

Methodological note on environmental indicators 2022

Extract from 2022 Universal Registration Document



3.5.3 PERFORMANCE CONTROL AND MEASUREMENT SYSTEMS, A PREREQUISITE FOR ENVIRONMENTAL RESPONSIBILITY

To monitor the implementation of its environmental policy, control environmental risks and encourage the communication of its environmental performance to stakeholders, ENGIE implements a specific reporting system that goes beyond the requirements of French law and which takes into account the Global Reporting Initiative (GRI) recommendations.

Environmental reporting is closely tied to operational performance reporting, thus becoming a management tool. The Group's Executive Committee transmits this goal of making environmental concerns an integral part of management responsibilities.

Methodological elements

Organization and scope

ENGIE conducts its environmental reporting using a dedicated tool that allows data to be reported following a defined methodology. This tool, called EARTH, is an environmental reporting IT solution used to manage the network of environmental correspondents and coordinators; to handle the management and documentation of the scope of environmental reporting; to manage data entry, monitoring and consolidation of indicators; to draft reports; and to provide the documentation necessary for producing and collecting data (reporting procedures and instructions).

EARTH is deployed in each regional Hub and thus covers the entire ENGIE organization.

The legal entities included in the reporting scope are those whose operations are relevant in terms of environmental impact and that are consolidated fully or proportionately under the rules of financial consolidation (IFRS). Legal entities whose sole business is energy trading, financial activity or engineering are therefore excluded from the scope, as are legal entities consolidated using the equity method. The entities included in the reporting report on the performance and impacts of the industrial facilities over which they have technical operational control, including facilities operated on behalf of third parties. In 2022, ENGIE nevertheless started to roll out its comprehensive survey of the entities consolidated by the equity method GBU Energy Solutions and the GBU Networks to acquire environmental-based information from a wider scope.

Thus, in accordance with the rules of financial consolidation, 100% of the impact data collected is consolidated when the entities are fully consolidated. For entities proportionately consolidated, the environmental impact data are consolidated in proportion to the Group's consolidation rate provided that it has 100% technical operational control or that, as a minimum, this is shared with other shareholders.

For disposals occurring during the year, the entities concerned complete the environmental questionnaire with the data available as of the last day of the month preceding the disposal. If it is not possible to collect all the environmental indicators, they are extrapolated on the basis of the main activity (for example, energy production for a power plant) and historical data. For acquisitions made during the year, it may happen that their environmental management system is not sufficiently mature to meet all the environmental indicators. In this case, the missing indicators are extrapolated on the basis of the main activity and indicators available in entities with a similar technical profile. A correction of these extrapolated values can be made a posteriori the following year, at the end of the first full fiscal year.

To calculate environmental management indicators such as the "share of relevant revenues covered by an environmental certification, an environmental crisis management plan, etc.," the relevant revenues is estimated for each legal entity. To obtain the relevant revenues, operations regarded as "not relevant in terms of environmental impact" (e.g. trading, finance and engineering) are stripped out of the consolidated revenues figure for each legal entity.

Procedures and guidelines are rolled out Group-wide via a network of duly mandated environmental contacts and coordinators. These procedures and guidelines at Group and regional or country level describe in detail the environmental data collection, control, consolidation, validation and transmission phases at the different levels of the organization, as well as the rules for defining the scope of consolidation. They include technical documents that provide methodological guidelines for the calculation of some specific indicators. Depending on its activities, each entity is assigned a profile that determines the indicators to answer. The list of the entities included in the scope of environmental reporting is approved by each region or country.

The definitions of the indicators used to measure the environmental performance of Group businesses have been revised based on comments made by the Statutory Auditors. They also take into account the comments by line managers represented in dedicated work groups. All the documentation is available from the Group upon request (CSR Department).

Until 2016, ENGIE would provide a "coverage rate" for each indicator published, corresponding to the response rate obtained from all the entities surveyed. Since 2017, thanks to the implementation of the new EARTH reporting tool, the coverage rate has been 100% for all indicators.

A certain number of methodological choices have been made to carry out the environmental reporting. These are described in the following five paragraphs.

General information

- The reliability of the scope of environmental reporting is a priority for ENGIE, which is evolving in an international context of business disposals and acquisitions. Before every reporting campaign, the financial scope for consolidation is compared against the information fed back by each regional Hub's environmental managers in order to check which industrial entities contributing to EARTH report to which financial entities. Moreover, reconciliations are carried out on several occasions using PERFORM, ENGIE's database which is dedicated to the operating performance of energy production facilities, to carry out an additional verification of the comprehensive nature of the scope.

