

# 2023 CLIMATE NOTEBOOK / TCFD REPORT

The ENGIE logo is positioned at the bottom center of the page. It features a white, curved, swoosh-like graphic above the word "ENGIE" in a white, lowercase, sans-serif font. The background of the entire page is a photograph of a rugged mountain range with green slopes and patches of snow under a blue sky with light clouds.

ENGIE



# SUMMARY

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# THE CLIMATE STRATEGY PURSUED

**ENGIE has set a goal of reaching Net Zero Carbon <sup>(1)</sup> throughout its entire value chain (scope 1, 2 and 3) by 2045, following a well-below 2°C trajectory certified by the Science Based Target initiative (SBTi) in February 2023. In this way, the Group is reducing its direct and indirect greenhouse gases (GHG) emissions by at least 90% compared with 2017 <sup>(2)</sup>. At the same time, it plans to work on the development of carbon sinks in order to neutralize its residual emissions over the long term and thus contribute at the right level to planetary carbon neutrality. The Group is also committed to supporting its customers in the reduction of their GHG emissions in order to accelerate the decarbonization of its own value chain.**

ENGIE’s strategy to decarbonize its value chain is based on three pillars (Reduce, Avoid and Remove) in line with the methodological framework of the Net Zero Initiative: <sup>(3)</sup>

<p><b>Reduce ENGIE’s GHG emissions</b></p> <p>First, reduce the direct and indirect GHG emissions resulting from ENGIE’s activities by at least 90% compared compared to 2017</p>	<p><b>Remove carbon from the atmosphere</b></p> <p>Then, increase carbon sinks to neutralize the last residual emissions that are the most difficult to abate.</p>	<p><b>Avoid customers’ GHG emissions through ENGIE’s solutions</b></p> <p>Support customers’ decarbonization so that they can reduce their GHG emissions.</p>
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### ENGIE’s 2045 Net Zero Carbon target

(1) Definition of the SBTi’s Net Zero standard (2) Baseline year for ENGIE’s climate targets defined with the SBTi (3) Carbone 4 initiative supported by ADEME

### ENGIE’S VISION FOR THE ENERGY TRANSITION IN EUROPE

Given the prevailing uncertainty regarding the evolution of the energy mix, public policies and the development of the sectors, ENGIE is building different scenarios for Europe’s energy future. Each scenario quantifies the volumes and prices of the main commodities (electricity, gas, coal, hydrogen, oil and CO<sub>2</sub>) of the 19 main European energy markets between 2023 and 2050.

The reference decarbonization trajectory chosen by ENGIE focuses on a balanced mix, in which renewable gases along with electrification of usages all have their benefits, in order to guarantee the best levels of efficiency and resilience of the energy system. In addition,

energy sufficiency and efficiency are an integral part of the efforts to reduce GHG emissions.

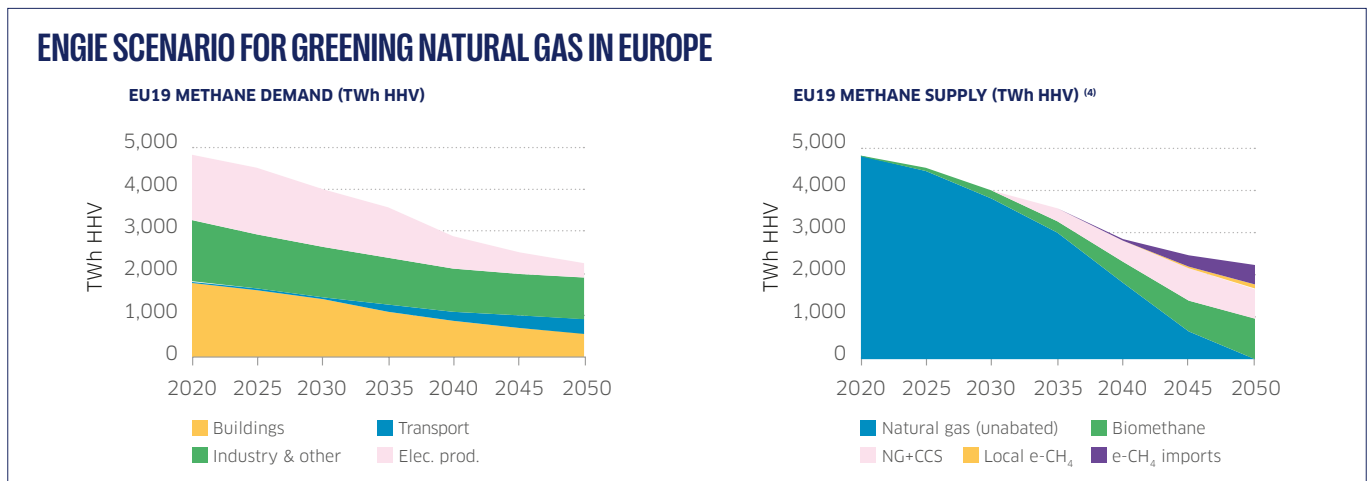
Studies carried out by the Group for the European scope have shown that large-scale electrification would generate additional costs of more than 15% by 2050 and would result in increased vulnerability of the electricity system. The Group also believes that the use of a wider range of decarbonization options puts energy system players in a better position to benefit from technological progress and meet the needs of flexibility inherent to the energy market. It would also reduce the economic and political pressure on electricity infrastructures (new lines to be built, acceptability of decarbonized

production assets, whether it is wind, solar or nuclear).

Different gases will contribute to the energy system of tomorrow. Biomethane, the first contributor, is part of a circular economy, decentralized solutions and creates local jobs. It can be injected into all existing networks without adaptation.

Renewable hydrogen produced by electrolysis from renewable energy sources will be key to decarbonizing high-temperature industrial processes and heavy transport.

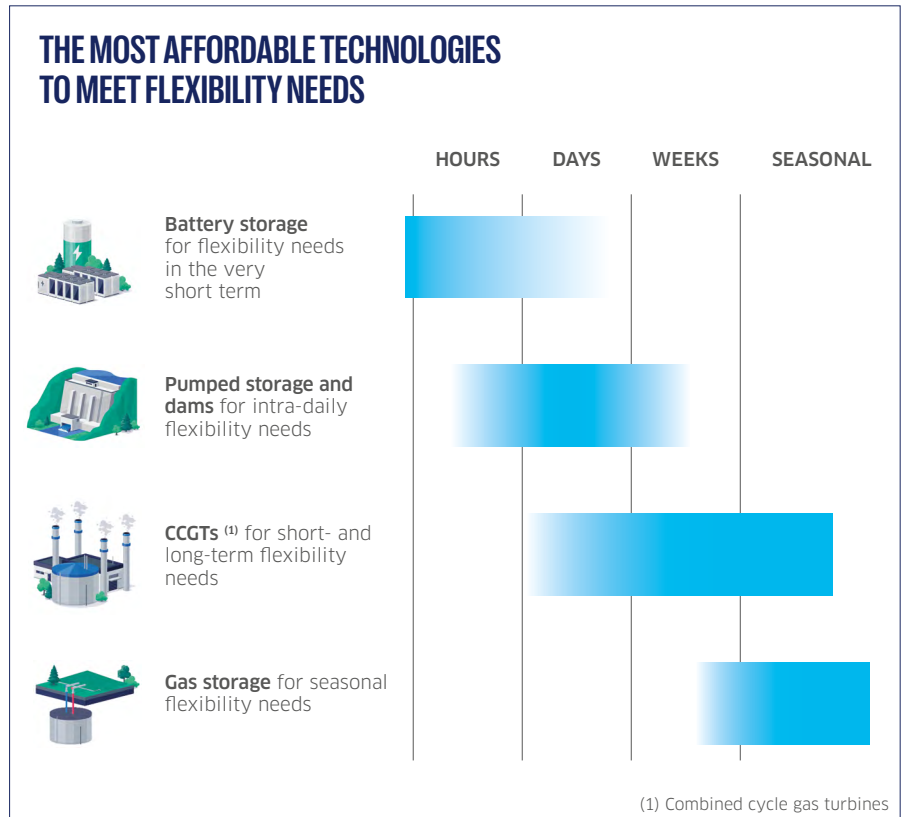
Finally, synthetic methane will complete the possible solutions. More details on the role of renewable gases can be found in the “renewable gases” notebook.



(4) This chart tracks methane demand only. It should be noted that ENGIE’s reference decarbonization scenario integrates hydrogen for approximately 1,000 TWh HHV in 2050 (excluding e-CH<sub>4</sub>).

## THE ROLE OF GAS IN THE DECARBONIZATION OF THE ENERGY SECTOR

- 1 A need for supply security:**  
The Group's gas-fired energy production assets (combined cycle gas turbines, or CCGTs) are essential today to the security and balance of the energy systems of which they are part. In 2022, for example, gas assets played a central role in the balance of the French electrical power system when there was strong pressure on supply.
- 2 Needs for balance and flexibility:**  
In an electricity mix dominated by intermittent renewable energy, the need for flexibility solutions to ensure the balance of the energy system will increase significantly (fourfold increase in 2035 according to the IEA in its Net Zero Emissions scenario). In the medium-term, only thermal assets can provide this flexibility on an intra-weekly and inter-seasonal basis.
- 3 Decarbonization of gas assets in the long term:**  
Over the long-term, the fleet of thermal assets will progressively decline (end of life of power plants, partially replaced by renewable production), but the remaining assets will stay to help balance the system (peak assets). In addition, biomethane and renewable hydrogen will contribute to the decarbonization of gas-fired thermal plants by 2040-2045.



## THE TRAJECTORY SELECTED

Already certified for a 2°C trajectory by the SBTi since 2020, ENGIE earned its new well-below 2°C certification early in 2023 with new targets for 2030 (see p. 79). ENGIE committed to reduce the carbon intensity related to energy generation and consumption (scope 1 and 2) that goes beyond the SBTi requirements with a commitment of -66% over the period from 2017-2030 instead of the -55% required by the SBTi.


Projections for use of gas-fired thermal power plants do not currently allow ENGIE to commit to a trajectory of 1.5°C, which would require a 78% reduction in carbon intensity over the same period. Such a reduction could not be achieved without the disposal of assets. These assets could not be closed. Indeed, these thermal assets could not be closed, otherwise the security of the electrical system to which they are connected would be jeopardized. They would thus continue to emit GHG emissions. ENGIE is therefore playing its role as an industrial company engaged in the energy transition, remaining at this stage a key player in thermal generation, resolutely committed to decarbonizing these assets with different technologies (biomethane, carbon capture and, depending on technological developments, renewable hydrogen). To fully industrialize these technologies, despite promising changes in the regulatory framework (particularly in the EU), we believe that the credible horizon is 2040-2045.


