INCREASED EFFICIENCY AND REDUCTION OF GHG EMISSIONS

Improving carbon efficiency and reducing GHG emissions are the first pillar of Eni's decarbonization strategy, which is divided into specific short and medium term targets.

In the short term, Eni has confirmed its 2025 target of reducing emission intensity by 43% compared to 2014 in upstream operated assets, through the elimination of process flaring, the reduction of fugitive methane emissions and the implementation of energy efficiency projects. These initiatives also contribute to the objective of improving the carbon efficiency index by 2% a year by 2021 compared to 2014, which is reflected into an overall improvement of 13.2% over the period, through energy efficiency projects and initiatives counting on all Eni businesses contribution.

DIRECT GHG EMISSIONS

Eni direct emissions* (MtCO₂eq - 100% operated)



* The GHG emissions from methane venting have been revised following the refinement of the estimation methodology, in line with international methodologies developed thanks to the CCAC OGMP Partnership. Therefore, the historical series of this emission category has been revised in order to ensure the consistency of the performance indices with respect to the reduction targets of the GHGs communicated by Eni.

Eni direct GHG emissions on a 100% operated basis:

 \rightarrow In 2018 remained substantially stable (+0.5%) compared to 2017

→ About 50% is already subject to carbon pricing schemes, mainly the European Emission Trading Scheme which covers all the major mid-downstream plants

→ 56% comes from the Exploration & Production business



Half of the GHG emissions are concentrated in Europe and in particular in Italy (45% of the total). The remaining amounts relate almost exclusively to assets located in Africa (44%) and, to a lesser extent, in Asia Oceania (6%) and America (2%)



UPSTREAM EMISSION INTENSITY

FRO PROCESS FLARING



UPSTREAM FUGITIVE METHANE EMISSIONS

2021 VS 2014 TARGET

IMPROVEMENT OF THE CARBON EFFICIENCY INDEX





UPS GHG Intensity Index [tC02eq/kboe]



In 2018 the upstream GHG intensity index calculated per unit of gross hydrocarbon produced (100% operated) improved by 6% vs 2017, reaching 21.44 tCO₂eq/kboe, thanks to the reduction in emissions from flaring and the ramp-up of the gas fields in Egypt (Zohr) and Indonesia (Jangkrik), as well as the return to full production in Norway (Goliat), plants with lower emission intensity than the average of E&P assets

The progressive improvement in the GHG intensity index has allowed the absolute value of upstream GHG emissions from hydrocarbon production to remain stable in the period 2014-2018 despite the considerable increase in production (+25%). Without this improvement, Eni GHG emissions would have been almost 6 MtCO₂eq higher in 2018. The objective of reducing upstream GHG intensity will contribute to the target of improving the carbon efficiency index by 2% a year by 2021 compared to 2014. It will be pursued by all Eni business units and will include Scope 2 emissions (see the section Energy Efficiency, p. 20).

PROCESS FLARING

ZERO PROCESS FLARING OBJECTIVE AT 2025 VS 2014 The main driver to reduce the emission intensity of the upstream business is the minimisation of flaring, which in 2018 accounted for 27% of emissions from hydrocarbon production. Eni is engaged in specific programmes to reduce gas sent to flaring, through an emphasis on the production of electricity for local populations, distribution for domestic consumption or export. Where these practices are not possible, Eni has created reinjection systems in natural gas reservoirs.



Volumes of hydrocarbon sent to process flaring $({\sf MSm}^{\tt 3})$



Eni confirms its commitment to zeroing of hydrocarbon sent to process flaring by 2025, 5 years earlier than the timescale laid down by the Global Gas Flaring Reduction (GGFR) initiative promoted by the World Bank, of which Eni is a partner

In 2018, emissions from flaring fell by 8%, mainly due to zero flaring achieved in Turkmenistan (Burun field) and emergency flaring containment actions. In 2018, Eni invested €39 million in flaring-down projects, especially in Nigeria and Libya.

