

# Eni for 2021

Carbon neutrality by 2050



# Mission

We are an energy company.

- 13 15** We concretely support a just energy transition, with the objective of preserving our planet
- 7 12** and promoting an efficient and sustainable access to energy for all.
- 9** Our work is based on passion and innovation, on our unique strengths and skills,
- 5 10** on the equal dignity of each person, recognizing diversity as a key value for human development, on the responsibility, integrity and transparency of our actions.
- 17** We believe in the value of long-term partnerships with the Countries and communities where we operate, bringing long-lasting prosperity for all.

## Global goals for a sustainable development

The 2030 Agenda for Sustainable Development, presented in September 2015, identifies the 17 Sustainable Development Goals (SDGs) which represent the common targets of sustainable development on the current complex social problems. These goals are an important reference for the international community and Eni in managing activities in those Countries in which it operates.



# ENI FOR 2021

## CARBON NEUTRALITY BY 2050

### **Disclaimer**

Eni for 2021 is a document published on a yearly basis which contains certain forward-looking statements related to the different topics covered therein. Forward-looking statements are based on Eni management's reasonable assumptions and belief in light of the information available to them at the time the statements are made. Nevertheless, by their nature, forward-looking statements involve a component of uncertainty as they relate to events and depend on circumstances that may or may not occur in the future and which are, in whole or in part, out of Eni's control. Actual results, also with reference to the targets and objectives identified in the strategic planning or those of Corporate Governance, may differ from those expressed in such statements, depending on a variety of factors, including without limitation: the impact of the pandemic disease (COVID-19); the fluctuation of the demand, the offer and the pricing of oil and natural gas and other oil products; the actual operational performances; the general macroeconomic conditions; geopolitical factors and changes in the economic and regulatory framework in many of the Countries in which Eni operates; the achievements reached in the development and use of new technologies; changes in the stakeholders' expectations and other changes to the business conditions. The readers of the document are therefore invited to take into account a possible discrepancy between the estimates reported and the results that may be achieved as a consequence of the occurrence of the above. Eni for 2021 also contains terms such as, for instance, "partnership" or "public/private partnership" used for convenience only, without a technical-legal implication. "Eni" means the parent company Eni SpA and its consolidated subsidiaries.

**Images:** All the photos of the covers and the reports Eni for 2021 come from the Eni photographic archive.



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## Why read Eni for 2021?

In Eni for 2021 - A Just Transition, Eni aims to describe its contribution to a just transition, an energy transition to guarantee access to efficient and sustainable energy by achieving the goal of net zero emissions by 2050, with a view to sharing social and economic benefits with workers, the value chain, communities and customers in an inclusive, transparent and socially equitable manner, taking into consideration the different level of development of the Countries in which it operates, minimising existing inequalities.

Eni for 2021 describes Eni's path to meeting these challenges. The document is structured according to the three levers of the integrated business model, Carbon Neutrality by 2050, Operational Excellence and Alliances for Development, which aim to create long-term value for all stakeholders. Compared to the Consolidated Disclosure of Non-Financial Information (in accordance with Leg. Decree 254/2016) published within the Annual Report to provide an integrated view of financial and nonfinancial information, Eni for is a voluntary sustainability report aimed at further exploring non-financial issues by presenting concrete cases and testimonials of people with whom Eni shares its journey.

➤ [For more information: Annual report 2021](#)



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**Eni for 2021 - Other documents**

- [Eni for 2021 - A Just transition](#)
- [Eni for 2021 - Sustainability performance](#)  
Including the standards/guidelines reference table

The contents of this document are organised based on the dashboard representing the four topic areas recommended by the Task Force on Climate-related Financial Disclosures – TCFD



# Message to our stakeholders



The last few years have shown how the fight against climate change and the commitment to an inclusive, sustainable, and just development have now become essential guidelines for the global agenda, and must be top priorities for governments, civil society, investors and companies.

The conflict in Ukraine, which we are following with great attention and deep condolences, is not only causing a humanitarian tragedy but has placed Europe's energy security in the spotlight. The need for a secure yet sustainable supply makes us even more firm in our commitment to develop a fully decarbonised portfolio of products and services by 2050, creating value for our stakeholders and contributing to a socially just energy transition that ensures universal

access to efficient, safe, and sustainable energy.

In order to achieve this, Eni adopted a distinctive approach based on three fundamental levers: technology, in particular proprietary technology, which allows us to be at the forefront in anticipating market changes; new business models, to maximise the value of our activities and technologies; and finally, stakeholder alliances, an essential element to effectively deploy new business models and develop new technologies, overcoming barriers to change and involving one and all in the transformation of the energy system.

As a result of this strategic approach, we have been able to accelerate our path towards net zero by 2050, planning to reach - 35% in absolute net Scope 1, 2 and 3

emissions by 2030, and -80% by 2040 compared to 2018. Moreover, we are also bringing forward Eni's net zero operational emissions (Scope 1+2) in 2035 and setting a new intermediate target of -40% by 2025.

These intermediate objectives allow our stakeholders to keep track of our progress in the execution of our decarbonization strategy. This confirms our commitment to further align the reduction trajectory to 1.5°C scenarios.

Around 90% of our long-term objective will be achieved through the reshaping of our conventional businesses. A contribution of more than 50% will come from Upstream, where hydrocarbon production will reach a plateau in 2025 and the gas share will gradually increase to 60% by 2030 and more than



90% after 2040; we have also set a target to further reduce methane emissions in line with the Global Methane Pledge. About 40% of the decarbonisation objective will come from midstream actions and downstream transformation. CO<sub>2</sub> capture and storage projects will be complementary in reducing emissions that are difficult to abate with existing technologies, and less than 5% of the total reduction of value chain emissions in 2050 will be related to compensation through offsetting, mainly from Natural Climate Solutions.

By transforming our processes, we will expand our range of decarbonised energy products and services, with the aim of reducing Scope 3 emissions. The Industrial Transformation Plan envisages a progressive increase in Plenitude's decarbonised electricity supply, with more than 15 GW of installed renewable capacity by 2030, rising to 60 GW by 2050. Moreover, we'll continue with the conversion of traditional refining into circular economy hubs along with a significant increase in biorefining capacity, which will reach 2 million tonnes by 2025 and 6 million over the next decade, while maintaining our commitment to make our biorefineries palm oil free starting 2023. In this direction, we have announced the creation of an entity dedicated to Sustainable Mobility able to offer innovative services and green, bio and low carbon products, with "vertical" integration that will guarantee procurement of agro-bio feedstock through the development of dedicated supply chains. To fund this growth, we will progressively increase the share of investments for new energy solutions and services, reaching almost 30% by the end of the plan, doubling to 60% by 2030 and up to 80% around 2040.

2021 was an important year in which we made significant prog-

ress in decarbonisation thanks to our pragmatic approach that leverages existing technologies, assets and expertise, to offer industrial and economically sustainable solutions that can be applied immediately, while investing in break-through technologies that can change the energy paradigm in the long-term.