# CLIMATE OBJECTIVES AND ASSOCIATED ACTION PLAN

## The levers of ENGIE's decarbonization based on medium and long term science-based targets

2030

Reduce the main sources of GHG emissions following a well-below 2°C trajectory

 43 Mt CO<sub>2</sub> eq. linked to energy generation

 52 Mt CO<sub>2</sub> eq. linked to the use of products sold gas sales

Remove carbon up to the residual emissions from ENGIE's activities in four countries (including Brazil) and the group's ways of working

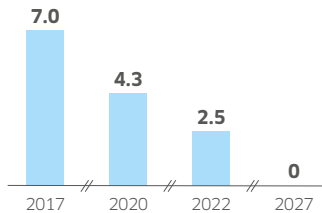
2045

ENGIE is committed to being Net Zero Carbon for all its scopes (1, 2 and 3). Reduce ENGIE's direct and indirect GHG emission by at least 90% compared to 2017. Then increase carbon sinks to neutralize the Group's residual emissions to ENGIE full value chain.

## Tracking the main decarbonization levers between 2017 and 2030

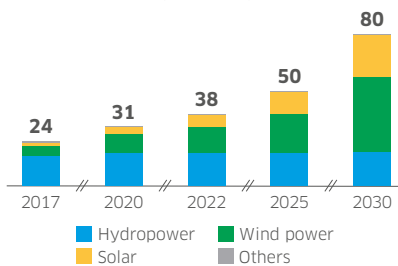
### COAL

CHANGE IN COAL-FIRED ELECTRICITY CAPACITIES (GW@100%)



### RENEWABLE ELECTRICITY

CHANGE IN RENEWABLE ELECTRICITY CAPACITIES (GW@100%)



### RENEWABLE GASES

#### BIOMETHANE



10 TWh of biomethane produced in Europe by 2030

€2.5 bn invested in the network for biomethane connections by 2030

€3 bn invested in renewable gases (including e-CH<sub>4</sub>) by 2030

~30 TWh / year of biomethane sold by ENGIE in B2B and B2C services in 2030

50 TWh / year biomethane connected production capacity in France in 2030

#### HYDROGEN



4 GW of renewable hydrogen production capacity through electrolysis by 2030

700 km of dedicated hydrogen networks by 2030

1 TWh of hydrogen storage capacity by 2030

30 TWh of hydrogen in the managed energy portfolio by 2030

More than 100 charging stations for hydrogen vehicles by 2030

€4bn invested in hydrogen by 2030

Key changes

CAPEX 2023-25

Targets

Targets progress report between 2017 and 2030

No new investment

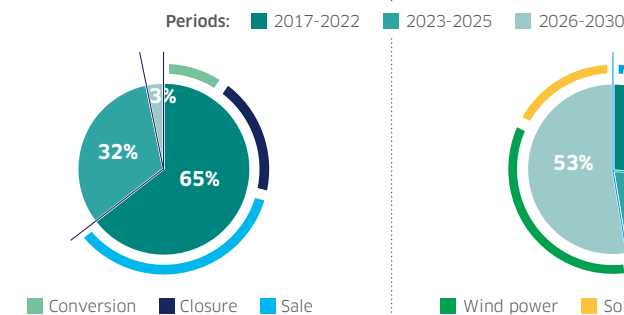
Between €13 bn and €14 bn

Over the entire Group, around 75% of 2023-2025 growth CAPEX will be aligned with the European taxonomy.

Coal phase-out in 2025 in continental Europe and in 2027 worldwide

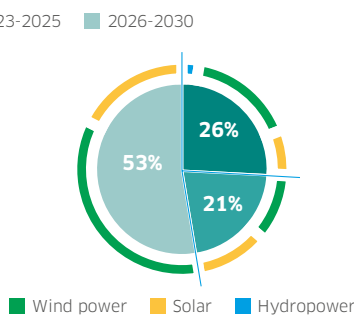
50 GW of renewable capacity in 2025 and 80 GW in 2030

COAL PHASE-OUT  
In number of electrical and heating assets



ENGIE is establishing a strategy to move away from coal in the following merit order: closure, conversion, then, if not possible, sale, ensuring a continuous dialog with stakeholders (ENGIE Just Transition policy)

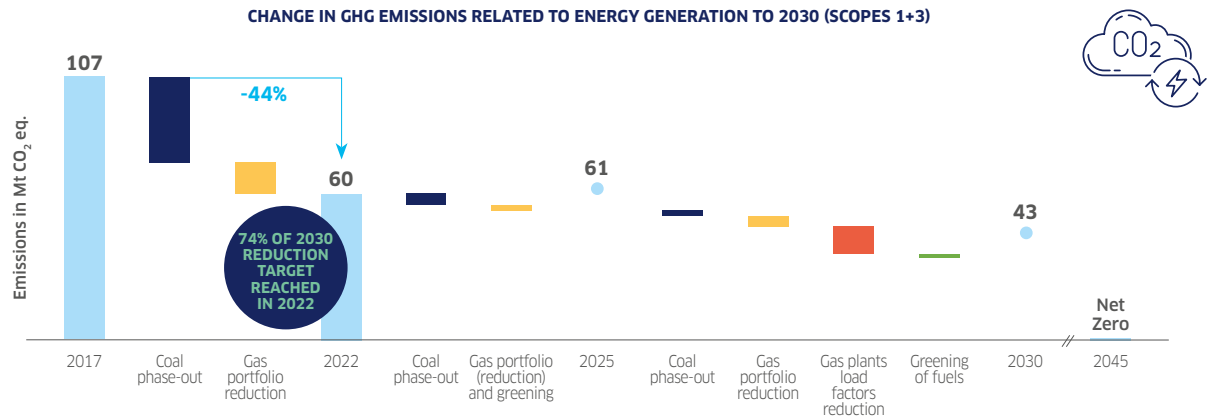
DEVELOPMENT OF RENEWABLES  
In capacities(GW@100%)



ENGIE targets to reach 58% of renewables capacity in its energy production by 2030, with a target for commissioning solar and wind power capacity at 4 GW per year on average in 2022-2025 and 6 GW per year in 2026-2030.

### DECARBONIZE ENERGY PRODUCTION (SCOPES 1 AND 3)

The GHG emissions related to ENGIE's energy production (electricity, heating and cooling) have decreased by 44% since 2017 over all of scope 1 (direct emissions associated with fully and proportionately consolidated assets) and scope 3 (indirect emissions associated with ENGIE equity associates). This represents 74% of the reduction target to reach 43 Mt CO<sub>2</sub> eq. in 2030 versus 2017.



Four primary levers are used: the phase-out from coal, the reduction of the gas-fired power plants (closure of several plants at the end of life), the reduction in the utilization time of gas assets (reduction of the load factors) and the decarbonization of the heating networks.

Between 2017 and 2022, thermal generation (coal and gas) fell by 22% (-35 TWh). In 2030, gas-fired power plants in Europe will act primarily as flexible capacity to support the development of renewable energy.

The Group currently estimates that the Ukrainian crisis accelerated the decreases in the use of fossil gas and the utilization rate of our power plants over the 2025-2030 period; the uncertainties related to the evolution of the energy system make any increase in the 2030 targets difficult at this stage.

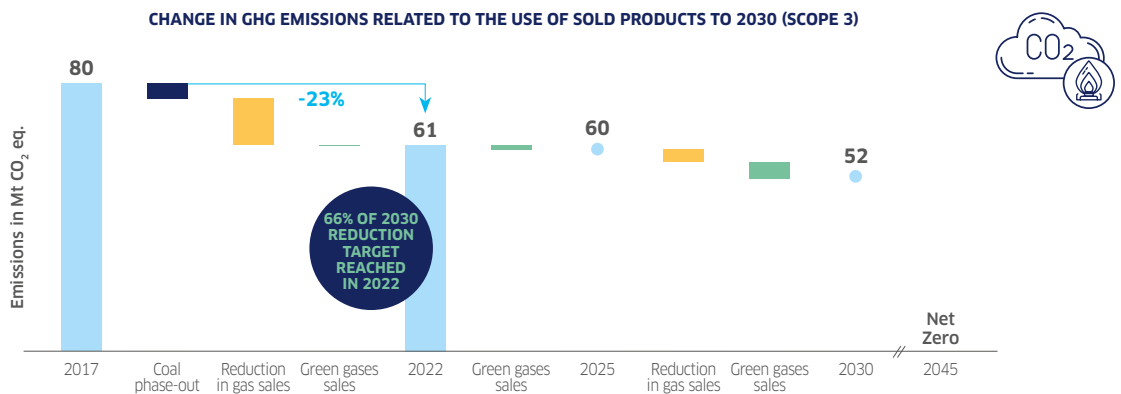
The strong growth in the centralized renewable fleet, as a replacement for thermal assets, plays an essential role in the Group's decarbonization and enabled a reduction from 343 gCO<sub>2</sub> eq. / kWh to

216 gCO<sub>2</sub> eq. / kWh in the carbon intensity of the energy production (scopes 1+3) between 2017 and 2022. This is ENGIE's first decarbonization lever and will count for around half of the decrease in carbon intensity over the 2017-2030 period.

Moreover, in 2022, renewable energy and recovery energy represented more than 50% of the energy mix of ENGIE's large heating networks and industrial services in France.

### DECARBONIZE THE USE OF THE SOLD PRODUCTS (GAS SALES)

GHG emissions linked to the use of the sold products (sales of fuels, primarily natural gas) have fallen by 23% since 2017. This represents 66% of the reduction target to reach 52 Mt CO<sub>2</sub> eq. in 2030 versus 2017.



Three main levers are used: the end of coal sales since 2017, the reduction in gas sales (related to energy sufficiency, energy efficiency and the transfer to other energy vectors) as well as the greening of

sales (biomethane and hydrogen). This last lever will become more important between 2022 and 2030, before becoming the first decarbonization lever between 2030 and 2045. All the reductions in sales

volumes between 2017 and 2022 have been replaced by the development of renewable electricity sales.

### DECARBONIZE IN THE LONG TERM (2030-2045)

Over the longer term, the Group will continue to use all the levers presented and is targeting a reduction of at least 90% in its absolute emissions compared to 2017 across all scopes. Massive use of renewable gases (biomethane, renewable hydrogen, etc.)

will progressively become the Group's primary decarbonization lever with renewable electricity capacity, ahead of the overall reduction of fossil gas. To a lesser extent, carbon capture (CCS) technologies will help the Group to achieve its 2045 targets. To become competitive, renewable gases will have to benefit from public

support, the creation of partnerships and market mechanisms in order to scale up these new energy vectors. This will also imply an adaptation of existing gas networks in order to achieve the goal (in the case of France) of 100% renewable gases in the transport and distribution networks in 2050.

**DECARBONIZE ENGIE'S OTHER ACTIVITIES**

**GHG emissions related to suppliers (5% of the carbon footprint)**

ENGIE is committed to supporting its top 250 preferred suppliers (excluding energy purchase) so that they are all certified or aligned with the Science Based Target initiative by 2030. This would cover 20% of the Group's purchases in terms of expenses. At the end of 2022, 23% of the top 250 preferred suppliers were already certified or aligned.

As a founding member of the First Movers coalition – which aims to accelerate the creation of a competitive and carbon neutral supply chain – ENGIE is committed to ensuring that 10% of its wind turbines will be made of low-carbon steel by 2030.

