Climate Report 2020

ENGIE

This Climate Report published in April 2020 presents the commitments of the ENGIE group against climate change

Our commitments in the fight against **climate change**

The ongoing transition in the energy sector is tantamount to a revolution. It calls for a significant change in the business models of its players. It involves moving from mature, centralized production technologies to new technologies that allow for local, sometimes intermittent production, as close as possible to the sources of consumption. As a corollary, demand management technologies, energy efficiency and the development of renewable electrical and thermal energies, with the greening of gas in particular, are becoming essential levers for meeting the challenges of the fight against climate change and the new aspirations of consumers.

Early and multidimensional engagement

The Group has sharply reduced its emissions over the past five years. Aware of its responsibility with regard to climate change, the Group sees the control of its CO_2 emissions as a major challenge, which has led it to implement an early action plan, supplemented by international objectives and commitments and subject to detailed reporting:

- promotion of the most efficient and virtuous technologies (energy efficiency, condensing boilers, heat pumps, renewable energy, etc.)
- Involvement in the construction of the international framework for the fight against climate change through joining and supporting of initiatives such as the World Bank's Prototype Carbon Fund, Caring for Climate (United Nations Global Compact) or the Task-force on Climate-related Financial Disclosures (TCFD).
- Support for initiatives to develop carbon prices (Carbon Pricing Leadership Coalition, WEF Climate Leaders, Strengthening the ETS price signal, Quinet Commission in France, etc.) and adoption in 2015 of an internal carbon price that facilitated the phasing-out of coal activities.
- Improved reporting quality and transparency.
- Adoption in 2014 of an ambitious objective to reduce the carbon intensity of our electricity production by 20% by 2020.
- Continued long-standing climate dialogue with NGOs and more recent dialogue with investors.

Anne Chassagnette
Group Director of CSR and CEO of the Rassembleurs d'Énergies impact investment fund

> "Climate change is a major challenge for the Group. This has become a business issue that feeds its service offerings and future value creation. Supported by the growing involvement of its consumers and stakeholders, as well as by the recommendations of financial players and the TCFD, the Group is now well on its way to reconciling financial performance and CSR. To this end, the Board of Directors has amended its internal rules of procedure by assigning the EESDC (Ethics, Environment and Sustainable Development Committee) the task of monitoring the risks and opportunities related to climate change."

A global vision of the challenges

Through the various renewable energy production processes (hydroelectricity, biomass, wind, solar) and the footprint of its industrial sites (gas storage, solar), ENGIE has strong interactions with biodiversity. This is why, since 2010, the Group has made commitments to preserve it. Through its act4nature commitments, the Group seeks to develop solutions that combine adaptation to climate change with biodiversity preservation.

As a direct consequence of climate change, water stress is a major challenge both for ENGIE, which has some sites that depend on access to fresh water, and for local populations. To address this issue, the Group analyzes the level of water stress at all its industrial sites each year and draws up action plans in consultation with the relevant stakeholders for sites presenting a proven risk.

Aware that air pollution is an aggravating factor in global warming, the Group works with local authorities to reduce air pollution in cities and towns, and strives to implement the best available techniques at its industrial sites to reduce nitrogen oxide, sulfur dioxide and particulate emissions as much as possible.

Ambitious targets for 2030

ENGIE is determined to be aligned with the Paris Accord and is **drastically reducing emissions related to its industrial activities. It has just obtained SBT certification for its new objectives for 2030**, a step toward the Group's carbon neutrality:

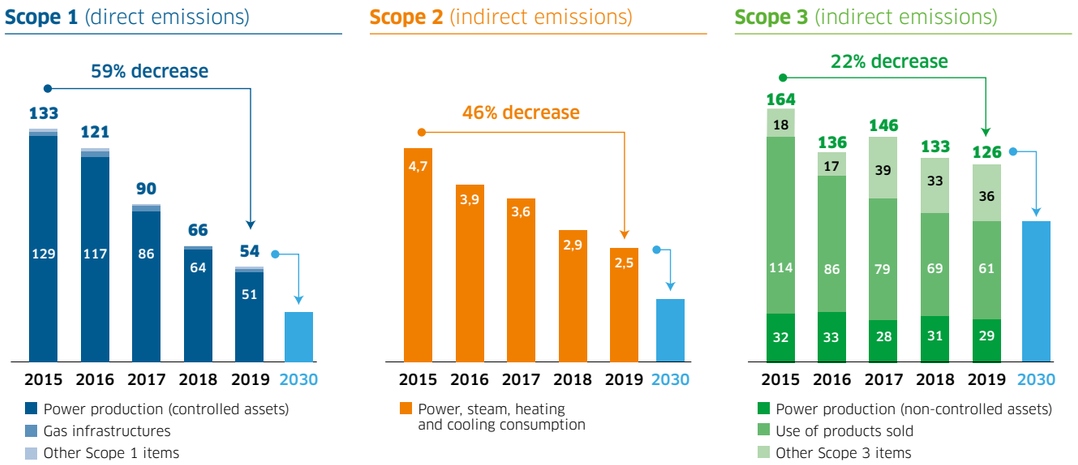
- **reduce by 52% the rate of emissions per kWh of energy production between 2017 and 2030**
- **reduce by 34% the emissions linked to the use of the Group's products sold between 2017 and 2030**

These reductions cover 96% of Scope 1 emissions and 91% of Scope 3 emissions.

The Group also acts on emissions related to its entire value chain. Its action includes defining with all its entities the neutrality trajectories of its work modes (building, IT, business travel and commuting, professional catering, etc.) and the definition of action plans with the various supply chains. With regard to its customers, ENGIE develops consulting offers and decarbonization solutions in order to become the leader in decarbonization services.

The Board of Directors has set four objectives for 2030: **two GHG emission reduction objectives for our energy production (target of 43 Mt CO_2) and for the use of products sold (target of 52 Mt CO_2),** in line with our SBT commitments, supplemented by systematic **decarbonization offers to all our customers** and the prioritization of **SBT-certified suppliers** for all our preferred suppliers.

GHG Emissions (Mt CO_2 eq)



> SEE ALSO

2019 Universal Registration Document > Chapter 3, Section 3.5.3 Methodology elements

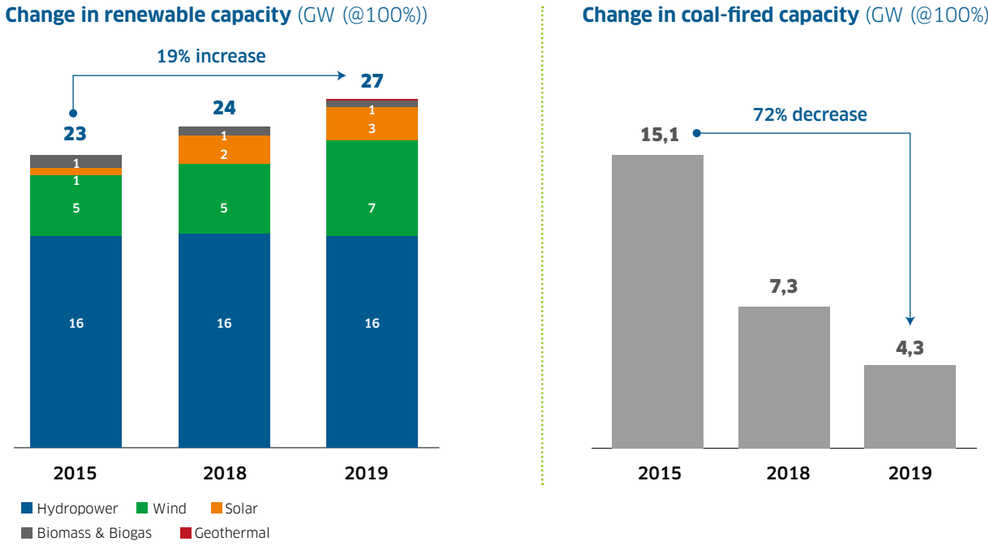
Climate-focused R&D

The challenge for R&D is to continue to guarantee access to energy vital for human activities without impacting the climate or ecosystems.

The fastest, cheapest and most reliable way to achieve carbon neutrality is through a mix of low-carbon electricity and fuels. There are many research topics. They include low-carbon electricity generation from **wind**, **solar** and **geothermal energy**, and the production of low-carbon gases such as **biomethane**, **synthetic methane**, **hydrogen** and hydrogen carriers (ammonia, formic acid and methanol). Other important levers are being investigated with technologies that reduce the amount of CO_2 in the atmosphere through **carbon sequestration**, **direct air capture** and **soil carbon sequestration**. In addition, the use of such tools as **drones**, **robots**, **sensors** and **artificial intelligence** is being studied. Lastly, intelligent and efficient uses of energy through **energy storage, smart devices and user education** can be relied upon to change behavior and habits.