Together with Commonwealth Fusion System, a company in which we are the main shareholder, we have achieved an extraordinary milestone in the field of magnetic fusion, a technology with the potential to produce enormous amounts of energy, safely, virtually inexhaustibly and with zero emissions.

In the UK, the HyNet project for CO<sub>2</sub> transport, capture and storage, operated by a consortium of companies led by Eni, has been selected by the UK government as one of the decarbonisation initiatives of greatest interest. Plenitude has achieved very solid results with more than 2 GW of renewable generation capacity installed and under construction, thanks to a series of targeted acquisitions of wind and photovoltaic plants in Spain, France and Italy, synergistic with its commercial presence and expansion in the US. Eni's participation within sector initiatives and partnerships represents an opportunity to build synergies and promote shared solutions in response to climate challenges. We work with the academic world, civil society, institutions, and businesses to promote the energy transition, exploiting and generating knowledge, sharing best practices and supporting initiatives to create value for Eni and its stakeholders.

Thanks to the ambition of our strategy and the rigorousness of our methodology, our pathway towards net zero was recognized by the Transition Pathway Initiative as aligned with the 1.5°C scenario

in the long term. The recent Net Zero Benchmark of the CA100+ investor coalition identified Eni, for the second year running, as one of the most aligned companies.

The company's transformation into a leader for the energy transition of the sector is also driven by a strong corporate governance structure, which ensures an adequate and comprehensive assessment of the risks and opportunities related to climate change. The strategic commitment to carbon footprint reduction is part of the company's essential goals and is therefore reflected in the variable remuneration plans of Eni's management.

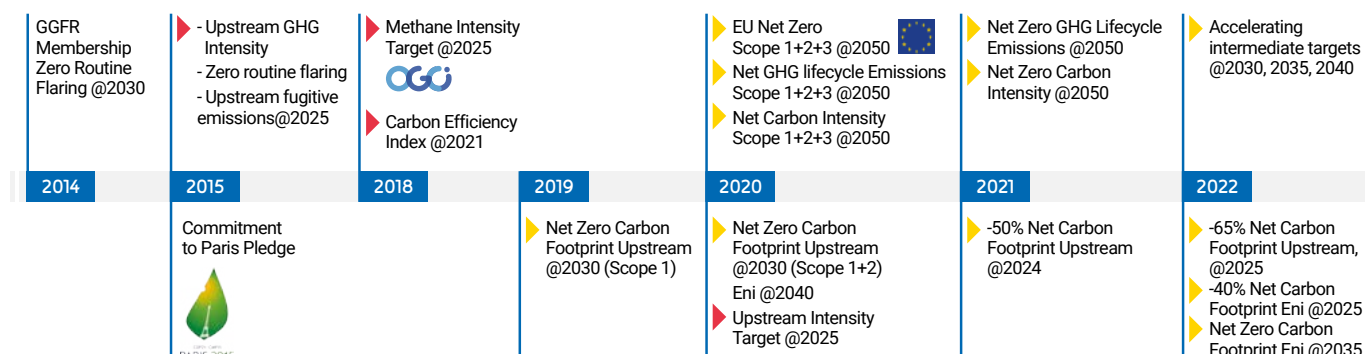
The commitments we are taking leverage on the fruitful dialogue we have in place with our stakeholders, with whom we engage to increasingly align our strategy with the objectives of the Paris Agreement and improve our climate reporting. For the fifth consecutive year, we are publishing this report in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), in which Eni is involved since its foundation, showing the milestones of our journey towards carbon neutrality and the robustness of our commitment and actions, in line with the requests of our stakeholders to whom it is addressed. Some steps towards a decarbonised world have already been taken, but many are still ahead of us and, as Eni, we are determined to move forward in our path to achieve carbon neutrality by 2050.

**Claudio Descalzi**

*Chief Executive Officer*



# The path of Eni's climate commitments



▶ Equity boundary

▶ 100% operated boundary

## GLOSSARY

GHG emissions	Scope 1	GHG emissions from sources attributable to the company's assets (e.g., combustion, flaring, fugitive, venting).
	Scope 2	GHG emissions resulting from the generation of electricity, heat and steam purchased from third parties and consumed in the company's assets.
	Scope 3	GHG emissions produced along the upstream and downstream value chain of the company's activity (e.g. suppliers and customers).
	GHG Lifecycle Emissions	Scope 1+2+3 emissions related to the value chain of energy products sold in accordance with the reporting methodology defined by Eni.
Metrics	Net Carbon Footprint	<p>Eni: the indicator considers GHG Scope 1+2 Emissions from assets operated by Eni and third parties accounted for on an equity basis and net of offsets from Natural Climate Solutions.</p> <p>Upstream: the indicator considers GHG Scope 1+2 Emissions associated with hydrocarbon development and production activities operated by Eni and by third parties, accounted for on an equity basis (Revenue Interest) and net of offsets from Natural Climate Solutions.</p>
	Net GHG Lifecycle Emissions	The indicator refers to GHG Scope 1+2+3 Emissions associated with the value chain of energy products sold by Eni, including both those deriving from its own production and those purchased from third parties, accounted for on an equity basis and net of offsets from Natural Climate Solutions.
	Net Carbon Intensity	The indicator, accounted for on an equity basis, is defined as the ratio between Net GHG Lifecycle Emissions (see Net GHG Lifecycle Emissions definition) and the energy content of the products sold by Eni.
	Emission intensity	<p>Indicators include direct GHG emissions (Scope 1) which are derived from assets operated by Eni, include CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O and are accounted for on a 100% basis:</p> <p>Upstream: indicator focused on emissions associated with the development and production of hydrocarbons. Denominator refers to gross operated production.</p> <p>R&amp;M: indicator focused on emissions related to traditional refineries and biorefineries. The denominator refers to incoming processed quantities (raw materials and semi-finished products).</p> <p>EniPower: indicator focused on emissions related to electricity and steam production from thermoelectric plants. The denominator refers to equivalent electricity produced (excluding the Bolgiano cogeneration plant).</p>
	Carbon Efficiency Index	Operational efficiency expresses the intensity of GHG emissions (Scope 1+ 2 in tonCO <sub>2</sub> eq.) of the main industrial activities operated by Eni divided by the production (converted by homogeneity into barrels of oil equivalent using Eni's average conversion factors) of the single businesses of reference, thus measuring their degree of operating efficiency in a decarbonisation scenario.





## Main results 2021

INDICATOR	UNIT OF MEASUREMENT	2019	2020	2021
Net Carbon Footprint Upstream (GHG emissions Scope 1 and 2)	Mton CO <sub>2</sub> eq	14.8	11.4	11.0
Net Carbon Footprint Eni (Scope 1 and 2)	Mton CO <sub>2</sub> eq	37.6	33.0	33.6
Net GHG Lifecycle Emissions (Scope 1, 2 and 3)	Mton CO <sub>2</sub> eq	501	439	456
Net Carbon Intensity (Scope 1, 2 and 3)	gCO <sub>2</sub> eq/MJ	68	68	67
Renewable installed capacity	MW	190	351	1,188
Capacity of biorefineries	Mton	1.1	1.1	1.1
Incidence of gas production on total equity production	%	52	51	52

Indicators accounted for on equity basis.