In the second half of 2022, ENGIE launched a dialog, primarily via the suppliers day, with its 400 largest suppliers in terms of GHG footprint (28% of the purchasing carbon footprint) in order to understand their maturity with respect to decarbonization (effective measure over their 3 scopes, calculated figures and restrictions, etc.) This will allow the launch, in the near future, of the first industrial projects to decarbonize the Group's procurement.

**Methane emissions from the gas networks (1% of the carbon footprint)**

The methane emissions related to gas networks controlled or operated by the Group are primarily due to venting safety procedures.

ENGIE has been committed for many years to reducing these methane emissions which accounted for 1.3 Mt CO eq in 2022.

In 2020, the Group's French subsidiaries (GrDF, GRTgaz, Elengy and Storengy) joined the Oil & Gas Methane Partnership 2.0 (OGMP), an initiative managed by the United Nations Environment Program, which intends to share an internationally recognized reporting framework and minimize the associated methane emissions. In this respect, these operators were classified in 2022 at the highest level of commitment – the "gold standard."

Today, ENGIE is moving ahead and has set a target of a worldwide reduction of 30% in its methane emissions related to its consolidated gas networks (transport, distribution, LNG terminals and storage) between 2017 and 2030.

It should be noted that the management of energy networks (electricity and gas) involves GHG emissions whether it is the losses of the electrical grids or the methane emissions in the gas networks. Thus, in France for example, these networks result in fewer emissions per MWh, despite the global warming potential of the methane and the low carbon intensity of the electricity.

**Emissions related to ways of working (0.15% of the carbon footprint)**


ENGIE has set a Net Zero 2030 target related to its ways of working. The goal is to reduce the Group's carbon footprint related to the buildings, digital tools and practices, travel, home-work commutes and vehicle fleets.

Employees are involved in such processes so as to identify and share best practices. This approach is complemented by an ongoing training program and a review of the associated Group policies (purchasing, real estate and IT policies in particular).

Reaching net zero by 2030 will be made possible thanks to two main levers: -35% of the electricity consumption of the buildings between 2019 and 2030 and 100% of vehicle replacements with low-emission vehicles by 2030.

With the current energy crisis, ENGIE also set up a sufficiency plan in 2022 designed to reduce the consumption of buildings by 15% (winter period in Europe), through measures related to heating and air conditioning notably.

**NEW TARGET FOR METHANE EMISSIONS**







**30%**

reduction in methane emissions between 2017 and 2030 worldwide

**OGMP COMMITMENTS**

**Oil & Gas Methane Partnership (OGMP) 2.0 aimed at reducing the methane emissions of the networks**

	<p><b>CH<sub>4</sub><sup>(1)</sup> intensity of 0.125%</b> by 2025</p>
	<p><b>-80% CH<sub>4</sub> emissions</b> in 2025 compared with 2016</p>
	<p><b>-25% CH<sub>4</sub> emissions in France; -45% in the United Kingdom; -35% in Germany</b> in 2025 compared with 2016</p>
	<p><b>-30% CH<sub>4</sub> emissions</b> in 2025 compared with 2015</p>

(1) CH<sub>4</sub> emissions / volume of gas distributed



**DECARBONIZE OUR CUSTOMERS THROUGH OUR PRODUCTS AND SERVICES**

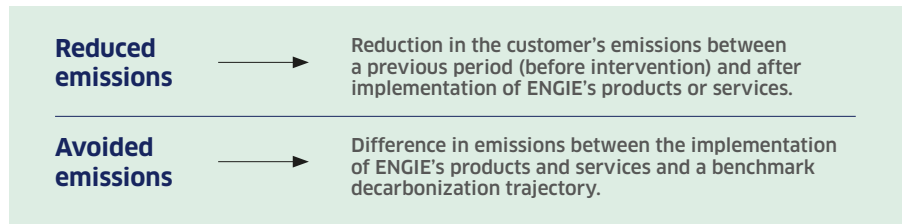
ENGIE's purpose is to act to accelerate the transition to a carbon-neutral economy, through lower-energy solutions that are more respectful of the environment. Within this framework, the Group's goal is to offer its customers products and services that can reduce their carbon footprint.

In 2020, ENGIE developed a methodology to quantify avoided emissions and set a goal of contributing to decarbonizing its customers by 2030.

In 2022, the Group's contribution to customer decarbonization was 28 Mt CO<sub>2</sub> eq.

The Group is involved in international working groups such as the World

Business Council for Sustainable Development (WBCSD) and the Net Zero Initiative in an effort to accelerate development of a comparable indicator that can be used by all.



**THE MÖLNLYCKE PLANT IN MALAYSIA**

Mölnlycke is a world leader in the supply of medical products and solutions. By using ENGIE's Utilities-as-a-Service solutions (integrated management of the production, operations and maintenance processes by ENGIE), the plants will be able to improve the energy efficiency of their processes and be more energy independent through renewable production on site. In this way, Mölnlycke will be able to reduce the carbon footprint of all its sites in Malaysia by up to 40% by 2030 (a target of 29,000 tons of CO<sub>2</sub> emissions avoided per year).

**Thermal oil heating system**  
The heating systems, fuel tanks and flue gas chimneys facilitate the supply of thermal oil to support the manufacturing processes.

**Cold water and iced water systems**  
The coolers supply cold water and iced water for the plant's operational needs.

**Compressed air system**  
Air compressors and an air tank supply compressed air for manufacturing processes.

**Cooling towers**  
The cooling towers support the cold water and iced water systems.

**Rooftop solar panels**  
1 MWp of solar panels to supply renewable energy to the plant will be installed, thus reducing dependence on the electricity network.

**SUPPORTING ENERGY SOBRIETY**

Together with its 22 million B2C customers, ENGIE contributes to societal behavioral change. For example, with *Mon Programme pour Agir (My Program to Act)*, the Group rewards customers who consume less and better and gives them the power to act for the ecological transition.

Today, there are 500,000 active customers, 89 environmental and societal projects and startups supported, and 145,000 participants to the electricity reduction challenges for total savings of 21 GWh (annual consumption of approximately 2,000 average French households of four people). In addition, *Mon Pilotage Elec (My Electricity Management)*

allows customers to manage their electric convectors remotely and thus to achieve energy savings up to 15% on their heating. In three years, the program is expected to reach an electricity network shedding capacity of nearly 100 MW.

# A LOOK AT THE RISKS AND OPPORTUNITIES

## TRANSITION RISKS REVIEW – CLIMATE MITIGATION

### ENGIE gas networks: a necessary transformation toward total decarbonization

The reduction of the volume of gas in certain networks (transport, storage or distribution) or in certain sectors (buildings, electricity production) and the imposition of stricter carbon criteria for methane currently represent the most significant risks for ENGIE's activities and for its gas networks in particular.

- ➔ The acceleration of Europe's climate ambitions cannot be accomplished without the use of these assets, which guarantee European energy security and decarbonization through their transformation.
- Continuity of the methane supply and the coupling of different energy vectors are essential for a decarbonized energy system since they can support the electricity network during demand peaks. This is especially true with the development of hybrid heat pumps.
  - French networks guarantee the gas supply in Europe in a complex geopolitical environment and will, in the future, enable the distribution of biomethane synthetic gas and even hydrogen. They provide assurance to the French and European system in the event of incidents on the other energy vectors (unavailability or delay in the nuclear fleet, for example).
  - Finally, a good portion of the transport or storage network can be converted to hydrogen.

### Low carbon gas: promising technologies to be industrialized

Accelerating decarbonization is also based on a massive roll-out of low carbon gases (biomethane, hydrogen and synthetic methane), which requires substantial investment in capital and human resources. These technologies remain exposed to regulatory constraints and growing conflicts of use (e.g. wood energy or agricultural waste). Sufficient production quantities will be necessary, particularly to guarantee the continuity of the gas-fired power plants, which are responsible for ensuring the balance of the electricity networks. The need to transform or build adapted networks could also delay the hydrogen economy.

- ➔ The Group is committed to a proactive role in low carbon gases to minimize the hazards to its business and push back these technological boundaries. ENGIE thus plays a significant role in developing the new technologies around 2G biomethane and synthetic molecules (ENGIE Lab), as well as CCS (Carbon Capture and Storage), which will support decarbonization efforts.



### Renewable electricity: a supply chain that is mature but under pressure and a growing demand for exemplary behavior

The supply of renewable electricity is a key element in ENGIE's decarbonization. At a time of accelerated development of new installed capacities, the manufacturing ability of the wind and solar components and batteries industry will determine the extent to which operators are able to meet their climate ambitions.

- ➔ Thus, the value chain is a key element in the strategy implemented by ENGIE, which has set up an action plan designed to best integrate these risks in investment decisions, reduce its exposure to them by promoting the re-use and eco-design of turbine components (the Zebra project) or solar panels and diversify its supply chain.

### An ambition facing major social and societal challenges

The energy transition that ENGIE is undertaking includes major social transformations, particularly with employees, the regions, customers and suppliers. These transformations carry a reputational and development risk for the Group, such as the exclusion from certain markets on the basis of the requirements in bid tenders and their criteria for sustainability, or the lack of competitiveness to attract talent.

- ➔ In addition to its climate ambitions, the Group is also committed to a Just Transition (see the dedicated notebook) to assist its most disadvantaged customers, the regions in which the Group operates and the employees when fossil activities are closed down especially in the case of the coal phase-out the coal phase-out. Development of renewable energy, both mature and in development, requires an increase in training that is both quantitative (number of persons trained) and qualitative (level of expertise). In this regard, ENGIE has set up training courses to enhance the skills of its employees (*Renewables Academy*).

The Group also launched a study on the transition risk related to a European alignment with a 1.5°C trajectory; the results will be communicated in accordance with the CSRD Directive.<sup>(1)</sup>

(1) Corporate Standard Reporting Directive

## PHYSICAL RISKS REVIEW – CLIMATE ADAPTATION

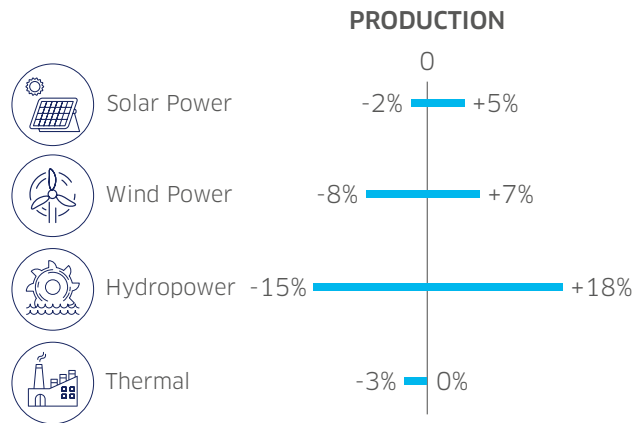
Workstream have been carried out at Engie for four years to anticipate the chronic impact of climate change on production for the different technologies as well as the impact of the evolution of extreme events on the Group's assets. They were made possible thanks to the collaboration with the Institut Pierre Simon Laplace on one side and the mobilization of the Group's operational experts on the other side.

