December 6, 2023, ENGIE SA issued €1,500 million worth of bonds, as follows:
  - a €600 million tranche, with a 3.625% coupon, maturing on December 6, 2026,
  - a €900 million tranche green bond, with a 3.875% coupon, maturing on December 6, 2033.

#### Other Group entities

- on June 24, 2023 ENGIE Alliance redeemed at maturity €1,000 million worth of bonds, with a 5.75% coupon.
- in December 2023, EBE issued a BRL 2.5 bn worth of bonds (€464 million), with a floating coupon.

## 14.4 Derivative instruments

### Accounting standards

Derivative financial instruments are measured at fair value. This fair value is determined on the basis of market data, available from external contributors. In the absence of an external benchmark, a valuation based on internal models recognized by market participants and favoring data directly derived from observable data such as OTC quotations is used.

The change in fair value of derivative financial instruments is recorded in the income statement except when they are designated as hedging instruments in a cash flow hedge or net investment hedge. In this case, changes in the value of the hedging instruments are recognized directly in equity, excluding the ineffective portion of the hedges.

The Group uses derivative financial instruments to manage and reduce its exposure to market risks arising from fluctuations in interest rates, foreign currency exchange rates and commodity prices, mainly for gas and electricity. The use of derivative instruments is governed by a Group policy for managing interest rate, currency and commodity risks (see Note 15 – *Risks arising from financial instruments*).

Derivative financial instruments are contracts (i) whose value changes in response to the change in one or more observable variables, (ii) that do not require any material initial net investment, and (iii) that are settled at a future date.

Derivative instruments include swaps, options, futures and swaptions, as well as forward commitments to purchase or sell listed and unlisted securities, and firm commitments or options to purchase or sell non-financial assets that involve physical delivery of the underlying.

For purchases and sales of electricity and natural gas, the Group systematically analyzes whether the contract was entered into in the “normal” course of operations and therefore falls outside the scope of IFRS 9. This analysis consists firstly in demonstrating that the contract is entered into and continues to be held for the purpose of physical delivery or receipt of the commodity in accordance with the Group’s expected purchase, sale or usage requirements for volumes intended to be used or sold by the Group within a reasonable time frame, as part of its operations.

The second step is to demonstrate that the Group has no practice of settling similar contracts on a net basis and that these contracts are not equivalent to written options. In particular, in the case of electricity and gas sales allowing the buyer a certain degree of flexibility concerning the volumes delivered, the Group distinguishes between contracts that are equivalent to capacity sales considered as transactions falling within the scope of ordinary operations and those that are equivalent to written financial options, which are accounted for as derivative financial instruments.

Only contracts that meet all of the above conditions are considered as falling outside the scope of IFRS 9. Adequate specific documentation is compiled to support this analysis.

### Embedded derivatives

The main Group contracts that may contain embedded derivatives are contracts with clauses or options potentially affecting the contract price, volume or maturity. This is the case primarily with contracts for the purchase or sale of non-financial assets, whose price is revised based on an index, the exchange rate of a foreign currency or the price of an asset other than the contract’s underlying.

An embedded derivative is a component of a hybrid (combined) instrument that also includes a non-derivative host contract – with the effect that some of the cash flows of the combined instrument vary in a way similar to a stand-alone derivative.

If a hybrid contract contains a host that is an asset within the scope of IFRS 9, the Group applies the presentation and measurement requirements described in Note 18.1 to the entire hybrid contract.

Conversely, when a hybrid contract contains a host that is not an asset within the scope of IFRS 9, an embedded derivative shall be separated from the host and accounted for as a derivative if, and only if:

- the economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host;
- a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and
- the hybrid contract is not measured at fair value with changes in fair value recognized in profit or loss (i.e., a derivative that is embedded in a financial liability at fair value through profit or loss is not separated).

Where an embedded derivative is separate from the host contract, it is measured at fair value and fair value changes are recognized in profit or loss (except if the embedded derivative is documented in a hedge relationship).

### **Hedging instruments: recognition and presentation**

Derivative instruments qualifying as hedging instruments are recognized in the consolidated statement of financial position and measured at fair value. However, their accounting treatment varies according to whether they are classified as (i) a fair value hedge of an asset or liability; (ii) a cash flow hedge, or (iii) a hedge of a net investment in a foreign operation.

#### ***Fair value hedges***

A fair value hedge is defined as a hedge of the exposure to changes in fair value of a recognized asset or liability such as a fixed-rate loan or borrowing, or of assets, liabilities or an unrecognized firm commitment denominated in a foreign currency.

The gain or loss from remeasuring the hedging instrument at fair value is recognized in profit or loss. The gain or loss on the hedged item attributable to the hedged risk adjusts the carrying amount of the hedged item and is also recognized in profit or loss even if the hedged item is in a category in respect of which changes in fair value are recognized through other comprehensive income. These two adjustments are presented net in the consolidated income statement, with the net effect corresponding to the ineffective portion of the hedge.

#### ***Cash flow hedges***

A cash flow hedge is a hedge of the exposure to variability in cash flows that could affect the Group's income. The hedged cash flows may be attributable to a particular risk associated with a recognized financial or non-financial asset or a highly probable forecast transaction.

The portion of the gain or loss on the hedging instrument that is determined to be an effective hedge is recognized directly in other comprehensive income, net of tax, while the ineffective portion is recognized in profit or loss. The gains or losses accumulated in equity are reclassified to the consolidated income statement under the same caption as the loss or gain on the hedged item – i.e., current operating income for operating cash flows and financial income or expenses for other cash flows – in the same periods in which the hedged cash flows affect income.

If the hedging relationship is discontinued, in particular because the hedge is no longer considered effective, the cumulative gain or loss on the hedging instrument remains recognized in equity until the forecast transaction occurs. However, if a forecast transaction is no longer expected to occur, the cumulative gain or loss on the hedging instrument is immediately recognized in profit or loss.

#### ***Hedge of a net investment in a foreign operation***

In the same way as for a cash flow hedge, the portion of the gain or loss on the hedging instrument that is determined to be an effective hedge of the currency risk is recognized directly in other comprehensive income, net of tax, while the ineffective portion is recognized in profit or loss. The gains or losses accumulated in other comprehensive income are transferred to the consolidated income statement when the investment is liquidated or sold.

**Hedging instruments: identification and documentation of hedging relationships**

The hedging instruments and hedged items are designated at the inception of the hedging relationship. The hedging relationship is formally documented in each case, specifying the hedging strategy, the hedged risk and the method used to assess hedge effectiveness. Only derivative contracts entered into with external counterparties are considered as being eligible for hedge accounting.

Hedge effectiveness is assessed and documented at the inception of the hedging relationship and on an ongoing basis throughout the periods for which the hedge was designated.

Hedge effectiveness is demonstrated both prospectively and retrospectively using various methods, based mainly on a comparison between changes in fair value or cash flows between the hedging instrument and the hedged item. Methods based on an analysis of statistical correlations between historical price data are also used.

**Derivative instruments not qualifying for hedge accounting: recognition and presentation**

These items mainly concern derivative financial instruments used in economic hedges that have not been – or are no longer – documented as hedging relationships for accounting purposes.

When a derivative financial instrument does not qualify or no longer qualifies for hedge accounting, changes in fair value are recognized directly in profit or loss under (i) current operating income for derivative instruments with non-financial assets as the underlying, and (ii) financial income or expenses for currency, interest rate and equity derivatives.

Derivative instruments not qualifying for hedge accounting used by the Group in connection with proprietary commodity trading activities and other derivatives expiring in less than 12 months are recognized in the consolidated statement of financial position in current assets and liabilities, while derivatives expiring after this period are classified as non-current items.

**Fair value measurement**

The fair value of instruments listed on an active market is determined by reference to the market price. In this case, these instruments are presented in level 1 of the fair value hierarchy.

The fair value of unlisted financial instruments for which there is no active market and for which observable market data exist is determined based on valuation techniques such as option pricing models or the discounted cash flow method.

The models used to evaluate these instruments take into account assumptions based on market inputs:

- the fair value of interest rate swaps is calculated based on the present value of future cash flows;
- the fair value of forward foreign exchange contracts and currency swaps is calculated by reference to current prices for contracts with similar maturities by discounting the future cash flow spread (difference between the forward exchange rate under the contract and the forward exchange rate recalculated in line with the new market conditions applicable to the nominal amount);
- the fair value of currency and interest rate options is calculated using option pricing models;
- commodity derivatives are valued by reference to listed market prices based on the present value of future cash flows (commodity swaps or commodity forwards) and option pricing models (options), for which market price volatility may be a factor. Contracts with maturities exceeding the depth of transactions for which prices are observable, or which are particularly complex, may be valued based on internal assumptions;
- exceptionally, for complex contracts negotiated with independent financial institutions, the Group uses the values established by its counterparties.

These instruments are presented in level 2 of the fair value hierarchy except when the evaluation is based mainly on data that are not observable, in which case they are presented in level 3 of the fair value hierarchy. Most often, this is the case for derivatives with a maturity that falls outside the observability period for market data relating to the underlying or when certain inputs such as the volatility of the underlying are not observable.

Except in case of enforceable master netting arrangements or similar agreements, counterparty risk is included in the fair value of financial derivative instrument assets and liabilities. It is calculated according to the “expected loss” method and takes into account the exposure at default, the probability of default and the loss given default. The probability of default is determined on the basis of credit ratings assigned to each counterparty (“historical probability of default” approach).

#### Offsetting of financial assets and liabilities in the statement of financial position

Financial assets and liabilities are presented net in the statement of financial position when the offsetting criteria of IAS 32 are met. Offsetting relates to instruments entered into with counterparties for which the contractual terms provide for a net settlement of transactions and a collateralization agreement (margin calls). In particular, commodity derivative assets and liabilities are offset for transactions with the same counterparty, in the same currency, by type of commodity and delivery point and with identical maturities.

Derivative instruments recognized in assets and liabilities are measured at fair value and broken down as follows:

In millions of euros	Dec. 31, 2023						Dec. 31, 2022					
	Assets			Liabilities			Assets			Liabilities		
	Non-current	Current	Total	Non-current	Current	Total	Non-current	Current	Total	Non-current	Current	Total
Derivatives hedging borrowings	279	111	390	457	131	588	226	92	319	620	114	735
Derivatives hedging commodities	10,984	8,344	19,328	15,132	7,516	22,648	30,932	15,076	46,008	37,210	11,698	48,907
Derivatives hedging other items <sup>(1)</sup>	1,501	26	1,526	1,167	159	1,325	1,975	84	2,059	1,587	47	1,634
<b>TOTAL</b>	<b>12,764</b>	<b>8,481</b>	<b>21,245</b>	<b>16,755</b>	<b>7,806</b>	<b>24,561</b>	<b>33,134</b>	<b>15,252</b>	<b>48,386</b>	<b>39,417</b>	<b>11,859</b>	<b>51,276</b>

(1) Derivatives hedging other items mainly include the interest rate component of interest rate derivatives (not qualifying as hedges or qualifying as cash flow hedges) that are excluded from net financial debt, as well as net investment hedge derivatives.

The net amount of derivatives hedging commodities recognized in the statement of financial position is measured after taking into account offsetting agreements that meet the criteria set out in paragraph 42 of IAS 32. This offsetting generated balance sheet effects of around €9.2 billion in 2023 and mainly concerned OTC derivatives concluded with counterparties for which the contractual terms provide for a net settlement of the transactions as well as a collateralization agreement (margin calls).

The balance of derivative hedging commodities is lower than at December 31, 2022 due to the decrease in commodity prices in 2023. Most of these derivatives mature in 2024 and 2025. This fair value incorporates market parameters at December 31, 2023, in particular the “bid ask” reserve, which has been updated to reflect the volatility of commodity prices observed on the markets. In the main markets where the Group operates (Europe, United States, Singapore) a 10% increase or decrease in these market parameters (including the “bid ask” spread) would impact the fair value of the derivatives concerned by a negative €85 million (increase) and a positive €85 million (decrease).

## 14.4.1 Offsetting of derivative instrument assets and liabilities

The net amount of derivative instruments after taking into account enforceable master netting arrangements or similar agreements, whether or not they are offset in accordance with paragraph 42 of IAS 32, are presented in the table below:

In millions of euros		Dec. 31, 2023				Dec. 31, 2022			
		Gross amount	Net amount recognized in the statement of financial position <sup>(1)</sup>	Other offsetting agreements <sup>(2)</sup>	Total net amount	Gross amount	Net amount recognized in the statement of financial position <sup>(1)</sup>	Other offsetting agreements <sup>(2)</sup>	Total net amount
<b>Assets</b>	Derivatives hedging commodities	28,522	<b>19,328</b>	(4,927)	<b>14,401</b>	72,322	<b>46,008</b>	(8,866)	<b>37,142</b>
	Derivatives hedging borrowings and other items	1,917	<b>1,917</b>	(469)	<b>1,448</b>	2,378	<b>2,378</b>	(364)	<b>2,014</b>
<b>Liabilities</b>	Derivatives hedging commodities	(31,843)	<b>(22,648)</b>	3,898	<b>(18,750)</b>	(75,221)	<b>(48,907)</b>	5,094	<b>(43,813)</b>
	Derivatives hedging borrowings and other items	(1,913)	<b>(1,913)</b>	415	<b>(1,498)</b>	(2,369)	<b>(2,369)</b>	547	<b>(1,822)</b>

(1) Net amount recognized in the statement of financial position after taking into account offsetting agreements that meet the criteria set out in paragraph 42 of IAS 32. Due to the volatility of commodity prices, this offsetting had a significant impact on the statement of financial position at December 31, 2023 and mainly concerns OTC derivatives concluded with counterparties for which the contractual terms provide for a net settlement of the transactions as well as a collateralization agreement (margin calls).

(2) Other offsetting agreements include collateral and other guarantee instruments, as well as offsetting agreements that do not meet the criteria set out in paragraph 42 of IAS 32.

## 14.5 Fair value of financial instruments by level in the fair value hierarchy

### 14.5.1 Financial assets

The table below shows the allocation of financial instruments carried in assets to the different levels in the fair value hierarchy:

In millions of euros	Dec. 31, 2023				Dec. 31, 2022			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Other financial assets (excluding loans and receivables at amortized cost)	7,552	6,189	-	1,363	5,658	4,225	-	1,433
Equity instruments at fair value through other comprehensive income	1,902	1,653	-	249	1,217	875	-	342
Equity instruments at fair value through income	222	-	-	222	278	-	-	278
Debt instruments at fair value through other comprehensive income	1,873	1,873	-	-	2,418	2,418	-	-
Debt instruments at fair value through income	3,555	2,663	-	891	1,745	933	-	813
Derivative instruments	21,245	43	20,087	1,114	48,386	138	44,730	3,518
Derivatives hedging borrowings	390	-	390	-	319	-	319	-
Derivatives hedging commodities - relating to portfolio management activities <sup>(1)</sup>	16,614	-	16,263	351	40,992	-	40,825	168
Derivatives hedging commodities - relating to trading	2,714	43	1,907	764	5,016	138	1,528	3,350
Derivatives hedging other items	1,526	-	1,526	-	2,059	-	2,059	-
<b>TOTAL</b>	<b>28,796</b>	<b>6,232</b>	<b>20,087</b>	<b>2,477</b>	<b>54,044</b>	<b>4,363</b>	<b>44,730</b>	<b>4,951</b>

(1) Derivative financial instruments relating to commodities classified in level 3 mainly include long-term gas supply contracts and electricity contracts measured at fair value through profit or loss. Due to geopolitical uncertainties, the fair value of contracts with Russian suppliers takes into account contingencies related to natural gas supply cuts since 2022.

A definition of these three levels is presented in Note 14.4 "Derivative instruments".

#### Other financial assets (excluding loans and receivables at amortized cost)

Changes in level 3 equity and debt instruments at fair value can be analyzed as follows:

In millions of euros	Equity instruments at fair value through other comprehensive income	Debt instruments at fair value through other comprehensive income	Equity instruments at fair value through income	Debt instruments at fair value through income	Other financial assets (excluding loans and receivables)
<b>AT DECEMBER 31, 2022</b>	<b>342</b>	<b>-</b>	<b>278</b>	<b>813</b>	<b>1,433</b>
Acquisitions	14	-	84	228	326
Disposals	-	(24)	(4)	(139)	(167)
Changes in fair value <sup>(1)</sup>	(95)	-	(49)	(11)	(156)
Changes in scope of consolidation, foreign currency translation and other changes	(13)	24	(87)	1	(75)
<b>AT DECEMBER 31, 2023</b>	<b>249</b>	<b>-</b>	<b>222</b>	<b>891</b>	<b>1,363</b>
Gains/(losses) recorded in income relating to instruments held at the end of the period					(50)

(1) Changes in fair value notably comprise the decrease in value of the Group's minority interest in Nord Stream AG for €-90 million (see Note 14.1.1.1 "Equity instruments at fair value").

#### Derivative instruments

Changes in level 3 commodity derivatives can be analyzed as follows:

In millions of euros	Net Asset/(Liability)
<b>AT DECEMBER 31, 2022</b>	<b>1,837</b>
Changes in fair value recorded in income	(3,697)
Settlements	644
Transfer from level 3 to levels 1 and 2	(40)
<b>Net fair value recorded in income</b>	<b>(1,256)</b>
Deferred Day-One gains/(losses)	(16)
<b>AT DECEMBER 31, 2023</b>	<b>(1,271)</b>

## 14.5.2 Financial liabilities

The table below shows the allocation of financial instruments carried in liabilities to the different levels in the fair value hierarchy:

In millions of euros	Dec. 31, 2023				Dec. 31, 2022			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Borrowings used in designated fair value hedges	5,755	-	5,755	-	3,679	-	3,679	-
Borrowings not used in designated fair value hedges	37,239	23,251	13,988	-	31,500	17,093	14,407	-
Derivative instruments	24,561	112	22,063	2,385	51,276	-	49,595	1,681
Derivatives hedging borrowings	588	-	588	-	735	-	735	-
Derivatives hedging commodities - relating to portfolio management activities <sup>(1)</sup>	20,933	-	20,081	852	48,907	-	47,227	1,681
Derivatives hedging commodities - relating to trading activities <sup>(1)</sup>	1,715	112	70	1,533	-	-	-	-
Derivatives hedging other items	1,325	-	1,325	-	1,634	-	1,634	-
<b>TOTAL</b>	<b>67,555</b>	<b>23,363</b>	<b>41,806</b>	<b>2,385</b>	<b>86,455</b>	<b>17,093</b>	<b>67,682</b>	<b>1,681</b>

(1) Derivative financial instruments relating to commodities classified in level 3 mainly include long-term gas supply contracts and electricity contracts measured at fair value through profit and loss. Due to geopolitical uncertainties, the fair value of contracts with Russian suppliers takes into account contingencies related to natural gas supply cuts since 2022.

A definition of these three levels is presented in Note 14.4 "Derivative instruments".

### Borrowings used in designated fair value hedges

This caption includes bonds in a designated fair value hedging relationship, which are presented in level 2 in the above table. Only the interest rate component of the bonds is remeasured, with fair value determined by reference to observable inputs.

### Borrowings not used in designated fair value hedges

Listed bond issues are included in level 1.

Other borrowings not used in a designated hedging relationship, are presented in level 2 in the above table. The fair value of these borrowings is determined on the basis of future discounted cash flows and relies on directly or indirectly observable data.

## NOTE 15 RISKS ARISING FROM FINANCIAL INSTRUMENTS

The Group mainly uses derivative instruments to manage its exposure to market risks. Financial risk management procedures are set out in Chapter 2 “Risk factors” of the Universal Registration Document.

### 15.1 Market risks

#### 15.1.1 Commodity risk

Commodity risk arises primarily from the following activities:

- portfolio management; and
- trading.

The Group has primarily identified two types of commodity risks: price risk resulting from fluctuations in market prices, and volume risk inherent to the business.

In the ordinary course of its operations, the Group is exposed to commodity risks on natural gas, electricity, coal, oil and oil products, other fuels, CO<sub>2</sub> and other “green” products. The Group is active on these energy markets either for supply purposes, or to optimize and secure its energy production chain and its energy sales. The Group also uses derivatives to offer hedging instruments to its clients and to hedge its own positions.

##### 15.1.1.1 Portfolio management activities

Portfolio management seeks to optimize the market value of assets (power plants, gas and coal supply contracts, energy sales and gas storage by pump and battery and transportation) over various timeframes (short-, medium- and long-term). Market value is optimized by:

- guaranteeing supply and ensuring the balance between physical needs and resources;
- managing market risks (price, volume) to unlock optimum value from portfolios within a specific risk framework.

The risk framework aims to safeguard the Group’s financial resources over the budget period and smooth out medium-term earnings (over three or five years, depending on the maturity of each market). It encourages portfolio managers to take out economic hedges on their portfolio.

Sensitivities of the commodity-related derivatives portfolio used as part of the portfolio management activities at December 31, 2023 are detailed in the table below. Due to the volatility in commodity prices on the markets since 2022, particularly impacting the European zone, the price assumptions for natural gas and electricity in Europe were revised upwards last year. These sensitivities have been established in the current uncertain context.

These new assumptions do not constitute an estimate of future market prices and are not representative of future changes in consolidated earnings and equity, insofar as they do not include the sensitivities relating to the purchase and sale contracts for the underlying commodities, which are not recognized at fair value.

Sensitivity analysis <sup>(1)</sup>

In millions of euros	Changes in price	Dec. 31, 2023		Dec. 31, 2022	
		Pre-tax impact on income	Pre-tax impact on equity	Pre-tax impact on income	Pre-tax impact on equity
Oil-based products	+USD 10/bbl	-	64	-	81
Natural gas - Europe <sup>(2)</sup>	-€10/MWh	(411)	(1,288)	(700)	(1,237)
Natural gas - Europe <sup>(2)</sup>	+€10/MWh	398	1,288	700	1,237
Natural gas - Rest of the world <sup>(2)</sup>	+€3/MWh	37	138	29	206
Electricity - Europe <sup>(2)</sup>	-€20/MWh	(353)	338	(51)	245
Electricity - Europe <sup>(2)</sup>	+€20/MWh	353	(338)	51	(245)
Electricity - Rest of the world <sup>(2)</sup>	+€5/MWh	(166)	-	(122)	-
Greenhouse gas emission rights	+€2/ton	12	9	24	1
EUR/USD	+10%	(40)	(111)	36	(186)
EUR/GBP	+10%	66	-	(17)	(34)

(1) The sensitivities shown above apply solely to financial commodity derivatives used for hedging purposes as part of the portfolio management activities.

(2) For December 2023 and in relation to the sensitivities shown, more drastic upward price changes, although difficult to quantify, could occur depending how the economic or political situation evolves. For example, an increase of 50€/MWh for natural gas and 100€/MWh for electricity would impact sensitivities by a positive €8.4 billion and a positive €0.1 billion, respectively for natural gas and electricity.

The decrease in commodity prices in 2023 contributed to substantial changes in the fair value of financial instruments, impacting the income statement (see Note 8 “Operating expenses”) as well as the other comprehensive income of the Group (see “Statement of comprehensive income”).

The sensitivity of equity to European electricity price changes is due to the application, since 2023, of cash flow hedge accounting to certain supply activities in France, Belgium and the Netherlands, as well as the sales resulting from the production of some of our assets in the same areas. The expected extension of this practice to other hedging strategies should contribute to reducing the sensitivity in the future of the pre-tax profit.

## 15.1.1.2 Trading activities

Revenues from trading activities totaled €3,441 million in 2023 (€4,499 million in 2022).

The Group’s trading activities are primarily conducted within:

- ENGIE Global Markets. Its role is to manage the risks of the physical and financial energy portfolio for the Group or external customers, providing them with access to the market and implementing customized hedging strategies;
- ENGIE SA for the optimization of part of its long-term gas supply contracts, of a power swap contract, of part of its gas sales contracts with retail entities in France and Benelux and of power generation facilities in France and Belgium.

These entities operate on organized or OTC markets in derivative instruments such as futures, forwards, swaps, or options. Exposure to trading activities is strictly controlled by daily monitoring of compliance with Value at Risk (VaR) limits.

The use of VaR to quantify market risk arising from trading activities provides a transversal measure of risk, taking all markets and products into account. VaR represents the maximum potential loss on a portfolio over a specified holding period based on a given confidence interval. It is not an indication of expected results but is back-tested on a regular basis.

The Group uses a one-day holding period and a 99% confidence interval to calculate VaR, as well as stress tests, in accordance with banking regulatory requirements.

The VaR shown below corresponds to the global VaR of the Group's entities with trading activities.

## Value at Risk

<i>In millions of euros</i>	Dec. 31, 2023	2023 average <sup>(1)</sup>	2023 maximum <sup>(2)</sup>	2023 minimum <sup>(2)</sup>	2022 average <sup>(1)</sup>
Trading activities	14	15	39	4	33

(1) Average daily VaR.

(2) Maximum and minimum daily VaR observed in 2023.

VaR limits are set within the framework of Group governance, which was strengthened since the beginning of the crisis to take into account the more volatile market environment. The minimum and the maximum, in 2023, are to be compared respectively with €6 million and with €143 million in 2022.

The continuous monitoring of market risks and the strict application of these measures have enabled the Group to perform its trading activities in a supervised environment during the year.

### 15.1.2 Hedges of commodity risks

#### Hedging instruments and sources of hedge ineffectiveness

The Group enters into cash flow hedges, using derivative instruments (firm or option contracts) contracted over the counter or on organized markets, to reduce its commodity risks, which relate mainly to future cash flows from contracted or expected sales and purchases of commodities. These instruments may be settled net or involve physical delivery of the underlying.

Sources of hedge ineffectiveness are mainly related to uncertainty regarding the timing and potential mismatches in settlement dates, and, in a context of volatile commodity market prices, indices between the derivative instruments and the associated underlying exposures.

The fair values of commodity derivatives are indicated in the table below:

<i>In millions of euros</i>	Dec. 31, 2023				Dec. 31, 2022			
	Assets		Liabilities		Assets		Liabilities	
	Non-current	Current	Non-current	Current	Non-current	Current	Non-current	Current
Derivative instruments relating to portfolio management activities	10,984	5,630	(15,132)	(5,801)	30,932	10,060	(37,210)	(11,698)
Cash flow hedges	1,648	4,268	(2,321)	(5,782)	3,538	4,400	(2,483)	(4,140)
Other derivative instruments	9,336	1,362	(12,811)	(19)	27,394	5,660	(34,726)	(7,558)
Derivative instruments relating to trading activities	-	2,714	-	(1,715)	-	5,016	-	-
<b>TOTAL</b>	<b>10,984</b>	<b>8,344</b>	<b>(15,132)</b>	<b>(7,516)</b>	<b>30,932</b>	<b>15,076</b>	<b>(37,210)</b>	<b>(11,698)</b>

The fair values shown in the table above reflect the amounts for which assets could be exchanged, or liabilities settled, at the end of the reporting period. They are not representative of expected future cash flows insofar as positions (i) are sensitive to changes in prices, (ii) can be modified by subsequent transactions, and (iii) can be offset by future cash flows arising on the underlying transactions.

### 15.1.2.1 Cash flow hedges

The fair values of cash flow hedges by type of commodity are as follows:

In millions of euros	Dec. 31, 2023				Dec. 31, 2022			
	Assets		Liabilities		Assets		Liabilities	
	Non-current	Current	Non-current	Current	Non-current	Current	Non-current	Current
Natural gas	760	1,848	(1,052)	(2,733)	3,204	3,825	(1,825)	(3,149)
Electricity	660	2,081	(1,057)	(2,664)	114	324	(208)	(521)
Oil	227	338	(211)	(384)	219	248	(449)	(470)
Other (1)	1	1	(1)	(1)	1	3	(1)	1
<b>TOTAL</b>	<b>1,648</b>	<b>4,268</b>	<b>(2,321)</b>	<b>(5,782)</b>	<b>3,538</b>	<b>4,400</b>	<b>(2,483)</b>	<b>(4,140)</b>

(1) Mainly includes foreign currency hedges on commodities.

### Notional amounts (net) <sup>(1)</sup>

Notional amounts and maturities of cash flow hedges are as follows:

	Unit	2024	2025	2026	2027	2028	Beyond 5 years	Total at Dec. 31, 2023
Natural gas	GWh	138,694	21,168	(8,934)	(1,392)	422	-	149,958
Electricity	GWh	88,624	50,082	16,065	8,515	871	(648)	163,509
Oil-based products	Thousands of barrels	(11,916)	(5,240)	-	-	-	-	(17,156)
Forex	Millions of euros	2	-	-	-	-	-	2
Greenhouse gas emission rights	Thousands of tons	(228)	(64)	(187)	20	20	-	(439)

(1) Long/(short) position.

### Effects of hedge accounting on the Group's financial position and performance

In millions of euros	Dec. 31, 2023			Dec. 31, 2022		
	Fair Value		Total	Nominal		Total
	Assets	Liabilities		Fair value	Nominal	
Cash flow hedges	5,916	(8,103)	(2,187)	10,553	1,315	39,983
<b>TOTAL</b>	<b>5,916</b>	<b>(8,103)</b>	<b>(2,187)</b>	<b>10,553</b>	<b>1,315</b>	<b>39,983</b>

The fair values represented above are positive for assets and negative for liabilities.

In millions of euros	Nominal amount	Fair Value	Change in fair value used for calculating hedge ineffectiveness	Change in the value of the hedging instrument recognized in equity <sup>(1)</sup>	Ineffective portion recognized in profit or loss <sup>(1)</sup>	Amount reclassified from the hedge reserve to profit or loss <sup>(1)</sup>	Line item of profit or loss
<b>Cash flow hedges</b>							Current operating income
Hedging instruments	10,553	(2,187)		(3,873)	120	711	
Hedged items			(4,944)				

(1) Gains/(losses).

The amount of hedge inefficiency is affected in 2023 by the volatility of commodity prices during the year and the partial decorrelation of the various markets particularly in Europe. It is calculated based on the change in fair value of the hedging instrument compared to the change in fair value of the hedged items since inception of the hedging relationship. The fair value of the hedging instruments at December 31, 2023 reflects the cumulative change in fair value of the hedging instruments since inception of the hedges.

**Maturity of commodity derivatives designated as cash flow hedges**

<i>In millions of euros</i>	2024	2025	2026	2027	2028	Beyond 5 years	Dec. 31, 2023	Dec. 31, 2022
Fair Value of derivatives by maturity	(1,459)	(692)	(7)	(14)	(5)	(10)	(2,187)	1,315

**Amounts presented in the statement of changes in equity and the statement of comprehensive income**

The following table provides a reconciliation of each component of equity and an analysis of other comprehensive income:

<i>In millions of euros</i>	Cash flow hedge	Derivatives hedging commodities
<b>At DECEMBER 31, 2022</b>		(699)
Effective portion recognized in equity		(3,873)
Amount reclassified from hedge reserve to profit or loss		711
Translation differences		-
Changes in scope of consolidation and other		9
<b>At DECEMBER 31, 2023</b>		(3,852)

**15.1.2.2 Other commodity derivatives**

Other commodity derivatives include:

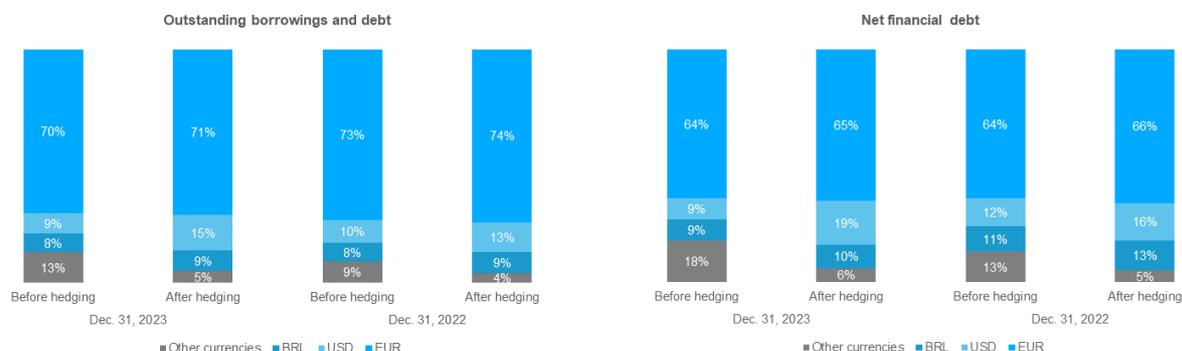
- commodity purchase and sale contracts that were not entered into or are no longer held for the purpose of the receipt or delivery of commodities in accordance with the Group's expected purchase, sale or usage requirements;
- embedded derivatives; and
- derivative financial instruments that are not eligible for hedge accounting in accordance with IFRS 9 or for which the Group has elected not to apply hedge accounting.

**15.1.3 Currency risk**

The Group is exposed to currency risk, defined as the impact on its statement of financial position and income statement of fluctuations in exchange rates affecting its operating and financing activities. Currency risk comprises (i) transaction risk arising in the ordinary course of business, (ii) specific transaction risk related to investments, mergers and acquisitions or disposal projects, and (iii) translation risk arising from the conversion into euros of income statement and statement of financial position items from subsidiaries with a functional currency other than the euro. The main translation risk exposures correspond to assets in US dollars, Brazilian real and pounds sterling.

### 15.1.3.1 Financial instruments by currency

The following tables present a breakdown by currency of outstanding borrowings and debt and net financial debt, before and after hedging:



### 15.1.3.2 Currency risk sensitivity analysis

A sensitivity analysis to currency risk on financial income/(loss) – excluding the income statement translation impact of foreign subsidiaries – was performed based on all financial instruments managed by the treasury department and representing a currency risk (including derivative financial instruments).

A sensitivity analysis to currency risk on equity was performed based on all financial instruments qualified as net investment hedges at the reporting date.

For currency risk, sensitivity corresponds to a 10% rise or fall in exchange rates of foreign currencies against the euro compared to closing rates.

	Dec. 31, 2023			
	Impact on income		Impact on equity	
<i>In millions of euros</i>	+10% <sup>(1)</sup>	-10% <sup>(1)</sup>	+10% <sup>(1)</sup>	-10% <sup>(1)</sup>
Exposures denominated in a currency other than the functional currency of companies carrying the liabilities on their statements of financial position <sup>(2)</sup>	(32)	32	NA	NA
Financial instruments (debt and derivatives) qualified as net investment hedges <sup>(3)</sup>	NA	NA	410	(410)

(1) +/-10%: depreciation (appreciation) of 10% of all foreign currencies against the euro.

(2) Excluding derivatives qualified as net investment hedges.

(3) This impact is offset by the change in the net investment hedged.

### 15.1.4 Interest rate risk

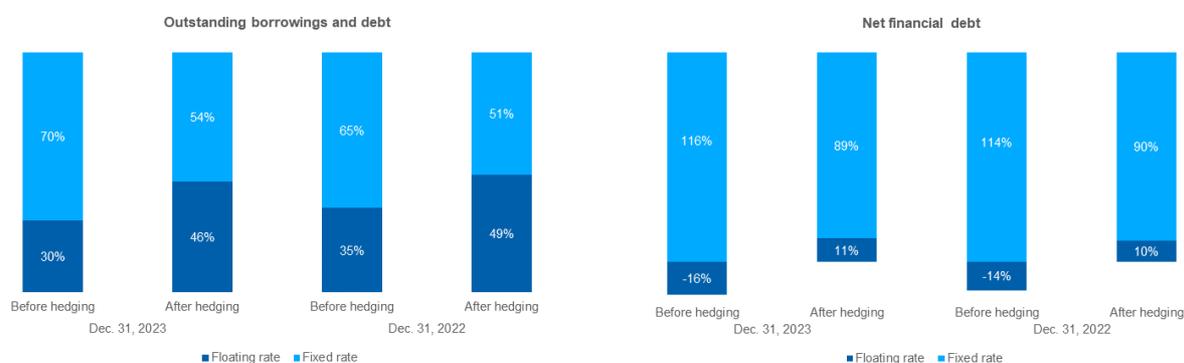
The Group seeks to manage its borrowing costs by limiting the impact of interest rate fluctuations on its income statement. The Group's policy is therefore to arbitrate between fixed rates, floating rates and capped floating rates for its net debt. The interest rate mix may shift within a range defined by Group Management in line with market trends.