UPS GHG emission intensity Direct GHG emissions (Scope 1)/Gross hydrocarbon production 100% operated (UPS)	tCO <sub>2</sub> eq/kboe	19.58	19.98	20.19
Upstream fugitive methane emissions	ktonCH <sub>4</sub>	21.9	11.2	9.2
Total volume of hydrocarbons sent to routine flaring	Billion Sm <sup>3</sup>	1.2	1.0	1.2
Carbon efficiency index(Scope 1 and 2)	tCO <sub>2</sub> eq/kboe	31.41	31.64	31.95

Indicators calculated on 100% of data for operated assets

R&D expenditure	€ million	194	157	177
of which related to carbon neutrality (including circular economy)	€ million	102	74	114



### REFERENCE SCENARIO

Limiting greenhouse gas emissions into the atmosphere and at the same time meeting the growing energy needs arising from the growth of population and economy, while ensuring adequate access to energy, are the main challenges facing the energy sector. The energy transition may take place along different paths, but the enforcement and support of Government and technological evolution will be key to making it possible.

A significant step forward for international climate engagement was the agreement reached in 2021, during the 26th Conference of the Parties (COP26), with the Glasgow Climate Act. The importance of limiting the temperature increase to 1.5°C compared to pre-industrial times was reaffirmed, in line with the most recent indications of the Intergovernmental Panel on Climate Change (IPCC), requiring member countries to contribute to reducing CO<sub>2</sub> emissions by 45% by

2030 compared to 2010, to reach net zero "around mid-century" and to substantially reduce non-CO<sub>2</sub> GHG emissions. Furthermore, in the context of international cooperation, COP26 defined and approved the guidelines necessary to make the international carbon credit market operational, a necessary tool to stimulate Government and business action for energy transition.

Government commitments are part of the scenarios developed by the International Energy Agency (IEA): the Stated Policies Scenario (STEPS) which includes all policies implemented and planned by Governments, and the Announced Pledges Scenario (APS) which analyses the implications in terms of emissions and energy demand if all the net zero targets announced by Governments are actually met and on schedule. At the same time, the IEA develops two backcasting scenarios (SDS - Sustainable Development Scenario

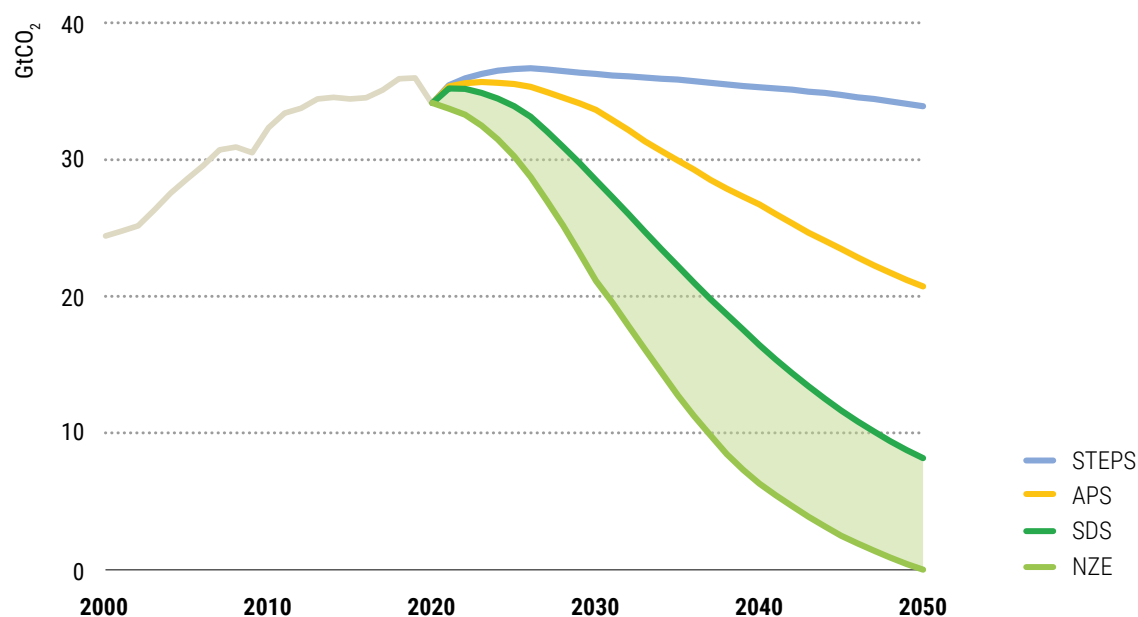
and NZE2050 - Net Zero), which, by pursuing the main energy objectives for sustainable development (including full access to energy and limiting the temperature increase to well below 2°C), identify in reverse all the actions needed to achieve them.

About 40% of emissions from the energy sector is from electricity generation, with coal accounting for more than 75% of the sector's emissions. According to IEA, a trajectory compatible with the Paris Agreement's goals of limiting the global temperature increase to well below 2°C would require emissions from the energy sector to halve by 2040, to reach about a quarter of the current level by 2050, and then target net zero emissions by 2070.

In the STEPS scenario, global energy demand is expected to increase by 21% in 2040 and 26% in 2050 compared to 2020. While the share of oil and gas is expected to remain almost unchanged, the role

According to IEA, a trajectory compatible with the Paris Agreement's goals of limiting the global temperature increase to well below 2°C would require emissions from the energy sector to halve by 2040, to reach about a quarter of the current level by 2050, and then target net zero emissions by 2070 (SDS scenario)