**Evolution of production.** While renewable energy (solar, wind and hydro) is essential in building a Net Zero Carbon system, it remains the most affected by the physical impacts of climate change. In the regions where ENGIE operates, hydroelectric generation is the most exposed technology with the strong variations in annual and infra-annual generation expected between now and 2050. Conversely, thermal assets are expected to be particularly resilient in terms of production variation.

### Examples of existing impacts due to climate change

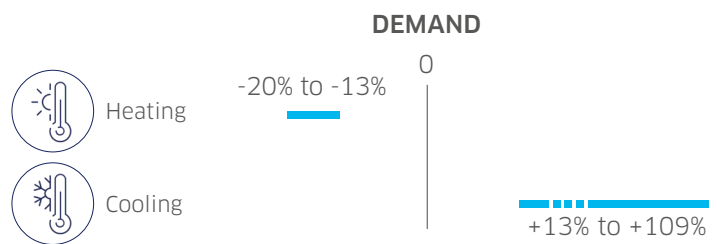


**Cold wave in Texas:** -€30 to €40 million on net income loss  
**Drought in France and Portugal in 2022:** buybacks of 1.3 TWh for 127 M€ EBIT



Minimum and maximum evolutions of ENGIE's existing sites between 2020 and 2050 according to a high warming scenario (RCP8.5).

**Change in demand.** The impact of climate change on the change in demand results in a change in heating and cooling needs. Heating needs should decline sharply, while cooling needs are expected to increase massively over the coming decades.



Evolution between 2020 and 2050 according to a significant warming scenario (RCP8.5) on median demand in the countries where ENGIE operates heating and cooling activities.

**Integrity of the facilities.** Asset integrity may be affected by the increase in the number of extreme events. For the last three years, the Group has organized itself to boost its resilience against four major risks: heatwaves, drought, floods and extreme winds. In 2023, mud slides, forest fires and extreme rainfall (for hydraulic activities) and the temperature of rivers (for thermal activities) will also be studied.

### Examples of existing impacts due to climate change



**Summer 2021:** Inability of firefighters to come to a site adjacent to Elengy because of too many local fires  
**Summer 2022:** Damage to the foundations of a solar facility in Italy due to drought

**Health of employees and subcontractors.** In addition to the risks discussed above, particular attention is paid to the impact of extreme heat and thermal stress (combination of temperature and humidity) on employees and subcontractors.

### Examples of existing impacts due to climate change

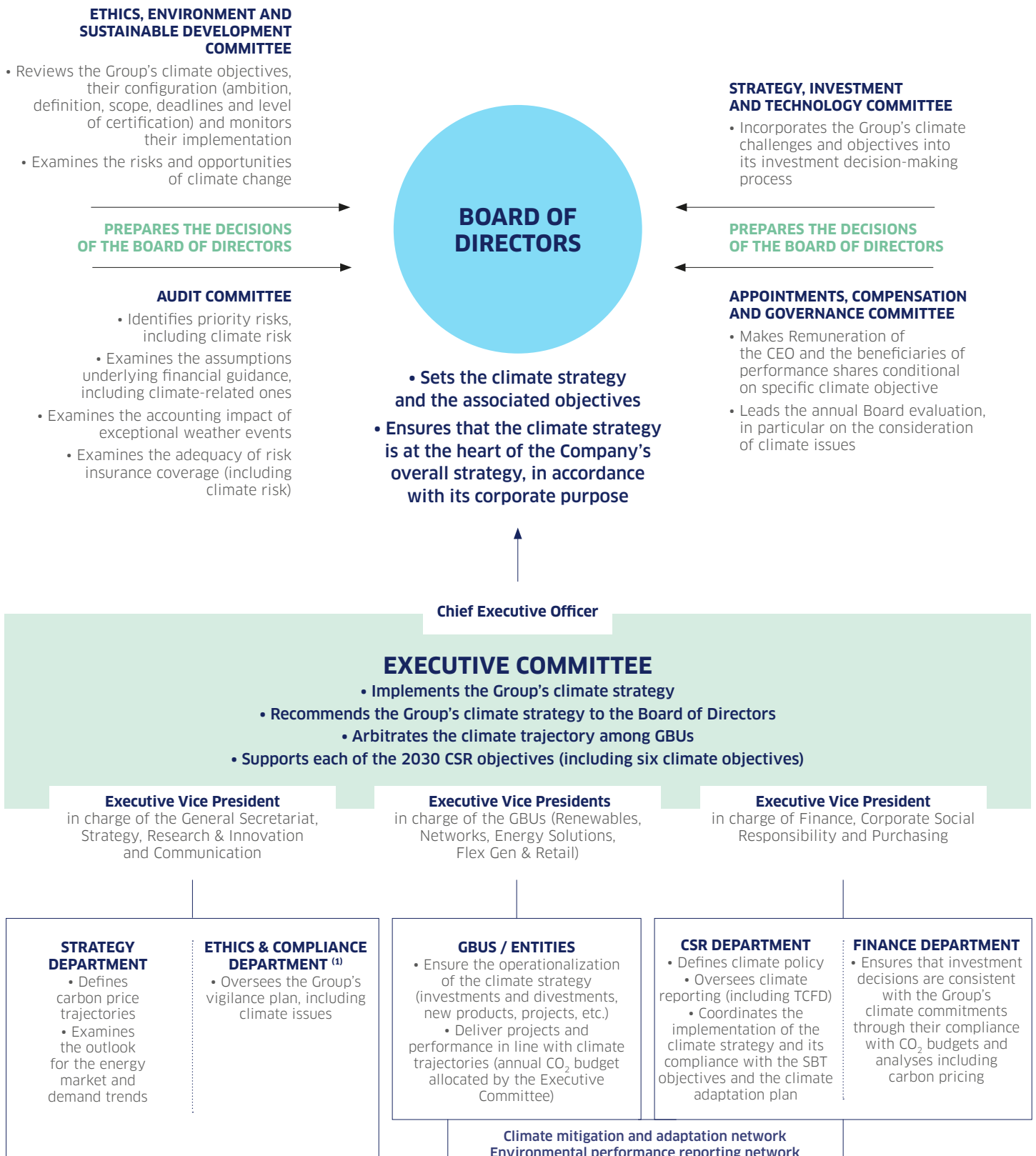


**Summer 2021:** Inability of ENGIE employees in the Middle East to come to work because of extreme heat (+50°C)  
**Summer 2022:** Support of the housing relocation of ENGIE employees in Pakistan in order to ensure continuity of service following floods

All this work allows for the development of adaptation plans for the Group's assets and activities (currently being rolled out after a pilot phase in 2022) as well as the integration of the impact of climate change in the Group's investment decision-making process (see page 76).

# CLIMATE GOVERNANCE

Implementing the Net Zero Carbon trajectory across all ENGIE’s activities required the adaptation of various governance processes. Whether at the level of corporate governing functions, investment processes or Research and Innovation, climate challenges permeate all the Group’s decision-making channels.

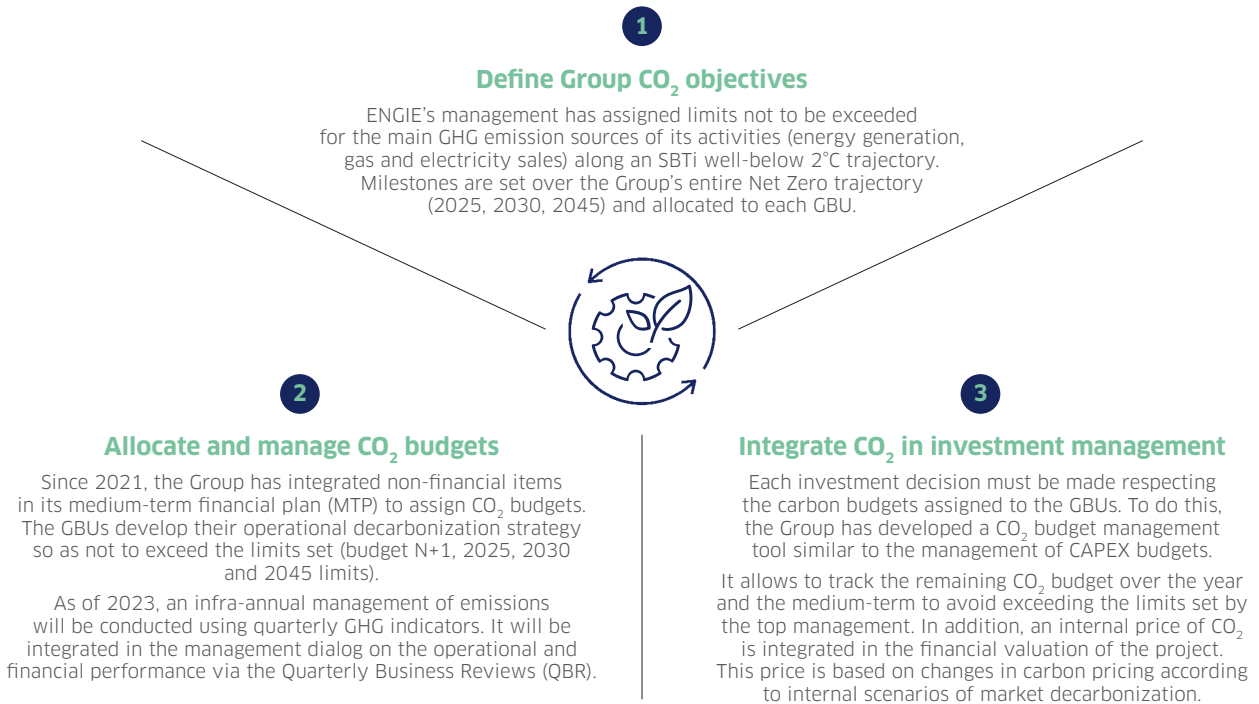


(1) Reporting to the Legal, Ethics and Compliance Department

## MITIGATION

### REDUCE OUR EMISSIONS USING HIGH-PERFORMANCE MANAGEMENT TOOLS

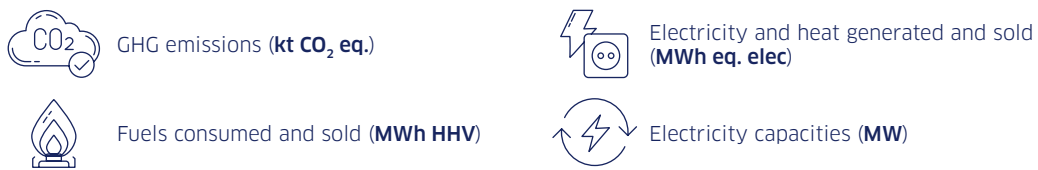
To achieve its reduction targets for CO<sub>2</sub> emissions, the Group has developed dual capital financial and carbon accounting, using management tools for both long-term strategic projections and investment decisions, as well as for infra-annual operational management.