- Significant environmental impacts resulting from subcontractors during services performed at one of the Group's facilities must be included in the Group's impacts except when a specific contractual clause provides that a subcontractor is liable for impacts generated at the site while providing the service. Data provided by subcontractors is not subject to systematic internal verification before being included in Group data and is the responsibility of the subcontractors alone. Regulations and legal obligations related to the environment may differ from one country to another, and certain data may thus be sometimes more difficult to gather.
- Since 2007, ENGIE has been a signatory to the CEO Water Mandate, thus demonstrating its commitment to the preservation of water resources. The water indicators are consistent with the GRI indicators and fall into four categories: withdrawal, discharge, consumption, reuse/recycling. Since 2015, the materiality of the water indicators published has been reviewed and the Statutory Auditors verify the inputs, outputs and consumption of fresh and non-fresh water as well as total consumption.

Non-GHG indicators

- NO_x, SO_x and fine particulate matters emissions are calculated locally on the basis of measurements. If discontinuous measurements are taken on a site, an average of the measurements over the last five years is taken where possible to avoid inconsistencies related to one-off measurements. For facilities burning natural gas that do not have automated measurement systems, a calculation method is provided for NO_x emissions and a default emission factor for SO_x (0.281 g/GJ LHV) and an other for fine particle emissions (0.9 g/GJ LHV) have been set up (factors recommended by the European Monitoring and Evaluation Programme - EMEP).
- As it is concerned about what becomes of the waste generated by its activities, the Group has indicators on the production and recovery of the waste generated by its activities. These are based on definitions of waste and recovery established by local regulations. To avoid erroneous data about stock, only the tonnages taken away and weighed on site are reported as disposed of. The tonnages that must be reported are wet or dry, depending on the way they are disposed of: if the waste disposed of was wet, the reported tonnages are wet and the converse for dry waste. As an exception, if the waste is permanently stored on site, the associated dry tonnages must also be reported as disposed of. In the latter case, the waste is never recovered. Waste generated by the construction or dismantling of plant and equipment, by the repowering or upgrading of facilities, and by soil rehabilitation, are not covered by the indicators for waste generated by activities.
- ENGIE operates hydraulic installations, some of which have water tanks. Given the difficulties in modeling the evaporation of each site, the evaporated water is not yet included in environmental reporting.
- Pumping storage stations are now recognized in the same way as batteries, as recommended by the European taxonomy. In this regard, electricity consumption corresponds to the difference between electricity supplied by the network and that returned to the network. The latter, as a result, is no longer accounted for under ENGIE's electricity production. This modification was applied with retroactive effect as from 2015 for the sake of consistency.
- For the sake of consistency, the factor for converting thermal power produced (GWh_{th}) into electric power (GWh_e) is set at 0.25 for incinerators and at 0.61 for all of the Group's procurement and energy production activities. This last factor was updated with retroactive effect as of 2015 for consistency purposes on the basis of EU Commission Delegated Regulation 2015/2402.
- The energy efficiency indicator covers fossil fuel and biofuel power plants. It also includes heat supplied by third parties as well as steel gases (see the note on heat and that on steel gases below).

GHG indicators: direct emissions (Scope 1)

- CO₂ emissions from the combustion of fossil fuels were calculated based on the most recent emission factors published by the IPCC (IPCC Guidelines for National GHG Inventories, Vol. 2 Energy – 2006). However, the emission factors for coal can vary greatly depending on the provenance. For this reason, each reporting entity consuming coal provides a locally calculated emissions factor. This also holds for alternative fuels for which it is not possible to use standard emission factors.
- The biomass and biogas consumed by ENGIE in its facilities generates energy that is counted as ENGIE production and, in accordance with conventions in this area, ENGIE counts CH₄ and N₂O emissions associated with their combustion when these fuels are used to produce energy but does not count CO₂ emissions.
- The Global Warming Potential (GWP) compares the warming capacity of the various greenhouse gases to CO₂. The GWP used to convert the Group's greenhouse gas (GHG) emissions to CO₂ equivalent are the latest GWP published by the IPCC (6th IPCC Assessment Report – 2022), considered on a 100-year scale. Therefore, the GWP of methane was decreased in 2022 from 36 to 29.8.
- Specific GHG emissions from energy generation in kg CO₂ eq./MWh are calculated for the regional hubs and GBU where this is a main activity: Generation Europe, North America, Latin America, Brazil, Asia Pacific, Middle East, South and Central Asia, and Turkey, Benelux, North, South and Eastern Europe, UK, France BtoB, France Networks, and France Renewable Energy.
- ENGIE carries out residual gas recovery services for its steel producing customer ArcelorMittal. This service allows ArcelorMittal to meet the majority of its electricity needs and thus reduce its GHG emissions by avoiding a high level of energy use by the network. When analyzing the GHG emissions relating to these services, ENGIE has noted that 100% of the emissions relate to the steel manufacturing process. At the end of this process, regulations require that steel producers burn residual gases, generally through flaring. ENGIE only intervenes in this process to extract energy that would otherwise have been lost to flaring, by taking over for ArcelorMittal in the burning of the residual gases, but without generating additional GHG emissions. This is why ArcelorMittal's reporting methodology includes direct emissions from the external plants to which the residual gases are delivered for recovery. This state of affairs is confirmed by Law No.2019-1147 of November 8, 2019 on climate and energy and the related decrees which set the greenhouse gas emissions ceiling for fossil-fueled power plants. Decree No. 2019-1467 of December 26, 2019 states that "Emissions from waste gases used in electricity production facilities are not recognized." Consequently, ENGIE now excludes these GHG emissions from its Scope 1