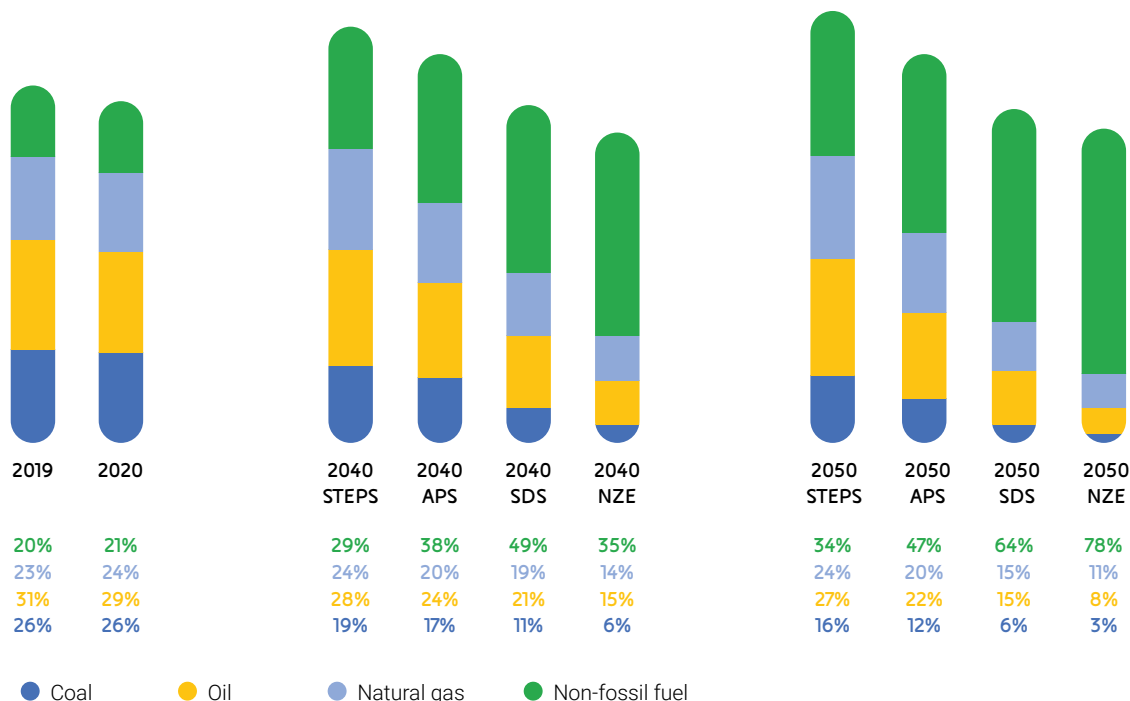
### CO<sub>2</sub> EMISSION REDUCTIONS IN IEA SCENARIOS - WEO 2021



Source: International Energy Agency (2021), World Energy Outlook 2021, IEA, Paris



ENERGY DEMAND BY SOURCE - IEA WEO 2021



Source: International Energy Agency (2021), World Energy Outlook 2021, IEA, Paris

of coal will decrease (19% of the energy mix in 2040, 16% in 2050 vs. 26% in 2020) in favour of low-carbon sources (mainly solar and wind). In this scenario, CO<sub>2</sub> emissions will continue to grow until 2030 and then gradually decline; this trajectory is compatible with an average temperature increase of 2.7°C by the end of the century compared to pre-industrial levels. In the SDS Scenario, global energy demand in 2040 is projected to fall compared to today (-1.5% vs. 2020, -5.3% vs. 2019). Fossil sources will maintain a central role in the energy mix (oil & gas will cover 40% of the mix in 2040 versus 53% in 2020), particularly natural gas, due to its lower environmental impact and its greater efficiency compared to other fossil fuels. Compared to STEPS scenario, the energy mix will move towards low carbon sources, with

an increasing share of nuclear and intermittent sources that will increase from about 2% today to 17% in 2040 and to 26% in 2050, while coal will fall more rapidly (6% of the energy mix in 2050 versus 16% in the STEPS scenario). The SDS trajectory sees CO<sub>2</sub> emissions decreasing at a CAGR of -4.6% between 2020 and 2050 to a level 75% below that of 2020, consistent with an average temperature increase of +1.65°C by the end of the century compared to pre-industrial levels. In the NZE2050 scenario, developed for the first time in 2021, global energy demand by 2040 is expected to decrease compared to today (-9% vs. 2020, -13% vs. 2019), despite the projected doubling of the global economy and population growth of 2 billion. In the NZE scenario, the challenging climate targets require an

immediate fall in the demand for oil (72 Mb/d in 2030 and 24 Mb/d in 2050 versus around 90 Mb/d in 2020), with an average annual decline in the period 2021-2050 of more than 4%. Gas consumption is expected to peak by the middle of this decade, when the gas phase-out in the electricity sector will begin. This path focuses on decarbonisation levers such as electrification, efficiency and a radical change in consumer behaviour. In the next ten years, emissions may be reduced by existing technologies already established on the market, however, for the following decades, also solutions which are still in the prototype or demonstration phase and not yet available on a large scale will have to be adopted.

In the NZE2050 scenario global energy demand by 2040 is expected to decrease compared to today



# Governance

## ROLE OF THE BOARD

The Board of Directors<sup>1</sup> (BoD) plays a central role in managing the main aspects linked to climate change. In particular, based on a proposal by the Chief Executive Officer (CEO) or the competent bodies, the BoD examines and/or approves:

- goals related to climate change and energy transition, an integral part of business strategies;
- the portfolio of Eni's top risks, including climate change;
- Eni's medium-long term plan, aiming to guarantee the sustainability of the business portfolio over a thirty-year time frame, in line with the provisions of the Strategic Four-year Plan;
- the short- and long-term Incentive Plan<sup>2</sup>, with objectives linked to the decarbonisation strategy for the CEO and management<sup>3</sup>;
- annual sustainability results, the sustainability report (Eni for) and the HSE review, including performance on decarbonisation;
- institutional reporting, which includes the Interim Consolidated Report and the Annual Report (including the Consolidated Disclosure of Non-Financial information);
- the relevant projects and their progress, on a semi-annual basis, with carbon pricing sensitivity<sup>4</sup>;
- within the Annual Report, resilience tests on all upstream cash generating units (CGUs), applying the IEA low carbon scenarios;
- strategic agreements, including climate change-related initiatives.

With regard to the composition of the Board of Directors, several Directors have experience and expertise in ESG issues, including energy transition, which was also examined during the Board's self-assessment<sup>5</sup>. Immediately after the appointment of the Board of Directors and the Board of Statutory Auditors, a board induction programme was implemented for directors and statutory auditors, which covered, among other topics, issues related to the decarbonisation process and the environmental and social sustainability of Eni's activities.

## COMMITTEES OF THE BOARD OF DIRECTORS

### SUSTAINABILITY AND SCENARIOS COMMITTEE (SSC)

- ▶ It examines issues concerning the integration of strategy, development scenarios and the long-term sustainability of the business, analysing scenarios for the preparation of the strategic plan. During 2021, the SSC explored topics related to climate change in all meetings, including updates on the activities of the CFO Taskforce for SDGs, the hydrogen supply chain and technologies, the OpenEs<sup>6</sup> platform, forestry activities, carbon pricing, Eni's commitment to safeguarding water resources, Eni's results in the ESG indexes and ratings (or sustainability ratings), the Sustainability-Linked Financing Framework, a focus on Eni's insurance activities related to climate change, the resolutions on climate and disclosures to shareholders' meetings of reference peers with a focus on "Say on climate"<sup>7</sup>, the insights on the activities of Carbon Capture and Storage (CCUS) and human rights<sup>8</sup>.

### CONTROL AND RISKS COMMITTEE (CRC)

- ▶ It supports the BoD in its periodic review of the main company risks, including climate change, and the review of the periodic financial and non-financial reports, including impacts of climate risks in terms of portfolio resilience and the related balance sheet evaluations, the HSE review and the audit plan.