## THE CO<sub>2</sub> MEDIUM-TERM PLAN (CO<sub>2</sub> MTP)

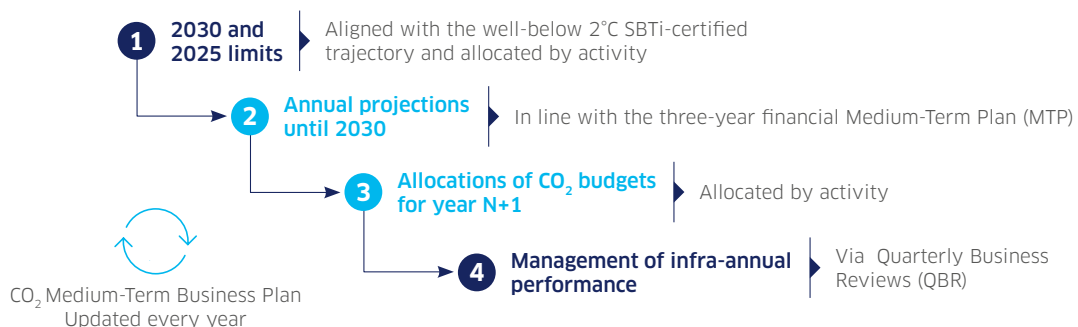
**A granular projection model, based on in-depth knowledge of the Group's operational performance.**

2030 projection of the Group's generation activities and energy sales via the consolidation of the following indicators:



- ➔ based on operational assumptions common to the entire Group, combined with internal scenarios on market decarbonization;
- ➔ at the level of each sales entity and each generation asset (as a function of their technology, load factors, country, consolidation methods, etc.).

A reliable management process that secures the execution of the Group's climate strategy:



The trajectories are consolidated in a CO<sub>2</sub> performance cockpit shared with top management.

## ADAPTATION

### PREPARE RESILIENCE BY MOBILIZING ALL EXISTING PROCESSES

1

#### Mobilize research and innovation

To reach a better understanding of climate change and its impacts on ENGIE, a partnership with the Institut Pierre Simon Laplace has been signed.

The goal is to model, as precisely as possible, future trends in energy production as a function of climate change scenarios (RCP 4.4 and RCP 8.5) as well as the impact of extreme events on all the Group's technologies in the different regions of the world.

2

#### Revise strategic processes

The impact of climate change on the Group's strategy is also studied as part of a country-by-country approach or through an analysis of the major climate regions that are of interest to ENGIE. The Group examines this impact according to four main factors: country risk, the value of existing assets, the strategic objectives for 2030 and strategic challenges specific to the countries studied in the context of the three IPCC climate scenarios (RCP 2.6, RCP 4.5 and RCP 8.5).



3

#### Integrate adaptation within the risk management process

The principal focus for increasing asset resilience is the integration of the physical risks of climate change into the Group's ERM (Enterprise Risk Management) process. Various risks are studied:

- changes in production / energy demand.
- the integrity of assets in relation with the evolution of extreme events. The reduction in insurance coverage, the increase in premiums and the risks incurred via the supply chains are also taken into account.
- the health and well-being of employees, particularly because of changes in thermal stresses.

4

#### Integrate the impact of climate change in the management of investments

Adaptation to the physical risks of climate change is embedded in the Group's investment process. Before any new investment, an analysis of sensitivity to the change in production or energy demand and the evolution of extreme events is computed.

The Group's climate road map is built on interactions with nature-related issues as well as societal-related issues, more particularly, the imperative for a just transition.

### NATURE

Responses to climate challenges are intrinsically linked to those of nature: on one hand, climate disruption is one of the five causes of the biodiversity collapse, while on the other, Nature-based Solutions are a credible response to the need for resilience. The Group is committed to limiting its impact on the other planetary boundaries with targets for biodiversity, water, forests, pollution, waste, etc. (see biodiversity notebook)

### JUST TRANSITION

The Group must meet the important challenge of a just transition that includes the human impacts of such a transformation (see Just Transition notebook).

- In several cases, the social dimension was the first reason for the sale of assets, at the request of local authorities for example.
- In the same way, the participation of the regions is a necessary condition for the successful development of renewable energy.

### RESOURCES

Questions of resource availability arise both when it comes to the end of fossil fuels and to the development of renewable energy. The Group notably conducts studies on the following issues:

- Criticalities of certain resources required for the successful development of renewable energy.
- Conflicts of usages on certain renewable resources such as wood biomass.

### DEVELOP SUSTAINABLE FINANCE

The Group is one of the leading corporate issuers of green bonds with nearly €18 billion of green bonds issued since 2014. In addition, the Group has incorporated, in its syndicated credit lines, margin adjustment mechanisms linked to compliance with annual CO<sub>2</sub> performance indicators.

### CORRELATE COMPENSATION WITH THE ACHIEVEMENT OF CLIMATE OBJECTIVES

The compensation policies for senior executives and the Chief Executive Officer incorporate criteria related to the Group's climate objectives. The Chief Executive Officer's variable compensation is therefore partly dependent on meeting the objective of reducing CO<sub>2</sub> emissions related to energy production. In 2023, this objective represents 10% of the non-financial criteria of the annual variable portion. In addition, the Group's performance shares (long-term incentives) granted to the Chief Executive Officer, all senior executives and 5,000 employees include climate criteria, with 10% of those on CO<sub>2</sub> emissions related to energy production and 5% related to the percentage of renewables in the Group's electricity mix capacities.

### TRAIN THE TEAMS IN CLIMATE CHALLENGES

The Group believes that acculturation, skills development and the commitment of its employees are a powerful lever to support the transformation of its business. Thus, ENGIE decided to create the Sustainability Academy in 2021. Through in-house courses, the academy aims to explain the Group's strategy in terms of environmental, social and governance issues, to give it meaning and to explore its implementation. E-modules, podcasts, climate and biodiversity fresks, workshops, challenges around sustainability, or learning expeditions -, a number of modules have been rolled out. In addition, the Group offers all its employees different training programs (Sustainable Business for All, Energy Revolution Toward Decarbonization), some of which dedicated to certain activities (Sustainability with my Clients in the business development and sales division).



Moreover, after the first Graduate Program "100% Renewable Energy" launched in 2020, the Renewables Academy was created in 2022 with the aim of training and increasing the skills of the Group's employees in the renewable energy businesses.

The expertise of ENGIE's Board of Directors is also a strong lever for the success of ENGIE's decarbonization strategy and achievement of its climate objectives. Over 2022, four information meetings were delivered in relation with CSR and non-financial reporting, the energy transitions scenarios, the critical impacts on its supply chain and the global energy landscape.

### ALIGN LOBBYING ACTIVITIES WITH THE PARIS AGREEMENT

In accordance with its commitment to fight climate change and accelerate the transition to a carbon-neutral economy, ENGIE is committed to ensuring that its lobbying activities and sector associations are aligned with the objectives of the Paris Agreement and the company's climate strategy.

In 2021, ENGIE carried out a review of its membership of professional and industrial associations and conducted a detailed evaluation of the alignment of these associations with the objectives of the Paris Agreement. The evaluation document is available on the Group's website. The evaluation will be updated in the first half of 2023.

### MOBILIZE RESEARCH ON DECARBONIZATION

Comprising more than 500 employees, ENGIE's Research and Innovation division contributes through its actions and initiatives to the operational performance, the integration of technologies, new solutions in strategic areas and disruptive technology.

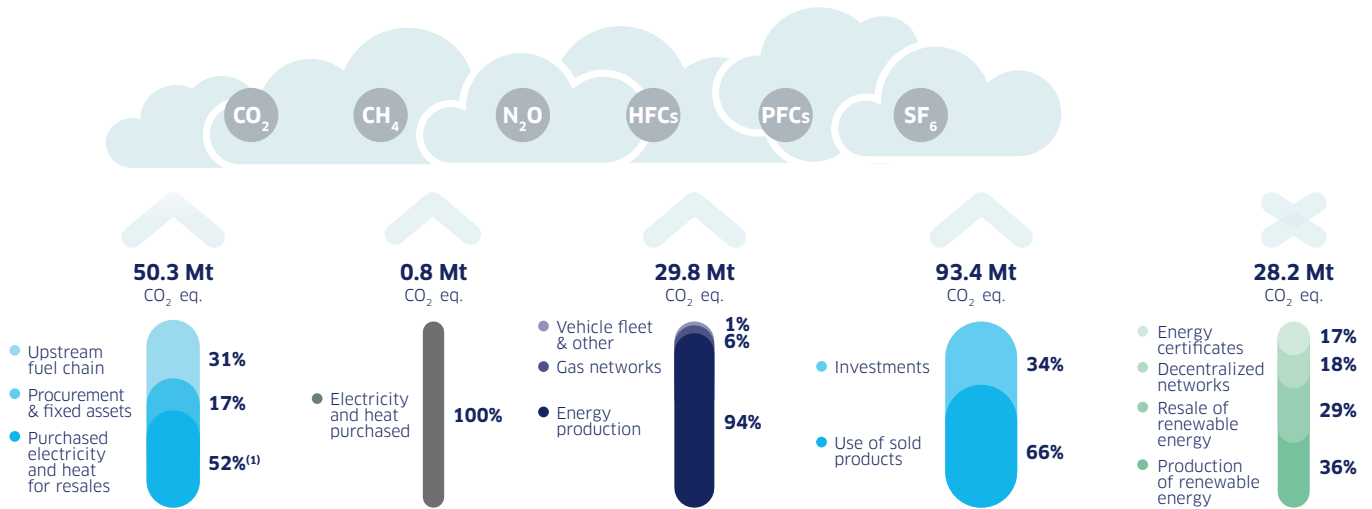
Its work is focused as a priority on the zero-carbon transition with solar and wind power and storage, the decarbonization of urban heating and cooling networks, the large-scale underground storage of hydrogen and the liquefaction of hydrogen.

The ENGIE Research and Innovation entity also finances environmental startups and develops a number of academic partnerships. The Group has notably focused on major partnerships with the Alternative Energies and Atomic Energy Commission (CEA) in France (electrolysis, photo catalysis, bio-themes and production of renewable molecules), with the National Renewable Energy Laboratory (NREL) in the United States (wind power, geothermal energy and hydrogen) and finally with EnergyVille in Belgium (solar, electro-reduction in molecules, transmission and storage of electricity).