In order to manage the interest rate structure for its net debt, the Group uses hedging instruments, particularly interest rate swaps and options.

The Group also uses forward interest rate pre-hedges to protect the refinancing rate of part of its debt.

### 15.1.4.1 Analysis of financial instruments by type of interest rate

The following tables present a breakdown by type of interest rate of outstanding borrowings and debt and net financial debt before and after hedging:



### 15.1.4.2 Interest rate risk sensitivity analysis

Sensitivity was analyzed based on the Group's net debt position (including the impact of interest rate and foreign currency derivatives relating to net debt) at the reporting date.

For interest rate risk, sensitivity corresponds to a 100-basis-point rise or fall in the yield curve compared to year-end interest rates.

In millions of euros	Dec. 31, 2023			
	Impact on income		Impact on equity	
	+100 basis points	-100 basis points	+100 basis points	-100 basis points
Net interest expense on floating-rate net debt (nominal amount) and on floating-rate leg of derivatives	(29)	29	NA	NA
Change in fair value of derivatives not qualifying as	(39)	43	NA	NA
Change in fair value of derivatives qualifying as cash flow hedges	NA	NA	280	(343)

### 15.1.5 Currency and interest rate hedges

#### 15.1.5.1 Currency risk management

Foreign currency exchange risk (or "FX" risk) is reported and managed based on a Group-wide approach, reflected in a policy approved by Group Management. The policy distinguishes between the three following main sources of currency risk:

- Regular transaction risk**

Regular transaction risk corresponds to the potential negative financial impact of currency fluctuations on business and financial operations denominated in a currency other than the functional currency.

The management of regular transaction risk is fully delegated to the subsidiaries for their scope of activities, while the risks related to central activities are managed at corporate level.

FX risks related to operational activities are systematically hedged when the related cash flows are certain, with a hedging horizon that corresponds at least to the medium-term plan horizon. For cash flows that are not certain, in their entirety, the hedge is initially based on a "no regret" volume. Exposures are monitored and managed based on the sum of nominal cash flows in FX, including highly probable amounts and related hedges.

For FX risks related to financial activities, all significant exposures related to cash, financial debt, etc. are systematically hedged. Exposures are monitored based on the net sum of balance sheet items in FX.

- **Project transaction risk**

Specific project transaction risk corresponds to the potential negative financial impact of FX fluctuations on specific major operations such as investment projects, acquisitions, disposals and restructuring projects, involving multiple currencies.

The management of these FX risks includes the definition and implementation of hedging transactions, taking into account the likelihood of the risk (including probability of project completion) and its evolution, the availability of hedging instruments and their associated cost. Management's aim is to ensure the viability and the profitability of the transactions.

- **Translation risk**

Translation risk corresponds to the potential negative financial impact of FX fluctuations concerning consolidated entities with a functional currency other than the euro. It relates to the translation of their income and expenses and their net assets.

Translation risk is managed centrally, with a focus on securing the net asset value.

The relevance of hedging this translation risk is assessed regularly for each currency (as a minimum) or set of assets in the same currency, taking into account notably the value of the assets and the hedging costs.

## Hedging instruments and sources of hedge ineffectiveness

The Group principally uses the following risk management levers for mitigating currency risk:

- derivative instruments: these mostly correspond to over-the-counter contracts and include FX forward transactions, FX swaps, currency swaps, cross currency swaps, plain vanilla FX options or combinations (calls, puts or collars);
- monetary items such as debt, cash and loans.

Sources of hedge ineffectiveness are mainly related to uncertainty regarding the timing and in some cases the amount of the future cash flows in foreign currency that are being hedged.

### 15.1.5.2 Interest rate risk management

The Group is exposed to interest rate risk through its financing and investing activities. Interest rate risk is defined as a financial risk resulting from fluctuations in base interest rates that may increase the cost of debt and affect the viability of investments. Base interest rates are market interest rates, such as EURIBOR, SOFR, etc., that do not include the borrower's credit spread.

#### Reform of interbank benchmark rates

As part of the interest rate benchmark reform in 2022, the Group benchmarked all new USD denominated financing contracts to the SOFR index. It also aligned its existing financing and derivative contracts with the same index in first-half 2023, following the end of the publication of the US Libor at June 30, 2023.

No impact has been recognized by the Group as a result of this transition.

The two main sources of interest rate risk are as follows:

- **Interest rate risk relating to Group net debt**

Interest rate risk relating to Group net debt designates the financial impact of base rate movements on the debt and cash portfolio from recurring financing activities. This risk is mainly managed centrally.

Risk management objectives are, by order of importance:

- to protect the long-term viability of assets;
- to optimize financing costs and ensure competitiveness; and
- to minimize uncertainty on the cost of debt.

Interest rate risk is actively managed by monitoring changes in market rates and their impact on the Group's gross and net debt.

- **Project interest rate risk**

Specific project interest rate risk corresponds to the potential negative financial impact of base rate movements on specific major operations such as investment projects, acquisitions, disposals and restructuring projects. Interest rate risk after the closing of an operation is considered as regular (see "Interest rate risk").

Interest rate risk is managed for specific project transactions in order to protect the economic viability of projects, acquisitions, disposals and restructuring initiatives against adverse changes in interest rates. It may include the implementation of hedging transactions, depending on a number of factors including the likelihood of completion, the availability of hedging instruments and their associated cost.

### Hedging instruments and sources of hedge ineffectiveness

The Group principally uses the following risk management levers for mitigating interest rate risk:

- derivative instruments: these mostly correspond to over-the-counter contracts that are used to manage base interest rates. Such instruments include:
  - swaps, to change the nature of interest payments on debts, typically from fixed to floating rates or vice versa,
  - plain vanilla interest rate options;
- caps, floors and collars that allow the impact of interest rate fluctuations to be limited by setting minimum and/or maximum limits on floating interest rates.

Sources of hedge ineffectiveness are mainly related to changes in the credit quality of the counterparties and related charges, as well as potential gaps in settlement dates and in indices between the derivative instruments and the related underlying exposures.

#### 15.1.5.3 Currency and interest rate hedges

The Group has elected to apply hedge accounting whenever possible and suitable for currency risk and interest rate risk management purposes and also manages a portfolio of undesignated derivative instruments, corresponding to economic hedges relating to net debt and foreign currency exposures.

The Group uses the three hedge accounting methods: cash flow hedging, fair value hedging and net investment hedging.

In general, the Group does not frequently reset hedging relationships, designate specific risk components as a hedged item or designate credit exposures as measured at fair value through income.

The Group qualifies interest rate or cross currency swaps transforming fixed-rate debt into floating-rate debt as fair value hedges.

Cash flow hedges are mainly used to hedge future cash flows in foreign currency, floating-rate debt as well as future refinancing requirements.

Net investment hedging instruments are mainly FX swaps, forwards and cross-currency swaps.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

NOTE 15 RISKS ARISING FROM FINANCIAL INSTRUMENTS

The fair values of derivatives (excluding commodity instruments) are indicated in the table below:

In millions of euros	Dec. 31, 2023				Dec. 31, 2022			
	Assets		Liabilities		Assets		Liabilities	
	Non-current	Current	Non-current	Current	Non-current	Current	Non-current	Current
Derivatives hedging borrowings	279	111	(457)	(131)	226	92	(620)	(114)
Fair value hedges	190	43	(289)	(21)	167	4	(394)	(38)
Cash flow hedges	43	-	(120)	(45)	30	5	(195)	(11)
Derivative instruments not qualifying for hedge accounting	47	68	(48)	(66)	30	84	(32)	(65)
Derivatives hedging other items	1,501	26	(1,167)	(159)	1,975	84	(1,587)	(47)
Cash flow hedges	189	2	(351)	(91)	509	41	(222)	(7)
Net investment hedges	180	-	(1)	-	156	-	(1)	-
Derivative instruments not qualifying for hedge accounting	1,131	23	(815)	(67)	1,310	43	(1,364)	(40)
<b>TOTAL</b>	<b>1,780</b>	<b>137</b>	<b>(1,623)</b>	<b>(290)</b>	<b>2,201</b>	<b>176</b>	<b>(2,208)</b>	<b>(161)</b>

The fair values shown in the table above reflect the amounts relating to the price that would be received for the sale of an asset or paid for the transfer of a liability between market participants in the normal course of business. They are not representative of expected future cash flows insofar as the positions (i) are sensitive to changes in prices or to changes in credit ratings, (ii) can be modified by subsequent transactions, and (iii) can be offset by future cash flows arising on the underlying transactions.

**Amount, timing and uncertainty of future cash flows**

The following tables provide a profile of the timing at December 31, 2023 of the nominal amount of hedging instruments:

In millions of euros										
Buy/Sell	Interest rate type	Derivative instrument type	Currency	Total	2024	2025	2026	2027	2028	Beyond 5 years
Buy	Fixed	CCS	USD	(337)	(113)	(86)	(93)	-	-	(45)
			GBP	(2,589)	-	-	-	-	(575)	(2,014)
			EUR	(1,230)	-	-	-	-	(569)	(661)
			CHF	(637)	(189)	-	-	(205)	-	(243)
			HKD	(266)	-	-	-	(104)	-	(162)
			PEN	(198)	(19)	-	(61)	(61)	(56)	-
			Other	(295)	(172)	(71)	-	-	-	(52)
	Floating	CCS	CLP	(46)	-	-	(46)	-	-	-
Sell	Fixed	CCS	EUR	3,539	216	75	-	98	638	2,512
			USD	1,446	22	-	114	70	607	633
	Floating	CCS	EUR	339	144	-	-	195	-	-
			BRL	309	118	93	99	-	-	-

In millions of euros											
Buy/Sell	Interest rate type	Derivative instrument type	Currency	Total	2024	2025	2026	2027	2028	Beyond 5 years	
Sell	Fixed	CAP	EUR	5	5	-	-	-	-	-	
			IRS	EUR	9,524	(663)	97	1,216	376	(99)	8,596
		Other	USD	1,322	(67)	35	723	296	30	305	
			ZAR	140	(87)	(50)	64	(48)	12	249	
			Other	63	3	3	3	3	3	47	
		Floating	IRS	EUR	17,643	1,690	2,415	1,950	800	138	10,650
				ZAR	-	(89)	(55)	58	(57)	1	142
BRL	59			-	-	-	-	59	-		

The tables presented above exclude currency derivatives (except for cross currency swaps - CCS). Their maturity dates are aligned with those of the hedged items.

Pursuant to the FX and interest rate risk management policy, FX sensitivity is presented in Note 15.1.3.2 "Currency risk sensitivity analysis" and the average cost of gross debt is 4.31% as presented in Note 10 "Net financial income/(loss)".

**Effects of hedge accounting on the Group's financial position and performance**
**Currency derivatives**

In millions of euros	Dec. 31, 2023			Dec. 31, 2022			
	Fair value		Total	Nominal amount	Fair value		Nominal amount
	Assets	Liabilities			Total	Total	
Cash flow hedges	51	(581)	(530)	4,708	(338)	3,139	
Net investment hedges	180	(1)	179	5,596	155	5,939	
Derivative instruments not qualifying for hedge accounting	55	(39)	16	12,086	123	12,007	
<b>TOTAL</b>	<b>286</b>	<b>(621)</b>	<b>(335)</b>	<b>22,391</b>	<b>(60)</b>	<b>21,085</b>	

**Interest rate derivatives**

In millions of euros	Dec. 31, 2023			Dec. 31, 2022			
	Fair value		Total	Nominal amount	Fair value		Nominal amount
	Assets	Liabilities			Total	Total	
Fair value hedges	232	(309)	(77)	7,975	(261)	5,148	
Cash flow hedges	183	(25)	158	3,399	491	5,260	
Derivative instruments not qualifying for hedge accounting	1,215	(957)	258	25,438	(186)	25,885	
<b>TOTAL</b>	<b>1,631</b>	<b>(1,291)</b>	<b>339</b>	<b>36,812</b>	<b>44</b>	<b>36,293</b>	

The fair values presented in the above table are positive for assets and negative for liabilities.

In millions of euros		Nominal and outstanding amount	Fair value <sup>(1)</sup>	Change in fair value used for calculating hedge ineffectiveness	Change in the value of the hedging instrument recognized in equity <sup>(2)</sup>	Ineffective portion recognized in profit or loss <sup>(2)</sup>	Amount reclassified from the hedge reserve to profit or loss <sup>(2)</sup>	Line item of the income statement
<b>Fair value hedges</b>	Hedging instruments	7,975	(77)	(77)	-	-	NA	Cost of net debt
	Hedged items <sup>(3) (4)</sup>	5,715	(41)	2,076	NA		NA	
<b>Cash flow hedges</b>								Other financial income and expenses / Current operating income including operating MtM
	Hedging instruments	8,107	(371)	(188)	402	(4)	(321)	
	Hedged items			186				
<b>Net investment hedges</b>								Other financial income and expenses / Current operating income including operating MtM
	Hedging instruments	5,596	179	148	(149)	NA	1	
	Hedged items			(148)				

(1) The adjustment of the fair value of hedged items is presented as long term and short-term borrowings and debt for a negative amount of €-41 million.

(2) Gains/(losses).

(3) The difference between the fair value used to determine the ineffective portion relating to hedging instruments and that relating to the hedged items corresponds to the amortized cost of borrowings and debt that are part of a fair value hedge relationship.

(4) Of which €40 million relating to hedging items that are no longer adjusted as a result of discontinuation of the fair value hedge relationship.

Hedge inefficiency is calculated based on the change in the fair value of the hedging instrument compared to the change in the fair value of the hedged items since inception of the hedging relationship. The fair value of the hedging instruments

at December 31, 2023 reflects the cumulative change in their fair value since inception of the hedges. The same principle applies to the hedged items.

No significant impact in terms of ineffectiveness or discontinuation of certain hedges was recognized at December 31, 2023.

**Foreign currency and interest rate derivatives designated as cash flow hedges can be analyzed as follows by maturity**

<i>In millions of euros</i>	2024	2025	2026	2027	2028	Beyond 5 years	Total at Dec. 31, 2023	Total at Dec. 31, 2022
Fair value of derivatives by maturity	(64)	23	6	10	(85)	(262)	(371)	147

### Amounts presented in the statement of changes in equity and the statement of comprehensive income

The following table provides a reconciliation of each component of equity and an analysis of other comprehensive income:

<i>In millions of euros</i>	Cash flow hedge			Net investment hedge
	Derivatives hedging borrowings - currency risk hedging <sup>(1)</sup>	Derivatives hedging other items - interest rate risk hedging <sup>(1) (3)</sup>	Derivatives hedging other items - currency risk hedging <sup>(2)</sup>	Derivatives hedging other items - currency risk hedging <sup>(2) (4)</sup>
<b>AT DECEMBER 31, 2022</b>	46	179	35	(386)
Effective portion recognized in equity		(381)	(21)	149
Amount reclassified from the hedge reserve to profit or loss		321	-	(1)
Translation differences	-	-	-	-
Changes in scope of consolidation and other	-	(24)	-	-
<b>AT DECEMBER 31, 2023</b>	45	97	14	(238)

(1) Cash flow hedges for given periods.

(2) Cash flow hedges for given transactions.

(3) Comprises a positive €275 million of cumulated reserves related to hedge transactions (a negative €86 million at December 31, 2022) for which hedge accounting has been discontinued (instruments cancelled prior to their maturity).

(4) All of the reserves relate to continuing hedging relationships.

## 15.2 Counterparty risk

Due to its financial and operational activities, the Group is exposed to the risk of default of its counterparties (customers, suppliers, EPC contractors, partners, intermediaries, and banks). Default could affect payments, delivery of goods and/or asset performance.

The principles of counterparty risk management are set out in the Group counterparty risk policy, which:

- assigns roles and responsibilities for managing and controlling counterparty risk at different levels (Corporate, BU or entity), and ensures operational procedures are in place and consistent across the Group;
- characterizes counterparty risk and the mechanisms by which it impacts the economic performance and financial statements of the Group;
- defines indicators, reporting and control mechanisms to ensure visibility and to provide tools for financial performance management; and
- provides guidelines on the use of mitigating mechanisms such as collateral and guarantees, which are widely used by some businesses.

Depending on the nature of the business, the Group is exposed to different types of counterparty risk. As a result some businesses use collateral instruments – particularly the Energy Management business, where the use of margin calls and other types of financial collateral (standardized legal framework) is a market standard. In addition, other businesses may request guarantees from their counterparties in certain cases (parent company guarantees, bank guarantees, etc.).

Under the new IFRS 9 standard, the Group has defined and applied a Group-wide methodology, which includes two different approaches:

- a portfolio approach, whereby the Group determines that:
  - coherent customer portfolios and sub-portfolios have to be considered (i.e., portfolios that have comparable credit risk and/or comparable payment behavior), taking into account the following aspects:
    - public or private counterparties,
    - residential or BtoB counterparties,
    - geography,
    - type of activity,
    - size of the counterparty, and
    - any other aspects the Group may consider relevant,
  - impairment rates must be determined based on historical aging balances and, when correlation is proven and documentation possible, historical data must be adjusted by forward-looking elements; and
- an individualized approach for significant counterparties, for which the Group has set rules for defining the stage of the concerned asset for Expected Credit Loss (ECL) calculations:
  - stage 1 covers financial assets that have not deteriorated significantly since initial recognition. The ECL for stage 1 is calculated on a 12-month basis,
  - stage 2 covers financial assets for which the credit risk has significantly increased. The ECL for stage 2 is calculated on a lifetime basis. The decision to move an asset from stage 1 to stage 2 is based on certain criteria such as:
    - a significant downgrade in the creditworthiness of a counterparty and/or its parent company and/or its guarantor (if any),
    - significant adverse change in the regulatory environment,
    - changes in political or country-related risk, and
    - any other aspect the Group may consider relevant.

Regarding financial assets that are more than 30 days past due, the move to stage 2 is not systematically applied as long as the Group has reasonable and verifiable information that demonstrates that, even if payments become more than 30 days past due, this does not represent a significant increase in the credit risk since initial recognition.

- stage 3 covers assets for which default has already been observed, such as:
  - when there is evidence of significant and ongoing financial difficulty of the counterparty,
  - when there is evidence of failure in credit support from a parent company to its subsidiary (in this case the subsidiary is the Group's at risk counterparty),
  - when a Group entity has initiated legal proceedings against the counterparty for non-payment.

Regarding financial assets that are more than 90 days past due, the presumption can be rebutted if the Group has reasonable and supportable information that demonstrates that even if payments become more than 90 days past due, this does not indicate counterparty default.

The ECL formula applicable in stages 1 and 2 is  $ECL = EAD \times PD \times LGD$ , where:

- for 12-month ECL, Exposure At Default (EAD) equals the carrying amount of the financial asset, to which the relevant Probability of Default (PD) and the Loss Given Default (LGD) are applied;
- for lifetime ECL, the calculation method consists in identifying changes in exposure for each year, especially the expected timing and amount of the contractual repayments, then applying to each repayment the relevant PD and the LGD, and discounting the figures obtained. ECL is then the sum of the discounted figures; and
- probability of default is the likelihood of default over a particular time horizon (in stage 1, this time horizon is 12 months after the reporting period; in stage 2 this time horizon is the entire lifetime of the financial asset). This information is based on external data from a reputable rating agency. The PD depends on the time horizon and of

the rating of the counterparty. The Group uses external ratings if they are available; ENGIE's credit risk experts determine an internal rating for major counterparties with no external rating.

LGD levels are notably based on Basel standards:

- 75% for subordinated assets; and
- 45% for standard assets.

For assets considered to be of strategic importance for the counterparty, such as essential public services or goods, LGD is set at 30%.

The Group has decided that write-offs apply in the following situations:

- assets for which a legal recovery procedure is pending: these should not be written off as long as the procedure is ongoing; and
- assets for which no legal recovery procedure is pending: these should be written off once the trade receivable is 3 years overdue (5 years overdue for public counterparties).

In the context of its market activities (mainly concerning BtoB customers), the Group takes into account forward-looking information when assessing its expected credit losses, in order to best reflect the situation in a series of economic sectors deemed to be the most critical. Accordingly, the specific adjustment to the provisioning rate for expected credit losses made at December 31, 2022 on certain business sectors particularly exposed to fluctuations in commodity prices was maintained during the year, in the absence of a significant and lasting improvement in the general economic context.

In addition, the risk of default on the Group's BtoC energy supply activities has evolved differently in each country, depending on the mechanisms put in place. In France, for example, the risk of default has risen due to the end of government measures (i.e. gas tariff shield, energy vouchers) aimed at limiting price increases. This is reflected in longer collection times and more frequent requests for payment instalment plans. Conversely, lower prices in Belgium and the protection mechanisms put in place by the Romanian government have reduced our exposure to credit risk.

### 15.2.1 Counterparty risk arising on operating activities

Counterparty risk arising on operating activities is managed via standard mechanisms such as third-party guarantees, netting agreements and margin calls, using dedicated hedging instruments or special prepayment and debt recovery procedures, particularly for retail customers.

Under the Group's policy, each global business unit is responsible for managing counterparty risk, although the Group continues to manage the biggest counterparty exposures centrally.

For large and medium-sized customers with which the Group's credit risk exposure exceeds a certain threshold, a specific, comprehensive rating determination model is used to assess the Group's credit risk exposure as accurately as possible. A simplified scoring model is used for customers for whom the Group's credit risk exposure is lower. These processes are based on formally documented, consistent methods across the Group. Consolidated exposures are monitored by counterparty and by segment (credit rating, sector, etc.) using standard indicators (payment risk, mark-to-market exposure).

GEMS' large exposures to trading counterparties and large commercial clients are regularly monitored by the Group's governance committees.

#### 15.2.1.1 Trade and other receivables, assets from contracts with customers

Total outstanding exposures presented in the tables below do not include impacts relating to VAT or to any other item not subject to credit risk, which amounted to €4,579 million at December 31, 2023 (compared to €6,084 million at December 31, 2022).

## Individual approach

		Dec. 31, 2023							
<i>In millions of euros</i>		Individual approach	Level 1: low credit risk	Level 2: increased credit risk	Level 3: impaired assets	Total by risk level	Investment Grade <sup>(1)</sup>	Other	Total by counterparty type
<b>Trade and other receivables, net</b>	Gross	13,653	12,304	1,248	101	13,653	11,533	2,121	13,653
	Expected credit losses	(909)	(696)	(116)	(97)	(909)	(594)	(315)	(909)
<b>TOTAL</b>		12,745	11,609	1,132	4	12,745	10,939	1,806	12,745
<b>Assets from contracts with customers</b>	Gross	4,377	4,374	2	-	4,377	3,299	1,078	4,377
	Expected credit losses	(22)	(22)	-	-	(22)	(15)	(7)	(22)
<b>TOTAL</b>		4,354	4,352	2	-	4,354	3,284	1,070	4,354

		Dec. 31, 2022							
<i>In millions of euros</i>		Individual approach	Level 1: low credit risk	Level 2: increased credit risk	Level 3: impaired assets	Total by risk level	Investment Grade (1)	Other	Total by counterparty type
<b>Trade and other receivables, net</b>	Gross	22,754	21,321	1,316	118	22,754	20,668	2,086	22,754
	Expected credit losses	(737)	(533)	(75)	(129)	(737)	(452)	(285)	(737)
<b>TOTAL</b>		22,017	20,787	1,241	(11)	22,017	20,216	1,801	22,017
<b>Assets from contracts with customers</b>	Gross	5,277	5,245	29	3	5,277	4,100	1,177	5,277
	Expected credit losses	(20)	(16)	-	(4)	(20)	(13)	(7)	(20)
<b>TOTAL</b>		5,256	5,229	29	(1)	5,256	4,087	1,169	5,256

(1) Investment Grade corresponds to counterparties that are rated at least BBB- by Standard & Poor's.

## Collective approach

		Dec. 31, 2023				Total past due assets at Dec. 31, 2022
<i>In millions of euros</i>		Collective approach	0 to 6 months	6 to 12 months	beyond	
<b>Trade and other receivables, net</b>	Gross	3,953	420	212	199	831
	Expected credit losses	(1,153)	(20)	(40)	(216)	(275)
<b>TOTAL</b>		2,800	400	173	(16)	557
<b>Assets from contracts with customers</b>	Gross	5,194	31	85	3	119
	Expected credit losses	(5)	-	(2)	-	(2)
<b>TOTAL</b>		5,189	31	83	3	117

		Dec. 31, 2022				Total past due assets at Dec. 31, 2021
<i>In millions of euros</i>		Collective approach	0 to 6 months	6 to 12 months	beyond	
<b>Trade and other receivables, net</b>	Gross	4,459	300	101	272	673
	Expected credit losses	(1,151)	(19)	(47)	(172)	(238)
<b>TOTAL</b>		3,308	281	54	100	435
<b>Assets from contracts with customers</b>	Gross	7,370	8	-	1	10
	Expected credit losses	(27)	-	(8)	-	(8)
<b>TOTAL</b>		7,343	8	(8)	1	2

## 15.2.1.2 Commodity derivatives

In the case of commodity derivatives, counterparty risk arises from positive fair value. When calculating the fair value of these derivative instruments, counterparty risk (CVA) is based on default probabilities whose parameters have been updated, in a context of uncertainty, to take account of an increased risk of default.

The volatility of commodity prices and the impact on the valuation of derivatives on the assets side of the balance sheet have not significantly altered the Group's exposure due to the credit quality of its counterparties.

In millions of euros	Dec. 31, 2023		Dec. 31, 2022	
	Investment Grade <sup>(1)</sup>	Total	Investment Grade <sup>(1)</sup>	Total
Gross exposure <sup>(2)</sup>	15,954	19,324	36,371	46,012
Net exposure <sup>(3)</sup>	6,385	8,050	12,434	16,124
% of credit exposure to "Investment Grade" counterparties	79.3%		77.1%	

(1) Investment Grade corresponds to transactions with counterparties that are rated at least BBB- by Standard & Poor's, Baa3 by Moody's, or equivalent by Dun & Bradstreet. "Investment Grade" is also determined based on an internal rating tool that has been rolled out within the Group, and covers its main counterparties.

(2) Corresponds to the maximum exposure, i.e. the value of the derivatives shown under assets (positive fair value).

(3) After taking into account the liability positions with the same counterparties (negative fair value), collateral, netting agreements and other credit enhancement techniques.

## 15.2.2 Counterparty risk arising on financing activities

For its financing activities, the Group has put in place procedures for managing and monitoring risk based on (i) the accreditation of counterparties according to external credit ratings, objective market data (credit default swaps, market capitalization) and financial structure, and (ii) counterparty risk exposure limits.

To reduce its counterparty risk exposure, the Group has drawn increasingly on a structured legal framework based on master agreements (including netting clauses) and collateralization contracts (margin calls).

The oversight procedure for managing counterparty risk arising from financing activities is managed by a Middle Office that operates independently of the Group's Treasury department and reports to the Finance division.

### 15.2.2.1 Loans and receivables at amortized cost

The total outstanding exposures presented in the tables below do not include impacts relating to VAT or to any other item not subject to credit risk, which amounted to €425 million at December 31, 2023 (compared to €547 million at December 31, 2022).

In millions of euros	Dec. 31, 2023						
	Level 1: low credit risk	Level 2: increased credit risk	Level 3: impaired assets	Total by risk level	Investment Grade <sup>(1)</sup>	Other	Total by counterparty type
Gross	8,879	285	700	9,865	5,754	4,111	9,865
Expected credit losses	(78)	(45)	(1,180)	(1,302)	(174)	(1,128)	(1,302)
<b>TOTAL</b>	<b>8,802</b>	<b>240</b>	<b>(479)</b>	<b>8,563</b>	<b>5,580</b>	<b>2,983</b>	<b>8,563</b>

In millions of euros	Dec. 31, 2022						
	Level 1: low credit risk	Level 2: increased credit risk	Level 3: impaired assets	Total by risk level	Investment Grade <sup>(1)</sup>	Other	Total by counterparty type
Gross	6,596	274	720	7,591	3,490	4,101	7,591
Expected credit losses	(99)	(38)	(1,154)	(1,291)	(158)	(1,133)	(1,291)
<b>TOTAL</b>	<b>6,497</b>	<b>236</b>	<b>(434)</b>	<b>6,300</b>	<b>3,332</b>	<b>2,967</b>	<b>6,300</b>

(1) Investment Grade corresponds to counterparties that are rated at least BBB- by Standard & Poor's.

In 2022, the Group had impaired the loan related to the financing of the Nord Stream 2 pipeline project for a total amount of €987 million (including capitalized interest).

### 15.2.2.2 Counterparty risk arising on investing activities and the use of derivative financial instruments

The Group is exposed to counterparty risk arising on investments of surplus cash and from the use of derivative financial instruments. In the case of financial instruments at fair value through income, counterparty risk arises on instruments with a positive fair value. Counterparty risk is taken into account when calculating the fair value of these derivative instruments.

In millions of euros	Dec. 31, 2023				Dec. 31, 2022			
	Total	Investment Grade <sup>(1)</sup>	Unrated <sup>(2)</sup>	Non Investment-Grade <sup>(2)</sup>	Total	Investment Grade <sup>(1)</sup>	Unrated <sup>(2)</sup>	Non-Investment Grade <sup>(2)</sup>
Exposure	17,577	89.6%	3.3%	7.1%	15,738	92.3%	4.5%	3.2%

(1) Investment Grade corresponds to counterparties that are rated at least BBB- by Standard & Poor's or Baa3 by Moody's.

(2) The bulk of these two exposures is carried by consolidated companies that include non-controlling interests, or by Group companies that operate in emerging countries, where cash cannot be pooled and is therefore invested locally.

Furthermore, at December 31, 2023, Crédit Agricole SA is the main Group counterparty and represents 31% of cash surpluses. This relates mainly to a depositary risk.

## 15.3 Liquidity risk

In the context of its operating activities, the Group is exposed to a risk of having insufficient liquidity to meet its contractual obligations. As well as the risks inherent in managing working capital requirements (WCR), margin calls are required in certain market activities, which are a way of mitigating counterparty risk on hedging instruments through the use of collateral.

The Group has set up a committee that meets weekly and is tasked with managing and monitoring liquidity risk throughout the Group, by maintaining a broad range of investments and sources of financing, and preparing forecasts of cash investments and divestments. ENGIE has set up a comprehensive framework to monitor and streamline cash movements related to OTC margin calls and margin calls via clearing houses, based on the use of liquidity swaps with its key counterparties, as well as the issuing of letters of credit. Given the current volatility of the markets, these margin calls may have a significant timing impact on the Group's cash position, and the use of the two above-mentioned levers has therefore been reinforced in order to monitor the impact on its cash position. Quarterly stress-tests are also performed on the margin calls put in place when commodity, interest rate and currency derivatives are negotiated to assess the Group's resilience in terms of liquidity.

The Group centralizes virtually all the financing needs and cash flow surpluses of the companies it controls, as well as most of their medium- and long-term external financing requirements. Centralization is provided by financing vehicles (long-term and short-term) and by dedicated Group cash pooling vehicles based in France, Belgium and Luxembourg.

Surpluses held by these structures are managed in accordance with a uniform policy. In accordance with this policy, unpooled cash surpluses are invested in instruments selected on a case-by-case basis in light of local financial market imperatives and the financial strength of the counterparties concerned.

The succession of financial crises since 2008 and the ensuing rise in counterparty risk prompted the Group to tighten its investment policy with the aim of keeping an extremely high level of liquidity and protecting invested capital, with a daily monitoring of performance and counterparty risk, allowing the Group to take immediate action where required in response to market developments. Consequently, 89% of the cash pooled at December 31, 2023 was invested in overnight bank deposits and standard money market funds with daily liquidity.

The Group's financing policy is based on:

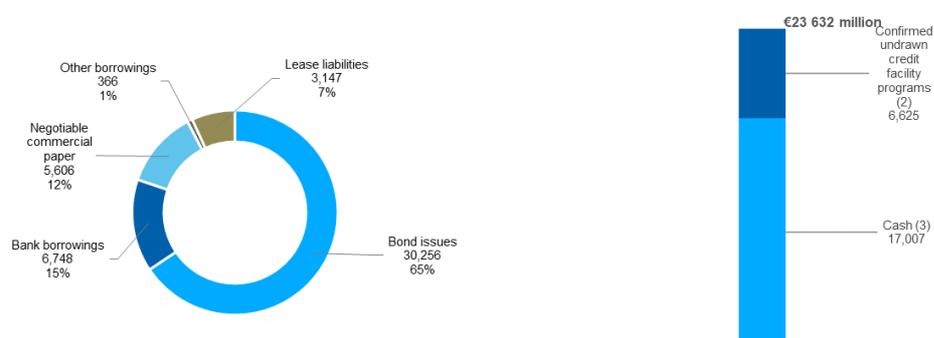
- centralizing external financing;
- diversifying sources of financing between credit institutions and capital markets;
- achieving a balanced debt repayment profile.

The Group seeks to diversify its sources of financing by carrying out public or private bond issues within the scope of its Euro Medium Term Notes program. It also issues negotiable commercial paper in France (Negotiable European Commercial Paper) and in the United States (U.S. Commercial Paper) as well as deeply-subordinated perpetual notes. As negotiable commercial paper is relatively inexpensive and highly liquid, it is used by the Group in a cyclical or structural manner to finance its short-term cash requirements. However, the refinancing of all outstanding negotiable commercial paper remains secured by confirmed bank lines of credit – mainly centralized – allowing the Group to continue to finance its activities if access to this financing source were to dry up. These facilities are appropriate for the scale of its operations and for the timing of contractual debt repayments.

The various actions carried out by the Group ensure a high and reinforced level of liquidity.

### Diversifying sources of financing and liquidity <sup>(1)</sup>

In millions of euros



- (1) These sources of financing and liquidity do not include the deeply-subordinated perpetual notes recognized in equity (see Note 16.2.1 "Issuance of deeply-subordinated perpetual notes").
- (2) Net amount of negotiable commercial paper.
- (3) Cash corresponds to cash and cash equivalents for €16,578 million, other financial assets deducted from net financial debt for €884 million, net of bank overdrafts and current accounts for €455 million, of which 76% was invested in the Eurozone.

At December 31, 2023, all Group entities whose debt is consolidated complied with the covenants and declarations included in their financial documentation, except for some non-significant entities for which compliance actions are being implemented. There are no defaults linked to financial ratios or rating levels on available centralized credit lines.

## 15.3.1 Undiscounted contractual payments relating to financial activities

### Undiscounted contractual payments on outstanding borrowings and debt by maturity

In millions of euros	2024	2025	2026	2027	2028	Beyond 5 years	Total at Dec. 31, 2023	Total at Dec. 31, 2022
Bond issues	1,039	1,463	2,922	3,130	3,230	18,472	30,256	23,557
Bank borrowings	763	485	387	637	245	4,231	6,748	5,476
Negotiable commercial paper	5,606	-	-	-	-	-	5,606	7,386
Lease liabilities	510	480	398	365	407	2,552	3,147	2,875
Other borrowings	92	22	3	3	2	244	366	374
Bank overdrafts and current accounts	455	-	-	-	-	-	455	615

Other financial assets and cash and cash equivalents deducted from net financial debt have a liquidity of less than one year.