### REMUNERATION COMMITTEE

- ▶ It proposes to the BoD the general criteria for short and long-term incentive plans for the CEO and managers with strategic responsibilities, which include, for 2022, specific objectives related to environmental sustainability and energy transition, including the reduction of GHG emissions (scope 1 and scope 2 equity), and the development of electricity generation from renewable sources as well as the implementation of relevant projects of Circular Economy.

### NOMINATION COMMITTEE

- ▶ It supports the BoD in the appointments for which it is responsible, in the self-assessment process and in the formulation of guidelines for the shareholders, expressing an opinion on the criteria and the related designations also in relation to the necessary competences.

1 To learn more about Eni's organisational structure, please refer to the "Company" section of the corporate website ([www.eni.com](http://www.eni.com)) and to the [Corporate Governance and Shareholding Structure Report 2021](#).

2 For more information see the [Report on remuneration policy and remuneration paid](#), published on [eni.com](http://eni.com).

3 Managers with strategic responsibilities: Managers reporting directly to Eni's CEO and Chairman and members of the Company's Management Committee.

4 For more information, see paragraph at [page 20 on Portfolio Resilience](#).

5 For more details on board competencies see [Eni for - A Just Transition, page 19](#).

6 For more information see <https://www.openes.io>.

7 Say on climate: the campaign, launched at the end of 2020, asks companies to put their Climate Action Plan to the advisory vote of the shareholders' meeting.

8 For further information, please refer "Sustainability and Scenarios Committee" in the [Corporate Governance and Shareholding Structure Report 2021](#).



## ROLE OF MANAGEMENT

Issues connected with the management of risks and opportunities related to climate change and energy transition are considered and integrated in all the stages of the business cycle, starting from negotiations for the acquisition of mining rights up to decommissioning. In order to facilitate the energy transition path, since 2020 Eni has benefited from a new organisational structure with two General Departments that will follow separate but synergic paths for the execution of Eni's strategy towards Net Zero by 2050: Natural Resources is committed to maximising the value of its oil & gas assets in line with the progressive decarbonisation of the portfolio; Energy Evolution is committed

to developing the new renewable and circular economy businesses, and to implementing the industrial transformation of legacy assets. The strategic commitment to carbon footprint reduction is one of the Company's essential goals and is therefore also reflected in the Variable Incentive Plans for the CEO and company management<sup>9</sup>.

Issues related to climate change, energy transition and to the medium-long term plan are managed through dedicated structures reporting to the CFO with the aim of overseeing the process of defining Eni's climate strategy and the related portfolio of initiatives as part of long-term planning in line with the commitments made by the company with respect to the

decarbonisation of all products and processes by 2050. The management, and more generally Eni's personnel, is constantly informed on the progress towards carbon neutrality through various sharing opportunities, for example: Live streaming in which the CEO explains the strategies and objectives of the Strategic Plan; Business review: a quarterly meeting between the Chairman, the CEO and his direct reports, to monitor progress on achieving objectives and implementing the strategic guidelines; HSE review; Annual and interim results; Quarterly report on top risks; CEO blog in which the CEO comments on the main events on the corporate intranet and creates a direct communication channel with all employees.

## VARIABLE INCENTIVE PLANS

### SHORT-TERM INCENTIVE PLAN

- ▶ The Short-Term deferral Incentive Plan (IBT) 2022 is closely linked to the Company's strategy, as it is aimed at measuring the achievement of annual objectives in line with Eni's new decarbonisation targets. In particular, the indicator related to Upstream GHG emission reduction is used, on an equity basis, which includes indirect emissions (Scope 2) and non-operated activities. Starting 2021, the IBT plan also includes the incremental renewable installed capacity indicator, replacing the indicator related to exploration resources, to support the energy transition strategy. Each of these targets is assigned to the CEO with a weight of 12.5% and to all company managers according to percentages in line with the attributed responsibilities.

### LONG-TERM INCENTIVE PLAN

- ▶ The 2020-2022 Long-Term Stock based Incentive Plan provides for a specific objective on issues of environmental sustainability and energy transition (total weight 35%), based on the targets related to decarbonisation, energy transition and circular economy processes, in line with the objectives communicated to the market and with the aim of aligning with the interests of stakeholders.

<sup>9</sup> For more details see the [Remuneration Report 2022](#).





# Risk Management

## INTEGRATED CLIMATE RISK MANAGEMENT MODEL

The risk and opportunity management process connected with climate change is part of the Integrated Risk Management (IRM) Model, developed by Eni with the aim of supporting the management in the decision-making process by strengthening awareness of the risk profile and related mitigations. Roles and responsibilities for the IRM process are as follows:

- the BoD defines the nature and level of risk compatible with the strategic objectives also with a view to business sustainability in the medium-long term, and outlines the guidelines for identifying, assessing, managing and monitoring risks;
- the Control and Risk Committee

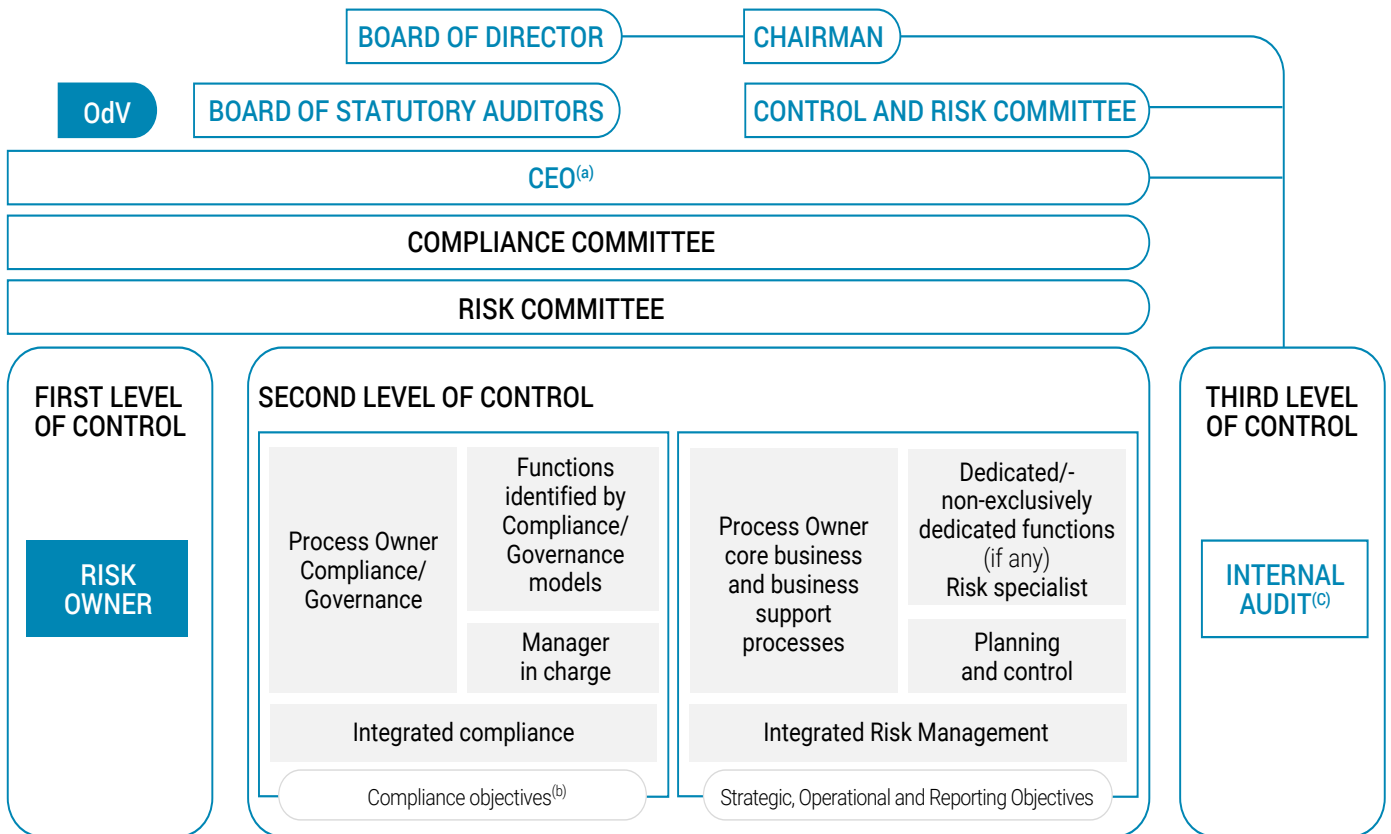
supports the BoD in defining the guidelines for risk management and examining the main risks. The Board of Statutory Auditors monitors the effectiveness of the IRM process;