# OUR DECARBONIZATION IN FIGURES

## ENGIE'S 2022 CARBON FOOTPRINT

33% reduction since 2017

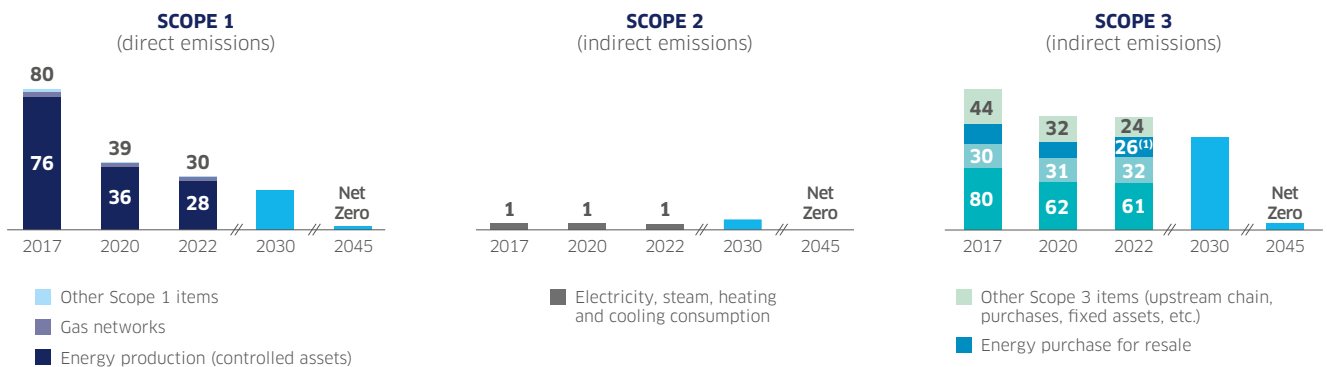


+5.3 Mt CO<sub>2</sub> eq. of biogenic emissions, related to the combustion of biomass or other organic material.

UPSTREAM INDIRECT EMISSIONS	DIRECT EMISSIONS	DOWNSTREAM INDIRECT EMISSIONS	AVOIDED EMISSIONS <sup>(2)</sup>
<b>SCOPE 3 upstream</b> <ul style="list-style-type: none"> <li>Purchased electricity and heat for resales</li> <li>Manufacture of goods, services and fixed equipment, purchased or leased by ENGIE (including their end of life)</li> <li>Upstream electricity and fuel chain (extraction and transport of raw materials)</li> </ul>	<b>SCOPE 2</b> <ul style="list-style-type: none"> <li>Production of electricity, heat or cold purchased and consumed by ENGIE for its own use</li> </ul>	<b>SCOPE 1</b> <ul style="list-style-type: none"> <li>Electricity or heat production by combustion of fossil fuels in power plants owned or controlled by ENGIE</li> <li>Methane emissions on networks controlled by ENGIE</li> <li>ENGIE vehicle fleets</li> </ul>	<b>Scope 3 downstream</b> <ul style="list-style-type: none"> <li>End consumption of gas volumes sold by ENGIE</li> <li>Investments, including the production of electricity or heat in power plants not controlled (equities) by ENGIE</li> </ul>
			<b>Decarbonization of Customers</b> <ul style="list-style-type: none"> <li>Production of energy and renewable gases</li> <li>Purchase and resale of energy and renewable gases</li> <li>Decentralized energy networks and associated services</li> <li>Marketing of energy certificates</li> </ul>

(1) The external databases used to calculate emissions related to purchased electricity and heat for resale are still under reliability improvement process. The figures could change in the coming years.  
 (2) Emissions avoided excluding the ENGIE carbon footprint

## GHG EMISSIONS SINCE 2017 (MT CO<sub>2</sub> eq.)



(1) Indicator audited for the first time in 2022



## 2030 CLIMATE OBJECTIVES

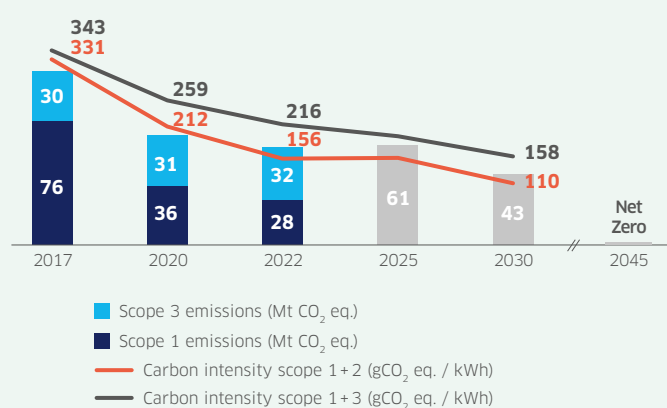
With the desire to leverage on opportunities associated with climate change challenges and to capitalize on its expertise in terms of decarbonization, ENGIE has set itself long-term as well as short- and medium-term objectives.

OUR DECARBONIZATION TARGETS	Results 2017	Results 2020	Results 2022	Objectives 2030
Carbon footprint of energy production (Mt CO <sub>2</sub> eq.) (Scopes 1 and 3.15)	107	68	60	43 Mt CO <sub>2</sub> eq.
Carbon footprint of use of sold products (Mt CO <sub>2</sub> eq.) (Scope 3.11)	80	62	61	52 Mt CO <sub>2</sub> eq.
Carbon intensity related to energy generation and consumption (gCO <sub>2</sub> eq. / kWh) (Scopes 1 and 2)	331	212	156	-66% vs 2017 110 gCO <sub>2</sub> eq. / kWh
Carbon intensity related to purchases and production of energy for resale (Scopes 1 and 3.3 and 3.15)	348	270	221	-56% vs 2017 153 gCO <sub>2</sub> eq. / kWh
Other GHG emissions, including scope 3 from procurement, capital goods and the upstream of purchased fuels and electricity (scopes 3.1, 3.2, 3.3) in Mt CO <sub>2</sub> eq.	126	103	90	-32.5% vs 2017 85 Mt CO <sub>2</sub> eq.
Methane emissions from gas networks (Mt CO <sub>2</sub> eq.) (Scope 1)	2.0	1.5	1.3	-30% vs 2017
Decarbonization of customers: emissions avoided through ENGIE products and services (Mt CO <sub>2</sub> eq.)	N/A	21	28	45
Decarbonization of the top 250 preferred suppliers (excluding energy): portion of suppliers SBT certified or aligned	N/A	15%	23%	100% of the top 250 suppliers
Decarbonization of our ways of working: GHG emissions (Mt CO <sub>2</sub> eq.) (Scopes 1, 2 and 3)	N/A	0.49	0.26	Net Zero

## Evolution of the two main indicators of the Group's decarbonization (including carbon intensity)

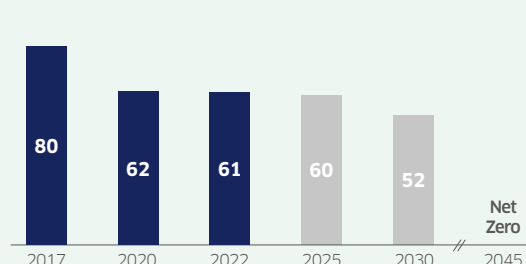
### GHG EMISSIONS FROM ENERGY PRODUCTION

(MT CO<sub>2</sub> eq.)



### GHG EMISSIONS RELATED TO THE USE OF SOLD PRODUCTS

(MT CO<sub>2</sub> eq.)



# ADDENDUM TO THE 2023 CLIMATE NOTEBOOK

Prior to its General Assembly of April 26, 2023, ENGIE has prepared this addendum to its climate notebook-TCFD report. The purpose of this document is to provide further insight into the Group's climate strategy in response to certain requests from its stakeholders.

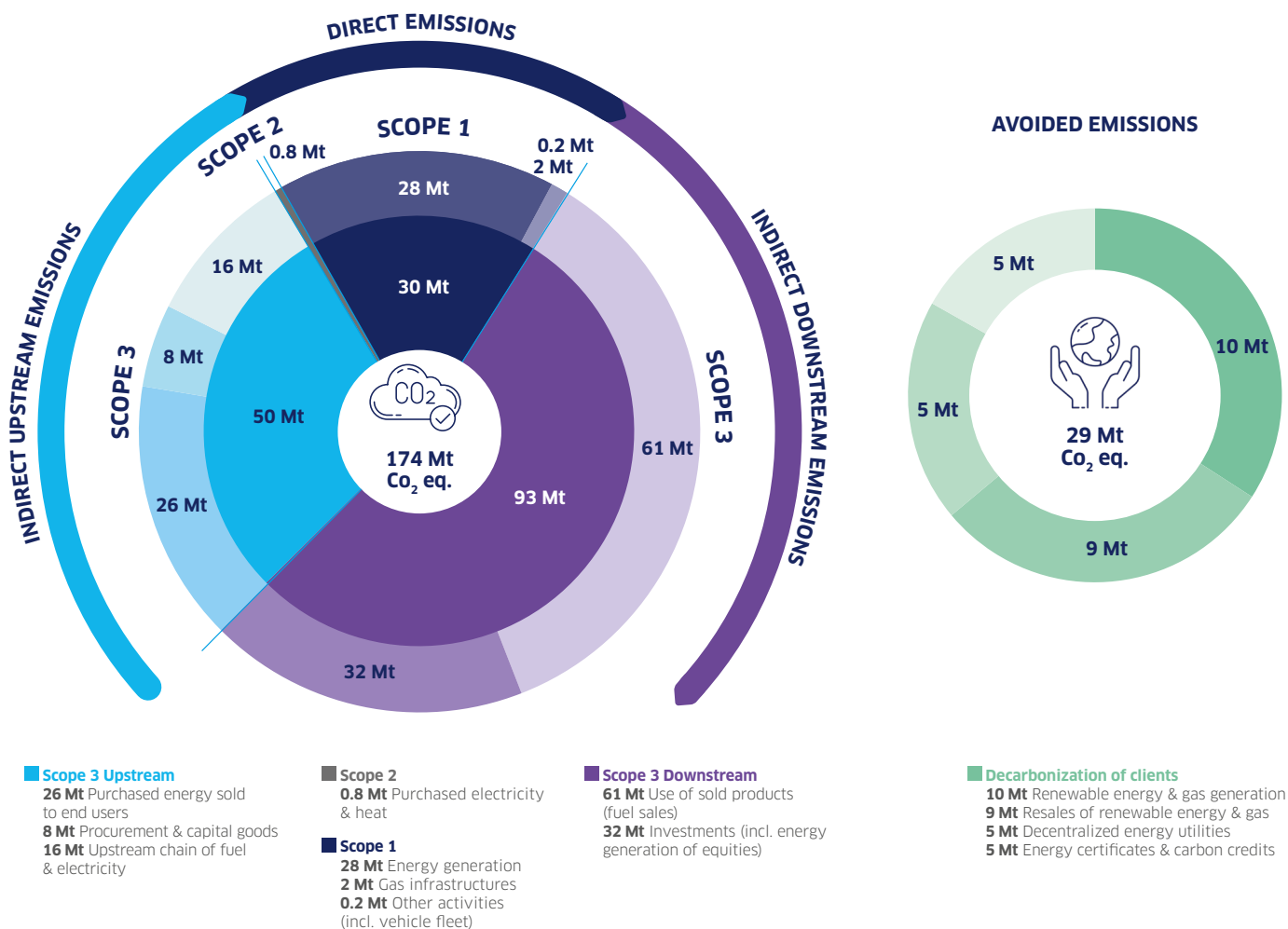
The ENGIE Group is committed to be Net Zero Carbon by 2045 on its 3 scopes, following a well-below 2°C 2030 trajectory, certified by SBTi since February 2023. To do this, the Group has set public objectives which cover 99% of its carbon footprint (scopes 1,2 and 3). Concretely, the Group, which had already withdrawn from exploration-production activities for years, has officially stated its worldwide coal phase out in 2027. To reach

Net Zero, the Group shall gradually transform its energy production model by investing massively in the production of renewable electricity. These technologies may be subject to intermittency issues, that is why they require flexibility solutions such as the storage of energy in the form of electrons or in the form of gas. In the short and medium term, the latter has the ability to be stored and distributed on demand and is an essential element

of the resilience of energy systems, particularly in periods of peak demand. The Group plans to gradually green this gas by replacing it with the sustainable alternatives of biomethane and green hydrogen.