### Undiscounted contractual interest payments on outstanding borrowings and debt by maturity

<i>In millions of euros</i>	2024	2025	2026	2027	2028	Beyond 5 years	Total at Dec. 31, 2023	Total at Dec. 31, 2022
Undiscounted contractual interest flows on outstanding borrowings and debt	1,319	1,267	1,230	1,116	1,053	10,915	16,900	11,131

### Undiscounted contractual payments on outstanding derivatives (excluding commodity instruments) by maturity

<i>In millions of euros</i>	2024	2025	2026	2027	2028	Beyond 5 years	Total at Dec. 31, 2023	Total at Dec. 31, 2022
Derivatives (excluding commodity instruments)	(233)	1	18	17	(20)	743	527	239

To better reflect the economic substance of these transactions, the cash flows linked to the derivatives recognized in assets and liabilities shown in the table above relate to net positions.

### Undiscounted contractual payments related to leases

At December 31, 2023, the Group, as lessee, was potentially exposed to future cash outflows not reflected in the measurement of lease liabilities for €1,045 million (of which approximately 75% relate to potential cash outflows beyond 2028). Those potential future cash outflows relate to leases not yet commenced to which the Group is committed (real estate and LNG vessels).

In addition, the Group is also exposed to future cash outflows in the form of variable lease payments in connection with the extension of the Rhone concession. These variable lease payments are dependent on revenue from electricity sales.

### Undrawn credit facility programs

<i>In millions of euros</i>	2024	2025	2026	2027	2028	Beyond 5 years	Total at Dec. 31, 2023	Total at Dec. 31, 2022
Confirmed undrawn credit facility programs	1,619	738	552	-	8,500	822	12,231	12,511

Of these undrawn programs, an amount of €5,606 million is allocated to covering commercial paper.

At December 31, 2023, no single counterparty represented more than 10% of the Group's confirmed undrawn credit lines.

## 15.3.2 Undiscounted contractual payments relating to operating activities

The table below provides an analysis of undiscounted fair values due and receivable in respect of commodity derivatives recorded in assets and liabilities at the reporting date.

The Group provides an analysis of residual contractual maturities for commodity derivative instruments included in its portfolio management activities. Derivative instruments relating to trading activities are considered to be liquid in less than one year, and are presented under current items in the statement of financial position.

<i>In millions of euros</i>	2024	2025	2026	2027	2028	Beyond 5 years	Total at Dec. 31, 2023	Total at Dec. 31, 2022
Derivative instruments carried in								
<i>relating to portfolio management</i>	(5,831)	(497)	(9,539)	(2,971)	(1,249)	(994)	(21,080)	(49,260)
<i>relating to trading activities</i>	(1,787)	-	-	-	-	-	(1,787)	-
Derivative instruments carried in assets								
<i>relating to portfolio management</i>	5,624	341	6,682	2,934	681	472	16,734	40,975
<i>relating to trading activities</i>	2,766	-	-	-	-	-	2,766	5,098
<b>TOTAL</b>	<b>772</b>	<b>(155)</b>	<b>(2,857)</b>	<b>(37)</b>	<b>(568)</b>	<b>(522)</b>	<b>(3,366)</b>	<b>(3,187)</b>

### 15.3.3 Commitments relating to commodity purchase and sale contracts entered into in the ordinary course of business

Some Group operating companies have entered into long-term contracts, some of which include “take-or-pay” clauses. These consist of firm commitments to purchase or sell specified quantities of gas, electricity or steam as well as related services, in exchange for a firm commitment from the other party to deliver or purchase said quantities and services. These contracts were documented as falling outside the scope of IFRS 9. The table below shows the main future commitments arising from contracts entered into by GBU Renewables and GEMS (expressed in TWh).

<i>In TWh</i>	<b>2024</b>	<b>2025-2028</b>	<b>Beyond 5 years</b>	<b>Total at Dec. 31, 2023</b>	<b>Total at Dec. 31, 2022</b>
Firm purchases	(450)	(566)	(1,134)	(2,150)	(1,884)
Firm sales	617	470	224	1,310	1,243

## NOTE 16 EQUITY

### 16.1 Share capital

	Number of shares			Value <i>(in millions of euros)</i>		
	Total	Treasury stock	Outstanding	Share capital	Additional paid-in capital	Treasury stock
<b>AT DECEMBER 31, 2022</b>	<b>2,435,285,011</b>	<b>(14,530,427)</b>	<b>2,420,754,584</b>	<b>2,435</b>	<b>25,667</b>	<b>(189)</b>
Dividend paid in cash	-	-	-	-	(1,752)	-
Purchase/disposal of treasury stock	-	(3,755,821)	(3,755,821)	-	-	(53)
Delivery of treasury stock (bonus)	-	4,450,881	4,450,881	-	-	65
<b>AT DECEMBER 31, 2023</b>	<b>2,435,285,011</b>	<b>(13,835,367)</b>	<b>2,421,449,644</b>	<b>2,435</b>	<b>23,916</b>	<b>(177)</b>

Changes in the number of outstanding shares in 2023 resulted exclusively from the disposal of 0.7 million treasury shares, as part of bonus share plans.

#### 16.1.1 Potential share capital and instruments providing a right to subscribe for new ENGIE SA shares

Since 2017, the Group no longer has any stock purchase or subscription option plans.

Shares to be allocated under the performance share award plans described in Note 19 "Share-based payments" are covered by existing ENGIE SA shares.

#### 16.1.2 Treasury stock

##### Accounting standards

Treasury shares are recognized at acquisition cost and deducted from equity. Gains and losses on disposals of treasury shares are recorded directly in equity and do not, therefore, impact income for the period.

The Group has a stock repurchase program as a result of the authorization granted to the Board of Directors by the Ordinary and Extraordinary Shareholders' Meeting of April 26, 2023. This program provides for the repurchase of up to 10% of the shares comprising the share capital of ENGIE SA at the date of the said Shareholders' Meeting. The aggregate amount of acquisitions net of expenses under the program may not exceed €7.3 billion, and the purchase price must be less than €30 per share excluding acquisition costs.

At December 31, 2023, the Group held 13.8 million treasury shares. To date, all the shares have been allocated to cover the Group's share commitments to employees and corporate officers.

The liquidity agreement signed with an investment service provider assigns to the latter the role of operating on the market on a daily basis, to buy or sell ENGIE SA shares, in order to ensure liquidity and an active market for the shares on the Paris and Brussels stock exchanges. To date, the resources allocated to the implementation of this agreement amount to €55 million.

## 16.2 Other disclosures concerning additional paid-in capital, consolidated reserves and issuance of deeply-subordinated perpetual notes (Group share)

Total additional paid-in capital, consolidated reserves and issuance of deeply subordinated perpetual notes (including net income for the year), amounted to €32,507 million at December 31, 2023, including €23,916 million in additional paid-in capital. Additional paid-in capital includes a portion of the cash dividend payment for 2022 in an amount of €1,752 million.

Consolidated reserves include the cumulative income of the Group, the legal and statutory reserves of ENGIE SA, cumulative actuarial gains and losses, net of tax and the change in fair value of equity instruments at fair value through OCI.

Under French law, 5% of the net income of French companies must be allocated to the legal reserve until the latter reaches 10% of share capital. This reserve can only be distributed to shareholders in the event of liquidation. The ENGIE SA legal reserve amounts to €244 million.

### 16.2.1 Issuance of deeply subordinated perpetual notes

In accordance with IAS 32 (*Financial Instruments: Presentation*), and given their characteristics, these instruments are recognized in equity in the Group's consolidated financial statements.

At December 31, 2023, the outstanding nominal value of deeply subordinated perpetual notes amounted to €3,393 million. No movements have been recorded since December 31, 2022.

In 2023, the Group paid €80 million to the holders of these notes. This amount is accounted for as a deduction from equity in the Group's consolidated financial statements; the related tax saving is accounted for in the income statement.

### 16.2.2 Distributable capacity of ENGIE SA

ENGIE SA's distributable capacity totaled €24,537 million at December 31, 2023 (compared with €27,365 million at December 31, 2022), including €23,916 million of additional paid-in capital.

### 16.2.3 Dividends

The Shareholders' Meeting of 26 April 2023 approved the payment of a unit dividend of €1.40 per share in respect of the 2022 financial year. In accordance with Article 26.2 of the Articles of Association, a bonus dividend of 10%, i.e. €0.14 per share, has been allocated to shares which have been held for at least two years at December 31, 2022, and which have remained continuously registered in this form in the name of the same shareholder until the dividend payment date. This bonus dividend may not apply to a number of shares representing more than 0.5% of the share capital for any one shareholder. On May 3, 2023, the Group paid a cash dividend of €3,391 million, including the dividend of €1.40 per share for shares eligible for the ordinary dividend, and a loyalty bonus of €36 million.

#### Proposed dividend in respect of 2023

At the Shareholders' Meeting convened to approve the ENGIE Group financial statements for the year ended December 31, 2023, the shareholders will be asked to approve a dividend of €1.43 per share, representing a total payout of €3,482 million based on the number of shares outstanding at December 31, 2023. It will be increased by 10% for all shares held for at least two years at December 31, 2023 and up to the 2023 dividend payment date. Based on the number of outstanding shares at December 31, 2023, this increase is valued at €38 million.

Subject to approval by the Shareholders' Meeting of Tuesday April 30, 2024, this dividend will be detached on Thursday May 2, 2024 and paid on Monday May 6, 2024. It is not recognized as a liability in the financial statements at December 31, 2023, since the financial statements at the end of 2023 were presented before the appropriation of earnings.

### 16.3 Recyclable gains and losses recognized in equity (Group share)

All items shown in the table below correspond to cumulative gains and losses (Group share) at December 31, 2023 and December 31, 2022, which are recyclable to income in subsequent periods.

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
Debt instruments	(44)	(369)
Net investment hedges <sup>(1)</sup>	(238)	(386)
Cash flow hedges (excl. commodity instruments) <sup>(1)</sup>	145	218
Commodity cash flow hedges <sup>(1)</sup>	(3,998)	(318)
Deferred taxes on the items above	786	(112)
Share of equity method entities accounted in recyclable items, net of tax <sup>(2)</sup>	334	300
Recyclable items relating to discontinued operations, net of tax	-	-
<b>TOTAL RECYCLABLE ITEMS BEFORE TRANSLATION ADJUSTMENTS</b>	<b>(3,015)</b>	<b>(668)</b>
Translation adjustments	(1,693)	(1,422)
<b>TOTAL RECYCLABLE ITEMS</b>	<b>(4,708)</b>	<b>(2,090)</b>

(1) See Note 15 "Risks arising from financial instruments".

(2) See Note 3 "Investments in equity method entities".

### 16.4 Capital management

ENGIE SA seeks to optimize its financial structure at all times by pursuing an optimal balance between its economic net debt and its EBITDA. The Group's key objective in managing its financial structure is to maximize value for shareholders and reduce the cost of capital, while ensuring that the Group has the financial flexibility required to continue its expansion. The Group manages its financial structure and makes any necessary adjustments in light of prevailing economic conditions. In this context, it may choose to adjust the amount of dividends paid to shareholders, reimburse a portion of capital, carry out share buybacks (see Note 16.1.2 "Treasury stock"), issue new shares, launch share-based payment plans, recalibrate its investment budget, or sell assets in order to scale back its net debt.

The Group's policy is to maintain an "strong investment grade" rating from the rating agencies. To achieve this, it manages its financial structure in line with the indicators usually monitored by these agencies, namely the Group's operating profile, financial policy and a series of financial ratios. One of the most commonly used ratios is the ratio where the numerator includes operating cash flows less cost of debt and taxes paid, and the denominator includes adjusted net financial debt. Net financial debt is mainly adjusted for nuclear provisions and provisions for pensions, as well as for 50% of hybrid debt (deeply-subordinated notes). In addition, the Group has issued a guidance targeting an "economic net debt to EBITDA" ratio less than or equal 4x.

The Group's objectives and processes for managing capital have remained unchanged over the past few years.

ENGIE SA is not obliged to comply with any external minimum capital requirements except those provided for by law.

## NOTE 17 PROVISIONS

### Accounting standards

#### General principles related to the recognition of a provision

The Group recognizes a provision where it has a present obligation (legal or constructive) towards a third party arising from past events and where it is probable that an outflow of resources will be necessary to settle the obligation with no expected consideration in return.

A provision for restructuring costs is recognized when the general criteria for setting up a provision are met, i.e., when the Group has a detailed formal plan relating to the restructuring and has raised a valid expectation in those affected that it will carry out the restructuring by starting to implement that plan or announcing its main features to those affected by it.

Provisions with a maturity of over 12 months are discounted when the effect of discounting is material. The Group's main long-term provisions are provisions for the back-end of the nuclear fuel cycle, provisions for dismantling facilities, provisions for site restoration costs, and provisions for post-employment and other long-term benefits. The discount rates used reflects current market assessments of the time value of money and the risks specific to the liability concerned. Expenses with respect to unwinding the discount on the provision are recognized as other financial income and expenses.

#### Estimates of provisions

Factors having a significant influence on the amount of provisions, and particularly, but not solely, those relating to the back-end of the nuclear fuel cycle, to the dismantling of nuclear facilities and of gas infrastructures in France, include:

- cost estimates (see Note 17.2);
- the timing of expenditure (notably the timetable for the end of gas operations regarding the main gas infrastructure businesses in France) (see Notes 17.2 and 17.3); and
- the discount rate applied to cash flows.

These factors are based on information and estimates deemed by the Group to be the most appropriate as of today.

Modifications to certain factors could lead to a significant adjustment in these provisions.

<i>In millions of euros</i>	Post-employment and other long-term benefits	Back-end of the nuclear fuel cycle and dismantling of nuclear facilities	Dismantling of non-nuclear facilities	Other contingencies	Total
<b>AT DECEMBER 31, 2022</b>	<b>4,471</b>	<b>19,017</b>	<b>1,330</b>	<b>2,209</b>	<b>27,027</b>
Additions	264	5,271	107	557	6,198
Utilizations	(315)	(327)	(75)	(671)	(1,388)
Reversals	-	-	-	(36)	(35)
Changes in scope of consolidation	(6)	-	15	-	8
Impact of unwinding discount adjustments	161	581	47	14	803
Translation adjustments	1	-	(21)	(3)	(22)
Other	631	(655)	(18)	44	2
<b>AT DECEMBER 31, 2023</b>	<b>5,208</b>	<b>23,887</b>	<b>1,384</b>	<b>2,114</b>	<b>32,593</b>
Non-current	5,126	11,948	1,384	334	18,792
Current <sup>(1)</sup>	82	11,939	-	1,780	13,801

(1) *The classification of liabilities as current or non-current reflects the effects of the agreement signed with the Belgian State on June 29, 2023 (which became binding on July 21, 2023), the implementation of which was specified in the transaction documents of December 13, 2023 (see Note 17.2). The Group will settle a large portion of this liability (€11.5 billion<sub>2022</sub>) when the laws transposing this agreement come into force, and will settle the remaining balance (€3.5 billion<sub>2022</sub>) when the extended units are restarted at the end of 2025.*

The impact of unwinding discount adjustments in respect of post-employment and other long-term benefits relates to the interest expense on the benefit obligation, net of interest income on plan assets.

The “Other” line mainly comprises actuarial gains and losses arising on post-employment benefit obligations in 2023, which are recorded in “Other comprehensive income” as well as reversals of provisions recorded against a dismantling or site rehabilitation asset, notably due to the effect induced by the CNP’s final opinion of July 7, 2023 (see Note 17.2).

Additions, utilizations, reversals and the impact of unwinding discount adjustments are presented as follows in the consolidated income statement:

<i>In millions of euros</i>	<b>Dec. 31, 2023</b>
Income/(loss) from operating activities	(4,774)
Other financial income and expenses	(824)
<b>TOTAL</b>	<b>(5,598)</b>

The different types of provisions and the calculation principles applied are described below.

## 17.1 Post-employment benefits and other long-term benefits

See Note 18 “Post-employment benefits and other long-term benefits”.

## 17.2 Obligations relating to nuclear power generation activities

### 17.2.1 Current legal context and expected developments following the agreement signed with the Belgian State on June 29, 2023 which became binding on July 21, 2023, the implementation of which was specified in the transaction documents of December 13, 2023

The Belgian law of April 11, 2003, partially repealed and amended by the law of July 12, 2022, granted Group subsidiary Synatom responsibility for managing provisions set aside to cover the costs of dismantling nuclear power plants and managing spent fuel.

The tasks of the Commission for Nuclear Provisions (CNP), set up pursuant to the above-mentioned law, are to oversee the process of computing and managing these provisions. In accordance with the law, every three years the CNP conducts an audit of the application and adequacy of the calculation methods used to compute nuclear provisions.

In this context, the CNP issued a final opinion on July 7, 2023 on the proposals submitted by Synatom in September 2022. The provisions recorded by Synatom as of December 31, 2023 take full account of the comments and assumptions made by the CNP. In 2023, this opinion mainly resulted in a €0.6 billion reduction in the provision for dismantling, offset by an adjustment in the book value of dismantling assets, part of which was the subject of an impairment loss reversal (€0.4 billion). The provisions therefore include, in their assumptions, all existing or planned environmental regulatory requirements on a European, national and regional level.

On June 29, 2023, the Group signed an agreement with the Belgian government which became binding on July 21, 2023, the implementation of which was specified in the transaction documents of December 13, 2023. This agreement provides for:

- the 10-year extension of the Doel 4 and Tihange 3 nuclear reactors as part of a 50/50 partnership between the Belgian State and the Group, contingent upon the implementation of a contract for difference protecting ENGIE against market risks; and
- the transfer of financial responsibility to the Belgian State for managing nuclear waste and spent fuel in return for the payment of a lump sum discharge amount of €15 billion<sub>2022</sub>, within the limit of a volumetric credit covering all nuclear waste produced by the Belgian power plants during their legal operating life, from commissioning to dismantling.

This agreement is binding on both parties. Although it assumes the enactment and entry into force of draft laws included in the agreement, and the European Commission's assent to state aid, its closing (following the release from or fulfillment of conditions precedent) is considered highly probable. The transfer of financial responsibility for the management of nuclear waste and spent fuel meeting the transfer criteria will be concluded at closing, unless the units are not restarted before November 1, 2027 due to serious negligence on the part of ENGIE. In this highly unlikely event, the Belgian State may cancel the agreement on the lump sum discharge and revert to the current system in which the nuclear operator bears the financial responsibility. The amounts already paid by the Group would accordingly be held in escrow for the benefit of the transferred nuclear provisions until the end of the dismantling program, including nuclear waste and back-end nuclear fuel cycle management.

The Group will settle its liability of €15 billion<sub>2022</sub> by means of a payment of €11.5 billion<sub>2022</sub> for category B and C waste (highly radioactive wastes, that are intended for geological storage) at the time of closing, after which it will settle the balance for category A waste (low-level radioactive wastes, that are intended for surface storage), i.e., €3.5 billion<sub>2022</sub>, when the extended units are restarted at the end of 2025. These amounts at December 31, 2022 are subject to a 3% indexation effective from January 1, 2023 until the date of payment.

As a result, the Group has increased its provisions by an amount corresponding to the balance between the liabilities already set aside for future nuclear waste treatment costs and the lump sum amount of €15 billion<sub>2022</sub>, i.e., an amount of €5.1 billion<sub>2022</sub> (including Electrabel's partners' share in certain power plants for €0.4 billion). As a result, the Group recognized a net expense of €4.8 billion in "Other items of income/(loss) from operating activities" (see Note 9).

At the end of this agreement, the Group will essentially retain responsibility for the on-site storage of spent fuel waste until the end of the dismantling operations and until 2050 at the latest, as well as for the conditioning of all waste in accordance with the contractual agreement (see Note 17.2). The Group will also remain responsible for the final shutdown of the reactors, their dismantling and the clean-up of the site at the end of their operating life. The process of setting up and managing all these provisions, for which the Group is responsible, will continue to be reviewed by the CNP every 3 years.

## 17.2.2 Provisions for the back-end of the nuclear fuel cycle

When spent nuclear fuel is removed from a reactor and temporarily stored on-site, it requires conditioning, before being consigned to long-term storage.

As part of the implementation of a final payment for the transfer of financial responsibility for managing the storage and disposal of nuclear waste and spent fuel, as provided for in the agreement, the risks associated with this liability, as described in the consolidated financial statements at December 31, 2022 (see Note 17.2 "Obligations relating to nuclear power generation activities"), have been considerably reduced. The agreement stipulates that the State will bear financial responsibility for managing all spent fuel after its transfer to ONDRAF (National agency for radioactive waste and enriched

fissile materials). The Group will settle a large portion of this liability (classified as current in the accounts) plus a risk premium for a total of €10.5 billion<sub>2022</sub>.

With regard to waste management, the Group's responsibility will be essentially limited to on-site storage of fuel elements until the end of dismantling operations, and until 2050 at the latest, as well as compliance with the contractual criteria for transferring waste to ONDRAF, whose liability is estimated at €1.7 billion<sub>2022</sub> in the draft law implementing the agreement.

Provisions not covered in the agreement are calculated based on the following principles and inputs:

- storage costs primarily comprise the costs of building and operating additional dry storage facilities and operating existing facilities, along with the costs of purchasing containers;
- radioactive spent fuel that has not been reprocessed is to be conditioned, which requires conditioning facilities to be built according to ONDRAF's approved criteria. ONDRAF's recommendations as regards the cost of these facilities have been fully taken into account;
- the discount rate used by the CNP (for the part not covered by the agreement with the Belgian government) is 3.0% (including inflation of 2.0%).

The costs effectively incurred in the future may differ from the estimates in terms of their nature and timing of payment. Certain ONDRAF recommendations from the 2022 triennial revision of nuclear provisions that could not yet be quantified will be specifically examined under the oversight of the CNP within the context of the next triennial review.

### Sensitivity

Following the assumption by the Belgian State of all obligations relating to nuclear waste after its transfer to ONDRAF, the Group will only remain exposed to changes in future storage and conditioning costs and the corresponding discounting inputs prior to the transfer.

- The costs of building dry storage facilities and purchasing fuel element containers at the Group's sites could differ from those covered by the provisions. A 10% change in these costs, still to incur would represent a €60 million change in provisions.
- A 10% change in the annual operating costs of the storage facilities would result in a €30 million change in the provision.
- A 25 basis point change in the discount rate would result in a €40 million adjustment to non-transferred provisions. A fall in the discount rate would lead to an increase in outstanding provisions, while a rise in the discount rate would reduce the provisions' amount.

It should be noted that the risk of exceeding volumetric credits is considered, at this stage, to be highly unlikely, as the volumetric credits established in the agreement have incorporated the volumetric contingencies estimated as part of the provision review in 2022.

## 17.2.3 Provisions for dismantling nuclear facilities

### Accounting standards

A provision is recognized when the Group has a present legal or constructive obligation to dismantle facilities or to restore a site. The present value of the obligation at the time of commissioning represents the initial amount of the provision for dismantling with, as the counterpart, an asset for the same amount, which is included in the carrying amount of the facilities concerned. This asset is depreciated over the operating life of the facilities and is included in the scope of assets subject to impairment tests. Adjustments to the provision due to subsequent changes in (i) the expected outflow of resources, (ii) the timing of dismantling expenses or (iii) the discount rate, are deducted from or subject to specific conditions, added to the cost of the corresponding asset. The impacts of unwinding the discount each year are recognized in expenses for the period.

A provision is also recorded for nuclear units for which the Group holds a capacity right up to its share of the expected dismantling costs to be borne by the Group.

At the end of their operating life, the nuclear power plants must be shut down for the period during which spent fuel is unloaded from the plant, and until the site is decommissioned and cleaned up.

The dismantling strategy is based on the facilities being dismantled (i) immediately after the reactor is shut down, (ii) on a mass basis rather than on a unit-by-unit basis, and (iii) completely, the land being subsequently returned to greenfield status.

Until December 31, 2022, the amount of these dismantling provisions included costs related to handling Class A – low or medium activity and short-lived – and B – low or medium activity and long-lived – dismantling waste, that were determined using the fee rate set by ONDRAF and approved by its Board of Directors in May 2022. As a result of the agreement, financial responsibility for all Category A and B waste management operations conditioned in accordance with the contractual transfer criteria will henceforth lie with the State, in return for payment of the lump sum discharge amount described in section 17.2.2 above. The Group will transfer this liability when the laws transposing this agreement come into force, for a total of €1 billion<sub>2022</sub> for category B waste, and when the extended units are restarted at the end of 2025, for a total of €3.5 billion<sub>2022</sub> for category A waste.

The Group only remains responsible for the final shutdown and dismantling, including the conditioning of Category A and B waste from these operations in accordance with the contractual transfer criteria. At December 31, 2023, provisions for dismantling nuclear facilities are calculated based on the following inputs:

- the start of the technical shutdown procedures depends on the unit concerned and on the timing of operations for the whole nuclear reactor. The shutdown procedures are immediately followed by dismantling operations;
- the scenario adopted is based on a dismantling program and on timetables that must be approved by the nuclear safety authorities. The safety conditions for the shutdown phases have been defined with the Belgian Federal Agency for Nuclear Control (AFCN) for the Doel 3 and Tihange 2 units that have already been shut down. The safety conditions for the dismantling phase have not yet been determined. The costs may change depending on the outcome of these discussions and the detailed schedule for the implementation of these phases which is currently being defined;
- costs payable over the long term are calculated by reference to the estimated costs for each nuclear facility, based on a study conducted by independent experts under the assumption that the facilities will be dismantled on a mass basis. The costs effectively incurred in the future may differ from the estimates in terms of their nature and timing of payment;
- fees for handling category A – low or medium activity and short-lived – and B – low or medium activity and long-lived – dismantling waste are determined using the fee rate set by ONDRAF and approved by its Board of Directors in May 2022;
- for the various phases, margins for contingencies, reviewed by ONDRAF and the Commission for Nuclear Provisions, are included;
- an inflation rate of 2.0% is applied until the dismantling obligations expire in order to determine the value of the future obligation;
- the discount rate used by the CNP is 2.5% (including inflation of 2.0%)

The 10-year extension of the Doel 4 and Tihange 3 units provided for in the agreement "deoptimizes" the systematic dismantling of the various units. The State is expected to cover the related additional provisions that are currently estimated at between €500 and €600 million. Pending an agreement on the exact amount under the oversight of the CNP, this additional liability paid in the form of a lump sum by the Belgian State at the time of closing has not been included in the financial statements. If the additional costs are not fully covered by the State, the Group may have to bear a portion of this additional liability.

Lastly, the Group sets aside provisions to cover the costs relating to the final shutdown phase of its drawing rights in Tricastin and Chooz B, as well as for the dismantling period leading to the decommissioning and clean-up of the Chooz B site, in accordance with the respective agreements with EDF. These are based on provisions for Belgian assets that most closely resemble these power plants, and are updated in line with revisions by the CNP.

### Sensitivity

In light of the agreement, the Group will only be responsible for shutdown and dismantling, including conditioning of the nuclear waste arising from these operations, in accordance with the contractual transfer criteria. The Group's remaining liability is estimated at €6.7 billion<sub>2022</sub> in the draft law implementing the agreement.

- a 10% change in shutdown costs of the units would lead to a change in the provisions of around €200 million;
- a 10% change in unit dismantling costs would lead to a change of around €400 million in nuclear provisions;
- a 25 basis point change in the discount rate would lead to an adjustment of approximately €170 million in the provisions. A fall in the discount rate would lead to an increase in outstanding provisions, while a rise in the discount rate would reduce the provisions' amount.

#### 17.2.4 Financial assets set aside to cover the future costs of dismantling nuclear facilities and managing radioactive fissile material

As indicated above, the Belgian law of July 12, 2022, partially repealing and amending the law of April 11, 2003, granted the Group's wholly-owned subsidiary Synatom responsibility for managing and investing funds received from operators of nuclear power plants in Belgium and intended to cover the costs of dismantling nuclear power plants and managing spent fuel. Pursuant to the law of April 11, 2003, Synatom could lend up to 75% of these funds to nuclear power plant operators provided that certain credit quality criteria are met.

The amount of outstanding loans between Synatom and nuclear operators, representing the countervalue of provisions for spent fuel management, will be repaid to Synatom by December 31, 2025, and the amount of outstanding loans between Synatom and Electrabel, representing the countervalue of provisions for dismantling, will be repaid by September 30, 2031.

The percentage of the provisions not subject to loans to nuclear operators is invested by Synatom either in external financial assets or in loans to legal entities meeting the "credit quality" criteria imposed by law.

Synatom invested just over €3 billion in such assets in 2023.

Synatom's objective for its investment in these assets has been adapted in light of the agreement. The objective is:

- for the portion to be liquidated at closing, to maintain the value of the underlying assets by investing in predominantly money-market instruments providing a return at least equivalent to the indexation of the fee amounts fixed at 3%;
- for the investments aimed at covering the Group's remaining liabilities, to ensure a sufficient return with an acceptable level of risk in order to cover dismantling costs and the costs of storing radioactive fissile material, under the constraints of diversification, risk minimization and availability as defined by the law of July 12, 2022.

The Synatom Board of Directors and its Investment Committee are responsible for defining Synatom's investment policy after consultation with the CNP, in accordance with the law of July 12, 2022. Based on a rigorous risk control policy, the Investment Committee oversees investment decisions, which are managed by a team headed by an investment director.

The value of financial assets dedicated to covering nuclear provisions amounted to €9,984 million at December 31, 2023, and their return was 5.01% for the year. The year 2023 was marked by the gradual re-exposure of the portfolio to recovering markets, following a year marked by the downward volatility of global equity and bond markets. However, this re-exposure had to be put on hold following the government's request, as part of the agreement, to be paid the fixed fees linked to the cost of nuclear waste treatment in cash rather than in dedicated assets.

### 17.2.4.1 Valuation of financial assets in 2023

Loans to entities outside the Group and other cash investments are shown in the table below:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
<b>Loans to third parties</b>	<b>3</b>	<b>5</b>
Loan to Sibelga	3	5
<b>Other loans and receivables at amortized cost</b>	<b>3 777</b>	<b>2 270</b>
Debt instruments - restricted cash UCITS	3 777	2 270
<b>Total loans and receivables at amortized cost</b>	<b>3 780</b>	<b>2 276</b>
Equity and debt instruments at fair value	1,640	863
Equity instruments at fair value through other comprehensive income	25	24
<b>Equity instruments at fair value through income</b>	<b>1,665</b>	<b>887</b>
Debt instruments at fair value through other comprehensive income	1,873	2,418
Debt instruments at fair value through income	2,663	933
<b>Debt instruments at fair value</b>	<b>4,536</b>	<b>3,350</b>
<b>Total equity and debt instruments at fair value</b>	<b>6,201</b>	<b>4,237</b>
<b>Derivative instruments</b>	<b>3</b>	<b>113</b>
<b>TOTAL <sup>(1)</sup></b>	<b>9,984</b>	<b>6,626</b>

(1) Not including €307 million in uranium inventories at December 31, 2023 (€308 million at December 31, 2022).

Loans to legal entities outside the Group and the cash held by the Undertaking for Collective Investment in Transferable Securities (UCITS) are presented in the statement of financial position under "Loans and receivables at amortized cost". Bonds and associated hedging instruments held by Synatom through the UCITS are presented under equity or debt instruments (see Note 14.1 "Financial assets").

The breakdown in the change in the cumulative fair value of Synatom's assets is presented as follows:

<i>In millions of euros</i>	Cumulative change in the fair value of dedicated financial assets	
	Dec. 31, 2023	Dec. 31, 2022
Equity instruments at fair value through other comprehensive income	88	(157)
Debt instruments at fair value through other comprehensive income	(101)	(282)
Debt instruments at fair value through income	122	(52)
<b>TOTAL</b>	<b>108</b>	<b>(491)</b>

The net loss for the period generated by these assets amounted to €184 million in 2023 (loss of €217 million in 2022).

<i>In millions of euros</i>	Effects on the result of the return on dedicated financial assets	
	Dec. 31, 2023	Dec. 31, 2022
Disposal proceeds	(312)	14
Return on assets	71	66
Change in fair value of derivatives not designated as hedges	(108)	(15)
Change in fair value of dedicated assets through income	167	(282)
<b>TOTAL</b>	<b>(184)</b>	<b>(217)</b>

## 17.3 Dismantling of non-nuclear plant and equipment and site rehabilitation

### 17.3.1 Dismantling obligations arising on non-nuclear plant and equipment

Certain items of plant and equipment, including conventional power stations, transmission and distribution pipelines, storage facilities and LNG terminals, have to be dismantled at the end of their operational lives or at least safely shut down. These obligations are the result of prevailing environmental regulations in the countries concerned, contractual agreements, or an implicit Group commitment. The most important issue for the Group concerns gas infrastructures in France.

France's political and societal guidelines for the energy transition aim to achieve carbon neutrality by 2050, by reducing greenhouse gas emissions and promoting renewable or so-called "green" energies, particularly biomethane and hydrogen. The various scenarios that make it possible to achieve carbon neutrality, in particular the National Low Carbon Strategy in France, the French Environment and Energy Management Agency (ADEME) scenarios, and the "Energy Futures" prospective study by the electricity transmission system operator, RTE, all lead to a significant decrease in the quantities of gas consumed, while maintaining a high number of gas connection points to manage peak electricity demand. The Group is closely analyzing this prospect, particularly for the purpose of defining its strategy and assessing the useful life of assets and evaluating provisions for their possible dismantling.

The future French Strategy for Energy and Climate (SFEC) will set out France's updated roadmap to achieve carbon neutrality by 2050 and ensure that France can adapt to the impacts of climate change. It will encompass the first five-year programming law on energy and the climate (LPEC), which must be adopted in 2024 and set out in the National Low-Carbon Strategy (SNBC, 3rd issue), the National Climate Change and Adaptation Plan (PNACC, 3rd issue) and the Long Term Energy Schedule (PPE 2024-2033), which are all to be adopted in the first half of 2024. Consequently, the next five-year review of the PPE and the SNBC will be preceded for the first time by the adoption of a programming law on energy and the climate, which will set the French policy for energy and climate's priorities for action.

In line with the objective of carbon neutrality by 2050, the long-term scenario adopted by the Group, which governs the implementation of its strategy, is one that combines reasonable electrification, i.e. just under 50% of final demand in 2050, with the development of a diversified range of green gases (biomethane, synthesized e-CH<sub>4</sub>, natural gas with the Carbon-Capture and Storage process, pure hydrogen). The scenario used by the Group is close to the ADEME's S3 scenario.

Due to the importance of green gases in the French energy mix scheduled for 2050 and beyond, gas infrastructures will remain largely necessary and will be essential to provide flexibility to the energy system. The adaptation and conversion of these infrastructures to green gas mean that they can be used in the very distant future, which means that the present value of dismantling provisions is almost zero, except in the specific cases of LNG terminals and reduced operation and non-regulated storage sites mainly in France and Germany, for which provisions for dismantling amounted to €326 million at December 31, 2023 and €359 million at December 31, 2022.

Given its time horizon and developments in French and European public policies, the Group will continue to assess the long-term scenario that will enable it to achieve carbon neutrality by 2050 on a regular basis. These assessments will be accompanied by a review of the valuation of dismantling provisions.

### 17.3.2 Hazelwood Power Station & Mine (Australia)

The Group and its partner Mitsui announced in November 2016 their decision to close the coal-fired Hazelwood Power Station, and cease coal extraction operations from the adjoining mine from late March 2017. The Group holds a 72% interest in the former 1,600 MW power station and adjoining coal mine, which has been consolidated as a joint operation.