METHANE EMISSIONS

Eni continues its commitment to optimising its monitoring and reporting processes to reduce methane emissions from operated assets. Methane emissions are essentially concentrated in the upstream value chain (98 kton, equal to 94% of the Eni total) and are due to fugitive emissions, unburnt methane from flaring and process venting. As part of the Oil and Gas Climate Initiative (OGCI) partnership, a collective target for reducing upstream methane intensity (defined as the ratio of total methane emissions to net natural gas production) was announced in 2018 and envisages reaching a value of 0.25% by 2025.

0.25% UPSTREAM METHANE INTENSITY AT 2025 OBJECTIVE WITHIN THE OGCI FRAMEWORK



Fugitive methane emission (UPS)

0.97

2017

0.97

2018

(MtCO₂eq)

2.29

2015

1.82

2016

2.89

2014



-80%

UPSTREAM METHANE

INTENSITY

% VS 2014

UPSTREAM FUGITIVE METHANE EMISSIONS OBJECTIVE AT 2025 VS 2014



The reductions recorded so far have been achieved by implementing LDAR (Leak Detection and Repair) campaigns, which consist in carrying out on-site monitoring campaigns of plant components in order to identify and eliminate methane leaks by scheduling appropriate maintenance. It is possible to control almost entirely fugitive emissions enabling savings and improving safety in operations. To date, 69% of Eni upstream assets (calculated on the basis of production levels) are already covered by LDAR programmes.

80%

0.58

2025

CH4 emission sources - Total Eni 2018



THE IMPROVEMENT OF THE CARBON EFFICIENCY INDEX OBJECTIVE OF 2% A YEAR BY 2021 IS REFERRED TO ALL BUSINESS LINES Eni is also continuing its participation in the Climate and Clean Air Coalition (CACC) Oil & Gas Methane Partnership, a public-private partnership led by the UNEP, in which it develops appropriate plans to control methane emissions, based on the execution of monitoring campaigns and the assessment of mitigation opportunities.

COMMITMENT TO ENERGY EFFICIENCY

Carbon efficiency index

The carbon efficiency index aims to measure the intensity of direct and indirect GHG emissions (Scope 1 and Scope 2) of Eni's main productions, thus measuring their degree of efficiency in a decarbonization context. The target extends the GHG reduction targets to all business areas with an improvement of 2% a year to 2021 compared to the value of the 2014 index. This target refers to the overall Eni index, maintaining the appropriate flexibility in the trends of the individual businesses.

 $(ton CO_2 eq/kboe)$ 41.27 38.58 2% per year 38.26 36.01 33.90 31.08 2014 2015 2016 2017 2018 2019 2020 2021

In 2018, the index stood at 33.90 tonC02eq/kboe, down 5.9% from 2017 (36.01 tonC02eq/kboe), thanks to positive upstream results and a reduction in the emission intensity of refineries. This reduction already makes it possible to achieve the 2021 target, but Eni is set on pursuing an improvement of at least 2% per annum in coming years as well

In 2018, Eni invested about €10 million in energy efficiency projects, which, once in full operation, will yield energy savings of 313 ktoe/year, amounting to a reduction in emissions of about 0.8 million tonnes of CO_2eq . In the upstream sector, structural and operational interventions to make production processes more efficient made possible to add a further 19 ktoe in energy savings, equivalent to 22 kton CO_2eq compared to those achieved last year (729 kton CO_2eq compared to baseline 2014). For the other industrial sectors, works carried out in 2018, at full operation, will provide further savings of around 18 ktoe, equivalent to 42 ktons of CO_2eq of direct emissions avoided, in line with planned savings.

The commitment to improving energy performance is also demonstrated by the inclusion in Eni's HSE regulatory system of tools aligned with ISO 50001 certification schemes. Currently, about 60% of Eni's global energy consumption is due to industrial installations already ISO 50001 certified and more than 90% coverage is expected by 2022.