To lead this major transformation, the Group has set growth investment objectives of €22 to €25 billion for the next 3 years, of which 75% are aligned with the European taxonomy.

**ENGIE HAS A QUANTIFIED AND CERTIFIED CARBON FOOTPRINT, OF WHICH EMISSIONS RELATED TO ENERGY PRODUCTION ACTIVITIES AND THE SALES OF GAS, ELECTRICITY AND HEAT REPRESENT MORE THAN 80%.**



ENGIE's carbon footprint on its 3 scopes (1,2 and 3), amounts to 174 Mt CO<sub>2</sub> eq. in 2022. This balance sheet has been reduced by 86 Mt CO<sub>2</sub> eq. since 2017, i.e. a 33% decrease.

**ENGIE IS COMMITTED TO ACHIEVING NET ZERO CARBON IN 2045 BY FOLLOWING A WELL-BELOW 2°C TRAJECTORY CERTIFIED IN FEBRUARY 2023 BY SBTI, THANKS TO 4 OPERATIONAL LEVERS.**

This commitment materializes first and foremost through a strategy to reduce its direct (scope 1) and indirect (scopes 2 and 3) greenhouse gas emissions. A GHG (Greenhouse Gas) steering governance has been put in place and budgets have been allocated to each of the business lines for the conduct of their operations as well as their investments (see page 75 of the integrated report - appendix TCFD) . The Group's Net Zero commitment will lead to a reduction of at least 90% of greenhouse gas emissions between 2017 and 2045. Regarding the 10% of residual emissions, ENGIE intends to minimize the volume, and is working in parallel to the definition of its neutralization strategy by increasing

carbon sinks. The priority remains for the Group to focus its efforts on actions to reduce its emissions.

The Group bases its strategy between now and 2030 on four operational levers:

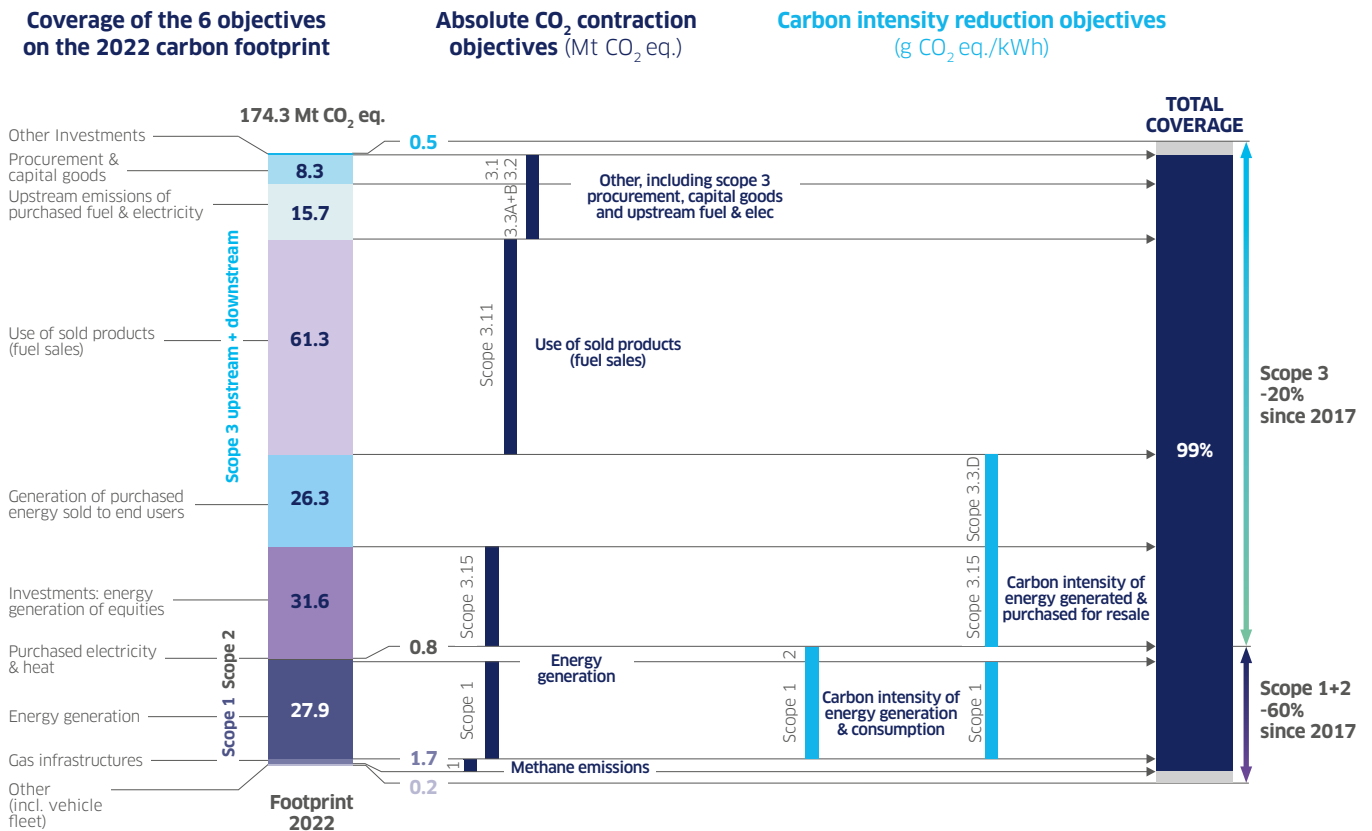
- 1. coal phase out;
- 2. development of renewable energies;
- 3. reduction and greening of the volumes of gas consumed and sold;
- 4. energy storage (details on page 32-33 of the integrated report).

The combination of these levers should enable the greening of the energy mix while correcting the effects of intermittency inherent to renewable energies through flexibility solutions such as energy storage. The use of our thermal power plants will progressively evolve so that they are mainly mobilized to meet peak demand.

**To date, 99% of the Group's emissions are covered by a decarbonization objective by 2030, either within the framework of the well-below 2°C certification, or within the framework of objectives for which the Group had already voluntarily subscribed publicly.**

As part of the SBTi certification process (2°C in 2020 and well-below 2°C since February 2023), the Group's decarbonization objectives have not been structured by scopes 1,2,3 but by type of activity (eg: energy production and consumption, gas sales or electricity sales, etc.) expressed in absolute value or in intensity (g CO<sub>2</sub> eq./kWh).

The graph below reconciles the approach by scope and by activity and thus makes it possible to visualize the portion of the carbon footprint covered by each 2030 decarbonization objective.



Figures in Mt CO<sub>2</sub> eq.  
 \* The Group also has a 2030 Net Zero objective on its ways of working (IT, business travel, employee commuting, building consumption) which represents 0.15% of the carbon footprint in 2022.

**ENGIE GOES BEYOND THE WELL-BELOW 2°C FOR WHICH IT IS CERTIFIED BY SBTi, BUT WITH A TRAJECTORY THAT DOES NOT REACH 1.5°C AT THIS STAGE**

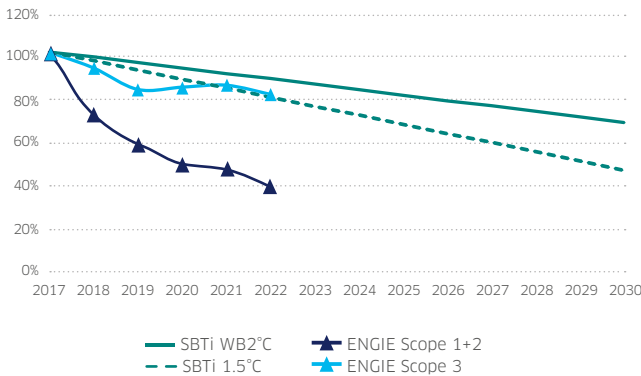
In its overall guidance (all sectors combined - graph 1) for a 1.5°C certification, SBTi requests a linear

reduction of 4.2% per year on scopes 1 and 2, as well as well-below 2°C reduction on its scope 3 (2.5% per year). ENGIE meets these criteria. However, more ambitious targets are required of companies in the Power sector (graph 2) on the generation

and sales of electricity and heat, on which ENGIE is not aligned. Below, the gap from the Group's trajectory with a global warming limited to 1.5°C according to SBTi :

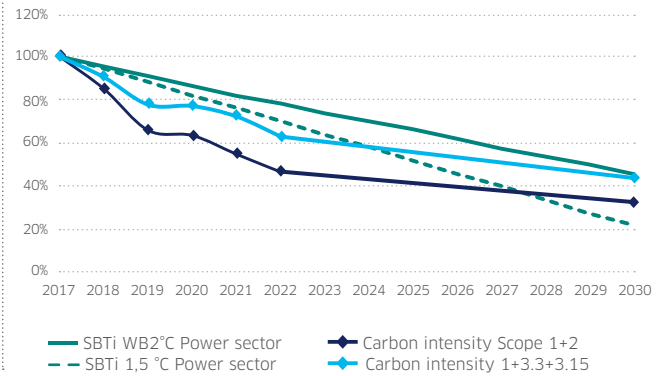
**SBTi GLOBAL GUIDANCE, ABSOLUTE GHG (Mt CO<sub>2</sub> eq.)**

CO<sub>2</sub> EMISSIONS VS ENGIE 2017 BASE YEAR



**SBTi POWER SECTOR GUIDANCE, GHG INTENSITY (g CO<sub>2</sub> eq./kWh)**

Carbon intensity VS ENGIE 2017 base year



For energy production activities, being aligned with 1.5°C would require increasing the reduction of scope 1+2 emissions related to energy production and consumption from -66% to around -78% between 2017 and 2030. Committing to this reduction would require the sale of current thermal power plants as they are necessary, in the short term, to the resilience of energy systems to which they contribute. These assets would therefore continue to emit greenhouse gases. ENGIE is in the best position to decarbonize these assets given its positioning in renewable gas technologies.