At December 31, 2023, the Group's share (72%) of the provision covering the obligation to dismantle and rehabilitate the mine amounted to €280 million, versus €220 million at December 31, 2022. The updating of certain provision inputs has resulted in an increase of around €90 million.

Dismantling and site rehabilitation work commenced in 2017 and focused on: managing site contamination; planning site wide environmental clean-up; the demolition and dismantling of all of the site's industrial facilities, including the former power station; and ongoing aquifer pumping and designated earthworks within the mine to ensure mine floor and batter stability with a view to long-term rehabilitation into a pit lake.

The ultimate regulatory obligations are likely to be revised during the life of the project and could therefore have an impact on provisions.

The amount of the provision recognized is based on the Group's best current estimate of the demolition and rehabilitation costs that Hazelwood is expected to incur. However, the amount of this provision may be adjusted in the future to take into account any changes in the key inputs.

## 17.4 Other contingencies

This caption essentially includes provisions for commercial litigation, tax claims and disputes (except income tax, pursuant to IFRIC 23) as well as provisions for onerous contracts relating to storage and transport capacity reservation contracts

## NOTE 18 POST-EMPLOYMENT BENEFITS AND OTHER LONG-TERM BENEFITS

### Accounting standards

Depending on the laws and practices in force in the countries where the Group operates, Group companies have obligations in terms of pensions, early retirement payments, retirement bonuses and other benefit plans. Such obligations generally apply to all employees within the companies concerned.

The Group's obligations in relation to pensions and other employee benefits are recognized and measured in compliance with IAS 19. Accordingly:

- the cost of defined contribution plans is expensed based on the amount of contributions payable in the period;
- the Group's obligations concerning pensions and other employee benefits payable under defined benefit plans are assessed on an actuarial basis using the projected unit credit method. These calculations are based on assumptions relating to mortality, staff turnover and estimated future salary increases, as well as the economic conditions specific to each country or entity of the Group. Discount rates are determined by reference to the yield, at the measurement date, on investment grade corporate bonds in the related geographical area (or on government bonds in countries where no representative market for such corporate bonds exists).

Pension commitments are measured on the basis of actuarial assumptions. The Group considers that the assumptions used to measure its obligations are relevant and documented. However, any change in these assumptions could have a significant impact on the resulting calculations.

Provisions are recorded when commitments under these plans exceed the fair value of plan assets. Where the value of plan assets (capped where appropriate) is greater than the related commitments, the surplus is recorded as an asset under "Other assets" (current or non-current).

As regards post-employment benefit obligations, actuarial gains and losses are recognized in other comprehensive income. Where appropriate, adjustments resulting from applying the asset ceiling to net assets relating to overfunded plans are treated in a similar way. However, actuarial gains and losses on other long-term benefits such as long-service awards, are recognized immediately in profit or loss.

Net interest on the net defined benefit liability (asset) is presented in net financial income/(loss).

### 18.1 Description of the main pension plans

#### 18.1.1 Companies belonging to the Electricity and Gas Industries sector in France

Since January 1, 2005, the CNIEG (*Caisse Nationale des Industries Électriques et Gazières*) has operated the pension, disability, death, occupational accident and occupational illness benefit plans for electricity and gas industry (hereinafter "EGI") companies in France. The CNIEG is a social security legal entity under private law placed under the joint responsibility of the ministries in charge of social security and the budget.

Employees and retirees of EGI sector companies have been fully affiliated to the CNIEG since January 1, 2005. The main affiliated Group entities are ENGIE SA, GRDF, GRTgaz, Elengy, Storengy, ENGIE Thermique France, CPCU, CNR and SHEM.

Following the funding reform of the special EGI pension plan introduced by Law No. 2004-803 of August 9, 2004 and its implementing decrees, specific benefits (pension benefits on top of the standard benefits payable under ordinary law) already vested at December 31, 2004 ("past specific benefits") were allocated between the various EGI entities. Past

specific benefits (benefits vested at December 31, 2004) relating to regulated transmission and distribution businesses ("regulated past specific benefits") are funded by the levy on gas and electricity transmission and distribution services (*Contribution Tarifaire d'Acheminement*) and therefore no longer represent an obligation for the ENGIE Group. Unregulated past specific benefits (benefits vested at December 31, 2004) are funded by EGI sector companies to the extent defined by Decree No. 2005-322 of April 5, 2005.

The specific benefits vested under the plan since January 1, 2005 are wholly financed by EGI sector companies in proportion to their respective weight in terms of payroll costs within the EGI sector.

As this plan is a defined benefit plan, the Group has set aside a pension provision in respect of specific benefits payable to employees of unregulated businesses and specific benefits vested by employees of regulated businesses since January 1, 2005. This provision also covers the Group's early retirement obligations. The provision amount may be subject to fluctuations based on the weight of the Group's companies within the EGI sector.

The special EGI pension plan has been closed to new entrants since September 1<sup>st</sup>, 2023.

Pension benefit obligations and other "mutualized" obligations are assessed by the CNIEG.

At December 31, 2023, the projected benefit obligation in respect of the special pension plan for EGI sector companies amounted to €2.73 billion.

The duration of the pension benefit obligation of the EGI pension plan is 19 years.

### 18.1.2 Companies belonging to the electricity and gas sector in Belgium

In Belgium, the rights of employees in electricity and gas sector companies, principally Electrabel, Laborelec and some ENGIE Energy Management Trading and ENGIE CC employee categories, are governed by collective bargaining agreements.

These agreements, applicable to "wage-rated" employees recruited prior to June 1, 2002 and managerial staff recruited prior to May 1, 1999, specify the benefits entitling employees to a supplementary pension equivalent to 75% of their most recent annual income, for a full career and in addition to the statutory pension. These top-up pension payments provided under defined benefit plans are partly reversionary. In practice, the benefits are paid in the form of a lump sum for the majority of plan participants. Most of the obligations resulting from these pension plans are financed through pension funds set up for the electricity and gas sector and by certain insurance companies. Pre-funded pension plans are financed by employer and employee contributions. Employer contributions are calculated annually based on actuarial assessments.

The actuarial "pension" liability relating to these plans amounted to €1.22 billion at December 31, 2023. The average duration of these plans is 9 years.

"Wage-rated" employees recruited after June 1, 2002 and managerial staff (i) recruited after May 1, 1999 or (ii) having opted for the transfer through defined contribution plans, are covered under defined contribution plans. Prior to January 1, 2017, the law specified a minimum average annual return (3.75% on wage contributions and 3.25% on employer contributions) when savings are liquidated.

The law on supplementary pensions, approved on December 18, 2016 and enforced on January 1, 2017 henceforth specifies a minimum rate of return, depending on the actual rate of return of Belgian government bonds, within a range of 1.75%-3.25% (the rates are now identical for employee and employer contributions). In 2023, the minimum rate of return stood at 1.75%.

An expense of €42 million was recognized in 2023, and €38 million in 2022 in respect of these defined contribution plans.

### 18.1.3 Other pension plans

Most other Group companies also grant their employees retirement benefits. In terms of financing, pension plans within the Group are almost equally split between defined benefit and defined contribution plans.

The Group's main pension plans outside France and Belgium concern:

- the United Kingdom: the large majority of defined benefit pension plans are now closed to new entrants and future benefits no longer vest under these plans. All entities run a defined contribution scheme. The pension obligations of International Power's subsidiaries in the United Kingdom are covered by the special Electricity Supply Pension Scheme (ESPS). The assets of this defined benefit scheme are invested in separate funds. Since June 1, 2008, the scheme has been closed and a defined contribution plan has been set up for new entrants;
- Germany: the Group's German subsidiaries have closed their defined benefit plans to new entrants and now offer defined contribution plans;
- Brazil: ENGIE Brasil Energia operates its own pension scheme. This scheme has been split into two parts, one for the (closed) defined benefit plan, and the other for the defined contribution plan that has been available to new entrants since the beginning of 2005.

## 18.2 Description of other post-employment benefit obligations and other long-term benefits

### 18.2.1 Other benefits granted to current and former EGI sector employees

Other benefits granted to EGI sector employees are:

- Post-employment benefits:
  - reduced energy prices;
  - end-of-career indemnities;
  - bonus leave;
  - death capital benefits.
- Long-term benefits:
  - allowances for occupational accidents and illnesses;
  - temporary and permanent disability allowances;
  - length-of-service awards.

The Group's main obligations are described below.

#### 18.2.1.1 Reduced energy prices

Under Article 28 of the national statute for electricity and gas industry personnel, all employees (current and former employees, provided they meet certain length-of-service conditions) are entitled to benefits in kind, which take the form of reduced energy prices known as "employee rates".

This benefit entitles employees to electricity and gas supplies at a reduced price. For retired employees, this provision represents a post-employment defined benefit. Retired employees are only entitled to the reduced rate if they have completed at least 15 years' service within EGI sector companies.

In accordance with the agreements signed with EDF in 1951, ENGIE provides gas to all current and former employees of ENGIE and EDF, while EDF supplies electricity to these same beneficiaries. ENGIE pays (or benefits from) the balancing contribution payable in respect of its employees as a result of energy exchanges between the two utilities.

The obligation to provide energy at a reduced price to current and former employees during their retirement is measured as the difference between the energy sale price and the preferential rate granted to employees.

The provision set aside in respect of reduced energy prices stood at €2.97 billion at December 31, 2023. The duration of the obligation is 19 years.

### 18.2.1.2 End-of-career indemnities

Retiring employees (or their dependents in the event of death during active service) are entitled to end-of-career indemnities, which increase in line with the length of service within the EGI sector.

### 18.2.1.3 Compensation for occupational accidents and illnesses

EGI sector employees are entitled to compensation for accidents at work and occupational illnesses. These benefits cover all employees or the dependents of employees who die as a result of occupational accidents or illnesses, or injuries undergone on the way to work.

The amount of the obligation corresponds to the likely present value of the benefits to be paid to current beneficiaries, taking into account any reversionary annuities.

## 18.2.2 Other benefits granted to employees of the gas and electricity sector in Belgium

Electricity and gas sector companies also grant other post-employee benefits such as the reimbursement of medical expenses, electricity and gas price reductions, as well as length-of-service awards and early retirement schemes. These benefits are not prefunded, with the exception of the special "*allocation transitoire*" termination indemnity, considered as an end-of-career indemnity.

## 18.2.3 Other collective agreements

Most other Group companies also grant their staff post-employment benefits (early retirement plans, medical coverage, benefits in kind, etc.) and other long-term benefits such as jubilee and length-of-service awards.

## 18.3 Defined benefit plans

### 18.3.1 Amounts presented in the statement of financial position and statement of comprehensive income

In accordance with IAS 19, the information presented in the statement of financial position relating to post-employment benefit obligations and other long-term benefits results from the difference between the gross projected benefit obligation and the fair value of plan assets. A provision is recognized if this difference is positive (net obligation), while a prepaid benefit cost is recorded in the statement of financial position when the difference is negative, provided that the conditions for recognizing the prepaid benefit cost are met.

Changes in provisions for pension plans, post-employment benefits and other long-term benefits, plan assets and reimbursement rights recognized in the statement of financial position are as follows:

<i>In millions of euros</i>	Provisions	Plan assets	Reimbursement rights
<b>AT DECEMBER 31, 2022</b>	<b>(4,471)</b>	<b>316</b>	<b>208</b>
Exchange rate differences	6	1	-
Changes in scope of consolidation and other	(3)	3	25
Actuarial gains and losses	(645)	44	-
Periodic pension cost	(403)	(89)	9
Contributions/benefits paid	308	14	1
<b>AT DECEMBER 31, 2023</b>	<b>(5,208)</b>	<b>289</b>	<b>244</b>

Plan assets and reimbursement rights are presented in the statement of financial position under “Other non-current assets” or “Other current assets”.

The cost recognized for the period amounted to €492 million in 2023 (€354 million in 2022). The components of this defined benefit cost in the period are set out in Note 18.3.3 “Components of the net periodic pension cost”.

The Eurozone represented 97% of the Group’s net obligation at December 31, 2023, (98% at December 31, 2022).

Cumulative actuarial gains and losses recognized in equity amounted to €1 979 million at December 31, 2023, compared to €1,400 million at December 31, 2022.

Net actuarial differences arising in the period and presented on a separate line in the statement of comprehensive income represented a net actuarial loss of €601 million in 2023 and a gain of €2,774 million in 2022.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

 NOTE 18 POST-EMPLOYMENT BENEFITS AND OTHER  
LONG-TERM BENEFITS

## 18.3.2 Change in benefit obligations and plan assets

The table below shows the amount of the Group's projected benefit obligations and plan assets, changes in these items during the periods presented, and their reconciliation with the amounts reported in the statement of financial position:

In millions of euros	Dec. 31, 2023				Dec. 31, 2022				
	Pension benefit obligations (1)	Other post-employment benefit obligations (2)	Long-term benefit obligations (3)	Total	Pension benefit obligations (1)	Other post-employment benefit obligations (2)	Long-term benefit obligations (3)	Total	
<b>A - CHANGE IN PROJECTED BENEFIT OBLIGATION</b>									
Projected benefit obligation at January 1	(5,565)	(3,308)	(395)	(9,268)	(7,566)	(4,649)	(499)	(12,715)	
Service cost	(168)	(48)	(33)	(248)	(229)	(97)	(45)	(372)	
Interest expense	(245)	(123)	(16)	(384)	(124)	(60)	(6)	(190)	
Contributions paid	(9)	-	-	(9)	(8)	-	-	(8)	
Amendments	(82)	27	(1)	(56)	-	-	-	-	
Changes in scope of consolidation	-	-	-	-	10	2	-	12	
Curtailments/settlements	8	5	1	14	(87)	-	-	(87)	
Financial actuarial gains and losses	(163)	(233)	(33)	(430)	2,118	1,390	81	3,590	
Demographic actuarial gains and losses	(110)	25	-	(85)	8	(4)	34	39	
Benefits paid	378	127	43	549	346	110	39	495	
Other (of which translation adjustments)	(11)	-	(1)	(11)	(33)	-	(1)	(34)	
Projected benefit obligation at December 31	<b>A</b>	<b>(5,966)</b>	<b>(3,529)</b>	<b>(433)</b>	<b>(9,928)</b>	<b>(5,565)</b>	<b>(3,308)</b>	<b>(395)</b>	<b>(9,268)</b>
<b>B - CHANGE IN FAIR VALUE OF PLAN ASSETS</b>									
Fair value of plan assets at January 1	5,181	-	-	5,181	5,843	-	-	5,843	
Interest income on plan assets	214	-	-	214	97	-	-	97	
Financial actuarial gains and losses	(119)	-	-	(119)	(739)	-	-	(739)	
Contributions received	91	-	-	91	133	-	-	133	
Changes in scope of consolidation	-	-	-	-	3	-	-	3	
Settlements	-	-	-	-	81	-	-	81	
Benefits paid	(308)	-	-	(308)	(260)	-	-	(260)	
Other (of which translation adjustments)	9	-	-	9	22	-	-	22	
Fair value of plan assets at December 31	<b>B</b>	<b>5,067</b>	<b>-</b>	<b>-</b>	<b>5,067</b>	<b>5,181</b>	<b>-</b>	<b>-</b>	<b>5,181</b>
<b>C - FUNDED STATUS</b>	<b>A+B</b>	<b>(899)</b>	<b>(3,529)</b>	<b>(433)</b>	<b>(4,861)</b>	<b>(384)</b>	<b>(3,308)</b>	<b>(395)</b>	<b>(4,087)</b>
Asset ceiling	(58)	-	-	(58)	(68)	-	-	(68)	
<b>NET BENEFIT OBLIGATION</b>	<b>(957)</b>	<b>(3,529)</b>	<b>(433)</b>	<b>(4,919)</b>	<b>(452)</b>	<b>(3,308)</b>	<b>(395)</b>	<b>(4,155)</b>	
<b>ACCRUED BENEFIT LIABILITY</b>	<b>(1,246)</b>	<b>(3,529)</b>	<b>(433)</b>	<b>(5,208)</b>	<b>(768)</b>	<b>(3,308)</b>	<b>(395)</b>	<b>(4,471)</b>	
<b>PREPAID BENEFIT</b>	<b>289</b>	<b>-</b>	<b>-</b>	<b>289</b>	<b>316</b>	<b>-</b>	<b>-</b>	<b>316</b>	

(1) Pensions and retirement bonuses.

(2) Reduced energy prices, healthcare, gratuities and other post-employment benefits.

(3) Length-of-service awards and other long-term benefits.

### 18.3.3 Components of the net periodic pension cost

The net periodic cost recognized in respect of defined benefit obligations for the years ended December 31, 2023 and 2022 breaks down as follows:

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
Current service cost	248	372
Actuarial gains and losses <sup>(1)</sup>	32	(116)
Gains or losses on pension plan curtailments, terminations and settlements <sup>(2)</sup>	42	6
<b>Total accounted for under current operating income including operating MtM and share in net income of equity method entities</b>	<b>322</b>	<b>261</b>
Net interest expense	170	93
<b>Total accounted for under net financial income/(loss)</b>	<b>170</b>	<b>93</b>
<b>TOTAL</b>	<b>492</b>	<b>354</b>

(1) On the long-term benefit obligation.

(2) Including the €56 million impact of the pension reform in 2023 on the IEG plan.

### 18.3.4 Funding policy and strategy

When defined benefit plans are funded, the related plan assets are invested in pension funds and/or with insurance companies, depending on the investment practices specific to the country concerned. The investment strategies underlying these defined benefit plans are aimed at striking the right balance between return on investment and acceptable levels of risk.

The objectives of these strategies can be summarized as follows: to maintain sufficient liquidity to cover pension and other benefit payments; and as part of risk management, to achieve a long-term rate of return higher than the discount rate or, where appropriate, at least equal to future required returns.

When plan assets are invested in pension funds, investment decisions are the responsibility of the fund management concerned. For French companies, where plan assets are invested with an insurance company, the latter manages the investment portfolio for unit-linked policies or euro-denominated policies, in a manner adapted to the risk and long-term profile of the liabilities.

The funding of these obligations for each of the periods presented can be analyzed as follows:

<i>In millions of euros</i>	Projected benefit obligation	Fair value of plan assets	Asset ceiling	Total net obligation
Underfunded plans	(4,063)	3,382	(56)	(737)
Overfunded plans	(1,365)	1,686	(2)	319
Unfunded plans	(4,501)	-	-	(4,501)
<b>AT DECEMBER 31, 2023</b>	<b>(9,929)</b>	<b>5,068</b>	<b>(58)</b>	<b>(4,919)</b>
Underfunded plans	(3,886)	3,391	(63)	(558)
Overfunded plans	(1,360)	1,788	(4)	424
Unfunded plans	(4,021)	-	-	(4,021)
<b>AT DECEMBER 31, 2022</b>	<b>(9,267)</b>	<b>5,180</b>	<b>(68)</b>	<b>(4,156)</b>

The allocation of plan assets by principal asset category can be analyzed as follows:

<i>In %</i>	Dec. 31, 2023	Dec. 31, 2022
Equity investments	26	27
Sovereign bond investments	26	25
Corporate bond investments	33	35
Money market securities	4	4
Real estate	3	2
Other assets	8	8
<b>TOTAL</b>	<b>100</b>	<b>100</b>

All plan assets were quoted on an active market at December 31, 2023.

The actual return on assets of EGI sector companies stood at a positive 7.7% in 2023.

In 2023, the actual return on plan assets of Belgian entities amounted to approximately a positive 6.9% in Group insurance and a positive 9.3% in pension funds.

The allocation of plan asset categories by geographic area of investment can be analyzed as follows:

<i>In %</i>	Europe	North America	Latin America	Asia - Oceania	Rest of the World	Total
Equity investments	45	34	7	12	2	100
Sovereign bond investments	74	3	19	1	3	100
Corporate bond investments	64	27	1	5	4	100
Money market securities	29	-	3	-	68	100
Real estate	68	3	5	-	24	100
Other assets	10	-	-	-	89	100

### 18.3.5 Actuarial assumptions

Actuarial assumptions are determined individually by country and company in conjunction with independent actuaries. Weighted discount rates for the main actuarial assumptions are presented below:

		Pension benefit obligations		Other post-employment benefit obligations		Long-term benefit obligations		Total benefit obligations	
		2023	2022	2023	2022	2023	2022	2023	2022
Discount rate	Eurozone	3.5%	3.8%	3.5%	3.8%	3.5%	3.8%	3.5%	3.8%
	UK Zone	5.2%	4.1%	-	-	-	-	-	-
Inflation rate	Eurozone	2.0%	2.1%	2.0%	2.1%	2.0%	2.1%	2.0%	2.1%
	UK Zone	3.5%	3.9%	-	-	-	-	-	-

#### 18.3.5.1 Discount and inflation rates

The discount rate applied is determined based on the yield, at the date of the calculation, of investment grade corporate bonds with maturities mirroring the term of the plan.

The rates were determined for each monetary area based on data for AA corporate bond yields. For the Eurozone, data (from Bloomberg) are extrapolated on the basis of government bond yields for long maturities.

According to the Group's estimates, a 100-basis-point increase (decrease) in the discount rate would result in a decrease (increase) of approximately 13% in the projected benefit obligation.

The inflation rates were determined for each monetary area. A 100-basis-point increase (decrease) in the inflation rate (with an unchanged discount rate) would result in an increase (decrease) of approximately 13% in the projected benefit obligation.

### 18.3.6 Estimated employer contributions payable in 2024 under defined benefit plans

The Group expects to pay around €207 million in contributions into its defined benefit plans in 2024, including €103 million for EGI sector companies. Annual contributions in respect of EGI sector companies will be made by reference to rights vested during the year, taking into account the funding level for each entity in order to even out contributions over the medium term.

## 18.4 Defined contribution plans

In 2023, the Group recorded a €92 million expense in respect of amounts paid into Group defined contribution plans of which €8 million concerning multi-employer plans in Netherlands (compared with €91 million in 2022, of which €9 million concerned multi-employer plans in the Netherlands). These contributions are recorded under "Personnel costs" in the consolidated income statement.

## NOTE 19 SHARE-BASED PAYMENTS

### Accounting standards

Under IFRS 2, share-based payments made in consideration for services provided are recognized as personnel costs. These services are measured at the fair value of the instruments awarded.

The fair value of bonus share plans is estimated by reference to the share price at the grant date, taking into account the fact that no dividend is payable over the vesting period, and based on the estimated turnover rate for the employees concerned and the probability that the Group will meet its performance targets. The fair value measurement also takes into account the non-transferability period associated with these instruments. The cost of shares granted to employees is expensed over the vesting period of the rights and offset against equity.

A Monte Carlo pricing model is used for performance shares granted on a discretionary basis and subject to external performance criteria.

Expenses recognized in respect of share-based payments break down as follows:

In millions of euros	Expense for the year	
	Dec. 31, 2023	Dec. 31, 2022
Employee share issues <sup>(1)</sup>	1	(49)
Bonus/performance share plans <sup>(2) (3)</sup>	(46)	(40)
Other Group companies' plans	-	(3)
<b>TOTAL</b>	<b>(45)</b>	<b>(92)</b>

(1) Including Share Appreciation Rights set up within the scope of employee share issues in certain countries.

(2) Following the review of performance conditions, the expense has not been adjusted in 2023 (an additional expense of €4.2 million was recognized in 2022).

(3) Following the review of continuing employment, the expense was not adjusted in 2023 (a reversal of €9,8 million was recognized in 2022).

### 19.1 Performance shares

#### 19.1.1 New awards in 2023

No award of performance shares to members of the Group's executive or senior management has been made in 2023.

#### 19.1.2 Review of internal performance conditions applicable to the plans

In addition to the condition of continuing employment within the Group, eligibility for certain bonus share and performance share plans is subject to an internal performance condition. When this condition is not fully met, the number of bonus shares granted to employees is reduced in accordance with the plans' regulations, leading to a decrease in the total expense recognized in relation to the plans in accordance with IFRS 2. Performance conditions are reviewed at each reporting date.

## NOTE 20 RELATED PARTY TRANSACTIONS

This note describes material transactions between the Group and its related parties.

Compensation payable to key management personnel is disclosed in Note 21 "Executive compensation".

Transactions with joint ventures and associates are described in Note 3 "Investments in equity method entities".

Only material transactions are described below.

### 20.1 Relations with the French State and with entities owned or partly owned by the French State

#### 20.1.1 Relations with the French State

The French State's interest in the Group at December 31, 2023 remained unchanged at 23.64% compared with the previous year. This entitles it to three of the fourteen seats on the Board of Directors (one director representing the State appointed by decree, and two directors appointed by the Shareholders' Meeting at the proposal of the State).

The French State holds 33.80% of the theoretical voting rights (33.95% of exercisable voting rights) compared with 33.56% at end-2022.

On May 22, 2019, the PACTE Law ("Action plan for business growth and transformation") was enacted, enabling the French State to dispose of its ENGIE shares without restriction.

In addition, the French State holds a golden share aimed at protecting France's critical interests and ensuring the continuity and safeguarding of supplies in the energy sector. The golden share is granted to the French State indefinitely and entitles it to veto decisions taken by ENGIE if it considers they could harm France's interests.

Public service engagements in the energy sector are defined by the law of January 3, 2003.

Transmission rates on the GRTgaz transportation network and the gas distribution network in France, as well as rates for accessing the French LNG terminals and revenues from storage capacities, are all regulated.

The Law on Energy and Climate enacted on November 8, 2019 provided for the phase out of regulated gas tariffs and the restriction of regulated electricity tariffs to residential consumers and small businesses. Regulated gas tariffs were phased out on July 1, 2023.

#### 20.1.2 Relations with EDF

Following the creation on July 1, 2004 of the French gas and electricity distribution network operator (EDF Gaz de France Distribution), Gaz de France SA and EDF entered into an agreement on April 18, 2005 setting out their relationship as regards the distribution business. The December 7, 2006 law on the energy sector reorganized the natural gas and electricity distribution networks. Enedis SA, a subsidiary of EDF SA, and GRDF SA, a subsidiary of ENGIE SA, were created on January 1, 2007 and December 31, 2007, respectively, and act in accordance with the agreement previously signed by the two incumbent operators. With the deployment of smart meters for both electricity and gas, the "common" activities operated by the two distributors evolved significantly. The remaining mixed activities are mainly in the areas of inventory management, human resources, the medical field, local IT and accountancy.

## 20.2 Relations with the CNIEG (*Caisse Nationale des Industries Électriques et Gazières*)

The Group's relations with the CNIEG, which manages all old-age, death and disability benefits for active and retired employees of the Group who belong to the special EGI pension plan, employees of EDF and Non-Nationalized Companies (*Entreprises Non Nationalisées – ENN*), are described in Note 18 "Post-employment benefits and other long-term benefits".

## NOTE 21 EXECUTIVE COMPENSATION

The executive compensation presented below includes the compensation of the members of the Group's Executive Committee and Board of Directors.

The Executive Committee had 10 members at December 31, 2023 and at December 31, 2022.

Their compensation breaks down as follows:

<i>In millions of euros</i>	<b>Dec. 31, 2023</b>	<b>Dec. 31, 2022</b>
Short-term benefits	23	34
Post-employment benefits	-	-
Share-based payments	4	4
Termination benefits	-	-
<b>TOTAL</b>	<b>27</b>	<b>37</b>

## NOTE 22 WORKING CAPITAL REQUIREMENTS, INVENTORIES, OTHER ASSETS AND OTHER LIABILITIES

### Accounting standards

In accordance with IAS 1, the Group's current and non-current assets and liabilities are shown separately in the consolidated statement of financial position. For most of the Group's activities, the breakdown into current and non-current items is based on when assets are expected to be realized, or liabilities extinguished. Assets expected to be realized or liabilities extinguished within 12 months of the reporting date are classified as current, while all other items are classified as non-current.

### Inventories

Inventories are measured at the lower of cost and net realizable value. Net realizable value corresponds to the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale.

The cost of inventories is determined based on the first-in, first-out method or the weighted average cost formula.

Nuclear fuel purchased is consumed in the process of producing electricity over a number of years. The consumption of this nuclear fuel inventory is recorded based on estimates of the quantity of electricity produced per unit of fuel.

### Gas inventories

Gas injected into underground storage facilities includes working gas, which can be extracted without adversely affecting the subsequent operation of the reservoirs, and cushion gas, which is inseparable from the reservoirs and essential for their operation (see Note 13.3 "Property, plant and equipment").

Working gas is classified in inventories and measured at weighted average purchase cost upon entering the transportation network regardless of its source, including any regasification costs.

Group inventory outflows are valued using the weighted average unit cost method.

Certain inventories are used for trading purposes and are recognized at fair value less selling costs, in accordance with IAS 2. Any changes in said fair value are recognized in the consolidated income statement for the year in which they occur.

### Greenhouse gas emission rights, energy saving certificates and green certificates

In the absence of specific IFRS standards or IFRIC interpretations on accounting for greenhouse gas emission allowances, energy saving certificates and green certificates, the Group has decided to recognize certificates in inventories at their acquisition or production cost. At the reporting date, a liability is recognized if the certificates held by the Group are insufficient to meet the obligation to return certificates to the French government. When not covered by the certificates held in inventories, the liability is measured at the market value or based on the price of any future contracts that have been entered into, when applicable.

### Tax equity

The ENGIE Group finances its renewables projects in the United States through tax equity structures, in which part of the necessary funds is provided by a tax partner. The tax partner obtains, up to a pre-determined level, a preferential right essentially to the project's tax credits, which it can deduct from its own tax base.

The tax partner's investments meet the definition of a liability under IFRS. Since the tax equity liability corresponding to these tax benefits does not give rise to any cash outflow for the project entity, it does not represent a financial debt and is accounted for in "Other liabilities".

Besides the unwinding effect, the liability changes mainly in line with the tax credits allocated to the tax partner and recognized in profit or loss.

## 22.1 Composition of change in working capital requirements

<i>In millions of euros</i>	Change in working capital requirements at Dec. 31, 2023	Change in working capital requirements at Dec. 31, 2022
<b>Inventories</b>	3,003	(2,115)
Trade and other receivables, net	12,507	(11,614)
Trade and other payables, net	(13,554)	8,521
Tax and employee-related receivables/payables	(325)	1,545
Margin calls and derivative instruments hedging commodities relating to trading activities	(1,113)	199
Other	(120)	1,040
<b>TOTAL</b>	<b>397</b>	<b>(2,424)</b>

## 22.2 Inventories

<i>In millions of euros</i>	Dec. 31, 2023	Dec. 31, 2022
<b>Inventories of natural gas, net</b>	<b>2,218</b>	<b>4,628</b>
Inventories of uranium <sup>(1)</sup>	307	308
CO <sub>2</sub> emissions allowances, green certificates and energy saving certificates, net	1,535	1,788
Inventories of commodities other than gas and other inventories, net	1,283	1,420
<b>TOTAL</b>	<b>5,343</b>	<b>8,145</b>

(1) Financial hedging instruments are backed by these uranium inventories and represented a negative amount of €1 million at December 31, 2023.

## 22.3 Other assets and other liabilities

<i>In millions of euros</i>	Dec. 31, 2023				Dec. 31, 2022			
	Assets		Liabilities		Assets		Liabilities	
	Non-current	Current	Non-current	Current	Non-current	Current	Non-current	Current
<b>Other assets and liabilities</b>	990	13,424	(3,614)	(18,118)	766	18,294	(3,646)	(23,583)
Tax receivables/payables	-	9,420	-	(10,415)	-	14,647	-	(16,863)
Employee receivables/payables	531	16	(2)	(2,503)	523	22	(2)	(2,479)
Dividend receivables/payables	-	127	-	(20)	-	12	-	(23)
Other	459	3,845	(3,613)	(5,178)	243	3,614	(3,644)	(4,218)

At December 31, 2023, other non-current assets included a receivable towards EDF in respect of nuclear provisions amounting to €654 million (€162 million at December 31, 2022).

Other liabilities include €2,140 million in investments made by tax partners as part of the financing of renewable projects in the United States by tax equity (€1,981 million at December 31, 2022).

## NOTE 23 LEGAL AND ANTI-TRUST PROCEEDINGS

The Group is party to a number of legal and anti-trust proceedings with third parties or with legal and/or administrative authorities (including tax authorities) in the normal course of its business.

The main disputes and investigations presented hereafter are recognized as liabilities or give rise to contingent assets or liabilities.

In the ordinary course of its business, the Group is involved in a number of disputes and investigations before state courts, arbitral tribunals or regulatory authorities. The disputes and investigations that could have a material impact on the Group are presented below.

### 23.1 Renewables

#### 23.1.1 Mexico – Renewable energy

In 2021, the Mexican government and public authorities took positions and legislative and regulatory measures that directly affect private players in the energy sector (in particular renewable energy producers) and go against the letter and spirit of the latest energy sector reforms introduced in 2013 and 2014. The constitutionality and legality of some of these measures have been contested in legal proceedings launched by non-government bodies and private investors, in particular by ENGIE subsidiaries that develop or implement renewable energy projects in the country. These proceedings are currently ongoing. The Mexican President has also submitted a draft revision of the Constitution that would substantially change the regulatory framework applicable to the electricity sector. However, Congress rejected the constitutional amendments proposed by the government, so the current law remains in force.

### 23.2 Energy Solutions

#### 23.2.1 Spain – Púnica

In the Púnica case (procedure concerning the awarding of contracts), 15 Cofely España employees, as well as the company itself, were placed under investigation by the examining judge in charge of the case. The criminal investigation was closed on July 19, 2021 with the referral of Cofely España and eight (former) employees before the criminal court. Cofely España lodged an appeal against this decision on September 30, 2021. On March 9, 2022, the appeal was dismissed and the referral decision upheld. The hearings are expected to begin in 2024.

#### 23.2.2 Italy – Competition procedure

On May 9, 2019, a fine of €38 million was jointly and severally imposed on ENGIE Servizi SpA and ENGIE Energy Services International S.A. ("ENGIE ESI") by the Italian Competition Authority (the "Authority") for certain alleged anti-competitive practices relating to the award of the Consip FM4 2014 contract. An appeal was lodged with the Lazio Regional Administrative Court (Lazio RAC). On July 18, 2019, the Lazio RAC suspended the payment of the fine, and on July 27, 2020, it overturned the Authority's decision as regards both ENGIE Servizi SpA and ENGIE ESI. On November 17, 2020, the Authority appealed the Lazio RAC's decision before Italy's highest administrative court. On May 9, 2022, the Italian administrative court rejected the Authority's appeal and upheld the Lazio RAC's reversal of the Authority's decision. Two companies (including Consorzio Innova whose appeals concern ENGIE Servizi SpA and ENGIE ESI) filed a special appeal against the administrative court's decision before the administrative court itself on June 13, 2022. This appeal does not have suspensive effect. Another appeal challenging the administrative court's rejection was also filed by the same companies before the Supreme Court on July 11, 2022. Following Consorzio Innova's withdrawal of its appeal to the Supreme Court, it closed the proceedings on April 4, 2023. On July 21, 2023, the Italian administrative court rejected Consorzio Innova's appeal. The Italian administrative court thereby confirmed its previous decision and upheld the Lazio RAC's reversal of the Authority's decision concerning ENGIE Servizi SpA and ENGIE ESI.

### 23.2.3 Italy – Manitalidea

In 2012, ENGIE Servizi formed a temporary association (“associazione temporanea di imprese” or “ATI”) with Manitalidea with the aim of submitting a bid for a public contract launched by CONSIP. ENGIE Servizi had an 85% stake in the ATI, with Manitalidea holding the remaining 15%. The purpose of the contract was to provide energy and maintenance services to hospitals.