and the DK6 power plants in France and the Knippegroen and Rodenhuijze power plants in Belgium no longer report emissions associated with steel gases. As these are residual gases and not fuel with a supply chain, ENGIE does not include emissions from an upstream fuel chain in its Scope 3. With the exception of GHG emissions related to the combustion of steel gases, all environmental indicators for these entities are included in the consolidated data, as well as their energy production.

GHG indicators: indirect emissions (Scopes 2 and 3)

- The nature of heating purchases accounted for under scope 2 changed in 2022. Heating from Energy Recovery Units (ERU) or non-ERU are therefore no longer included in the calculation of Scope 2 emissions. ENGIE is therefore in line with French practices in this area, as set out in the methodology of the Syndicat National du Chauffage Urbain (the French national district heating syndicate - SNCU) in response to the annual survey on Heating and Cooling Networks. This survey serves as national statistics for the Ministry of Energy Transition and the basis of calculation for CO₂ content and the EnRR rate of each network published in the energy performance diagnosis decree. Heating purchases taken into account only relate to heating produced excluding ERU. Based on MWh purchased, an average loss rate of 16.5% supplied by the SNCU is used to recognize MWh of heat lost during transmission and calculate scope 2. In 2022, heating purchased generated excluding ERU represented 8.11% of all heating acquired. In the absence of historical data to distinguish between ERU heating and non-ERU heating, the same percentage has been applied retrospectively since 2015 for the sake of consistency.
- Two methodological changes that occurred in 2022 had a significant impact on Scope 2 in particular, with retroactive effect from 2015. It concerned the exclusion of the heat recovered from ERUs and the change in the status of pumped storage stations from electricity production facilities to batteries. As a result of the restatement that followed, Scope 2 in 2021 dropped from 1,903,934 tCO₂eq to 552,962 tCO₂eq (-71%) while scope in 2020 dropped from 2,330,625 tCO₂eq to 613,714 tCO₂eq (-73.7%). To measure the impact of these measures, the decrease compared

with 2021 was the result of the change in pumped storage of roughly -37% and by the change in heat from the ERUs of 34%.

- In the “Use of sold products (fuels sold to end-consumers, off market)” indirect emissions category, the term “end-consumer” refers to customers who use the natural gas purchased themselves. Volumes sold to trading platforms, resellers, Local Distribution Companies or other intermediaries not owned by ENGIE are, therefore, excluded.
- In 2022, three sources of emissions were added to Scope 3 to make it even more exhaustive:
 - emissions from the upstream chain of electricity purchased for resale were calculated and represent 62.5% of the energy-related emissions category not included in the “direct GHG emissions” and “indirect energy-related GHG emissions” categories and 18.3% of the total Scope 3 in 2022. Emissions of the TWh sold are determined by first calculating the emissions from ENGIE’s production. The emission factors used for this include the complete LCA, including the construction of the installations, except for combustion installations for which the factors are applied to their actual fuel consumption. This method is more precise than the calculation based on the LCA for this type of installation. These production emissions are then deducted from ENGIE’s total sales in the countries concerned, calculated on the basis of European average factors including the complete LCA, including construction;
 - following the extension of the environmental data collection to the entities consolidated by the equity method of the GBU Energy Solutions and the GBU Networks, the “investments” category now includes direct emissions from all energy production but also from other activities such as gas networks;
 - sales of biomass and biomethane to end-users are now collected to complete the “use of sold products” category by calculating biogenic emissions. This last addition also completes the first category mentioned in this paragraph with emissions from the upstream chain of these two fuels.

(1) The share of energy production from non-fossil sources has increased by 106.5% in eight years, from 28.6% in 2015 to 59% in 2022.