At ENGIE, the programs carried out by our researchers are organized around these themes, alongside our scientific and academic partners, and aim to facilitate the deployment of these alternatives, notably by reducing their cost, so that research can help accelerate the transition toward sustainable solutions that preserve biodiversity, the climate and social inclusion.

The Group is committed to having 58% of renewable capacities in 2030 and is continuing to withdraw from coal at a steady pace.



IDDRI

Lola Vallejo
Climate Programme Director, Institute for Sustainable Development and International Relations (IDDRI) on current climate negotiations

"The global objective enshrined in the Paris Accord is to limit warming to well below 2°C. This year should see the first concrete achievement of this objective: all countries are expected to attend COP26 in Glasgow in November (now put back a year) with more ambitious emission reduction plans for 2030, as well as long-term strategies defining their decarbonization trajectory. The disengagement of some key countries from the Agreement, and the global health crisis of COVID-19, create uncertainties about the outcome. Facing the climate challenge implies that all governments put climate action at the heart of their political project, like Europe with its Green Pact, or of their economic recovery plans."

A detailed analysis of climate risks

While actively reducing its emissions and in line with the TCFD's recommendations, ENGIE anticipates the physical impacts of climate change, assesses the financial consequences and analyzes its adaptation needs.

In 2019, ENGIE worked on the transition with the development of a 2°C trajectory that was certified SBT. The Group has also adapted its governance policy and continued its dialogue with investors on their specific expectations regarding the TCFD.

Four priorities have been identified for 2020:

1/ **Continuation of the partnership with the Pierre-Simon Laplace Institute** for the definition of climate curves and the assessment of the financial impacts on the Group's facilities

2/ **narrative description of 2°C and 4°C climate scenarios** specifying the risks and opportunities for ENGIE as well as the adaptation plans considered

3/ **Review of risks that could impact the Group's industrial assets worth more than €50 million** and analysis of the current exposure of assets to floods, rising sea levels, extreme winds and temperatures and forest fires

4/ **overall statistical and financial evaluation** of the physical impacts on all the Group's assets

IDENTIFIED PHYSICAL RISKS	POTENTIAL IMPACTS	IMPLEMENTED ACTIONS
Storm Intensification 	**High winds can directly or indirectly damage solar panels, wind turbines, power lines, depending on their type and resistance, and/or generate service interruptions.**	▶ Maintenance campaigns, and consideration right from the design stage of the use of more resistant materials, taking into account the exposure of the installations ▶ Development of contingency plans to provide for continuity of service, including in the event of supply chain difficulties ▶ Insurance coverage
Increasing rainfall intensity 	**Heavy rainfall can increase the risk of flooding and affect dam flows – triggering disruptions and affecting the capacity of dams to generate power. The operation of certain other types of assets can also be affected (cogeneration, gas storage, gas transmission networks, heating and cooling networks). Landslides can also damage gas networks.**	▶ Ongoing monitoring of assets to accurately assess their degree of exposure and adjust their insurance coverage ▶ Development of nature-based solutions to better manage floods, such as natural dikes, mangrove replanting, river or wetland restoration
Increasing frequency and magnitude of droughts 	**Water capacity is likely to be affected, which could lead to a reduction in production in some regions. Some thermal and nuclear power plants that use river water for cooling may have to reduce their operation if the temperature of their discharged water becomes too high.** **Some equipment may not be able to withstand excessively high temperatures.**	▶ Development of contingency plans to provide for continuity of service ▶ Study of the implementation of alternative production technologies to make up for possible shortfall ▶ Development of nature-based solutions to better preserve water resources and reduce evaporation ▶ Identification of sites under high water stress and associated action plans
Sea level rise 	**A rise of more than one meter can impact assets located on exposed coasts.**	▶ Sensitivity studies for rises more than one meter in height ▶ Continuous monitoring of assets ▶ Study of protection solutions
Increasing frequency of forest fires 	**Specific asset exposure in South Africa, Australia, North America and Europe.**	▶ Development of contingency plans to provide for continuity of service ▶ Deployment of a policy of systematic clearing of the surroundings of production assets

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