In September 2012, three lots of the contract were awarded to the ATI.

On March 11, 2022, Manitalidea filed for damages against ENGIE Servizi in the Rome Civil Court, claiming that (i) ENGIE Servizi had not complied with the provisions of the temporary association agreement relating to the distribution of contracts between the partners, and (ii) as a result, Manitalidea had missed an opportunity to increase its revenue. After Manitalidea filed for bankruptcy, the claim was extended to include the alleged responsibility of ENGIE Servizi for Manitalidea’s financial difficulties and bankruptcy.

The proceedings are still ongoing.

## 23.3 Retail

### 23.3.1 Peru – Antamina

In 2012, following a tender for the annual purchase of 170 MW until 2032, ENGIE Energía Perú S.A. entered into a long-term gas purchase agreement with the Peruvian mining company Antamina (the “Agreement”).

In 2021, however, Antamina launched another tender for the same annual volume and entered into three purchase agreements with three new suppliers for a six-month period renewable twice. This called into question the exclusivity and “take or pay” clause that ENGIE Energía Perú S.A. believed it had been granted until 2032 under the Agreement. Following the signing of these new agreements, Antamina refused, as of January 2022, to accept delivery of the agreed upon quantity of gas under the Agreement and, consequently, to pay the corresponding penalty.

On April 26, 2022, ENGIE Energía Perú S.A. filed an arbitration procedure against Antamina, seeking recognition of the exclusive nature of the Agreement and Antamina’s obligation to only procure gas supplies from ENGIE. The suit also seeks the payment of invoices that have been outstanding since January 2022. The arbitration procedure is governed by the rules of the Arbitration Center of the Lima Chamber of Commerce. On January 4, 2023, ENGIE Energía Perú S.A. filed its statement of claim. The procedure is underway, and the verdict is expected in early 2024.

### 23.3.2 GEMS

At the beginning of the fourth quarter of 2022, ENGIE initiated an arbitration procedure against Gazprom Export LLC seeking, in particular to obtain (i) recognition of Gazprom Export LLC’s non-performance of its gas delivery obligations towards ENGIE under long-term gas delivery agreements and (ii) payment of contractual penalties as well as compensation for damage resulting from this non-performance from Gazprom Export LLC.

This arbitration procedure is due to the significant delivery shortages by Gazprom Export LLC to ENGIE as of mid-June 2022, followed by Gazprom Export LLC’s unilateral decision at the end of summer 2022 to reduce its deliveries to ENGIE due to a disagreement between the parties on the application of the agreements.

### 23.3.3 Chile – TotalEnergies

On January 3, 2023, ENGIE Energía Chile S.A. initiated international arbitration proceedings against TotalEnergies Gas & Power Limited for breaching its contractual obligations under an LNG supply contract entered into in August 2011. The proceedings are currently ongoing.

## 23.4 FlexGen

### 23.4.1 Italy – Vado Ligure

On March 11, 2014, the Court of Savona seized and closed down the VL3 and VL4 coal-fired production units at the Vado Ligure thermal power plant belonging to Tirreno Power S.p.A. (TP), a company which is 50%-owned by the ENGIE Group. This decision was taken as part of a criminal investigation against the present and former executive managers of TP into environmental infringements and public health risks. The investigation was closed on July 20, 2016. The case was referred to the Court of Savona to be tried on the merits. The proceedings before the Court of First Instance began on December 11, 2018 and carried on into 2023, seeking the liability of the former members of the Board of Directors and management. Third parties, including the Italian Ministry of the Environment and Ministry of Health, joined the proceedings to claim damages. On October 3, 2023, the Court of Savona acquitted all 26 directors and managers of all charges. The subsidiary Tirreno Power SpA, in which ENGIE has a 50% stake, was also acquitted. The decision was notified in January 2024. The public prosecutor has decided to appeal the decision in February 2024.

### 23.4.2 Brazil – Claim against sales tax adjustments

ENGIE Brasil Energia S.A. was subject to a tax reassessment covering fiscal years 2014, 2015, 2016 and 2018 in respect of federal value-added taxes (PIS and COFINS) for refunds relating to fuels used in the production of energy by thermopower plants. The total amount at stake is 693.6 million Brazilian real, including a principal amount of 258.9 million.

The company is contesting these reassessments and has lodged administrative appeals. The administrative appeals for fiscal years 2014, 2015 and 2016 were rejected and the company initiated the discussion at the judicial court. The administrative appeal for 2018 is being examined. If this administrative appeal is unsuccessful, the case could also be brought before the ordinary courts and tribunals.

In 2023, Diamante Geração de Energia (controlled by ENGIE Brasil Energia SA at the time and owner of the thermopower plants) was also subject to reassessments for the tax treatment of comparable fuel reimbursements. The reassessments concerned both PIS and COFINS taxes (fiscal years 2019 and 2020) and corporate income tax (fiscal year 2018). The total amount at stake is 542 million Brazilian real, including a principal amount of 260.5 million. Although ENGIE Brasil Energia SA sold this company in 2021, it remains financially responsible under the vendor's warranty regarding the years prior to the sale. The company is challenging these reassessments and has lodged an administrative appeal, which is currently under review, with the potential for escalation to ordinary courts and tribunals.

### 23.4.3 Italy – exceptional tax on the energy sector

In December 2022, ENGIE filed an action against the tax authorities to obtain the reimbursement of the tax it had paid in July and November 2022 for a total amount of more than €308 million, pursuant to two legislative decrees (no. 21 and no. 50/2022) that introduced an exceptional solidarity contribution to be paid by operators in the energy sector. ENGIE contests the validity of the basis of the tax in relation to the decree's objective, its compatibility with the Italian Constitution as well as its compatibility with Italy's European commitments (EU law). In December 2023, the Milan Court of First Instance asked the Italian Constitutional Court to rule on the constitutionality of the tax as part of the proceedings launched by ENGIE.

### 23.4.4 Flémalle – EPC

In November 2021, Electrabel SA entered into an EPC (Engineering, Procurement, Construction) agreement with SEPCO III for the construction of a gas-fired power plant in Flémalle (Belgium), in the context of the CRM (Capacity Remuneration Mechanism).

In August 2022, Electrabel SA terminated the EPC agreement with SEPCO III for non-performance of its contractual obligations and initiated arbitration proceedings in November 2022, to obtain compensation for the damage sustained.

SEPCO III filed a counterclaim against Electrabel seeking damages to cover the alleged loss it had sustained due to the termination of the contract.

## 23.5 Nuclear

### 23.5.1 Extension of operations at the nuclear power plants 2015-2025

Various associations have brought actions before the Constitutional Court, the *Conseil d'État* and the ordinary courts against the laws and administrative decisions authorizing the extension of operations at the Doel 1 and Doel 2 plants. On June 22, 2017 the Constitutional Court referred the case to the Court of Justice of the European Union (CJEU) for a preliminary ruling. In its judgment of July 29, 2019, the CJEU ruled that the Belgian law extending the operating lives of the Doel 1 and Doel 2 reactors (law extending Doel 1 and Doel 2) was adopted without the required environmental assessments being carried out first, but that the effects of the law on extension could provisionally be maintained where there was a genuine and serious threat of an interruption to the electricity supply, and then only for the length of time strictly necessary to eliminate this threat. In its decision of March 5, 2020, the Constitutional Court overturned the law extending Doel 1 and Doel 2, while maintaining its effects until the legislator adopts a new law after having carried out the required environmental assessment, including a cross-border public consultation process, by December 31, 2022 at the latest.

The environmental assessment and the cross-border public consultation were carried out by the Belgian State in 2021. The draft law incorporating the conclusion of the assessment and the consultation was passed by the Belgian Federal Parliament on October 11, 2022 and published on November 3, 2022.

The appeal before the *Conseil d'État* against the administrative decisions that allowed the extension of operations at the Doel 1 and Doel 2 plants is still pending.

### 23.5.2 Shutdown of the Doel 3 and Tihange 2 power plants

Various associations have lodged appeals before the Brussels Court of First Instance against Electrabel, the Belgian State, the Nuclear Safety Authority and/or the Elia electricity transmission network to contest the decisions and actions to shut down the Doel 3 (on September 23, 2022) and/or Tihange 2 (on January 31, 2023) power plants. In a first judgment dated November 16, 2022, the Brussels Court of First Instance, ruling in summary proceedings in one of the cases, confirmed the decisions and actions taken in relation to the shutdown. The applicants in this case withdrew their action on the merits. In the second case on the merits, a judgment was handed down on June 30, 2023, rejecting the interim measures requested, including the request to prohibit Electrabel from taking any irreversible action in connection with the shutdown of Doel 3 and Tihange 2. The case is continuing on the merits, with no precise timetable at this stage.

### 23.5.3 Appeal against the Belgian energy regulator's decision implementing the law of December 16, 2022 introducing a cap on electricity producers' market revenues

Electrabel lodged an appeal with the Belgian Market Court (*Cour des Marchés*) on March 29, 2023 against the decision of the Belgian energy regulator (CREG) to implement the December 16, 2022 law introducing a cap on electricity producers' market revenues for 2022. Electrabel lodged a second action for annulment with the same court against the same regulator's decision for 2023 revenues.

Electrabel contests the validity of this revenue cap, arguing that it is contrary to the European Regulation that introduced it, notably because it falsely determines market revenues using presumptions and not on the basis of revenues actually received, as provided for by the Regulation, and because it is implemented retroactively from August 1, 2022, outside the period covered by the Regulation. The Market Court handed down its ruling in the first case on October 18, 2023, finding that the action was admissible and prima facie founded, and referred three questions to the Court of Justice of the European Union for a preliminary ruling. The second case was heard on January 10, 2024, and the ruling handed down on January 31 suspends delivery until the Court of Justice of the European Union has ruled on the first case.

An appeal was also lodged with the Constitutional Court in June 2023.

In addition to the above-mentioned appeals, a claim for restitution of the 2022 tax has been lodged, as well as an appeal to the Court of First Instance for the annulment of the tax.

#### 23.5.4 Arbitration procedure in application of the Tihange 1 and Doel 1 and 2 agreements following the adoption of the law of December 16, 2022 introducing a cap on electricity producers' market revenues

On October 17, 2023, Electrabel gave notice of the launch of arbitration proceedings before an arbitral tribunal for the breach of the agreements signed for the extension of Tihange 1 on March 12, 2014 and the extension of Doel 1 and Doel 2 on November 30, 2015. These agreements excluded, by virtue of the royalties paid in particular, any other charges in favor of the State (with the exception of general application taxes) linked to the ownership or operation of Tihange 1 or Doel 1 and Doel 2, the revenues, production or production capacity of these plants, or their use of nuclear fuel. Under the terms of the agreements, Electrabel is claiming the reimbursement of the tax paid for 2022 and the levy for 2023 on these plants.

### 23.6 Other

#### 23.6.1 Withholding tax

In their tax deficiency notice dated December 22, 2008, the French tax authorities questioned the tax treatment of the non-recourse Dailly sale by SUEZ (now ENGIE) of a disputed withholding tax (*précompte*) receivable in 2005 for an amount of €995 million (receivable relating to the *précompte* paid in respect of the 1999-2003 fiscal years). The Montreuil Administrative Court handed down a judgment in ENGIE's favor in 2019, which led the French tax authorities to appeal the decision before the Versailles Court of Appeal, which overturned the prior Court's decision in 2021. On April 14, 2023, the *Conseil d'État* overturned the Court's ruling on the grounds that the assigned claim should be classified as an advance repayment of non-deductible tax, irrespective of the fact that the State had not authorized its repayment by the bank assigning the claim, and that the repayment was only partial. The *Conseil d'État* referred the case back to the Versailles Administrative Court of Appeal to decide on the basis of a procedure that made the tax treatment of the disputed assignment of receivables in 2005 dependent on the outcome of the *précompte* litigation itself. The Court of Appeal's decision is expected in 2024.

Regarding the dispute over the *précompte* itself, on February 1, 2016, the *Conseil d'État* dismissed the appeal before the Court of Cassation seeking the repayment of the *précompte* in respect of the 1999, 2000 and 2001 fiscal years. On June 23, 2020, the Versailles Administrative Court of Appeal found in favor of ENGIE as regards the cases seeking repayment of the *précompte* in respect of the 2002 and 2003 fiscal years but rejected the case in respect of the 2004 fiscal year. As the *précompte* receivables for 2002/2003 have been assigned, the relevant amounts have been repaid to the assignee banks. The case has been referred to the *Conseil d'État* by the two parties. On March 27, 2023, the *Conseil d'État* dismissed ENGIE's appeal in light of the *Conseil Constitutionnel's* decision of October 2022. On June 30, 2023, the *Conseil d'État* upheld the Court's ruling and dismissed the Minister's appeal in respect of the 2002 claim. It accordingly referred the matter back to the Versailles Administrative Court of Appeal, which was tasked with quantifying the amount of the 2003 *précompte* claim to be refunded in the light of the rules it had laid down, taking into account the prior decisions of the Court of Justice of the European Union and the *Conseil constitutionnel*. On January 9, 2024, the Court validated the calculation of the refundable *précompte* proposed by the tax authorities, without responding to ENGIE's arguments. The latter intends to appeal the decision before the *Conseil d'État*.

Furthermore, after ENGIE and several French groups lodged a complaint, on April 28, 2016, the European Commission issued a reasoned opinion to the French State as part of infringement proceedings, setting out its view that the *Conseil d'État* did not comply with European Union law when handing down decisions in disputes regarding the *précompte*, such as those involving ENGIE. On July 10, 2017, the European Commission referred the matter to the Court of Justice of the European Union on the grounds of France's failure to comply. On October 4, 2018, the Court of Justice of the European Union ruled partially in favor of the European Commission. Following this decision, France must revisit its methodology in order to determine the *précompte* repayment amounts in closed and pending court cases. No action has been initiated to date due to parallel litigation proceedings on the basis of Directive 90/435/EC.

### 23.6.2 Luxembourg – State aid investigation

On September 19, 2016, the European Commission announced its decision to open an investigation into whether or not two private rulings granted by the Luxembourg State in 2008 and 2010 covering two similar transactions between several of the Group's Luxembourg subsidiaries constituted State aid. On June 20, 2018, the European Commission adopted a final, unfavorable decision deeming that Luxembourg had provided ENGIE with State aid. On September 4, 2018, ENGIE requested the annulment of the decision before the European Courts, thereby challenging the existence of a selective advantage. As these proceedings did not have a suspensive effect, ENGIE paid a sum of €123 million into an escrow account on October 22, 2018 in respect of one of the two transactions in question, since no aid was actually received for the other. Following the proceedings before the European Courts, this sum will be returned to ENGIE or paid to the Luxembourg State depending on whether or not the Commission's decision is annulled. On May 12, 2021, the Court rejected the appeals of the Luxembourg State and of ENGIE, thereby confirming the European Commission's position on the existence of State aid granted to the Group's Luxembourg subsidiaries. On July 22, 2021, ENGIE referred the matter to the Court of Justice of the European Union seeking the annulment of the Court's decision. On December 5, 2023, the Court ruled in favor of the Luxembourg State and ENGIE, annulling both the judgment of the Court of First Instance and the Commission's decision on the grounds of errors in the reference framework. ENGIE recovered the 123 million in escrow in January 2024, thus concluding the dispute.

### 23.6.3 Poland – Competition procedure

On November 7, 2019, a fine of 172 million Polish zloty (€40 million) was imposed on ENGIE Energy Management Holding Switzerland AG (EEMHS) for failing to respond to a request for disclosure of documents from the Polish Competition Authority (UOKiK) in proceedings initiated by the UOKiK which suspected a potential failure to notify by EEMHS and other financial investors involved in the financing of the Nord Stream 2 pipeline (main proceeding). EEMHS filed an appeal with the Competition Protection Court. On November 7, 2023, the Court reduced the penalty to around €100,000. The UOKiK has appealed this decision to the Warsaw Court of Appeal (2<sup>nd</sup> degree). The proceedings are pending.

In the context of the main proceedings, on October 6, 2020, the UOKiK ordered EEMHS to pay a fine of 55.5 million Polish zlotys (approximately €12.3 million). The UOKiK also ordered the termination of the financing agreements for the Nord Stream 2 project. On November 5, 2020, EEMHS appealed this decision with the Competition Protection Court (the "Court"). The appeal automatically suspends the execution of all of the penalties ordered by the UOKiK. On November 21, 2022, the Court overturned the UOKiK's decision in its entirety. The UOKiK has appealed this decision. On October 16, 2023, the Warsaw Court of Appeal (2<sup>nd</sup> degree) upheld the lower court's decisions, which overturned the UOKiK's decision in its entirety. The UOKiK may file an appeal in cassation.

### 23.6.4 Claim by the Dutch tax authorities related to interest deductibility

Based on a disputable interpretation of a statutory modification that came into force in 2007, the Dutch tax authorities refused the deductibility of a portion (€1.1 billion) of the interest paid on financing contracted for the acquisition of investments made in the Netherlands since 2000. Following the Dutch tax authorities' rejection of the administrative claim against the 2007 tax assessment, action was brought before the Arnhem Court of First Instance in June 2016. On October 4, 2018, the court ruled in favor of the tax authorities. On October 26, 2020, the ruling was confirmed by the Arnhem Court of Appeal. ENGIE Energie Nederland Holding BV considers that the Court committed errors in law and that its decision was not well-founded, under either Dutch or European law. It has therefore appealed the decision before the Court of Cassation. In July 2022, the Court of Cassation decided to refer questions on the compatibility of the Dutch legislation on interest with three of the European fundamental freedoms to the Court of Justice of the European Union for a preliminary ruling. The hearing was held before the Court of Justice of the European Union in November 2023. Its decision is expected in the first half of 2024.

### 23.6.5 Transfer price of gas

The Belgian tax authorities' Special Tax Inspectorate has issued two tax deficiency notices in respect of taxable income for fiscal years 2012 and 2013 for an aggregate amount of €706 million, considering that the price applied for the supply

of gas by ENGIE (then GDF SUEZ) to Electrabel S.A. was excessive. ENGIE and Electrabel S.A. are challenging this adjustment and have submitted a request for conciliation proceedings, which was accepted by France and Belgium in May 2018. The proceedings are ongoing between the two States, who put forward their respective positions late 2022/early 2023, although the issue was still not resolved by the end of December 2023.

## NOTE 24 SUBSEQUENT EVENTS

---

No significant subsequent events have occurred since the closing of the accounts at December 31, 2023.

## NOTE 25 FEES PAID TO THE STATUTORY AUDITORS AND TO MEMBERS OF THEIR NETWORKS

Pursuant to Article 222-8 of the General Regulations of the French Financial Markets Authority (AMF), the following table presents information on the fees paid by ENGIE SA, its fully consolidated subsidiaries and joint operations to each of the auditors in charge of auditing the annual and consolidated financial statements of the ENGIE Group.

The Shareholders' Meeting of ENGIE SA of May 14, 2020 decided to renew the terms of office of Deloitte and EY as Statutory Auditors for a six-year period from 2020 to 2025.

<i>In millions of euros</i>	Deloitte			EY			Total
	Deloitte & Associés	Network	Total	EY & others	Network	Total	
<b>Statutory audit and review of consolidated and parent company financial statements</b>	<b>5.0</b>	<b>6.8</b>	<b>11.8</b>	<b>5.7</b>	<b>9.5</b>	<b>15.1</b>	<b>26.9</b>
ENGIE SA	2.5	-	2.5	2.9	-	2.9	5.4
Controlled entities	2.5	6.8	9.3	2.8	9.5	12.2	21.5
<b>Non-audit services</b>	<b>0.7</b>	<b>0.7</b>	<b>1.4</b>	<b>1.5</b>	<b>2.2</b>	<b>3.7</b>	<b>5.1</b>
<b>ENGIE SA</b>	<b>0.6</b>	<b>-</b>	<b>0.6</b>	<b>1.0</b>	<b>-</b>	<b>1.1</b>	<b>1.6</b>
<i>Of which services related to legal and regulatory requirements</i>	<i>0.4</i>	<i>-</i>	<i>0.4</i>	<i>0.6</i>	<i>-</i>	<i>0.6</i>	<i>0.9</i>
<i>Of which other audit services</i>	<i>0.1</i>	<i>-</i>	<i>0.1</i>	<i>0.5</i>	<i>-</i>	<i>0.5</i>	<i>0.6</i>
<i>Of which reviews of internal control</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
<i>Of which due diligence services</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
<i>Of which tax services</i>	<i>0.1</i>	<i>-</i>	<i>0.1</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>0.1</i>
<b>Controlled entities</b>	<b>0.1</b>	<b>0.7</b>	<b>0.8</b>	<b>0.5</b>	<b>2.2</b>	<b>2.6</b>	<b>3.4</b>
<i>Of which services related to legal and regulatory requirements</i>	<i>-</i>	<i>0.4</i>	<i>0.4</i>	<i>0.4</i>	<i>0.5</i>	<i>0.9</i>	<i>1.3</i>
<i>Of which other audit services</i>	<i>0.1</i>	<i>0.1</i>	<i>0.2</i>	<i>-</i>	<i>0.2</i>	<i>0.2</i>	<i>0.4</i>
<i>Of which reviews of internal control</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
<i>Of which due diligence services</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>1.1</i>	<i>1.1</i>	<i>1.1</i>
<i>Of which tax services</i>	<i>-</i>	<i>0.1</i>	<i>0.1</i>	<i>-</i>	<i>0.4</i>	<i>0.4</i>	<i>0.5</i>
<b>Total</b>	<b>5.6</b>	<b>7.5</b>	<b>13.1</b>	<b>7.1</b>	<b>11.7</b>	<b>18.8</b>	<b>31.9</b>

## NOTE 26 INFORMATION REGARDING LUXEMBOURG AND DUTCH COMPANIES EXEMPTED FROM THE REQUIREMENTS TO PUBLISH ANNUAL FINANCIAL STATEMENTS

---

Some companies do not publish annual financial statements pursuant to domestic provisions under Luxembourg law (Article 70 of the Law of December 19, 2002) and Dutch law (Article 403 of the Civil Code) relating to the exemption from the requirement to publish audited annual financial statements.

The companies exempted are notably: ENGIE Energie Nederland NV, ENGIE Energie Nederland Holding BV, ENGIE Nederland Retail BV, ENGIE United Consumers Energie BV, Electrabel Invest Luxembourg, ENGIE Treasury Management SARL and ENGIE Invest International SA.





A public limited company with a share capital of €2,435,285,011  
Corporate headquarters: 1 place Samuel de Champlain  
92400 Courbevoie – France  
Tel.: +33 (0)1 44 22 00 00

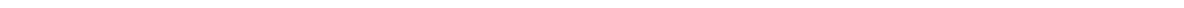
Register of commerce: 542 107 651 RCS NANTERRE  
VAT FR 13 542 107 651

[engie.com](http://engie.com)





## Appendix B – M&V Report



Steve Schulte, CMVP, CEM  
 Report Team Manager  
 ENGIE Services U.S. Inc.  
 12980 Foster Street, Suite 400  
 Overland Park, KS 66213  
 steven.schulte@engie.com

T. 913.225.7134  
 F. 913.653.0013



March 26, 2024

Mr. James Hamilton  
 Management Assistant  
 North Georgia Mountains Authority  
 199 South Erwin Street  
 Cartersville, GA 30120

Re: Final Energy Savings Reports – Year 7

Dear Mr. Hamilton:

The *final* energy savings reports for January 2023 thru December 2023 of Year 7 are ready to be viewed on our reporting website at [www.utilityvision.com](http://www.utilityvision.com).

North Georgia Mountains Authority - Savings Summary											
YEAR 7	Measured Option C - Sites			Measured Option A		Stipulated			Savings to-date	Pro-rated Guarantee to-date	Excess Savings to-date
	Dollar Savings	Electric % (kWh) Svgs	Propane % (Therms) Svgs	Lighting & Water	Utility Meter Consolidation & Wholesale Propane Purchasing	Electric, Gas, Water & Sewer	Life Cycle Cost Avoidance Savings	Operations & Maint. Savings			
Jan-23	\$29,216	33.6%	16.9%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$45,621	\$42,373	\$3,248
Feb-23	\$45,324	47.3%	41.1%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$107,350	\$84,747	\$22,603
Mar-23	\$29,004	36.4%	23.3%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$152,759	\$127,120	\$25,639
Apr-23	\$28,910	40.7%	18.5%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$198,074	\$169,493	\$28,581
May-23	\$21,948	31.8%	22.2%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$236,427	\$211,866	\$24,560
Jun-23	\$23,277	34.3%	-2.0%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$276,109	\$254,240	\$21,870
Jul-23	\$21,537	26.1%	19.7%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$314,051	\$296,613	\$17,438
Aug-23	\$23,312	27.5%	25.5%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$353,768	\$338,986	\$14,782
Sep-23	\$25,853	33.8%	22.3%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$396,026	\$381,359	\$14,667
Oct-23	\$34,785	43.1%	26.5%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$447,216	\$423,733	\$23,483
Nov-23	\$29,121	35.3%	22.7%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$492,742	\$466,106	\$26,636
Dec-23	\$24,667	29.4%	13.6%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	<b>\$533,813</b>	\$508,479	<b>\$25,334</b>
Totals	<b>\$336,955</b>	<b>35.0%</b>	<b>21.9%</b>	\$26,818	\$51,316	\$68,612	\$9,580	\$40,532			

\*Some totals may be off slightly due to rounding.

In Year 7, electric and propane savings of \$336,955 were achieved at the Option C sites. These savings were realized because of the reduction in electric consumption by 35.0% and propane consumption by 21.9%. When you include the Option A measured lighting and water savings of \$26,818, utility meter consolidation and wholesale propane purchasing of \$51,316, as well as the stipulated savings from electric, gas, water & sewer of \$68,612, life cycle cost avoidance of \$9,580 and O&M savings of \$40,532, the savings total **\$533,813**. This exceeds the Year 7 guarantee of \$508,479 by **\$25,334**.

The items included in this package are similar to last year’s from Utilityvision®. In order of inclusion:

- 1.) Cover Letter
- 2.) Sign-off sheet for acceptance
- 3.) Savings Summary: Monthly Dollar Savings vs. Guarantee – Year 7
- 4.) Cost Analysis: Energy Savings Project Performance Graph & Table – Year 7
- 5.) Energy Analysis – Graph & Table for Amicalola Falls Monthly kWh Savings
- 6.) Energy Analysis – Graph & Table for Brasstown Monthly kWh Savings
- 7.) Energy Analysis – Graph & Table for Brasstown Monthly Therm Savings
- 8.) Energy Analysis – Graph & Table for Unicoi Monthly kWh Savings
- 9.) Baseline Summary Sheet (for Option C Meters)

Here is a historical summary of the program to-date:

Year	Option C			Option A	Stipulated	Total	Guaranteed	Total
	\$ Savings	% kWh Svgs	% Therm Svgs	\$ Savings	\$ Savings	\$ Savings	\$ Savings	Excess Savings
Year 0 (9m)	\$154,617	23.8%	24.9%	\$23,757	\$15,053	<b>\$193,428</b>	\$0	\$193,428
Year 1 (12m)	\$300,961	34.3%	30.6%	\$68,570	\$161,064	<b>\$530,595</b>	\$503,111	\$27,484
Year 2 (12m)	\$282,585	31.3%	28.9%	\$70,079	\$154,400	<b>\$507,064</b>	\$503,972	\$3,091
Year 3 (12m)	\$299,468	34.1%	21.6%	\$71,620	\$147,584	<b>\$518,672</b>	\$504,847	\$13,825
Year 4 (12m)	\$305,526	36.6%	27.4%	\$73,196	\$140,613	<b>\$519,335</b>	\$505,735	\$13,600
Year 5 (12m)	\$334,632	36.6%	21.9%	\$74,806	\$133,481	<b>\$542,919</b>	\$506,637	\$36,282
Year 6 (12m)	\$312,789	33.0%	21.6%	\$76,452	\$126,186	<b>\$515,427</b>	\$507,551	\$7,876
Year 7 (12m)	\$336,955	35.0%	21.9%	\$78,134	\$118,724	<b>\$533,813</b>	\$508,479	\$25,334
	<b>\$2,327,534</b>	<b>34.4%</b>	<b>24.8%</b>	<b>\$536,614</b>	<b>\$997,105</b>	<b>\$3,861,253</b>	<b>\$3,540,332</b>	<b>\$320,921</b>
		Averages Yr1 - Yr 7						

Some totals may be off slightly due to rounding.

Please sign the *sign-off* sheet and send back to ENGIE Services U.S. Inc. showing your acceptance of the Year 7 reports within 30 days in the envelope provided. After reviewing the reports, if you have any questions, please call me at (816) 679-3389 or contact me by e-mail at [steven.schulte@engie.com](mailto:steven.schulte@engie.com).

Sincerely,  
**ENGIE Services U.S. Inc.**



Steve Schulte, CMVP, CEM  
 Report Team Manager

cc: Bill Donohue – NGMA – Buford, GA  
 Craig Campbell – ENGIE Services U.S. Inc. – Georgia

I have looked at and accept the reports and calculations included with the letter copied here.

Date: \_\_\_\_\_

Mr. James Hamilton, Management Assistant  
North Georgia Mountains Authority

Steve Schulte, CMVP, CEM  
Report Team Manager  
ENGIE Services U.S. Inc.  
12980 Foster Street, Suite 400  
Overland Park, KS 66213  
steven.schulte@engie.com

T. 913.225.7134  
F. 913.653.0013



March 26, 2024

Mr. James Hamilton  
Management Assistant  
North Georgia Mountains Authority  
199 South Erwin Street  
Cartersville, GA 30120

Re: Final Energy Savings Reports – Year 7

Dear Mr. Hamilton:

The *final* energy savings reports for January 2023 thru December 2023 of Year 7 are ready to be viewed on our reporting website at [www.utilityvision.com](http://www.utilityvision.com).

Please return this signed page to:

ENGIE Services U.S. Inc.  
Energy Management Group – Vicki Santoro  
12980 Foster Street, Suite 400  
Overland Park, KS 66213-2601  
[vicki.santoro@engie.com](mailto:vicki.santoro@engie.com)

North Georgia Mountains Authority - Savings Summary											
YEAR 7	Measured Option C - Sites			Measured Option A		Stipulated			Savings to-date	Pro-rated Guarantee to-date	Excess Savings to-date
	Dollar Savings	Electric % (kWh) Svgs	Propane % (Therms) Svgs	Lighting & Water	Utility Meter Consolidation & Wholesale Propane Purchasing	Electric, Gas, Water & Sewer	Life Cycle Cost Avoidance Savings	Operations & Maint Savings			
Jan-23	\$29,216	33.6%	16.9%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$45,621	\$42,373	\$3,248
Feb-23	\$45,324	47.3%	41.1%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$107,350	\$84,747	\$22,603
Mar-23	\$29,004	36.4%	23.3%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$152,759	\$127,120	\$25,639
Apr-23	\$28,910	40.7%	18.5%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$198,074	\$169,493	\$28,581
May-23	\$21,948	31.8%	22.2%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$236,427	\$211,866	\$24,560
Jun-23	\$23,277	34.3%	-2.0%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$276,109	\$254,240	\$21,870
Jul-23	\$21,537	26.1%	19.7%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$314,051	\$296,613	\$17,438
Aug-23	\$23,312	27.5%	25.5%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$353,768	\$338,986	\$14,782
Sep-23	\$25,853	33.8%	22.3%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$396,026	\$381,359	\$14,667
Oct-23	\$34,785	43.1%	26.5%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$447,216	\$423,733	\$23,483
Nov-23	\$29,121	35.5%	22.7%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$492,742	\$466,106	\$26,636
Dec-23	\$24,687	29.4%	13.6%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	<b>\$533,813</b>	\$508,479	<b>\$25,334</b>
<b>Totals</b>	<b>\$336,955</b>	<b>35.0%</b>	<b>21.9%</b>		<b>\$51,316</b>	<b>\$68,612</b>	<b>\$9,580</b>	<b>\$40,532</b>			

\*Some totals may be off slightly due to rounding.

In Year 7, electric and propane savings of \$336,955 were achieved at the Option C sites. These savings were realized because of the reduction in electric consumption by 35.0% and propane consumption by 21.9%. When you include the Option A measured lighting and water savings of \$26,818, utility meter consolidation and wholesale propane purchasing of \$51,316, as well as the stipulated savings from electric, gas, water & sewer of \$68,612, life cycle cost avoidance of \$9,580 and O&M savings of \$40,532, the savings total **\$533,813**. This exceeds the Year 7 guarantee of \$508,479 by **\$25,334**.

**North Georgia Mountains Authority - Savings Summary**

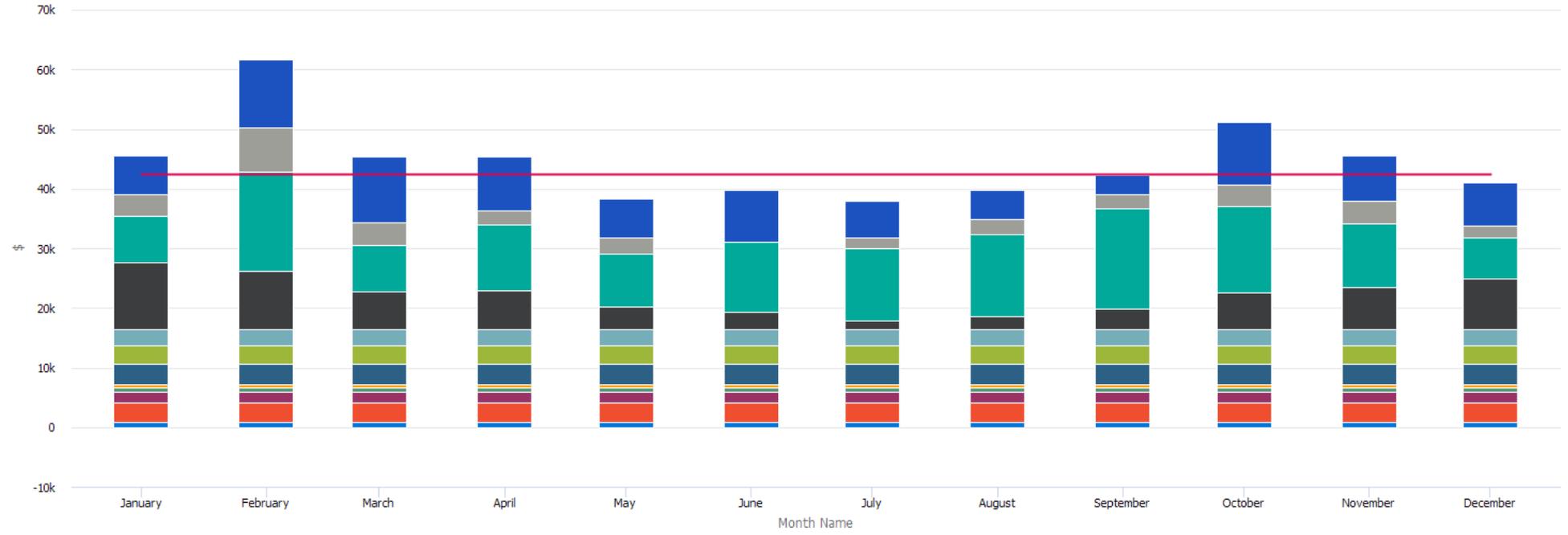
YEAR 7	Measured Option C - Sites			Measured Option A		Stipulated			Savings to-date	Pro-rated Guarantee to-date	Excess Savings to-date
	Dollar Savings	Electric % (kWh) Svgs	Propane % (Therms) Svgs	Lighting & Water	Utility Meter Consolidation & Wholesale Propane Purchasing	Electric, Gas, Water & Sewer	Life Cycle Cost Avoidance Savings	Operations & Maint. Savings			
Jan-23	\$29,216	33.6%	16.9%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$45,621	\$42,373	\$3,248
Feb-23	\$45,324	47.3%	41.1%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$107,350	\$84,747	\$22,603
Mar-23	\$29,004	36.4%	23.3%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$152,759	\$127,120	\$25,639
Apr-23	\$28,910	40.7%	18.5%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$198,074	\$169,493	\$28,581
May-23	\$21,948	31.8%	22.2%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$236,427	\$211,866	\$24,560
Jun-23	\$23,277	34.3%	-2.0%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$276,109	\$254,240	\$21,870
Jul-23	\$21,537	26.1%	19.7%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$314,051	\$296,613	\$17,438
Aug-23	\$23,312	27.5%	25.5%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$353,768	\$338,986	\$14,782
Sep-23	\$25,853	33.8%	22.3%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$396,026	\$381,359	\$14,667
Oct-23	\$34,785	43.1%	26.5%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$447,216	\$423,733	\$23,483
Nov-23	\$29,121	35.3%	22.7%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	\$492,742	\$466,106	\$26,636
Dec-23	\$24,667	29.4%	13.6%	\$2,235	\$4,276	\$5,718	\$798	\$3,378	<b>\$533,813</b>	\$508,479	<b>\$25,334</b>
<b>Totals</b>	<b>\$336,955</b>	<b>35.0%</b>	<b>21.9%</b>	\$26,818	\$51,316	\$68,612	\$9,580	\$40,532			

\*Some totals may be off slightly due to rounding.