- the Chief Executive Officer implements the BoD guidance; in particular, using the IRM process it ensures the identification, assessment, management and monitoring of the main risks, submitted to the BoD on a quarterly basis, taking into account the operations and specific risk profiles of each business line and individual processes, for an integrated risk management policy; it also ensures that the IRM process evolves in line with the dynamics of the business and the regulatory context;

the Risk Committee, chaired by the CEO, advises the CEO on the main risks: for this purpose, it examines and expresses opinions at the request of the CEO on the main findings of the IRM process.

The IRM model ensures the detection, consolidation and analysis of all Eni's risks and supports the BoD in checking the compatibility of the risk profile with the strategic objectives, also from a medium to long-term perspective. The process is continual and dynamic and provides for the following sub-processes: (i) risk governance, methodologies and tools, (ii) risk strategy, (iii) integrated risk management, (iv) risk knowledge, training and communication. The IRM process starts with the contribution to the definition of Eni's

The Integrated Risk Management (IRM) Model aims to support the management in the decision-making process by strengthening awareness of the risk profile and related mitigations.



(a) Director in charge of the internal control and risk management system.

(b) Including financial reporting reliability objectives.

(c) The Internal Audit Director reports hierarchically to the Board of Directors, and on its behalf, to the Chairman, without prejudice to his/her functional reporting to the Control and Risk Committee and to the CEO, as Director in charge of the Internal Control and Risk Management System.



risk strategy and continues with analysis of the risk profile underlying the plan, the identification of de-risking objectives and strategic treatment actions<sup>10</sup>.

During 2021:

- two cycles of assessment were carried out: the Annual Risk Profile Assessment that involved 125 subsidiaries in 43 Countries in the first half, and the Interim Top Risk Assessment in the second half;
- three monitoring cycles were performed on the top risks in order to analyse risk trends and the implementation status of treatment actions put in place by the management.

Results from the assessment and monitoring cycles are presented to the Board of Directors and the

Board of Statutory Auditors on a quarterly basis.

The portfolio of Eni's Top Risks is made up of 20 risks, grouped into strategic, external and operational risks; climate change in particular is one of Eni's top strategic risks analysed, assessed and monitored by the CEO as part of the IRM processes.

### RISKS AND OPPORTUNITIES RELATED TO CLIMATE CHANGE

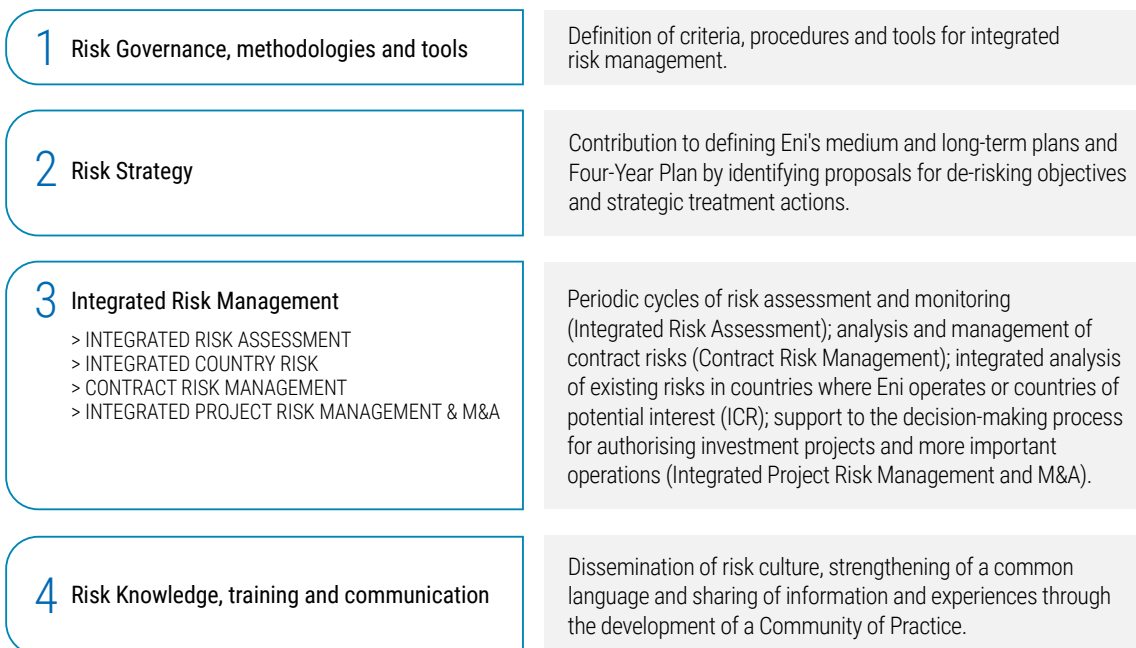
Risks related to climate change are analysed, assessed and managed by considering the aspects identified in the TCFD recommendations, which refer both to the risks related to energy transition (market scenario, regulatory developments, legal risk, techno-

logical evolution and reputational issues) and to the physical risks (acute and chronic) associated with climate change. The analysis is carried out using an integrated and cross-cutting approach that involves specialist departments and business lines and considers the related risks and opportunities.