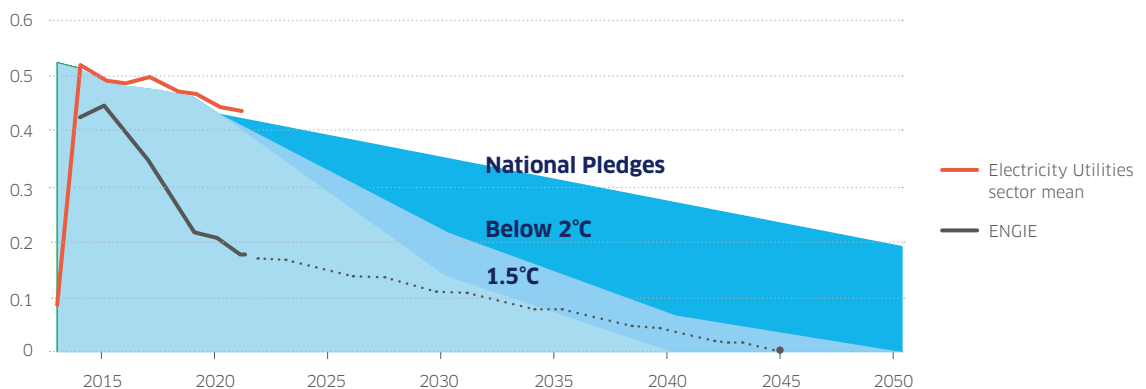
On energy sales, the 1.5°C trajectory would require increasing the reduction target linked to energy sales from -56% to around -80% between 2017 and 2030. ENGIE communicated for the first time on the emissions related to purchased energy sold to end-users in 2022. This indicator is therefore recent and requires more maturity in terms of data before exploring potential additional decarbonization levers.

To be noted, several benchmarks coexist to analyze the gap with a 1.5°C trajectory. Indeed, the Group is aligned with such a trajectory by

2030 when compared to the IEA's Net Zero Emissions 2022 scenario, reference used by the Transition Pathway Initiative to assess the alignment of companies of the energy sector (see graph below). This shows the complexity of communication on the subject, without a reference framework commonly shared by the entire international community.

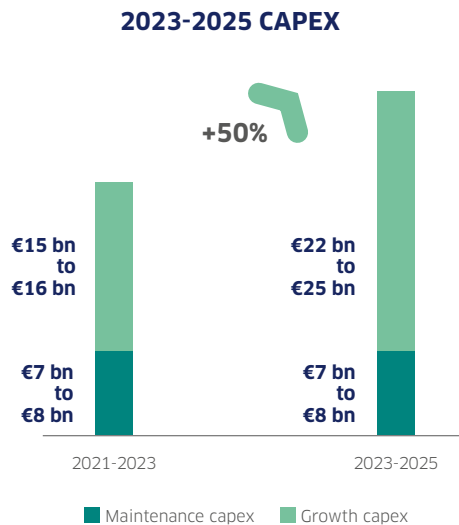
**CARBON INTENSITY**

(metric tonnes of CO<sub>2</sub> per Mwh electricity generation)



## ENGIE IS COMMITTING FINANCIAL RESOURCES IN LINE WITH ITS DECARBONIZATION AMBITION.

To deliver its ambitions, ENGIE is committed to align all of its CAPEX with its decarbonization strategy. Over the 2023-2025 period, €22 to €25 billion in growth investments are anticipated (+50% compared with 2021-2023 period).



At least 75% of these growth investments are aligned with the European taxonomy. This corresponds in particular to the development of:

- the production of renewable wind, solar and hydraulic electricity (€13 to 14 billion) ;
- production of green gases (biogas, biomethane and hydrogen) and related infrastructures as well as storage capacities such as batteries (€2 to 3 billion) ;
- infrastructures (electric transport, low-carbon mobility and heating and cooling networks) (between €1 and €2 billion).

Regarding the 25% not aligned with the European taxonomy:

- Between 5 and 10% relate to centralized or decentralized generation assets which today operate with fossil gas, but which have the capacity to decarbonize by 2045. These are either investments aimed at optimizing their efficiency

and reducing their greenhouse gas emissions, i.e. additional capacities necessary to bring flexibility to the electricity system (partly remunerated via a capacity-based remuneration mechanism)

- Between 5 and 10% concern gas infrastructures. Given the thresholds of the taxonomy, these infrastructures are not considered eligible to date, but will change over time with the increase in the volumes of renewable gas in the networks. In addition, these projects respond to requests whose execution are made mandatory by the European regulatory system: connections to new customers and strengthening and improvement of existing networks, including digitization measures.
- Finally, part of the CAPEX is not covered by the European taxonomy (between 5-10%) including for instance desalination solutions or the development of digital solutions (between €2 and 3 billion).

## THE GROUP'S DECARBONIZATION AMBITIONS ARE UNDERPINNED BY AMBITIOUS GAS GREENING TARGETS, AS WELL AS THE PROVISION OF BOTH DECARBONIZATION AND ENERGY SYSTEM FLEXIBILITY SOLUTIONS.

The Group is largely committed to the development of new technologies, and in particular to biomethane, renewable hydrogen and batteries, with in 2030:

**~10 TWh** of annual biomethane production capacity in Europe

**~30 TWh/year** of biomethane sold

**~50 TWh** of annual biomethane production capacity connected to ENGIE networks in France

**4 GW** of renewable hydrogen production capacity by electrolysis

**700 km** of network dedicated to hydrogen

**1 TWh** of H<sub>2</sub> storage capacity

**30 TWh** of hydrogen in the energy management portfolio

**+100** hydrogen vehicle charging stations

**10 GW** of battery capacity

The Group will invest ~10% of its development CAPEX between 2023 and 2025 in batteries and green molecules. Between now and 2030, €4 billion will be invested in hydrogen and €2.5 billion for biomethane connections to the networks.

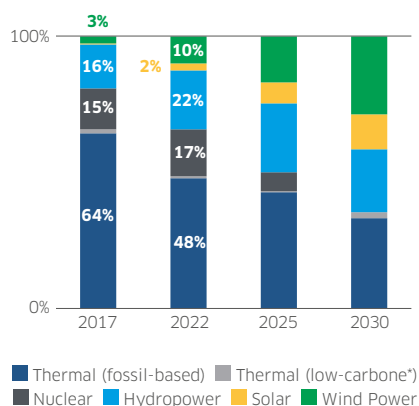
**THESE INVESTMENTS ALLOW THE GROUP TO CONTINUE TO DECARBONIZE ITS ENERGY PRODUCTION.**

Renewable electricity (wind, hydraulic and solar) will develop very widely to reach around 65% of ENGIE’s production in 2030.

Low-carbon thermal electricity (electricity from biomass, biomethane, renewable hydrogen, as well as natural gas + CCS) will accelerate its development from 2030 and will then represent between 5 to 10% of the fuel consumed.

As a reminder, the Group has an objective of 43Mt CO<sub>2</sub> eq. in 2030 linked to energy generation.

**ELECTRICITY GENERATION (TWh) MIX EVOLUTION (%)**



\* Low carbon = biomass, biomethane, hydrogen & natural gas + CCS

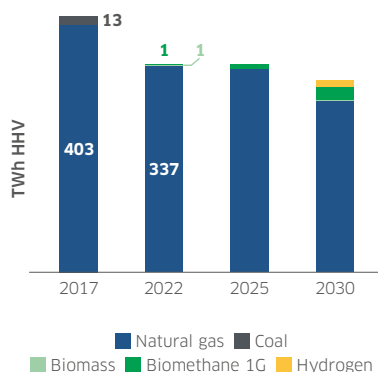
**FUEL SALES WILL ALSO BE STRONGLY DECARBONIZED.**

Three main factors contribute to the decarbonization of fuel sales: cessation of coal sales since 2017, reduction in fossil gas sales (linked to energy sobriety and efficiency as well as the transfer to other energy vectors), greening of sales (biomethane and renewable hydrogen).

This last lever will build up between 2022 and 2030, before becoming the first decarbonization lever between 2030 and 2045. The share of renewable gases should represent at least 10% of the Group’s gas sales by 2030.

As a reminder, the Group has an objective of 52Mt CO<sub>2</sub> eq. in 2030 linked to use of sold products (fuel sales).

**FUEL SALES (TWh HHV)**



Thus, in parallel with the development of renewable electricity, the Group’s energy mix is decarbonizing over the period 2017-2030, thanks to the end of coal consumption and a 30% reduction of natural gas consumption for both energy generation and fuel sales.

Furthermore, the rate of greening of the gas transported and distributed by the Group will largely depend on public policies and the regulatory framework in place. The current gas flows from the gas distribution and transport networks in France already include a share of biomethane; proportion that will grow in the coming years, to reach 100% renewable gas by 2050. ENGIE has also committed to reducing methane emissions from its controlled gas infrastructures around the world by 30% between 2017 and 2030.

**UNDERSTANDING THE CARBON FOOTPRINT OF LIQUEFIED NATURAL GAS**

Following the war in Ukraine, ENGIE had to renew 20% of its supply contracts in 2023. The strategy of renewing the Group’s natural gas supply portfolio is compatible with a decreasing demand for natural gas in Europe between now and 2045. This strategy includes the mobilization of additional volumes from the North Sea, as well as new

LNG contracts put in place with companies, particularly American ones.

Based on internal data available to date, for the entire life cycle from extraction to combustion, the difference in emissions between LNG from the USA and natural gas from Russia is estimated at approximately 10 %.

These contracts do not call into question the Group’s ability to achieve its Net Zero objective by 2045, nor its greenhouse gas emissions objectives for 2030 and end before 2045. In the meantime, they offer to the Group the flexibility to be able to reroute these volumes.

## APPENDIX: ENGIE'S CARBON FOOTPRINT IN 2017 AND 2022 (-33% BETWEEN 2017 AND 2022)

EMISSIONS (t CO <sub>2</sub> eq.)	2017	2022
<b>Scope 1</b>	<b>80,489,233</b>	<b>29 832,102</b>
Energy generation	76,377,307	27 917,242
Gas infrastructures	2,625,857	1 724,521
Methane emissions from gas infrastructures	2,069,736	1 263,608
Other emissions from gas infrastructures	556,121	460,913
Other activities	1,486,068	190,340
<b>Scope 2</b>	<b>916,698</b>	<b>751,862</b>
<b>Scope 3</b>	<b>179,335,290</b>	<b>143,706,215</b>
1. Procurement of goods and services	14,868,671	5,466,061
2. Capital goods	2,947,153	2,820,358
3. Fuel- and energy-related activities	51,867,244	41,978,623
Upstream emissions of purchased fuels and electricity	25,757,416	15,727,752
Generation of purchased energy that is sold to end users	26,109,828*	26,250,871
11. Use of sold products (fuel sales)	79,515,748	61,304,676
15. Investments	30,136,474	32,136,497
Energy generation of equities	30,136,474	31,626,021
Other investments	-	510,476
<b>TOTAL scopes 1, 2 and 3</b>	<b>260,741,220</b>	<b>174,290,178</b>

In addition, GHG emissions related to ways of working are monitored as part of a specific objective (Net Zero by 2030). This includes in particular emissions related to business travel (scope 3.6: 26,762 t CO<sub>2</sub> eq. in 2022) and employee commuting (scope 3.7: 66,222 t CO<sub>2</sub> eq. in 2022).

\* Value subject to change, audited for the first time in 2022, pending an update of the calculation methodology



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