# Cost Analysis : Energy Savings Project Performance - Year 7



<b>From:</b>	Sunday, January 1, 2023	<b>To:</b>	Sunday, December 31, 2023	<b>Interval</b>	1 Month
--------------	-------------------------	------------	---------------------------	-----------------	---------



- All Sites.Life Cycle Cost Avoidance Savings (\$)
- All Sites.Option A Utility Meter Consolidation Savings (\$)
- All Sites.Stipulated Electric Savings (\$)
- Amicalola Falls State Park and Lodge.Electricity Savings (\$)
- Unicoi State Park and Lodge.Electricity Savings (\$)
- All Sites.Operation and Maintenance Savings (\$)
- All Sites.Option A Water Savings (\$)
- All Sites.Stipulated Propane Savings (\$)
- Brasstown Valley Resort.Electricity Savings (\$)
- All Sites.Option A Lighting Savings (\$)
- All Sites.Option A Wholesale Propane Savings (\$)
- All Sites.Stipulated Water and Sewer Savings (\$)
- Brasstown Valley Resort.Propane Savings (\$)
- Guarantee (\$)

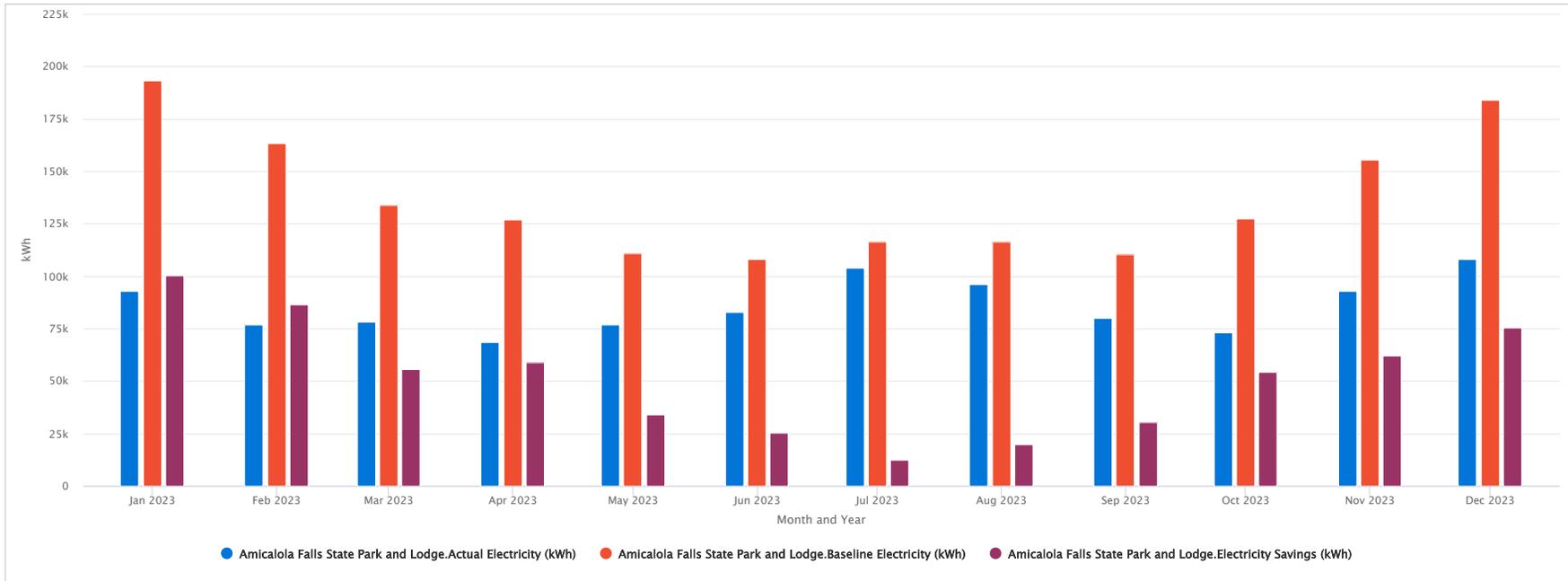
# Cost Analysis : Energy Savings Project Performance - Year 7



<b>From:</b>	Sunday, January 1, 2023	<b>To:</b>	Sunday, December 31, 2023
--------------	-------------------------	------------	---------------------------

From Timestamp	All Sites.Life Cycle Cost Avoidance Savings (\$)	All Sites.Operation and Maintenance Savings (\$)	All Sites.Option A Lighting Savings (\$)	All Sites.Option A Utility Meter Consolidation Savings (\$)	All Sites.Option A Water Savings (\$)	All Sites.Option A Wholesale Propane Savings (\$)	All Sites.Stipulated Electric Savings (\$)	All Sites.Stipulated Propane Savings (\$)	All Sites.Stipulated Water and Sewer Savings (\$)	Amicalola Falls State Park and Lodge.Electricity Savings (\$)
1/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	11,283.97
2/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	9,745.78
3/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	6,265.23
4/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	6,605.18
5/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	3,809.14
6/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	2,842.06
7/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	1,388.65
8/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	2,229.84
9/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	3,414.68
10/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	6,129.88
11/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	7,013.48
12/1/2023 12:00:00 AM	798.33	3,377.67	1,699.06	815.30	535.74	3,461.07	3,112.26	2,589.29	16.11	8,504.57
	9,579.96	40,532.04	20,388.72	9,783.60	6,428.88	41,532.84	37,347.12	31,071.48	193.32	69,232.46

<b>Brasstown Valley Resort.Electricity Savings (\$)</b>	<b>Brasstown Valley Resort.Propane Savings (\$)</b>	<b>Unicoi State Park and Lodge.Electricity Savings (\$)</b>
7,729.82	3,652.50	6,550.14
16,629.56	7,458.04	11,490.46
7,943.75	3,746.86	11,048.46
10,949.70	2,292.96	9,062.50
8,895.30	2,731.31	6,511.92
11,850.79	-158.52	8,743.12
12,220.96	1,813.73	6,113.73
13,645.03	2,633.26	4,804.32
16,914.33	2,353.71	3,170.52
14,560.92	3,632.93	10,460.91
10,797.79	3,716.54	7,593.45
6,827.27	2,129.53	7,205.42
138,965.22	36,002.85	92,754.95



1 Month (Month and Year) : 1/1/2023 12:00 AM - 12/31/2023 11:59 PM [Change Interval]

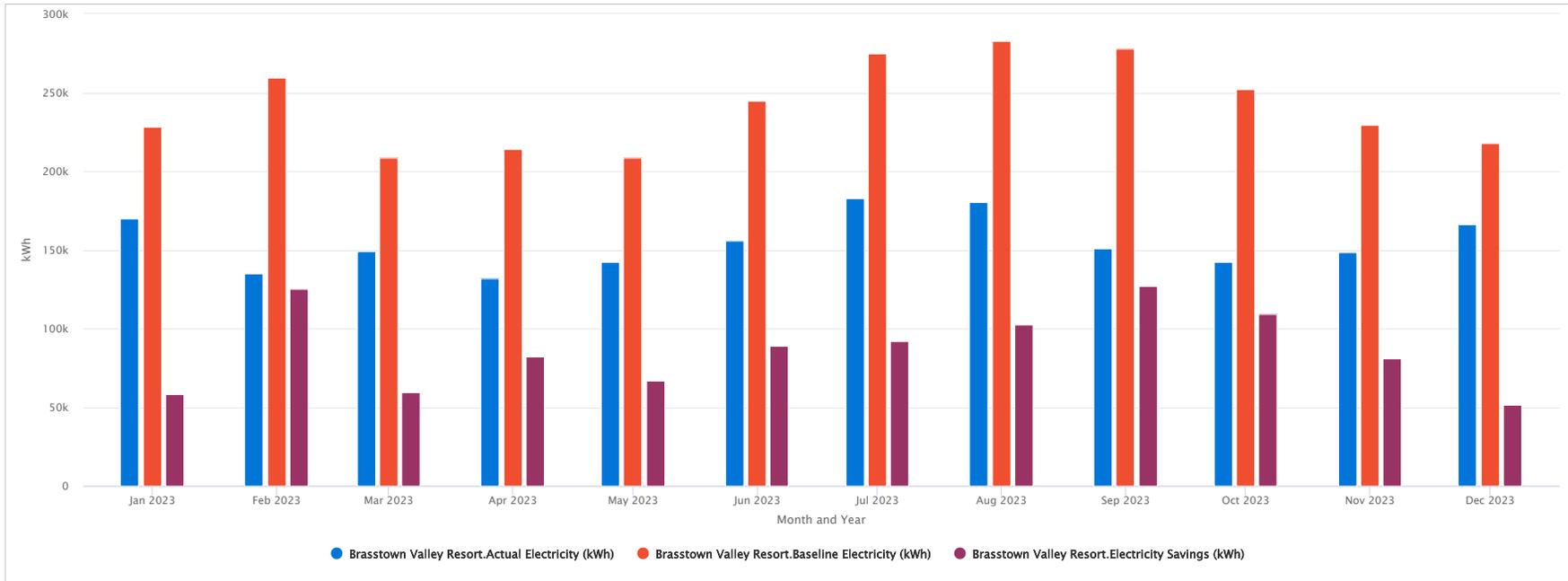


Chart Data | Estimated Reads | Notes | Investigate



From Timestamp	Amicalola Falls State Park and Lodge.Actual Electricity (kWh)	Amicalola Falls State Park and Lodge.Baseline Electricity (kWh)	Amicalola Falls State Park and Lodge.Electricity Savings (kWh)
January 2023	93,101.0	193,394	100,293.0
February 2023	76,909.5	163,531	86,621.5
March 2023	78,393.0	134,079	55,686.0
April 2023	68,347.5	127,055	58,707.5
May 2023	76,820.0	110,676	33,856.0
June 2023	82,769.5	108,030	25,260.5
July 2023	104,106.5	116,449	12,342.5
August 2023	96,378.0	116,197	19,819.0
September 2023	80,168.0	110,518	30,350.0
October 2023	72,996.0	127,479	54,483.0
November 2023	92,997.5	155,334	62,336.5
December 2023	108,322.5	183,912	75,589.5
	<b>1,031,309.0</b>	<b>1,646,654</b>	<b>615,345.0</b>





1 Month (Month and Year) : 1/1/2023 12:00 AM - 12/31/2023 11:59 PM [Change Interval]

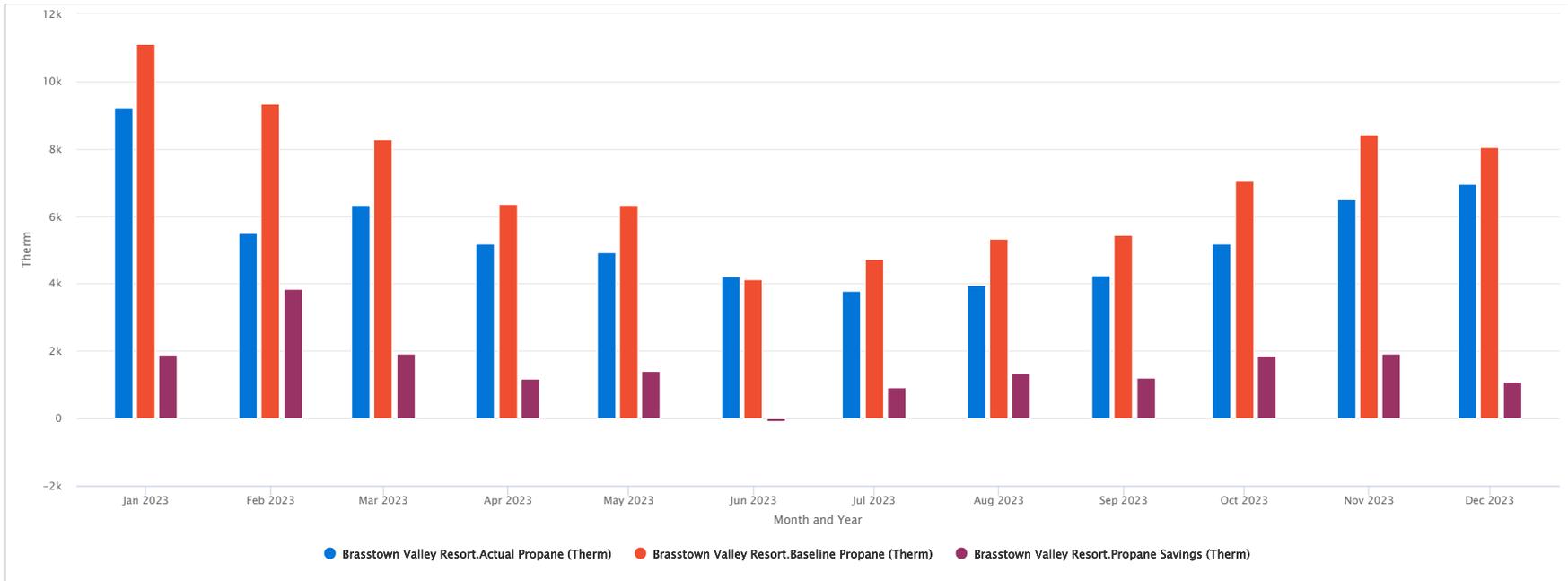


Chart Data | Estimated Reads | Notes | Investigate



From Timestamp	Brasstown Valley Resort.Actual Electricity (kWh)	Brasstown Valley Resort.Baseline Electricity (kWh)	Brasstown Valley Resort.Electricity Savings (kWh)
January 2023	169,844.7	227,920	58,075.3
February 2023	134,819.6	259,760	124,940.4
March 2023	148,877.4	208,560	59,682.6
April 2023	131,733.3	214,000	82,266.7
May 2023	142,048.3	208,880	66,831.7
June 2023	155,683.3	244,720	89,036.7
July 2023	182,742.1	274,560	91,817.9
August 2023	180,522.9	283,040	102,517.1
September 2023	151,080.1	278,160	127,079.9
October 2023	142,601.7	252,000	109,398.3
November 2023	148,474.6	229,600	81,125.4
December 2023	166,305.7	217,600	51,294.3
	<b>1,854,733.7</b>	<b>2,898,800</b>	<b>1,044,066.3</b>





1 Month (Month and Year) : 1/1/2023 12:00 AM - 12/31/2023 11:59 PM [Change Interval]



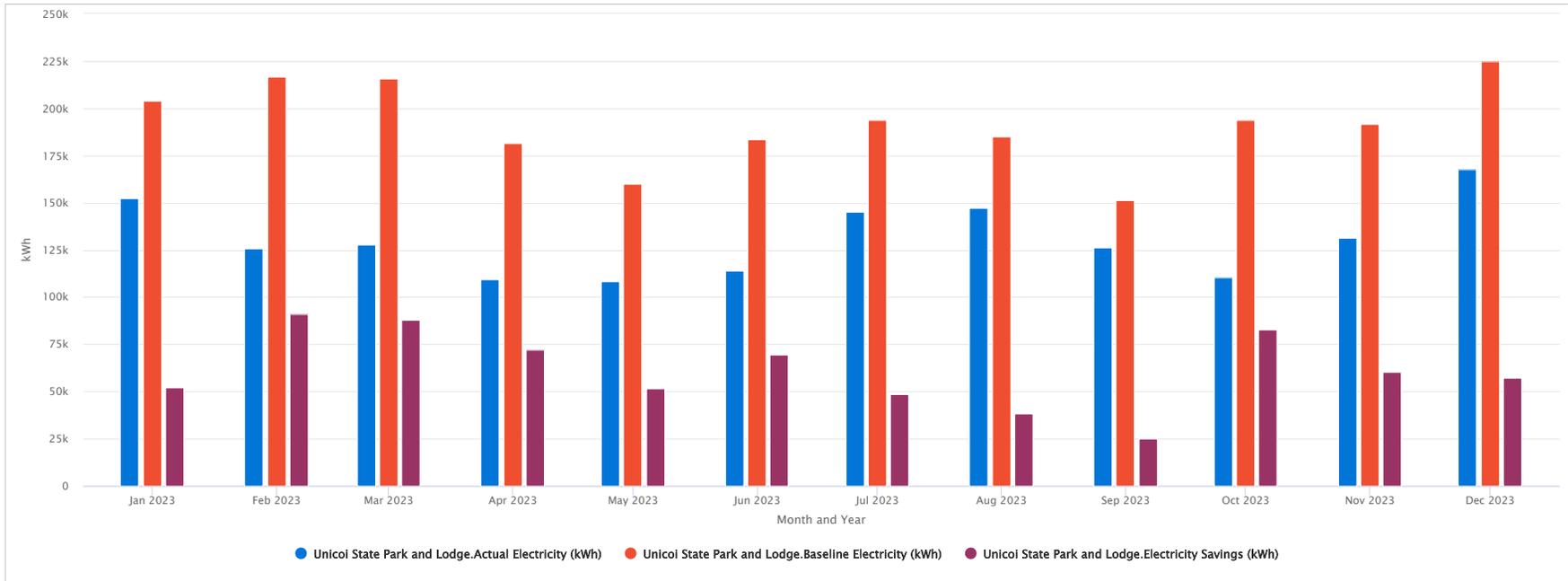
Chart Data | Estimated Reads | Notes | Investigate



From Timestamp	Brasstown Valley Resort.Actual Propane (Therm)	Brasstown Valley Resort.Baseline Propane (Therm)	Brasstown Valley Resort.Propane Savings (Therm)
January 2023	9,229.2	11,109	1,879.8
February 2023	5,511.6	9,350	3,838.4
March 2023	6,343.6	8,272	1,928.4
April 2023	5,184.9	6,365	1,180.1
May 2023	4,919.3	6,325	1,405.7
June 2023	4,202.6	4,121	-81.6
July 2023	3,793.5	4,727	933.5
August 2023	3,960.7	5,316	1,355.3
September 2023	4,229.6	5,441	1,211.4
October 2023	5,189.2	7,059	1,869.8
November 2023	6,515.2	8,428	1,912.8
December 2023	6,959.0	8,055	1,096.0
	<b>66,038.4</b>	<b>84,568</b>	<b>18,529.6</b>



Energy Analysis



1 Month (Month and Year) : 1/1/2023 12:00 AM - 12/31/2023 11:59 PM [Change Interval]



Chart Data | Estimated Reads | Notes | Investigate



From Timestamp	Unicoi State Park and Lodge.Actual Electricity (kWh)	Unicoi State Park and Lodge.Baseline Electricity (kWh)	Unicoi State Park and Lodge.Electricity Savings (kWh)
January 2023	152,254.7	204,240	51,985.3
February 2023	125,645.9	216,840	91,194.1
March 2023	127,833.8	215,520	87,686.2
April 2023	109,635.4	181,560	71,924.6
May 2023	108,278.1	159,960	51,681.9
June 2023	114,018.1	183,408	69,389.9
July 2023	145,034.4	193,556	48,521.6
August 2023	147,160.5	185,290	38,129.5
September 2023	126,277.1	151,440	25,162.9
October 2023	110,656.9	193,680	83,023.1
November 2023	131,494.5	191,760	60,265.5
December 2023	167,814.1	225,000	57,185.9
	<b>1,566,103.5</b>	<b>2,302,254</b>	<b>736,150.5</b>



# North Georgia Mountains Authority

## Baseline Summary Sheet

Year 7

1/3/2024

Page 1 of 1

There may be changes at the facilities that will affect the energy use. In order to accurately calculate the savings that have been achieved from the implementation of energy conservation measures, it is important to account for changes in use or equipment to the facility. The tables below summarize these adjustments in terms of the change in the amount of energy used at each facility, and a detailed adjustment will be included for each change to the baseline. The Adjusted Monitoring Baselines will be used in the reports to calculate energy savings.

### Amicalola Falls

	Electric Usage (kWh)	
	Previous Baseline	Adjusted Baseline
January	193,394	193,394.0
February	163,531	163,531.0
March	134,079	134,079.0
April	127,055	127,055.0
May	110,676	110,676.0
June	108,030	108,030.0
July	116,449	116,449.0
August	116,197	116,197.0
September	110,518	110,518.0
October	127,479	127,479.0
November	155,334	155,334.0
December	183,912	183,912.0
Totals	1,646,654	- 1,646,654.0

### Brasstown Valley

	Electric Usage (kWh)		Propane Usage (therms)	
	Previous Baseline	Adjusted Baseline	Previous Baseline	Adjusted Baseline
January	227,920	227,920.0	11,109	11,109.0
February	259,760	259,760.0	9,350	9,350.0
March	208,560	208,560.0	8,272	8,272.0
April	214,000	214,000.0	6,365	6,365.0
May	208,880	208,880.0	6,325	6,325.0
June	244,720	244,720.0	4,121	4,121.0
July	274,560	274,560.0	4,727	4,727.0
August	283,040	283,040.0	5,316	5,316.0
September	278,160	278,160.0	5,441	5,441.0
October	252,000	252,000.0	7,059	7,059.0
November	229,600	229,600.0	8,428	8,428.0
December	217,600	217,600.0	8,055	8,055.0
Totals	2,898,800	- 2,898,800.0	84,568	- 84,568.0

### Unicoi State Park and Lodge

	Electric Usage (kWh)	
	Previous Baseline	Adjusted Baseline
January	204,240	204,240.0
February	216,840	216,840.0
March	215,520	215,520.0
April	181,560	181,560.0
May	159,960	159,960.0
June	183,408	183,408.0
July	193,556	193,556.0
August	185,290	185,290.0
September	151,440	151,440.0
October	193,680	193,680.0
November	191,760	191,760.0
December	225,000	225,000.0
Totals	2,302,254	- 2,302,254.0



## Appendix C – Sample Performance Energy Contract





**Energy Services Contract  
[Customer] and ENGIE Services U.S.**

**DIR Project Registration #** \_\_\_\_\_  
**ENGIE Services Project #:** \_\_\_\_\_  
**ENGIE Services Contract # R** \_\_\_\_\_

**ENERGY SERVICES CONTRACT**

**DRAFT DATED [●]**

This **ENERGY SERVICES CONTRACT** (this "Contract") is made and entered into as of [●] (the "Contract Effective Date") by and between **ENGIE Services U.S. Inc.**, a Delaware corporation, with California State Contractor's License Number 995037 ("ENGIE Services U.S."), and **[Customer]** ("[Customer]" and together with ENGIE Services U.S. the "Parties" and each of [Customer] and ENGIE Services U.S. a "Party").

**CONTRACT RECITALS**

WHEREAS, [Customer] owns and/or operates certain public facilities specifically described in Attachment A (the "Facilities") and [Customer] wishes to reduce the Facilities' energy consumption and costs and improve the Facilities' energy quality and reliability; and

WHEREAS, ENGIE Services U.S. is a full-service energy services company with the technical capabilities to provide services to [Customer] including identifying supply-side and/or demand-side energy conservation measures ("ECMs"), engineering, procurement, construction management, installation, construction and training; and

WHEREAS, ENGIE Services U.S. has identified potential energy and operational savings opportunities at [Customer]'s Facilities and estimated program costs to implement the ECMs and presented an overall potential energy cost and consumption savings for implementing the ECMs; and

WHEREAS, pursuant to California Government Code §4217.12, [Customer] held a regularly scheduled public hearing on [●], of which two weeks advance public notice was given regarding this Contract and its subject matter, and

WHEREAS, [Customer] has determined that the anticipated cost to [Customer] to implement the ECMs will be less than the anticipated cost to [Customer] for thermal, electrical, and other energy, together with anticipated operational, maintenance and other costs, that would have been consumed by [Customer] in the absence of the ECMs **for 4217 projects:** in compliance with California Government Code §§4217.10 through 4217.18; and

WHEREAS, [Customer] has determined that entering into this energy services contract to implement the ECMs is in the best interests of [Customer] and that California Government Code §4217.10 *et seq.* allows [Customer] to enter into this Contract; and

WHEREAS, by adoption of Resolution No. [●] at the above-referenced meeting, [Customer] approved this Contract and authorized its execution.

NOW, THEREFORE, [Customer] and ENGIE Services U.S. hereby agree as follows:

**ARTICLE 1. DEFINITIONS**

For purposes of this Contract and its Attachments, defined terms will have the following meanings:

**"Abnormally Severe Weather Conditions"** means typhoons, hurricanes, tornadoes, lightning storms and other climatic and weather conditions that are abnormally severe for the period of time when, and the area where, such storms or conditions occur, in each case occurring at a property, the access roads to a property, or any other location where Work or Professional Services are then being performed. The term "Abnormally Severe Weather Conditions" specifically includes rain, snow or sleet in excess of one hundred fifty percent (150%) of the median level over the preceding ten (10) year period for the local geographic area and time of year in which such rain, snow or sleet accumulates.

**"Act"** is defined in ARTICLE 14.

**"Affiliate"** means any Person that directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with the Person specified. For purposes of this definition, control of a Person means the power, direct or indirect, to direct or cause the direction of the management and policies of such Person whether by contract or otherwise; ownership of fifty percent (50%) or more of the voting securities of another Person creates a rebuttable presumption that such Person controls such other Person.

**"Applicable Law"** means any statute, law, treaty, building code, rule, regulation, ordinance, code, enactment, injunction, writ, order, decision, authorization, judgment, decree, protocol, procedure or other legal or regulatory

determination or restriction by a court or Governmental Authority of competent jurisdiction, as may be in effect at the time the Work or Professional Services are undertaken.

**“Applicable Permits”** means all permits, approvals, inspections and certifications required to be issued by any Governmental Authority in connection with the Professional Services or the building, installation and start-up of the Work as of the Contract Effective Date.

**“Application for Payment”** means a monthly progress payment as described in Section 8.01 or an invoice for materials stored off-site as described in Section 8.02.

**“Arbitral Panel”** is defined in Section 19.04(ii).

**“Arbitration Rules”** is defined in Section 19.04(ii).

**“Attachment”** means the following attachments to this Contract, each of which is an “Attachment:”

Attachment A	[Customer]’s Facilities and Existing Equipment
Attachment B	Standards of Occupancy and Control
Attachment C	Scope of Work
Attachment D	Scope of Monitoring Installation
Attachment E	M&V Services
Attachment F	Maintenance Services
Attachment G	Education Services

**“Beneficial Use”** means when major new equipment and systems included in the Scope of Work are properly installed, inspected, operational, and are capable of being used for their intended purpose. Criteria for Beneficial Use of equipment / systems will be established as defined in Attachment C.

**“Business Day”** means any calendar day other than a Saturday, a Sunday or a calendar day on which banking institutions in San Francisco, California, are authorized or obligated by law or executive order to be closed.

**“CEQA”** means the California Environmental Quality Act, codified at California Public Resource Code § 21000 *et seq.*, and the applicable state and local guidelines promulgated thereunder.

**“Certificate of Beneficial Use”** means the certificate, issued by ENGIE Services U.S. to [Customer] and subcontractor(s), which identifies when [Customer] took Beneficial Use of the Work or any portion thereof. A Certificate of Beneficial Use may be executed for an individual subcontract, a specific building, a portion of the Work, or the entire Work.

**“Certificate of Final Completion”** means the certificate issued by ENGIE Services U.S. to [Customer], in accordance with Section 6.03. A Certificate of Final Completion may be executed for an individual subcontract, a specific building, a portion of the Work, or the entire Work.

**“Certificate of Substantial Completion”** means the certificate issued by ENGIE Services U.S. to [Customer], in accordance with Section 6.02. A Certificate of Substantial Completion may be executed for an individual subcontract, a specific building, a portion of the Work, or the entire Work.

**“Change”** means any addition to, deletion from, suspension of, or other modification to the quality, function, or intent of the Work or Professional Services.

**“Change in Law”** means any of the following events or circumstances occurring after the Contract Effective Date: (i) an amendment, modification, interpretation, construction, enforcement standard, supplement or other change in or repeal of an existing Applicable Law; or (ii) an enactment or making of a new Applicable Law (excluding a change in any income or franchise tax law, worker’s compensation, payroll or withholding tax law, but including any change in law imposing new or additional tariffs or import duties).

**“Change Order”** means a written document, signed by both ENGIE Services U.S. and [Customer], authorizing ENGIE Services U.S. to perform a Change. The Change Order modifies the Scope of Work and should identify: (i) the applicable Change; (ii) any additional compensation to be paid to ENGIE Services U.S. to perform such Change; and (iii) any extension of time to complete the Project.

**“Construction”** means any and all Work to be performed that involves construction, alteration, repair, installation or removal of equipment, addition to, subtraction from, improving, moving, wrecking or demolishing any building, parking facility, excavation, or other structure or improvement, or any part thereof.

**“Construction Documents”** means the final designs, drawings, specifications and submittals that are used for Construction, and any Change Orders affecting those documents, that describe the technical requirements for the installation of all the materials and equipment pursuant to this Contract.

**“Construction Period”** means the period beginning with the first day of the month in which material or equipment is first installed at the Facilities and continuing until the [M&V Commencement Date][date of Final Completion].

**“Contract”** is defined in the Preamble, and includes all Attachments hereto (all of which are incorporated herein by this reference), as well as all Change Orders, amendments, restatements, supplements and other modifications hereto.

**“Contract Amount”** means [●] (\$[●]), which is inclusive of the mobilization payment, as set forth in Section 8.01, but exclusive of any fees for Professional Services.

**“Contract Bonds”** is defined in Section 12.02.

**“Contract Effective Date”** is defined in the Preamble.

**“[Customer]”** is defined in the Preamble.

**“[Customer] Persons”** means [Customer], its agents, employees, subcontractors, architects, general contractors, lease/leaseback contractors or other Persons acting on behalf of [Customer] or for whom [Customer] is responsible.

**“Delay”** means any circumstances involving delay, disruption, hindrance or interference affecting the time of performance of the Work or the Professional Services.

**“Dispute”** is defined in Section 19.02.

**“DOE Guidelines”** is defined in Section 13.01.

**“ECM”** is defined in the Recitals.

**“Education Services”** (if any) are defined in Attachment G.

**“EMS”** means an energy management system.

**“Energy Delivery Point”** means, for each Generating Facility, the point at which Utility meter energy is being delivered, as designated in the Interconnection Agreement.

**“Energy Usage Data”** is defined in Section 2.05.

**“ENGIE Services U.S.”** is defined in the Preamble.

**“ENGIE Services U.S. Warranty”** is defined in Section 9.01.

**“Event of Default”** is defined in ARTICLE 16.

**“Excusable Event”** means an act, event, occurrence, condition or cause beyond the control of ENGIE Services U.S., including, but not limited to, the following: (i) any act or failure to act of, or other Delay caused by any [Customer] Person; (ii) the failure to obtain, or delay in obtaining, any Interconnection Agreement, Applicable Permit, or approval of a Governmental Authority (including due to failure to make timely inspection), or Delays caused by Changes and/or modifications to the Scope of Work required by a Governmental Authority, other than a failure caused by the action or inaction of ENGIE Services U.S.; (iii) changes in the design, scope or schedule of the Work required by any Governmental Authority or [Customer] Person; (iv) undisclosed or unforeseen conditions encountered at the Project Location, including discovery or existence of Hazardous Substances; (v) the failure to obtain, or delay in obtaining, approval of any Governmental Authority for design and installation of any portion of the Work, including any further or subsequent approval required with respect to any Change, other than a failure caused by the action or inaction of ENGIE Services U.S.; (vi) information provided to ENGIE Services U.S. by any [Customer] Person or Utility is later found to be inaccurate or incomplete; (vii) any Change in Law; (viii) Delay caused by pending arbitration; (ix) acts of God; (x) acts of the public enemy or terrorist acts; (xi) relocation or construction of transmission facilities or the shutdown of such facilities for the purpose of necessary repairs; (xii) work by Utility; (xiii) flood, earthquake, tornado, storm, fire, explosions, lightning, landslide or similar cataclysmic occurrence; (xiv) sabotage, vandalism, riots or civil disobedience; (xv) labor disputes or strikes; (xvi) labor or material shortages; delay in manufacturing and deliveries of equipment; supply chain disruptions; material price increases that equal or exceed fifteen percent (15%) in a six (6) month period; (xvii) Abnormally Severe Weather Conditions; (xviii) an annual level of direct beam solar resource availability that is less than or equal to 90% of historical averages as measured by long-term weather data (minimum 5 years) collected at the applicable Facility and/or other reliable calibrated and appropriate weather station representative of such Facility; (xix) requirement by Utility that any Generating Facility discontinue operation; (xx) any action by a Governmental Authority that prevents or inhibits the Parties from carrying out their respective obligations under this Contract (including an unstayed order of a court

or administrative agency having the effect of subjecting the sales of energy output to federal or state regulation of prices and/or services); (xxi) any Utility power outage at a Facility; or (xxii) regional epidemic or global pandemic.

“**Facilities**” is defined in the Recitals.

“**Final Completion**” means the stage in the progress of the Work at which the Construction Work as identified in the Scope of Work, or a designated portion thereof, has been completed and commissioned, including completion of all Punch List items, completion of all required training, and delivery to [Customer] of the final documentation (as-built drawings, operation and maintenance manuals, warranty documentation and final submittals).

“**Generating Facility**” means each of the photovoltaic, solar powered generating facilities located at the sites listed in Attachment E, and includes all associated photovoltaic panels, mounting assemblies, inverters, converters, metering, lighting fixtures, transformers, ballasts, disconnects, combiners, switches, wires and other equipment that may be necessary to connect the Generating Facility to the applicable Energy Delivery Point.

“**Governmental Authority**” means any federal, state, regional, town, county, city, municipal or local government agency, department or regulatory body having jurisdiction under Applicable Law over the matter in question.

“**Greenhouse Gas**” is defined in Section 13.01.

“**Hazardous Substances**” means (i) any hazardous, toxic, or dangerous wastes, substances, chemicals, constituents, contaminants, pollutants, and materials and any other carcinogenic, liquids, corrosive, ignitable, radioactive, reactive, toxic, or otherwise hazardous substances or mixtures (whether solids, liquids, gases) now or at any time subject to regulation, control, remediation, or otherwise addressed under Applicable Laws; (ii) any “hazardous substance” as defined by the Resource, Conservation and Recovery Act of 1976 (42 U.S.C. §6901 *et seq.*), as amended, and regulations promulgated thereunder; (iii) any “hazardous, toxic or dangerous waste, substance or material” specifically defined as such in 42 U.S.C. §9601 *et seq.*, as amended and regulations promulgated thereunder; and (iv) any hazardous, toxic or dangerous waste, substance, or material as defined in any so-called “superfund” or “superlien” law.