**Market scenario.** The global energy landscape is facing major challenges in the coming years, balancing the growth in energy consumption with the urgency of tackling climate change. In order to model the evolution of the energy system in the light of these challenges, the International Energy Agency (IEA) develops two regulatory scenarios<sup>11</sup>, and two backcasting scenarios<sup>12</sup> (SDS and NZE2050), which, by pursuing the sustainable develop-

## IRM - INTEGRATED RISK MANAGEMENT

Risk-based process



<sup>10</sup> For more information on Eni's integrated risk management model see [Eni for - A just transition](#) (page 30).

<sup>11</sup> For more information see [Reference Scenario at pag. 8](#).

<sup>12</sup> Defined-target scenario.



During COP26, a package of decisions (Glasgow Climate Pact) was defined, representing an important step forward in climate negotiations

ment objectives, identify in reverse all the actions needed to achieve them. Based on these latter two scenarios, Eni stress-tests the recoverability of the O&G assets book values, assessing risks and opportunities related to climate change.

**Regulatory developments.** Adoption of policies suitable to sustain the energy transition towards low carbon sources could have significant impacts on the evolution of Eni's business portfolio. In particular, at COP26, a package of decisions (Glasgow Climate Pact) was defined, representing an important step forward in climate negotiations. Among the most relevant topics, the importance of limiting the increase in temperature to 1.5°C by the end of the century compared to the pre-industrial era is recognized, and to this end an objective of global CO<sub>2</sub> emissions reduction of 45% by 2030 vs. 2010 has been defined, targeting net zero "around mid-century". At the same time, several countries have announced net zero commitments that now cover over 90% of global emissions. In this context, the EU has also committed to achieving carbon neutrality by 2050 and has increased its GHG emission reduction target from 40% to 55% in 2030 vs. 1990,

making it binding with the Climate Law approved in June 2021. In the same year, the European Commission published the Fit for 55 package, which revises the main climate directives in line with the new 2030 target, within a broader review of its climate policies (i.e. the EU regulation on taxonomy and hydrogen and decarbonised gas packages).

**Legal risk.** At a global level, there has been an increase in judicial and extrajudicial actions brought by public and private parties against major Oil & Gas companies, including Eni, concerning their liability for climate change and human rights impacts, as well as for so-called 'greenwashing' practices to the detriment of consumers and investors. The remedies brought by the promoters of such actions are wide-ranging, varying, for example, from a request for modification of the decarbonisation strategy, to compensation for damages for historical emissions, to an injunction or a requirement to rectify communications to the public possibly associated with financial penalties.

**Technological developments.** The need to build a final energy consumption model with a low carbon footprint will favour technologies for GHG emissions capture and

reduction, production of hydrogen from gas as well as technologies that support methane emissions control along the Oil & Gas production chain. In this way it will be possible to aspire to a rapid and realistic transition from a predominantly fossil-fuelled scenario to one with a low carbon footprint. Furthermore, technological evolution in the field of energy production and storage from renewable sources and in the field of bio-based activities will be a key lever for the industrial transformation of Eni's business.

**Reputation.** Awareness-raising campaigns by NGOs and other environmentalist organisations, shareholder resolutions during meetings, disinvestments by some investors and class actions by groups of stakeholders, are increasingly oriented towards greater transparency on the tangible commitments of Oil & Gas companies to energy transition.

**Physical risk.** Intensification of extreme and chronic weather phenomena in the medium to long-term could cause damage to plants and infrastructures, resulting in an interruption of industrial activities and increased recovery and maintenance costs.

## FOCUS ON

### PHYSICAL RISK AND ENI'S ADAPTATION ACTIONS

Regarding extreme climate phenomena, such as hurricanes or typhoons, Eni's current portfolio of assets, designed in accordance with applicable regulations to withstand extreme environmental conditions, has a geographical distribution that does not result in concentrations of high risk. With regard to more gradual phenomena such as sea level rise or coastal erosion, vulnerability of Eni's assets affected by the phenomenon is assessed through specific analysis, as in the case of Eni's assets in the Nile Delta area, where the impact is however limited, and it is therefore possible to implement preventive mitigation interventions to counter the phenomenon.

In parallel with its commitment to ensuring the integrity of its operations, Eni, as a responsible operator, is addressing the issue of adaptation to Climate Change, also regarding the socioeconomic and environmental impacts in the Countries where it operates. To this end, in 2021 a project was completed in collaboration with FEEM (Fondazione Eni Enrico Mattei) and the Pisa Institute of Management (IDM), for the assessment of the main risks/opportunities connected to Climate Change, which led to the development of guidelines and measures which provide methodological support for the identification and implementation of adaptation actions in Countries of interest.





**TRANSITION RISKS**



**OPPORTUNITIES**

**ENI RESPONSE ACTIONS – DOCUMENT SECTIONS**  
(more details in the sections of the document)

**LOW CARBON SCENARIO**

- Uncertainty about market development for new products
- Changing consumer preferences (e.g. decline in global demand for hydrocarbons)
- Loss of profits and cash flow
- "Stranded asset" risk
- Impacts on shareholders' returns

- Opening up of new market opportunities for decarbonised products
- Development of renewables and low carbon energy
- Growing demand for hydrogen
- Diversification of raw materials for biorefineries and the chemical industry and development of new products
- CCS development

- Enhancement of the upstream portfolio with a view to decarbonisation
- CCUS - Carbon Capture Utilisation and Storage
- Natural Climate Solutions
- Renewable energy projects and Plenitude
- Sustainable mobility
- Hydrogen
- Magnetic confinement fusion
- Partnerships for Carbon Neutrality by 2050



**POLICY AND LEGAL**

- New regulatory requirements imposing a potential increase in operating and investment costs
- New regulatory requirements imposing a potential reduction in demand for hydrocarbons
- Introduction of new climate disclosure requirements
- Proceedings relating to climate change

- Development of renewables and low carbon energy
- Diversification of raw materials for biorefineries and the chemical industry and development of new products
- Reassessment of assets from a circular perspective
- Energy efficiency interventions with the adoption of BAT

- Enhancement of the upstream portfolio with a view to decarbonisation
- Renewable energy projects and plenitude
- Hydrogen
- Sustainable mobility
- Commitment to energy efficiency
- Climate advocacy
- Transparency and leadership in climate disclosure



**TECHNOLOGICAL DEVELOPMENTS**

- Reduction in hydrocarbon demand through technological breakthroughs
- Profitability and specific risks of transition technologies

- Development of renewables and low carbon energy
- Development of new products and services through R&D and innovation
- Partnerships for the development of technological solutions to cut emissions

- Role of research and development in the energy transition
- Renewable energy projects and plenitude
- Sustainable mobility
- Hydrogen
- Magnetic confinement fusion
- CCUS - Carbon Capture Utilisation and Storage
- Partnerships for Carbon Neutrality by 2050



**REPUTATION**

- Change in consumer preferences
- Impact on stock price
- Deterioration of industry/company appeal for talent attraction & retention
- Extrajudicial proceedings related to climate change

- Development of renewables and low carbon energy
- Positive impact on stakeholder perception (e.g. rise in share price)
- Eni's distinctive positioning in climate benchmarks
- Partnerships for decarbonisation

- Strategy
- Partnership for carbon neutrality by 2050
- Climate advocacy
- Value chain approach



# Strategy

Eni wants to be a leader of the energy sector with a long-term strategy towards carbon neutrality in 2050

Aware of the ongoing climate emergency, Eni wants to be a leader of the energy sector's with a long-term strategy towards carbon neutrality in 2050, in line with scenarios compatible with keeping global warming within 1.5°C at the end of the century.