“**Incentive Funds**” is defined in Section 8.06.

“**Installation**” means the setting up, construction, and placement of any equipment or materials in the manner it will be operated, in accordance with the Scope of Work and in accordance with all Applicable Laws.

“**Instruments of Service**” is defined in Section 10.01(c).

“**Interconnection Agreement**” means the Interconnection Agreement to be entered into between [Customer] and the Utility with respect to the Generating Facilities.

“**Interconnection Facilities**” is defined in Section 18.02.

“**Interest**” means interest calculated at the lesser of (i) the prime rate plus two percent (2%) or (ii) the maximum rate permitted by Applicable Law. The “prime rate” will be the “Prime Rate” of interest per annum for domestic banks as published in The Wall Street Journal in the “Money Rates” section.

“**Losses**” is defined in Section 11.01.

“**M&V Commencement Date**” means the first day of the month immediately following the later of (i) ENGIE Services U.S.’s receipt of the fully signed Certificate of Final Completion, and (ii) ENGIE Services U.S.’s receipt of the full Contract Amount.

“**M&V Services**” (if any) are defined in Attachment E.

“**Maintenance Services**” (if any) are defined in Attachment E.

“**Measurement Period**” means each one-year period following the M&V Commencement Date.

“**NEC**” means the National Electric Code.

“**Notice to Proceed**” is defined in Section 2.04.

“**Party**” and “**Parties**” are defined in the Preamble.

“**Person**” means any natural person, corporation, general partnership, limited partnership, limited liability company, proprietorship, other business organization, trust, union, association or Governmental Authority.

“**Professional Services**” means professional services (such as Education Services, Maintenance Services and M&V Services, if any) provided by ENGIE Services U.S. to [Customer] under this Contract.

“**Project**” means the entirety of Work to be performed by ENGIE Services U.S. pursuant to the Scope of Work, and any Change Orders.

“**Project Location**” means the area or areas where the Project materials and equipment and any other energy related equipment, as described in the Scope of Work, are installed, and the general area where the Work is performed.

“**Punch List**” means, with respect to any portion of the Work, a list of minor corrective items which need to be completed or corrected in order to complete such portion of the Work, but do not impair [Customer]’s ability to beneficially operate and utilize such portion of the Work.

“**Retained Items**” is defined in Section 10.02.

“**Retention**” is defined in Section 8.03.

“**Schedule of Values**” is defined in Section 8.01.

“**Scope of Work**” means the Work set forth in Attachments C and D, as modified by any Change Order.

“**Substantial Completion**” means the stage in the progress of the Work at which the Work, or a designated portion thereof, is sufficiently complete, in conformance with the Scope of Work, the Construction Documents and any Change Orders, so that [Customer] can take Beneficial Use thereof.

“**Surety**” means the surety supplying the Contract Bonds, which must be an “admitted surety insurer,” as defined by California Code of Civil Procedure §995.120, authorized to do business in the State of California, and reasonably satisfactory to [Customer].

“**Utility**” is defined in Section 18.02.

“**Work**” means the Work to be done by ENGIE Services U.S. pursuant to the Scope of Work, subject to any Change Orders.

## ARTICLE 2. TERM; PERFORMANCE OF THE WORK

Section 2.01 Contract Term. The term of this Contract commences on the Contract Effective Date and ends on the [last day of the Energy Savings Term][last day on which Professional Services are provided], unless terminated earlier as provided in this Contract.

Section 2.02 Performance of Work. The Work and Professional Services to be performed hereunder will be provided in accordance with the terms of this Contract and the applicable standard of care. ENGIE Services U.S. will perform its obligations under this Contract (i) using the degree of skill and care that is required by current, good and sound professional procedures and practices, and (ii) in conformance with (x) generally accepted professional standards prevailing at the time the Work is performed, (y) the covenants, terms and conditions of this Contract, and (z) applicable laws, codes, rules and regulations, including, without limitation, the applicable provisions of the California Building Code. ENGIE Services U.S. represents and warrants that it is fully experienced in projects of the nature and scope of the Work and Professional Services, and that it is properly qualified, licensed and equipped to supply and perform the Work and Professional Services. The Work completed herein will be subject to [Customer]’s general right of inspection and supervision to secure the satisfactory completion thereof in accordance with this Contract.

Section 2.03 Scope of Work.

- (a) The Scope of Work may not exceed that set forth in Attachments C and D, except pursuant to a Change Order.
- (b) The Professional Services may not exceed those set forth in Attachments E, F and G, except pursuant to a Change Order.

Section 2.04 Notice to Proceed. Within ten (10) days after [Customer] has closed the financing referenced in Section 2.07, [Customer] will issue to ENGIE Services U.S. a written Notice to Proceed (“Notice to Proceed”). ENGIE Services U.S. will begin Work within thirty (30) calendar days after ENGIE Services U.S.’s receipt of the Notice to Proceed. If [Customer] fails to issue the Notice to Proceed within twenty (20) calendar days after the financing has closed, ENGIE Services U.S. will be entitled to an equitable extension of time and/or an equitable adjustment in the Contract Amount as a result of such delay.

Section 2.05 Project Schedule. After receipt of the Notice to Proceed, ENGIE Services U.S. will develop, with input from [Customer], a master project schedule using Microsoft Project®. ENGIE Services U.S. will establish a weekly construction meeting at which time the Work of the previous week will be reviewed and a two-week look ahead will be coordinated. The project schedule will be updated monthly.

Section 2.06 [Customer]’s Energy and Operational Records and Data. If ENGIE Services U.S. requests, [Customer] will provide to ENGIE Services U.S., within thirty (30) calendar days after such request, [Customer]’s Energy Usage Data for the twelve (12) months preceding the Contract Effective Date, and will make commercially reasonable efforts to provide the Energy Usage Data for the thirty-six (36) months preceding the Contract Effective Date. “Energy Usage Data” means all of [Customer]’s records and complete data concerning energy usage, energy-related

maintenance, and other related costs for the Facilities, and including, without limitation, utility records; occupancy information; descriptions of any past, present or anticipated changes in a building's structure or its heating, cooling, lighting or other systems or energy requirements; descriptions of all energy consuming or saving equipment used in the Facilities; applicable building drawings, specifications, existing AutoCAD files, operation and maintenance manuals, and as-builts; bills and records relating to operation and maintenance of systems and equipment within the Facilities, and a description of operation and management procedures currently utilized. [Customer] agrees that ENGIE Services U.S. may rely on the foregoing data as being accurate in all respects. If ENGIE Services U.S. requests, [Customer] will also provide to ENGIE Services U.S., within thirty (30) calendar days after such request, any prior energy audits of the Facilities, and copies of [Customer]'s financial statements and records related to energy usage and operational costs for said time period at the Facilities, and will authorize its agents and employees to provide and freely discuss such records and to make themselves available for consultations and discussions with authorized representatives, employees, subcontractors, and agents of ENGIE Services U.S.

Section 2.07 Finance Contingency. It is acknowledged and agreed by the Parties that the continued existence of this Contract is expressly contingent upon [Customer] closing financing that will allow it to make the payments to ENGIE Services U.S. required by this Contract. [Customer] will have thirty (30) calendar days after the Contract Effective Date to close such financing. If the financing is not closed within this time, for any reason, either Party may by written notice to the other Party declare this Contract to be null and void; and the Contract will be null and void as of the other Party's receipt of this notice; *provided* that [Customer] may not declare this Contract to be null and void after it has issued the Notice to Proceed. It is acknowledged and agreed that ENGIE Services U.S. will have no obligation to commence performance of the Work unless and until the financing has been closed.

Section 2.08 Proof of Financial Arrangements. Prior to the commencement of the Work, [Customer] will provide ENGIE Services U.S. proof that financial arrangements have been made to fulfill [Customer]'s obligations under this Contract. [Customer]'s requirement to furnish such proof to ENGIE Services U.S. is a condition precedent to commencement of the Work. After commencement of the Work, ENGIE Services U.S. may request such proof if (i) [Customer] fails to make payments to ENGIE Services U.S. as this Contract requires; (ii) a Change in the Work materially changes the Contract Amount; or (iii) ENGIE Services U.S. has other reasonable concerns regarding [Customer]'s ability to fulfill its payment obligations under this Contract when due. [Customer] will furnish such proof as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After [Customer] furnishes any such proof, [Customer] will not materially vary such financial arrangements without prior consent of ENGIE Services U.S. If [Customer] fails to provide ENGIE Services U.S. with such proof within ten (10) calendar days of receiving a demand from ENGIE Services U.S., ENGIE Services U.S. will be entitled to suspend its performance under this Contract until such proof is received.

### **ARTICLE 3. PROJECT IMPLEMENTATION - GENERAL**

#### Section 3.01 Registrations, Permits and Approvals.

- (a) Prior to issuing the Notice to Proceed, [Customer] must register the Project with the California Department of Industrial Relations, using Form PWC-100.
- (b) ENGIE Services U.S. is responsible for obtaining (but not paying for) all Applicable Permits required under this Contract. [Customer] will cooperate fully with and assist ENGIE Services U.S. in obtaining Applicable Permits.
- (c) [Customer] is responsible for paying for all permit fees (including expedited plan check fees), inspections, and certifications costs, including any additional work that may be required by the Authority(ies) Having Jurisdiction as part of the permitting process.
- (d) [Customer] is responsible for hiring and paying for all inspectors, site testing (including geotechnical observations) and laboratory testing.
- (e) [Customer] is responsible for paying for all utility interconnection(s) costs, including any additional work that may be required by the Utility(ies) as part of the Interconnection Agreement(s).
- (f) [Customer] is responsible for obtaining and paying for any annual operating permits and approvals or exemptions required by CEQA, as applicable.

Section 3.02 Coordination. [Customer] will be responsible for coordinating the activities of ENGIE Services U.S. and ENGIE Services U.S.'s subcontractors and suppliers with those of [Customer] Persons.

Section 3.03 Project Meetings/Status Updates. During the course of the Work, ENGIE Services U.S. will periodically meet with [Customer] to report on the general status and progress of the Work. ENGIE Services U.S. may (but is not required to) make food and beverage items of nominal value available to [Customer] and [Customer]'s employees and agents at such meetings, which if offered will be deemed part of the Scope of Work and included in the Contract Amount.

Section 3.04 Project Location Access. [Customer] hereby grants to ENGIE Services U.S., without cost to ENGIE Services U.S., all rights of ingress and egress at the Project Location, necessary for ENGIE Services U.S. to perform the Work and provide all services contemplated by this Contract. ENGIE Services U.S. will provide twenty-four-hour advance notice to [Customer] for access to any [Customer] Facilities. All persons entering the Project Location, including [Customer] and its employees and agents, must follow ENGIE Services U.S.'s safety procedures. ENGIE Services U.S. may (but is not required to) make transportation available to [Customer] and [Customer]'s employees and agents between and within Project Locations, which if offered will be deemed part of the Scope of Work and included in the Contract Amount.

Section 3.05 Consents: Cooperation. Whenever a Party's consent, approval, satisfaction, or determination will be required or permitted under this Contract, and this Contract does not expressly state that the Party may act in its sole discretion, such consent, approval, satisfaction, or determination will not be unreasonably withheld, qualified, conditioned, or delayed, whether or not such a "reasonableness" standard is expressly stated in this Contract. Whenever a Party's cooperation is required for the other Party to carry out its obligations hereunder, each Party agrees that it will act in good faith and reasonably in so cooperating with the other Party or its designated representatives or assignees or subcontractors. Each Party will furnish decisions, information, and approvals required by this Contract in a timely manner so as not to delay the other Party's performance under this Contract.

Section 3.06 Independent Contractor. The Parties hereto agree that ENGIE Services U.S., and any agents and employees of ENGIE Services U.S., its subcontractors and/or consultants, is acting in an independent capacity in the performance of this Contract, and not as a public official, officer, employee, consultant, or agent of [Customer] for purposes of conflict of interest laws or any other Applicable Law.

#### **ARTICLE 4. FINAL DESIGN PHASE – CONSTRUCTION DOCUMENTS / EQUIPMENT PROCUREMENT**

##### Section 4.01 General Provisions.

- (a) After receipt of the Notice to Proceed, ENGIE Services U.S. will proceed with the preparation of any necessary designs, drawings, and specifications related to the Scope of Work.
- (b) After completion of the design phase and approval of the final plans and specifications by [Customer], ENGIE Services U.S. will order the equipment identified in the Scope of Work, and any other necessary materials and supplies in order to meet the project schedule.
- (c) [Customer] will designate a single-point representative with whom ENGIE Services U.S. may consult on a reasonable, regular basis and who is authorized to act on [Customer]'s behalf with respect to the Project design. [Customer]'s representative will render decisions in a timely manner with regard to any documents submitted by ENGIE Services U.S. and to other requests made by ENGIE Services U.S. in order to avoid delay in the orderly and sequential progress of ENGIE Services U.S.'s design services.
- (d) Within ten (10) Business Days after ENGIE Services U.S.'s request, [Customer] will:
  - (i) furnish all surveys or other information in [Customer]'s possession that describe the physical characteristics, legal limitations, and utility locations in and around the Project Location;
  - (ii) disclose any prior environmental review documentation and all information in its possession concerning subsurface conditions, including without limitation the existence of any known Hazardous Substances, in or around the general area of the Project Location;
  - (iii) supply ENGIE Services U.S. with all relevant information in [Customer]'s possession, including any as-built drawings and photographs, of prior construction undertaken at the Project Location;
  - (iv) obtain any and all easements, zoning variances, planning approvals, including any resolution of any environmental impact issues, and any other legal authorization regarding utilization of the Project Location for the execution of the Work; and
  - (v) obtain any and all title reports for those Project Locations reasonably requested by ENGIE Services U.S.
- (e) All information furnished pursuant to this Section 4.01 will be supplied at [Customer]'s expense, and ENGIE Services U.S. will be entitled to rely upon the accuracy and completeness of all information provided. If ENGIE Services U.S. is adversely affected by any failure to provide, or delay in providing, the information specified in Section 4.01(d), ENGIE Services U.S. will be entitled to an equitable extension of time and/or an equitable adjustment in the Contract Amount.
- (f) If any information disclosed under this Section 4.01 gives rise to a Change to the Work or an Excusable Event, ENGIE Services U.S. will notify [Customer]. The Parties will meet and confer with respect to those Changes, and ENGIE Services U.S. will be entitled to an equitable extension of time and/or an equitable adjustment in the Contract Amount. If the Parties, however, are unable to agree on whether [Customer]'s disclosed information

gives rise to a Change to the Work or an Excusable Event, those disputes are to be resolved in accordance with ARTICLE 19.

- (g) ENGIE Services U.S. contemplates that it will not encounter any Hazardous Substances at the Project Location, except as has been disclosed as a pre-existing condition by [Customer] prior to the Contract Effective Date. However, any disclosure of Hazardous Substances that will affect the performance of the Work after the Contract Effective Date will constitute a valid basis for a Change Order.

Section 4.02 Review of Construction Documents. ENGIE Services U.S. will prepare and submit all drawings and specifications to [Customer] for review. [Customer] will review the documents and provide any comments in writing to ENGIE Services U.S. within ten (10) Business Days after receipt of the documents. ENGIE Services U.S. will incorporate appropriate [Customer] comments into the applicable drawings and specifications. ENGIE Services U.S. reserves the right to issue the drawings and specifications in phases to allow Construction to be performed in phases. If [Customer] fails to provide written comments within the ten (10) Business Day period, [Customer] will be deemed to have no comments regarding the documents.

Section 4.03 Permits. The respective obligations of the Parties in obtaining inspections and permits are as specified in Section 3.01. [Customer] will agree to any nonmaterial changes to the designs, drawings, and specifications required by any Governmental Authority. The Contract Amount must be increased by any additional cost incurred by ENGIE Services U.S. due to a Change required by a Governmental Authority and the time required to complete the Work must be increased by the number of additional days required to complete the Work because of a Change imposed by a Governmental Authority.

Section 4.04 Changes During Final Design Phase. If during the design phase any [Customer] Person requests Changes and/or modifications to the Work and/or an Excusable Event occurs, ENGIE Services U.S. will be entitled to an equitable extension of time and/or an equitable adjustment in the Contract Amount. Valid bases for additional compensation and/or time extension include, but are not limited to: (i) any [Customer] Person requests changes and/or modifications to the Project Scope of Work during the Project design phase; (ii) any [Customer] Person causes delays during ENGIE Services U.S.'s design work; (iii) the discovery of subsurface or other site conditions that were not reasonably anticipated or disclosed as of the Contract Effective Date; (iv) the discovery of Hazardous Substances at or impacting the Project Location; (v) changes to the Scope of Work required to obtain Applicable Permits; (vi) damage to any equipment or other Work installed by ENGIE Services U.S. caused by the act or omission of any [Customer] Person; (vii) changes and/or modifications to Scope of Work ordered by any Governmental Authority; and (viii) any other condition that would not reasonably have been anticipated by ENGIE Services U.S., that modifies and/or changes the Scope of Work, that increases the agreed-upon Contract Amount or increases the time needed to complete the Work.

## **ARTICLE 5. CONSTRUCTION PHASE**

Section 5.01 General Provisions. Upon securing the requisite Applicable Permits pursuant to Section 3.01, and completion of Construction Documents, ENGIE Services U.S. will commence the construction of the Project in accordance with the Construction Documents. The construction will be performed in accordance with all Applicable Laws and Applicable Permits, by ENGIE Services U.S. and/or one or more licensed subcontractors qualified to perform the Work.

Section 5.02 ENGIE Services U.S.'s Responsibilities during Construction Phase.

- (a) As an independent contractor to [Customer], ENGIE Services U.S. will provide, or cause to be provided by its subcontractor(s), all labor, materials, equipment, tools, transportation, and other facilities and services necessary for the proper execution, construction, and completion of the Work. ENGIE Services U.S. will purchase in advance all necessary materials and supplies for the construction of the Project in order to assure the prompt and timely delivery of the completed Work pursuant to the project schedule. ENGIE Services U.S. will also be responsible for all means, methods, techniques, sequences, and procedures required by the Construction Documents.
- (b) ENGIE Services U.S. will make commercially reasonable efforts to coordinate construction activities and perform the Work to minimize disruption to [Customer]'s operations at the Project Location. ENGIE Services U.S. will provide at least fifteen (15) calendar days' written notice to [Customer] of any planned power outages that will be necessary for the construction. ENGIE Services U.S. will cooperate with [Customer] in scheduling such outages, and [Customer] agrees to provide its reasonable approval of any scheduled outage.
- (c) ENGIE Services U.S. will initiate and maintain a safety program in connection with its Construction of the Project. ENGIE Services U.S. will take reasonable precautions for the safety of, and will provide reasonable protection to prevent damage, injury, or loss to: (i) employees of ENGIE Services U.S. and subcontractors performing Work under this Contract; (ii) ENGIE Services U.S.'s property and other materials to be incorporated into the Project, under the care, custody, and control of ENGIE Services U.S. or its subcontractors; and (iii) other property at or adjacent to the Project Location not designated for removal, relocation, or replacement

during the course of construction. ENGIE Services U.S. will not be responsible for [Customer]'s employees' safety unless ENGIE Services U.S.'s negligence in the performance of its Work is the proximate cause of the employee's injury.

- (d) ENGIE Services U.S. will provide notice to [Customer] of scheduled test(s) of installed equipment, if any, and [Customer] and/or its designees will have the right to be present at any or all such tests conducted by ENGIE Services U.S., any subcontractor, and/or manufacturers of the equipment.
- (e) Pursuant to California Labor Code §6705, if the Work is a public work involving an estimated expenditure in excess of \$25,000 and includes the excavation of any trench or trenches five (5) feet or more in depth, ENGIE Services U.S. will, in advance of excavation, submit to [Customer] and/or a registered civil or structural engineer, employed by [Customer], to whom authority to accept has been delegated, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches, which provisions will be no less effective than the current and applicable CAL-OSHA Construction Safety Orders. No excavation of such trench or trenches may be commenced until this detailed plan has been accepted by [Customer] or by the person to whom authority to accept has been delegated by [Customer]. Pursuant to California Labor Code §6705, nothing in this Section 5.02(e) imposes tort liability on [Customer] or any of its employees.
- (f) Pursuant to California Public Contract Code §7104, if the Work is a public work involving digging trenches or other excavations that extend deeper than four (4) feet below the surface of the ground:
  - (i) ENGIE Services U.S. will promptly, and before the following conditions are disturbed, notify [Customer], in writing, of any:
    - 1) Material that ENGIE Services U.S. believes may be material that is hazardous waste, as defined in California Health and Safety Code §25117, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law;
    - 2) Subsurface or latent physical conditions at the site differing from those indicated by information about the site made available to ENGIE Services U.S. before the Contract Effective Date;
    - 3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract.
  - (ii) [Customer] will promptly investigate the conditions and, if it finds that the conditions do materially so differ or do involve hazardous waste, and cause a decrease or increase in ENGIE Services U.S.'s cost of, or the time required for, performance of any part of the Work will issue a Change Order under the procedures described in this Contract.
  - (iii) If a dispute arises between [Customer] and ENGIE Services U.S., whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in ENGIE Services U.S.'s cost of, or time required for, performance of any part of the Work, ENGIE Services U.S. will not be excused from any scheduled completion date provided for by this Contract but will proceed with all Work to be performed under this Contract. ENGIE Services U.S. will retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the Parties.
- (g) **[Remove if not a school:]** Pursuant to California Education Code §32244, no lead-based paint, lead plumbing and solders, or other potential sources of lead contamination will be utilized on this Project. [Customer] acknowledges and agrees that actions to abate existing risk factors for lead are expressly excluded from the Scope of Work and the Professional Services, and ENGIE Services U.S. will have no obligation to take any such abatement action.

Section 5.03 [Customer]'s Responsibilities during Construction Phase.

- (a) [Customer] will designate a single-point representative authorized to act on [Customer]'s behalf with respect to Project construction and/or equipment installation. [Customer] may from time to time change the designated representative and will provide written notice to ENGIE Services U.S. of such change. Any independent review of the construction will be undertaken at [Customer]'s sole expense, and will be performed in a timely manner so as to not unreasonably delay the orderly progress of ENGIE Services U.S.'s Work.
- (b) [Customer] will provide a temporary staging area for ENGIE Services U.S., or its subcontractors, to use during the construction phase to store and assemble equipment for completion of the Work, if needed. [Customer] will provide sufficient space at the Facilities for the performance of the Work and the storage, installation, and operation of any equipment and materials and will take reasonable steps to protect any such equipment and materials from harm, theft and misuse. [Customer] will provide access to the Facilities, including parking permits and identification tags, for ENGIE Services U.S. and subcontractors to perform the Work during regular

business hours, or such other reasonable hours as may be requested by ENGIE Services U.S. and acceptable to [Customer]. [Customer] will also either provide a set or sets of keys to ENGIE Services U.S. and its subcontractors (signed out per [Customer] policy) or provide a readily available security escort to unlock and lock doors. [Customer] will not unreasonably restrict ENGIE Services U.S.'s access to Facilities to make emergency repairs or corrections as ENGIE Services U.S. may determine are needed.

- (c) [Customer] will maintain the portion of the Project Location that is not directly affected by ENGIE Services U.S.'s Work. [Customer] will keep the designated Project Location and staging area for the Project free of obstructions, waste, and materials within the control of [Customer].
- (d) [Customer] will obtain any required environmental clearance from, and any inspections, including special inspections, or permits required by, any federal, state, and local jurisdictions, including but not limited to any clearances required under CEQA, prior to scheduled construction start date.
- (e) [Customer] will prepare the Project Location for construction, including, but not limited to, clearance of all above and below ground obstructions, such as vegetation, buildings, appurtenances, and utilities. Subsurface conditions and obstacles (buried pipe, utilities, etc.) that are not otherwise previously and accurately documented by [Customer] and such documentation made available to ENGIE Services U.S. are the responsibility of [Customer]. If ENGIE Services U.S. encounters such unforeseen conditions in the performance of the Work, ENGIE Services U.S. will be entitled to an equitable extension of time and/or an equitable adjustment in the Contract Amount.
- (f) [Customer] will remove any Hazardous Substances either known to [Customer] prior to the commencement of the Work or encountered by ENGIE Services U.S. during the construction of the Project, if necessary in order for the Work to progress safely, that were not knowingly released or brought to the site by ENGIE Services U.S. ENGIE Services U.S. will respond to the discovery of Hazardous Substances at or around the Project Location during the course of ENGIE Services U.S.'s construction in accordance with Section 5.06.
- (g) [Customer] will coordinate the Work to be performed by ENGIE Services U.S. with its own operations and with any other construction project that is ongoing at or around the Project Location, with the exception that ENGIE Services U.S. will coordinate the Interconnection Facilities work, if any, which will be performed by the local utility.
- (h) [Customer] will, and will cause [Customer] Persons to, allow ENGIE Services U.S. and its subcontractors access to and reasonable use of necessary quantities of [Customer]'s water and other utilities, including electrical power, as needed for the construction of the Work, at no cost to ENGIE Services U.S.
- (i) [Customer] will, and will cause [Customer] Persons to, provide ENGIE Services U.S. and/or its subcontractors with reasonable access to the Project Location to perform the Work, including without limitation and at no extra cost to ENGIE Services U.S., access to perform Work on Saturdays, Sundays, legal holidays, and non-regular working hours.
- (j) [Customer] will also do the following:
  - (i) Attend the regularly scheduled progress meetings. Participate as needed regarding scheduling of the Work.
  - (ii) When requested by ENGIE Services U.S., participate in the job inspection walk-through with ENGIE Services U.S. to determine Substantial Completion or Beneficial Use of major equipment, and will sign the Certificate(s) of Substantial Completion.
  - (iii) Perform a final walk-through of the Project and, upon receipt of the operation and maintenance manuals and as-built drawings, sign the Certificate of Final Completion for the related Work.
  - (iv) Upon the completion of the entire Scope of Work listed in Attachment C, including training, if any, and submission of close-out documents, sign a Certificate of Final Completion for the entire Project.

Section 5.04 Changes.

- (a) Change Orders Generally. Changes and/or modifications to the Scope of Work will be authorized by a written Change Order. The Change Order should state the change and/or modification to the Scope of Work, any additional compensation to be paid, and any applicable extension of time. ENGIE Services U.S. may, at its election, suspend performance of that portion of the Work affected by any proposed Change until a written Change Order with respect to the Changed or modified Work has been signed by both [Customer] and ENGIE Services U.S. ENGIE Services U.S. will use its reasonable efforts to continue other portions of the Work not affected or impacted by such proposed Change until such time as the applicable Change Order is resolved. In addition, if any [Customer] Person requests a proposal from ENGIE Services U.S. for a Change and [Customer] subsequently elects to not proceed with such Change, [Customer] agrees that a Change Order will be issued to

reimburse ENGIE Services U.S. for any costs reasonably incurred for estimating services, design services, and/or preparation of the proposal requested by such [Customer] Person.

- (b) Change Orders Requiring Additional Compensation. If during construction any [Customer] Person requests changes and/or modifications to the Work, and/or there are Excusable Events, [Customer] will pay the extra costs caused by such modifications and/or changes and/or Excusable Event and ENGIE Services U.S. will be entitled to additional compensation for the following reasons, that include, but are not limited to: (i) any [Customer] Person requests changes and/or modifications to the Scope of Work during the construction phase of the Project; (ii) any [Customer] Person causes delays during ENGIE Services U.S.'s construction work; (iii) discovery of subsurface or other site conditions that were not reasonably anticipated or disclosed prior to the commencement of the Work; (iv) discovery of Hazardous Substances at or impacting the Project Location; (v) changes and/or modifications to the Scope of Work required to obtain required permits and approvals as required by any Governmental Authority; (vi) damage to any equipment or other Work installed by ENGIE Services U.S. caused by the act or omission of any [Customer] Person; (vii) changes and/or modifications to Scope of Work ordered by any Governmental Authority; and (viii) any other condition that would not reasonably have been anticipated by ENGIE Services U.S., that modifies and/or changes the Scope of Work or the Contract Amount.
- (c) Change Orders Requiring Additional Time. If during construction any [Customer] Person requests changes and/or modifications to the Scope of Work and/or an Excusable Event occurs, the Parties agree that an equitable extension of time to complete the Work may be necessary. Prior to any extension of time, ENGIE Services U.S. will use commercially reasonable efforts to make up such delays, including authorizing overtime payments; *provided* that [Customer] has issued a Change Order authorizing any such overtime payment and has specifically agreed to pay all costs, including administrative charges and expenses, associated therewith.
- (d) Method for Adjustment. An increase or decrease in the Contract Amount and/or time resulting from a Change in the Work and/or Excusable Event must be determined by one or more of the following methods:
  - (i) unit prices set forth in this Contract or as subsequently agreed;
  - (ii) a mutually accepted, itemized lump sum; or
  - (iii) costs calculated on a basis agreed upon by [Customer] and ENGIE Services U.S. plus a fee (either a lump sum or a fee based on a percentage of cost) to which the Parties agree.
- (e) Disagreements. If there is a disagreement between [Customer] and ENGIE Services U.S. as to whether ENGIE Services U.S. is entitled to an equitable extension of time and/or an equitable adjustment in the Contract Amount, those disputes are to be resolved in accordance with the provisions of ARTICLE 19. Pending the resolution of any such dispute, ENGIE Services U.S. may suspend Work.

Section 5.05 Minor Changes to Scope of Work. ENGIE Services U.S. has the authority to make minor changes that do not change the total Contract Amount and are consistent with the intent of the Construction Documents, without prior notice to [Customer]. ENGIE Services U.S. will either promptly inform [Customer], in writing, of any minor changes made during the implementation of the Project, or make available to [Customer] at the site a set of as-built drawings that will be kept current to show those minor changes.

Section 5.06 Hazardous Substances.

- (a) ENGIE Services U.S. will promptly provide written notice to [Customer] if ENGIE Services U.S. observes any Hazardous Substance, as defined herein, at or around the Facilities during the course of construction or installation of any equipment which have not been addressed as part of the Scope of Work. ENGIE Services U.S. will have no obligation to investigate the Facilities for the presence of Hazardous Substances prior to commencement of the Work unless otherwise specified in the Scope of Work. [Customer] will be solely responsible for investigating Hazardous Substances and determining the appropriate removal and remediation measures with respect to the Hazardous Substances. [Customer] will comply with all Applicable Laws with respect to the identification, removal and proper disposal of any Hazardous Substances known or discovered at or around the Facilities, and in such connection will execute all generator manifests with respect thereto. ENGIE Services U.S. will comply with all Applicable Laws in connection with the use, handling, and disposal of any Hazardous Substances in the performance of its Work. In connection with the foregoing, [Customer] will provide ENGIE Services U.S., within ten (10) Business Days after the Contract Effective Date, a written statement that represents and warrants (i) whether or not, to its knowledge, there are Hazardous Substances either on or within the walls, ceiling or other structural components, or otherwise located in the Project Location, including, but not limited to, asbestos-containing materials; (ii) whether or not, to its knowledge, conditions or situations exist at the Facilities which are subject to special precautions or equipment required by federal, state, or local health or safety regulations; and (iii) whether or not, to its knowledge, there are unsafe working conditions at the Facilities.

- (b) [Customer] will indemnify, defend, and hold ENGIE Services U.S. harmless from and against any and all Losses that in any way result from, or arise under, such [Customer] owned or generated Hazardous Substances, except for liabilities to the extent due to the negligence or willful misconduct of ENGIE Services U.S., or its subcontractors, agents or representatives, in the handling, disturbance or release of Hazardous Substances. This indemnification will survive any termination of this Contract.

Section 5.07 Pre-Existing Conditions. Certain pre-existing conditions may be present within the Facilities that (i) are non-compliant with applicable codes, (ii) may become non-compliant with applicable codes upon completion of ENGIE Services U.S.'s Work, (iii) may cause ENGIE Services U.S.'s completed Work to be non-compliant with applicable codes, (iv) may prevent [Customer] from realizing the full benefits of ENGIE Services U.S.'s Work, (v) may present a safety or equipment hazard, or (vi) are otherwise outside the scope of ENGIE Services U.S.'s Work. Regardless of whether or not such conditions may have been readily identifiable prior to the commencement of Work, ENGIE Services U.S. will not be responsible for repairing such pre-existing conditions unless such responsibility is expressly provided for in the Scope of Work or an approved Change Order. ENGIE Services U.S., in its sole discretion, may determine whether it will bring said pre-existing conditions into compliance by agreeing to execute a Change Order with [Customer] for additional compensation and, if appropriate, an extension of time.

## ARTICLE 6. PROJECT COMPLETION

Section 6.01 Occupancy or Use of Work. [Customer] may take occupancy or use of any completed or partially completed portion of the Work at any stage, whether or not such portion is Substantially Complete, *provided* that such occupancy or use is authorized by Governmental Authority and, *provided further*, that [Customer] assumes responsibility for the security of, insurance coverage for, maintenance, utilities for, and damage to or destruction of such portion of the Work. If Substantial Completion of a portion of the Construction Work is not yet achieved, occupancy or use of such portion of the Work will not commence until [Customer]'s insurance company has consented to such occupancy or use. When occupancy or use of a portion of the Work occurs before Substantial Completion of such portion, [Customer] and ENGIE Services U.S. will accept in writing the responsibilities assigned to each of them for title to materials and equipment, payments and Retention with respect to such portion.

Section 6.02 Substantial Completion. When ENGIE Services U.S. considers the Work, or any portion thereof, to be Substantially Complete, ENGIE Services U.S. will supply to [Customer] a written Certificate of Substantial Completion with respect to such portion of the Work, including a Punch List of items and the time for their completion or correction. [Customer] will within ten (10) Business Days of receipt of the Certificate of Substantial Completion, review such portion of the Work for the sole purpose of determining that it is Substantially Complete, and sign and return the Certificate of Substantial Completion to ENGIE Services U.S. acknowledging and agreeing: (i) that such portion of the Work is Substantially Complete; (ii) the date of such Substantial Completion; (iii) that from the date of Substantial Completion [Customer] will assume responsibility for the security of, insurance coverage for, maintenance, utilities for, and damage to or destruction of such portion of the Work. [Customer] agrees that approval of a Certificate of Substantial Completion will not be unreasonably withheld, delayed or conditioned.

Section 6.03 Final Completion. When ENGIE Services U.S. considers the entirety of the Work to be Finally Complete, ENGIE Services U.S. will notify [Customer] that the Work is fully complete and ready for final inspection. [Customer] will inspect the Work to verify the status of Final Completion within ten (10) Business Days after its receipt of ENGIE Services U.S.'s certification that the Work is complete. If [Customer] does not verify the Final Completion of the Work within this period, the Work will be deemed fully completed. When [Customer] agrees that the Work is fully completed, ENGIE Services U.S. will issue a Certificate of Final Completion, which [Customer] must sign. [Customer] agrees that its signing of the Certificate of Final Completion will not be unreasonably withheld, delayed or conditioned. At that time, [Customer] will pay ENGIE Services U.S. any remaining Contract Amount due and any outstanding Retention being withheld by [Customer], in accordance with Section 8.03. [Customer] may give ENGIE Services U.S. written notice of acceptance of the Work and will promptly record a notice of completion or notice of acceptance in the office of the county recorder in accordance with California Civil Code §9204.

Section 6.04 Transfer of Title; Risk of Loss. Title to all or a portion of the Project equipment, supplies and other components of the Construction Work will pass to [Customer] upon the earlier of (i) the date payment for such Project equipment, supplies or components is made by [Customer] or (ii) the date any such items are incorporated into the Project Location. ENGIE Services U.S. will retain care, custody and control and risk of loss of such Project equipment, supplies and components until the earlier of Beneficial Use or Substantial Completion. Transfer of title to [Customer] will in no way affect [Customer]'s and ENGIE Services U.S.'s rights and obligations as set forth in other provisions of this Contract. Except as provided in this Section 6.04, after the date of Substantial Completion, ENGIE Services U.S. will have no further obligations or liabilities to [Customer] arising out of or relating to this Contract, except for the obligation to complete any Punch List items, the obligation to perform any warranty service under Section 9.01, and obligations which, pursuant to their terms, survive the termination of this Contract.

## ARTICLE 7. SUBCONTRACTORS

Section 7.01 Authority to Subcontract. ENGIE Services U.S. may delegate its duties and performance under this Contract, and has the right to enter into agreements with any subcontractors and other service or material providers as ENGIE Services U.S. may select in its discretion to perform the Work. ENGIE Services U.S. will not be required to enter into any subcontracts with parties whom ENGIE Services U.S. has not selected or subcontractors whom ENGIE Services U.S. has objection to using.

Section 7.02 Prompt Payment of Subcontractors. ENGIE Services U.S. will promptly pay, when due, all amounts payable for labor and materials furnished in the performance of this Contract and will endeavor to prevent any lien or other claim under any provision of Applicable Law from arising against any [Customer] property, against ENGIE Services U.S.'s rights to payments hereunder, or against [Customer].

Section 7.03 Relationship. Nothing in this Contract constitutes or will be deemed to constitute a contractual relationship between any of ENGIE Services U.S.'s subcontractors and [Customer], or any obligation on the part of [Customer] to pay any sums to any of ENGIE Services U.S.'s subcontractors.

Section 7.04 Prevailing Wages. To the extent required by California Labor Code §1771 or other Applicable Law, all employees of ENGIE Services U.S. and ENGIE Services U.S.'s subcontractors performing Work at the Project Location will be paid the per diem prevailing wages for the employee's job classification in the locality in which the Work is performed. In accordance with California Labor Code §§1773 and 1773.2, [Customer] will obtain from the Director of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work, in the locality in which the Work is to be performed, for each craft, classification or type of worker needed to execute the Work at the Project Location, and will cause copies of such determinations to be kept on file at its principal office and posted at each Project Location. [Customer] will promptly notify ENGIE Services U.S. of any changes to any such prevailing wage determination. ***[If CREBs, QZABs, QSCBs, QECBs, or other tax credit bonds are being used:*** If a portion of the Work is subject to the federal Davis-Bacon Act and/or related acts because it is being paid for with CREBs, QZABs or other tax credit bonds, ENGIE Services U.S. will ensure that its subcontracts for such portion of the Work require the use of the labor classifications identified in the applicable federal wage determination for certified payroll records, and that all employees of ENGIE Services U.S. and ENGIE Services U.S.'s subcontractors performing such portion of the Work be paid the higher of the California or federal prevailing wage rates with respect to such portion of the Work.]

## ARTICLE 8. PAYMENTS

Section 8.01 Monthly Progress Payments. Promptly after the Contract Effective Date, ENGIE Services U.S. will invoice [Customer] for a mobilization payment in the amount of [●]. These amounts must be paid to ENGIE Services U.S. within thirty (30) calendar days after [Customer]'s receipt of an invoice for those amounts. In addition, as the Work progresses, ENGIE Services U.S. will submit to [Customer] its applications for monthly payments based on the progress made on the Project through the date on which ENGIE Services U.S. submits such Application for Payment. Within twenty-one (21) calendar days from the Contract Effective Date, ENGIE Services U.S. will prepare and submit to [Customer] a schedule of values apportioned to the various divisions or phases of the Work ("Schedule of Values"). Each line item contained in the Schedule of Values will be assigned a value such that the total of all items equals the Contract Amount. All Applications for Payment will be in accordance with the Schedule of Values.

Section 8.02 Materials Stored Off-Site. In addition to the monthly progress payments specified in Section 8.01, ENGIE Services U.S. may invoice [Customer] for materials purchased in advance and not stored at the Project Location. Each such Application for Payment will be accompanied by proof of off-site material purchases, evidence that the materials have been delivered to a warehouse reasonably acceptable to [Customer] and evidence of appropriate insurance coverage. ENGIE Services U.S. will furnish to [Customer] written consent from the Surety approving the advance payment for materials stored off site. [Customer] will pre-pay one hundred percent (100%) of ENGIE Services U.S.'s Application for Payment for the materials delivered, less Retention as indicated in Section 8.03. ENGIE Services U.S. will protect stored materials from damage. Damaged materials, even though paid for, will not be incorporated into the Work.

Section 8.03 Retention. [Customer], or its designee, must approve and pay each Application for Payment, less a retention amount ("Retention") of five percent (5%) in accordance with California Public Contract Code §7201, within thirty (30) calendar days after its receipt of the Application for Payment; *provided, however*, that there is to be no Retention with respect to the mobilization payment. A failure to approve and pay an Application for Payment in a timely manner is a material default by [Customer] under this Contract. [Customer] may make progress payments in full without Retention at any time after fifty percent (50%) of the Work has been completed, as permitted pursuant to California Public Contract Code §9203. Upon Substantial Completion, the Retention must be reduced to two percent (2%) of the Contract Amount, and ENGIE Services U.S. may invoice and [Customer] will pay this amount. [Customer] will pay ENGIE Services U.S. the remaining two percent (2%) Retention amount upon achieving Final Completion. In lieu of Retention being held by [Customer], ENGIE Services U.S. may request that securities be substituted or Retention be held in an escrow account pursuant to California Public Contract Code §22300.

Section 8.04 Final Payment. The final Application for Payment may be submitted after Final Completion. The final payment amount must also include payment to ENGIE Services U.S. for any remaining Retention withheld by [Customer].

Section 8.05 Disputed Invoices/Late Payments. [Customer] may in good faith dispute any Application for Payment, or part thereof, within fifteen (15) calendar days after the date the Application for Payment was received by [Customer]. If [Customer] disputes all or a portion of any Application for Payment, [Customer] will pay the undisputed portion when due and provide ENGIE Services U.S. a written notice and explanation of the basis for the dispute and the amount of the Application for Payment being withheld related to the dispute. [Customer] will be deemed to have waived and released any dispute known to it with respect to an Application for Payment if such notice and written explanation is not provided within fifteen (15) calendar days after the date the Application for Payment was received by [Customer]. If any amount disputed by [Customer] is finally determined to be due to ENGIE Services U.S., either by agreement between the Parties or as a result of dispute resolution pursuant to ARTICLE 19 below, it will be paid to ENGIE Services U.S. within ten (10) Business Days after such final determination, plus Interest from the date billed or claimed until such amount is paid.

Section 8.06 Rebate Programs. ENGIE Services U.S. will assist [Customer] in the preparation and submission to the applicable agencies of applications and documentation necessary for the following energy efficiency rebate, incentive, and/or loan program(s) \_\_\_\_\_. ENGIE Services U.S. makes no guarantee that [Customer] will receive funding from any energy efficiency rebate, incentive, and/or loan program(s), including those listed above (collectively, "Incentive Funds"), or any portion thereof; ENGIE Services U.S. expressly disclaims any liability for [Customer]'s failure to receive any portion of the Incentive Funds, and [Customer] acknowledges and agrees that ENGIE Services U.S. will have no liability for any failure to receive all or any portion of the Incentive Funds. Procurement, or lack thereof, of the Incentive Funds will not alter the Contract Amount of this Contract or the payment timeline associated with payment of the Contract Amount.

#### **ARTICLE 9. WARRANTY / LIMITATION OF LIABILITY**

EXCEPT FOR THE WARRANTIES PROVIDED IN THIS ARTICLE 9, ENGIE SERVICES U.S. MAKES NO WARRANTIES IN CONNECTION WITH THE WORK PROVIDED UNDER THIS CONTRACT, WHETHER EXPRESS OR IMPLIED IN LAW, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES AGAINST INTELLECTUAL PROPERTY INFRINGEMENT. [Customer] WILL HAVE NO REMEDIES AGAINST EITHER ENGIE SERVICES U.S. OR ANY ENGIE SERVICES U.S. SUBCONTRACTOR OR VENDOR FOR ANY DEFECTIVE MATERIALS OR EQUIPMENT INSTALLED, EXCEPT FOR THE REPAIR OR REPLACEMENT OF SUCH MATERIALS OR EQUIPMENT IN ACCORDANCE WITH THE WARRANTIES INDICATED BELOW. SPECIFICALLY, NEITHER ENGIE SERVICES U.S., NOR ENGIE SERVICES U.S.'s SUBCONTRACTORS OR VENDORS, WILL BE LIABLE TO [Customer] FOR LOSS OF PROFITS OR FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY.

Section 9.01 ENGIE Services U.S. warrants to [Customer] that material and equipment furnished under this Contract will be of good quality and new, unless otherwise specifically required or permitted by this Contract. ENGIE Services U.S. further warrants that its workmanship provided hereunder, including its subcontractors' workmanship, will be free of material defects for a period of one (1) year from the date of Substantial Completion as indicated on the executed Certificate of Substantial Completion, or the date of Beneficial Use as indicated on the executed Certificate of Beneficial Use ("ENGIE Services U.S. Warranty"). Notwithstanding the preceding sentence, the date the ENGIE Services U.S. Warranty commences with respect to a specific piece or pieces of equipment may be further defined in Attachment C.

Section 9.02 Equipment and material warranties that exceed the ENGIE Services U.S. Warranty period will be provided directly by the equipment and/or material manufacturers and such warranties will be assigned directly to [Customer], after the one (1) year period. During the ENGIE Services U.S. Warranty period, ENGIE Services U.S. will be [Customer]'s agent in working with the equipment and material manufacturers in resolving any equipment or material warranty issues. If any material defects are discovered within the ENGIE Services U.S. Warranty period, ENGIE Services U.S., or ENGIE Services U.S.'s subcontractors, will correct its defects, and/or ENGIE Services U.S. will work with the equipment or material manufacturer as [Customer]'s agent to facilitate the manufacturer's correction of the equipment or material defect. Such warranty services will be performed in a timely manner and at the reasonable convenience of [Customer]. If a warranty issue arises on any equipment or material installed after the ENGIE Services U.S. Warranty period, and the equipment or material has a warranty period that exceeds one (1) year, [Customer] will contact the manufacturer directly to resolve such warranty issues and [Customer] acknowledges that the manufacturer will have sole responsibility for such issues.

Section 9.03 The warranties in this ARTICLE 9 expressly exclude any remedy for damage or defect caused by improper or inadequate maintenance of the installed equipment by service providers other than ENGIE Services U.S. or its subcontractors, corrosion, erosion, deterioration, abuse, modifications or repairs not performed by an authorized ENGIE Services U.S. subcontractor, improper use or operation, or normal wear and tear under normal usage. ENGIE

Services U.S. shall not be responsible for the cost of correcting a breach of warranty or defect to the extent that the manufacturer of the equipment that is the subject of a warranty hereunder does not honor its equipment warranty as a result of its termination of operations, insolvency, liquidation, bankruptcy or similar occurrence. Unless otherwise specified, all warranties hereunder, including without limitation those for defects, whether latent or patent, in design, engineering, or construction, will terminate one (1) year from the date of Substantial Completion or Beneficial Use; and thereafter, ENGIE Services U.S. will have no liability for breach of any warranty or for any latent or patent defect of any kind pursuant to California Code of Civil Procedure §§337.1 and 337.15.

Section 9.04 [Customer] and ENGIE Services U.S. have discussed the risks and rewards associated with this Project, as well as the Contract Amount to be paid to ENGIE Services U.S. for performance of the Work. [Customer] and ENGIE Services U.S. agree to allocate certain of the risks so that, to the fullest extent permitted by Applicable Law, ENGIE Services U.S.'s total aggregate liability to [Customer] and all third parties is limited to the Contract Amount for any and all injuries, damages, claims, losses, expenses, or claim expenses (including attorney's fees) arising out of this Contract from any cause or causes. Such causes include, but are not limited to, negligence, errors, omissions, strict liability, breach of contract, or breach of warranty.

Section 9.05 **[Remove if M&V Services are included:** This Contract does not contain an energy savings guarantee or solar PV system performance guarantee and [Customer] hereby waives any such guarantee to the fullest extent permitted by Applicable Law.]

## **ARTICLE 10. OWNERSHIP OF CERTAIN PROPERTY AND EXISTING EQUIPMENT**

### Section 10.01 Ownership of Certain Proprietary Property Rights.

- (a) Ownership: Except as expressly provided in this Contract, [Customer] will not acquire, by virtue of this Contract, any rights or interest in any formulas, patterns, devices, software, inventions or processes, copyrights, patents, trade secrets, other intellectual property rights, or similar items of property which are or may be used in connection with the Work. ENGIE Services U.S. will own all inventions, improvements, technical data, models, processes, methods, and information and all other work products developed or used in connection with the Work, including all intellectual property rights therein.
- (b) License: Solely in connection with the Facilities, ENGIE Services U.S. grants to [Customer] a limited, perpetual, royalty-free, non-transferrable license for any ENGIE Services U.S. intellectual property rights necessary for [Customer] to operate, maintain, and repair any modifications or additions to Facilities, or equipment delivered, as a part of the Work.
- (c) Ownership and Use of Instruments of Service. All data, reports, proposals, plans, specifications, flow sheets, drawings, and other products of the Work (the "Instruments of Service") furnished directly or indirectly, in writing or otherwise, to [Customer] by ENGIE Services U.S. under this Contract will remain ENGIE Services U.S.'s property and may be used by [Customer] only for the Work. ENGIE Services U.S. will be deemed the author and owner of such Instruments of Service and will retain all common law, statutory and other reserved rights, including copyrights. The Instruments of Service may not be used by [Customer] or any [Customer] Person for future additions or alterations to the Project or for other projects, without the prior written agreement of ENGIE Services U.S. Any unauthorized use of the Instruments of Service will be at [Customer]'s sole risk and without liability to ENGIE Services U.S. If [Customer] uses the Instruments of Service for implementation purposes, including additions to or completion of the Project, without the written permission of ENGIE Services U.S., [Customer] agrees to waive and release, and indemnify and hold harmless, ENGIE Services U.S., its subcontractors, and their directors, employees, subcontractors, and agents from any and all Losses associated with or resulting from such use.

Section 10.02 Ownership of any Existing Equipment. Ownership of any equipment and materials presently existing at the Facilities on the Contract Effective Date will remain the property of [Customer] even if such equipment or materials are replaced or their operation made unnecessary by work performed by ENGIE Services U.S. If applicable, ENGIE Services U.S. will advise [Customer] in writing of all equipment and materials that will be replaced at the Facilities and [Customer] will, within five (5) Business Days of ENGIE Services U.S.'s notice, designate in writing to ENGIE Services U.S. which replaced equipment and materials should not be disposed of off-site by ENGIE Services U.S. (the "Retained Items"). [Customer] will be responsible for and designate the location and storage for the Retained Items. ENGIE Services U.S. will be responsible for the disposal of replaced equipment and materials, except for the Retained Items. ENGIE Services U.S. will use commercially reasonable efforts to remove the Retained Items in such a manner as to avoid damage thereto, or if it is unreasonable to avoid damage altogether, to minimize the damage done. ENGIE Services U.S. will not be responsible for the removal and/or disposal of any Hazardous Substances except as required by the Scope of Work.

## **ARTICLE 11. INDEMNIFICATION / LIMITATION ON LIABILITY**

Section 11.01 Indemnification. To the fullest extent permitted by Applicable Laws, each Party will indemnify, hold harmless, release and defend the other Party, its officers, employees, and agents from and against any and all

actions, claims, demands, damages, disabilities, fines, penalties, losses, costs, expenses (including consultants' and attorneys' fees and other defense expenses) and liabilities of any nature ("Losses") that may be asserted by any person or entity, to the extent arising out of that Party's performance or activities hereunder, including the performance or activities of other persons employed or utilized by that Party in the performance of this Contract, excepting liabilities to the extent due to the negligence or willful misconduct of the indemnified party. This indemnification obligation will continue to bind the Parties after the termination of this Contract.

Section 11.02 Waiver of Consequential Damages and Limitation of Liability. The liability of a defaulting Party will be limited to direct, actual damages. Neither Party shall be liable to the other Party for any special, indirect, incidental or consequential damages whatsoever, whether in contract, tort (including negligence) or strict liability, including, but not limited to, operational losses in the performance of business such as lost profits or revenues or any increase in operating expense. Additionally, each Party waives any claims for negligence against the other Party to the fullest extent permitted by Applicable Law.

## **ARTICLE 12. INSURANCE / BONDS**

Section 12.01 ENGIE Services U.S. Insurance. ENGIE Services U.S. will maintain, or cause to be maintained, for the duration of this Contract, the insurance coverage outlined in (a) through (f) below, and all such other insurance as required by Applicable Law. Evidence of coverage will be provided to [Customer] via an insurance certificate.

- (a) Workers' Compensation/Employers Liability for states in which ENGIE Services U.S. is not a qualified self-insured. Limits as follows:

*	Workers' Compensation:	Statutory
*	Employers Liability:	Bodily Injury by accident \$1,000,000 each accident Bodily Injury by disease \$1,000,000 each employee Bodily Injury by disease \$1,000,000 policy limit

- (b) Commercial General Liability insurance with limits of:

*	\$2,000,000 each occurrence for Bodily Injury and Property Damage
*	\$4,000,000 General Aggregate - other than Products/Completed Operations
*	\$2,000,000 Products/Completed Operations Aggregate
*	\$2,000,000 Personal and Advertising Injury
*	\$ 100,000 Damage to premises rented to ENGIE Services U.S.

Coverage to be written on an occurrence form. Coverage to be at least as broad as ISO form CG 0001 (04/13) or its equivalent forms, without endorsements that limit the policy terms with respect to: (1) provisions for severability of interest or (2) explosion, collapse, underground hazard.

- (c) Auto Liability insurance for owned, hired and non-owned vehicles with limits of \$1,000,000 per accident. Coverage to be written on an occurrence form.

- (d) Professional Liability insurance with limits of:

*	\$1,000,000 per occurrence
*	\$1,000,000 aggregate

Coverage to be written on a claims-made form.

- (e) Umbrella/Excess Liability Insurance. Limits as follows:

*	\$1,000,000 each occurrence
*	\$1,000,000 aggregate

Coverage terms and limits to apply excess of the per occurrence and/or aggregate limits provided for Commercial General Liability and Professional Liability written on a claims made form. Coverage terms and limits also to apply in excess of those required for Employers Liability and Auto Liability written on an occurrence form.

- (f) Policy Endorsements.

- \* The insurance provided for Workers' Compensation and Employers' Liability above will contain waivers of subrogation rights against [Customer], but only to the extent of the indemnity obligations contained in this Contract.
- \* The insurance provided for Commercial General Liability and Auto Liability above will:

- (i) include [Customer] as an additional insured with respect to Work performed under this Contract, but only to the extent of the indemnity obligations contained in this Contract, and
- (ii) provide that the insurance is primary coverage with respect to all insureds, but only to the extent of the indemnity obligations contained in this Contract.

Section 12.02 [Customer]’s Insurance. [Customer] will maintain, or cause to be maintained, for the duration of this Contract, the insurance coverage outlined below, and all such other insurance as required by Applicable Law. Evidence of coverage will be provided to ENGIE Services U.S. via an insurance certificate.

- (a) Commercial General Liability insurance, written on an occurrence form, with limits of:
  - \* \$2,000,000 each occurrence for Bodily Injury and Property Damage; and
  - \* \$4,000,000 General Aggregate
- (b) The insurance provided for above will contain waivers of subrogation rights against ENGIE Services U.S., will include ENGIE Services U.S. as an additional insured, and will provide that the insurance is primary coverage with respect to all insureds.

Section 12.03 Waivers of Subrogation. The Parties waive all rights against each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this ARTICLE 12 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance. The Parties and their respective property damage insurers also waive all rights of subrogation against the other Party, its directors, officers, agents and employees. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

Section 12.04 Performance and Payment Bonds. Prior to commencing Work under this Contract, ENGIE Services U.S. will furnish a performance bond, in an amount equal to one hundred percent (100%) of the Contract Amount, and a payment bond to guarantee payment of all claims for labor and materials furnished, in an amount equal to one hundred percent (100%) of the Contract Amount (collectively, the “Contract Bonds”). The Contract Bonds shall be maintained in full force and effect until Final Completion; provided that upon the achievement of Substantial Completion, the value of the Contract Bonds shall be reduced to the value of the Retainage being withheld by [Customer]. The Contract Bonds are not being furnished to cover the performance of any Professional Services, including any energy guaranty or guaranteed savings under this Contract, nor to cover any equipment and/or material manufacturer’s warranty or other third-party warranty being assigned to [Customer]. [Customer] agrees that upon Final Completion and expiration of the ENGIE Services U.S. Warranty period set forth in Article 9 herein, the Contract Bonds shall be returned to ENGIE Services U.S., and all obligations arising thereunder are terminated and the surety company that issued the bond is forever discharged from any and all liabilities of whatever nature arising in connection with the Contract Bonds.

**ARTICLE 13. DOE GUIDELINES; ENERGY POLICY ACT**

Section 13.01 As authorized by §1605(b) of the Energy Policy Act of 1992 (Pub. L. No. 102-486) the U.S. Department of Energy has issued, and may issue in the future, guidelines for the voluntary reporting of Greenhouse Gas emissions (“DOE Guidelines”). “Greenhouse Gases” means those gases and other particles as defined in the DOE Guidelines. [Customer] hereby assigns and transfers to ENGIE Services U.S., and its Affiliates and assigns, any Greenhouse Gas emission reduction credits that result from the Work.

**ARTICLE 14. MUNICIPAL ADVISOR**

Section 14.01 THE PARTIES ACKNOWLEDGE AND AGREE THAT ENGIE SERVICES U.S. IS NOT A MUNICIPAL ADVISOR AND CANNOT GIVE ADVICE TO [Customer] WITH RESPECT TO MUNICIPAL SECURITIES OR MUNICIPAL FINANCIAL PRODUCTS ABSENT [Customer] BEING REPRESENTED BY, AND RELYING UPON THE ADVICE OF, AN INDEPENDENT REGISTERED MUNICIPAL ADVISOR. ENGIE SERVICES U.S. IS NOT SUBJECT TO A FIDUCIARY DUTY WITH REGARD TO [Customer] OR THE PROVISION OF INFORMATION TO [Customer]. [Customer] WILL CONSULT WITH AN INDEPENDENT REGISTERED MUNICIPAL ADVISOR ABOUT THE FINANCING OPTION APPROPRIATE FOR [Customer]’S SITUATION.

**ARTICLE 15. TRADE SECRETS**

If any materials or information provided by ENGIE Services U.S. to [Customer] under this Contract are designated by ENGIE Services U.S. as a “trade secret” or otherwise exempt from disclosure under the Public Records Act (California Government Code §6250 *et seq.*, the “Act”) and if a third party makes a request for disclosure of the materials under the Act, as soon as practical (but not later than five (5) calendar days) after receipt of such request, [Customer] will notify ENGIE Services U.S. of such request and advise ENGIE Services U.S. whether [Customer] believes that there is a reasonable possibility that the materials may not be exempt from disclosure. Within ten (10) calendar days after a third party’s request for

disclosure of materials under the Act, ENGIE Services U.S. will (i) authorize [Customer] to release the documents or information sought; or (ii) if ENGIE Services U.S. reasonably believes that the information is exempt from disclosure, advise [Customer] not to release the materials.

#### **ARTICLE 16. EVENTS OF DEFAULT**

Section 16.01 Events of Default by ENGIE Services U.S. Each of the following events or conditions will constitute an "Event of Default" by ENGIE Services U.S.:

- (i) any substantial failure by ENGIE Services U.S. to perform or comply with this Contract, including a material breach of any covenant contained herein, and such failure continues for thirty (30) calendar days after notice to ENGIE Services U.S. demanding that such failure to perform be cured; *provided* that (y) such failure to perform will not be deemed a default hereunder if it is excused by a provision of this Contract, and (z) if such cure cannot be effected in thirty (30) calendar days, ENGIE Services U.S. will be deemed to have cured the default upon the commencement of a cure within thirty (30) calendar days and diligent subsequent completion thereof; or
- (ii) any representation or warranty furnished by ENGIE Services U.S. in this Contract which was false or misleading in any material respect when made.

Section 16.02 Events of Default by [Customer]. Each of the following events or conditions will constitute an "Event of Default" by [Customer]:

- (i) any substantial failure by [Customer] to perform or comply with this Contract, including a material breach of any covenant contained herein, and such failure continues for thirty (30) calendar days after notice to [Customer] demanding that such failure to perform be cured; *provided* that (y) such failure to perform will not be deemed a default hereunder if it is excused by a provision of this Contract; and (z) if such cure cannot be effected in thirty (30) calendar days, [Customer] will be deemed to have cured the default upon the commencement of a cure within thirty (30) calendar days and diligent subsequent completion thereof; or
- (ii) any representation or warranty furnished by [Customer] in this Contract which was false or misleading in any material respect when made; or
- (iii) any failure by [Customer] to pay any amount to ENGIE Services U.S. which is not paid within ten (10) calendar days after written notice from ENGIE Services U.S. that the amount is past due.

#### **ARTICLE 17. REMEDIES UPON DEFAULT**

Section 17.01 Termination for Cause. If there is an Event of Default by either Party under this Contract, unless such Event of Default has been cured within the applicable time periods for a cure set forth in ARTICLE 16, the non-defaulting Party may terminate this Contract by providing three (3) Business Days' written notice to the defaulting Party in the case of a monetary default and ten (10) Business Days' written notice to the defaulting Party in the case of a non-monetary default. Upon termination of this Contract, each Party will promptly return to the other all papers, materials, and property of the other held by such Party in connection with this Contract. Each Party will also assist the other in the orderly termination of this Contract and the transfer of all aspects hereof, tangible and intangible, as may be necessary for the orderly, non-disrupted business continuation of each Party. If this Contract is so terminated, ENGIE Services U.S. will be entitled to payment for Work satisfactorily performed, earned profit and overhead, and costs incurred in accordance with this Contract up to the date of termination.

Section 17.02 Remedies Upon Default by ENGIE Services U.S. If an Event of Default by ENGIE Services U.S. occurs, [Customer] will be entitled to obtain any available legal or equitable remedies through arbitration proceedings instituted pursuant to ARTICLE 19, including, without limitation, terminating this Contract, or recovering amounts due and unpaid by ENGIE Services U.S. and/or damages, which will include [Customer]'s reasonable, actual, direct out-of-pocket losses incurred by reason of such Event of Default and any cost of funding; loss of anticipated payment obligations; and any payment or delivery required to have been made on or before the date of the Event of Default and not made, including interest on any sums due, and losses and costs incurred as a result of terminating this Contract and all costs and expenses reasonably incurred in exercising the foregoing remedies.

Section 17.03 Remedies upon Default by [Customer]. If an Event of Default by [Customer] occurs, ENGIE Services U.S. will be entitled to obtain any available legal or equitable remedies through arbitration proceedings instituted pursuant to ARTICLE 19 including, without limitation, terminating this Contract or recovering amounts due and unpaid by [Customer], and/or damages which will include ENGIE Services U.S.'s reasonable, actual, direct out-of-pocket losses incurred by reason of such Event of Default and any cost of funding; loss of anticipated payment obligations; and any payment or delivery required to have been made on or before the date of the Event of Default and not made, including

Interest on any sums due, and losses and costs incurred as a result of terminating this Contract and all costs and expenses reasonably incurred in exercising the foregoing remedies.

**ARTICLE 18. CONDITIONS BEYOND CONTROL OF THE PARTIES**

Section 18.01 Excusable Events. If any Party is delayed in, or prevented from, performing or carrying out its obligations under this Contract by reason of any Excusable Event, such circumstance will not constitute an Event of Default, and such Party will be excused from performance hereunder and will not be liable to the other Party for or on account of any loss, damage, injury or expense resulting from, or arising out of, such delay or prevention. Notwithstanding the foregoing, no Party will be excused from any payment obligations under this Contract as a result of an Excusable Event.

Section 18.02 Utility Work. [Customer] expressly understands and agrees that Excusable Events may occur due to Interconnection Facilities work that may need to be performed by the local electric utility ("Utility") in order for ENGIE Services U.S. to fully implement the Project. "Interconnection Facilities" means any distribution or transmission lines and other facilities that may be required to connect equipment supplied under this Contract to an electrical distribution/transmission system owned and maintained by the Utility. Any Interconnection Facilities work that may be required will be performed by the Utility under the Interconnection Agreement.

**ARTICLE 19. GOVERNING LAW AND RESOLUTION OF DISPUTES**

Section 19.01 Governing Law. This Contract is governed by and must be interpreted under the laws of the State where the Work is performed, without regard to the jurisdiction's choice of law rules.

Section 19.02 Initial Dispute Resolution. If a dispute arises out of or relates to this Contract, the transaction contemplated by this Contract, or the breach of this Contract (a "Dispute"), either Party may initiate the dispute resolution process set forth in this ARTICLE 19 by giving notice to the other Party. The Parties will endeavor to settle the Dispute as follows:

- (i) *Field Representatives' Meeting*: Within fifteen (15) Business Days after notice of the Dispute, ENGIE Services U.S.'s senior project management personnel will meet with [Customer]'s project representative in a good faith attempt to resolve the Dispute.
- (ii) *Management Representatives' Meeting*: If ENGIE Services U.S.'s and [Customer]'s project representatives fail to meet, or if they are unable to resolve the Dispute, senior executives for ENGIE Services U.S. and for [Customer], neither of whom have had day-to-day management responsibilities for the Project, will meet, within thirty (30) calendar days after notice of the Dispute, in an attempt to resolve the Dispute and any other identified disputes or any unresolved issues that may lead to a dispute. If the senior executives of ENGIE Services U.S. and [Customer] are unable to resolve a Dispute or if a senior management conference is not held within the time provided herein, either Party may submit the Dispute to mediation in accordance with Section 19.03.

Section 19.03 Mediation. If the Dispute is not settled pursuant to Section 19.02, the Parties will endeavor to settle the Dispute by mediation under the Commercial Mediation Procedures of the American Arbitration Association. Mediation is a condition precedent to arbitration or the institution of legal or equitable proceedings by either Party. Once one Party files a request for mediation with the other Party and with the American Arbitration Association, the Parties agree to conclude the mediation within sixty (60) calendar days after filing the request. Either Party may terminate the mediation at any time after the first session, but the decision to terminate must be delivered in person by the Party's representative to the other Party's representative and the mediator. If the Dispute is not resolved by mediation within sixty (60) calendar days after the date of filing of the request for mediation, then the exclusive means to resolve the Dispute is final and binding arbitration, as described in Section 19.04. Either Party may initiate arbitration proceedings by notice to the other Party and the American Arbitration Association.

Section 19.04 Arbitration Proceedings. The following provisions apply to all arbitration proceedings pursuant to this ARTICLE 19:

- (i) The place of arbitration will be the American Arbitration Association office closest to where the Work was performed.
- (ii) One arbitrator (or three arbitrators if the monetary value of the Dispute is more than \$2,000,000) (the "Arbitral Panel") will conduct the arbitral proceedings in accordance with the Commercial Arbitration Rules and Mediation Procedures (Excluding the Procedures for Large, Complex Commercial Disputes) of the American Arbitration Association currently in effect ("Arbitration Rules"). To the extent of any conflicts between the Arbitration Rules and the provisions of this Contract, the provisions of this Contract prevail.



Attention:

With a COPY TO:

Office of \_\_\_\_\_

Street Address

City, State, Zip

Tel:

Attention:

**ARTICLE 22. CONSTRUCTION OF CONTRACT**

This Contract is the result of arms-length negotiations between two sophisticated parties and ambiguities or uncertainties in it will not be construed for or against either Party, but will be construed in a manner that most accurately reflects the intent of the Parties as of the Contract Effective Date. Each of the Parties acknowledges and agrees that neither Party has provided the other with any legal, accounting, regulatory, financial, or tax advice with respect to any of the transactions contemplated hereby, and each Party has consulted its own legal, accounting, regulatory, financial and tax advisors to the extent it has deemed appropriate.

**ARTICLE 23. CHOICE OF LAW**

THE INTERPRETATION, VALIDITY AND ENFORCEMENT OF THIS CONTRACT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA.

**ARTICLE 24. BINDING EFFECT**

Except as otherwise provided herein, the terms and provisions of this Contract will apply to, be binding upon, and inure to the benefit of the Parties hereto and their respective heirs, legal representatives, successors, and permitted assigns.

**ARTICLE 25. NO WAIVER**

The failure of ENGIE Services U.S. or [Customer] to insist upon the strict performance of this Contract will not constitute or be construed as a waiver or relinquishment of either Party's right to thereafter enforce the same in accordance with this Contract in the event of a continuing or subsequent default on the part of ENGIE Services U.S. or [Customer].

**ARTICLE 26. SEVERABILITY**

If any clause or provision of this Contract or any part thereof becomes or is declared by a court of competent jurisdiction invalid, illegal, void, or unenforceable, this Contract will continue in full force and effect without said provisions; *provided* that no such severability will be effective if it materially changes the benefits or obligations of either Party hereunder.

**ARTICLE 27. HEADINGS**

Headings and subtitles used throughout this Contract are for the purpose of convenience only, and no heading or subtitle will modify or be used to interpret the text of any section.

**ARTICLE 28. COUNTERPARTS; INTEGRATION**

This Contract may be executed in counterparts (and by different Parties hereto in different counterparts), each of which will constitute an original, but all of which when taken together will constitute a single contract. This Contract constitutes the entire contract among the Parties relating to the subject matter hereof and supersedes any and all previous agreements and understandings, oral or written, relating to the subject matter hereof. This Contract cannot be amended, modified, or terminated except by a written instrument, executed by both Parties hereto. Delivery of an executed counterpart of a signature page of this Contract by email will be effective as delivery of a manually executed counterpart of this Contract.

*[the Parties' signatures appear on the following page]*

IN WITNESS WHEREOF, and intending to be legally bound, the Parties hereto subscribe their names to this Contract by their duly authorized officers as of the Contract Effective Date.

**ENGIE SERVICES U.S.:**

ENGIE Services U.S. Inc.

**[Customer]:**

*[type [Customer] name here]*

By: \_\_\_\_\_  
Name:  
Title:

By: \_\_\_\_\_  
Name:  
Title:

DRAFT

**ATTACHMENT A**  
**FACILITIES**

(a) The following [Customer] Facilities are included under the Scope of Work as listed below:

Facility	Address	Square Feet
(insert rows as needed)		

DRAFT

**ATTACHMENT B**  
**STANDARDS OF OCCUPANCY and CONTROL**

**ATTACHMENT C**

**SCOPE OF WORK**

California State Contractor's License Number 995037  
California Public Works Contractor Registration Number 1000001498

Energy Conservation Measures to Be Implemented

ECM #	Description
	(add lines when necessary)

**ATTACHMENT D**  
**MONITORING INSTALLATION SCOPE OF WORK**

**ATTACHMENT E  
M&V SERVICES**

**ATTACHMENT F**  
**MAINTENANCE SERVICES**

ENGIE Services U.S.  
500 12th Street, Suite 300  
Oakland, CA 94607

[engie-na.com](https://www.engie-na.com)