In 2022, Eni relaunched its strategy with a distinctive approach that leverages:

- **Proprietary and breakthrough technologies:** developing solutions to

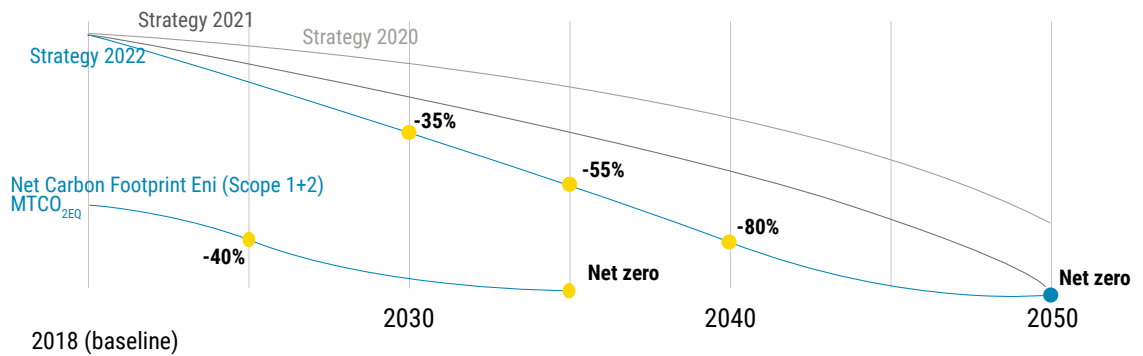
deliver decarbonised energy, ensuring Eni a leading position in the energy transition through research and technological innovation.

- **New business models:** creating dedicated entities with tailored business models, focused on customers and the capacity to independently access capital markets to accelerate the transformation towards net zero.
- **Alliances with stakeholders:** working alongside stakeholders for the

decarbonization of the energy system and a fair and inclusive transition that ensures shared value.

As a result of this distinctive approach, Eni has relaunched its GHG emission reduction targets, with new short and medium-term targets that accelerate the path towards carbon neutrality in 2050, confirming Eni's commitment to further align its reduction trajectory with low carbon scenarios.

## NET GHG LIFECYCLE EMISSIONS



The new objectives include:

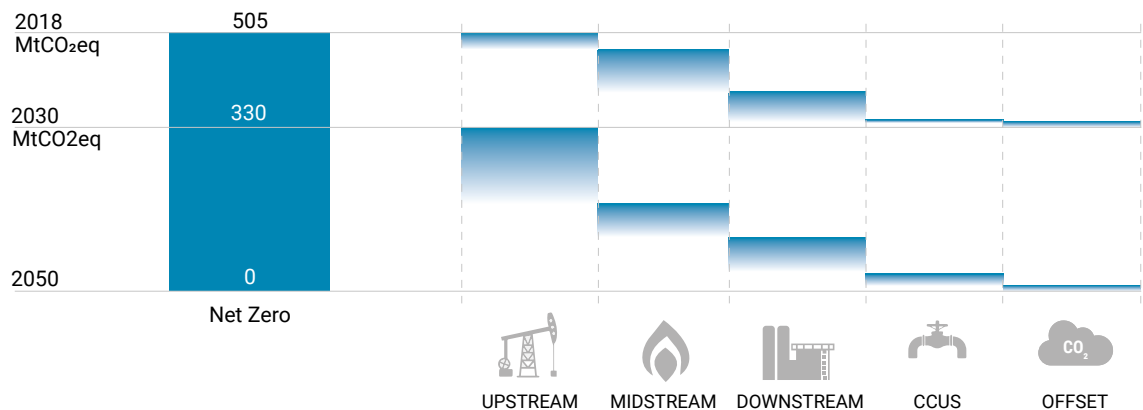
- -35% Net GHG Lifecycle Emissions (Scope 1+2+3) @2030 vs. 2018, -55% @2035 and -80% @2040;
- -15% Net Carbon Intensity of energy products sold @2030 vs. 2018 and -50% @2040;
- Eni Net Zero Carbon Footprint (Scope 1+2) brought forward to 2035, with a new target of a 40% reduction @2025 vs. 2018

Eni's strategy towards Net Zero is supported by an industrial transformation plan that winds its way through the distinct and synergistic paths of the two business groups: Natural Resources, to optimize the upstream portfolio value enhancing its sustainability through progressive decarbonization and Energy Evolution, committed in expanding bio, renewable

and circular economy businesses. Whithin this group will lie the new company dedicated to sustainable mobility, which will be positioned along the entire value chain of low carbon product as a multi-energy, multi-service and increasingly customer-focused company. The actions, mostly already underway, include:

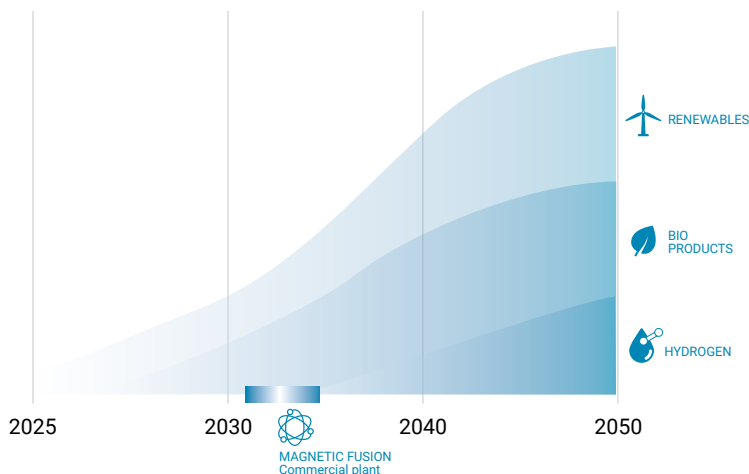
- decarbonisation of the O&G port-

## BUSINESS LEVERS FOR DECARBONIZATION





### SALES OF ENERGY SOLUTIONS



folio, confirming targets for reducing operational emissions and minimising methane emissions in line with the Global Methane Pledge<sup>13</sup>;

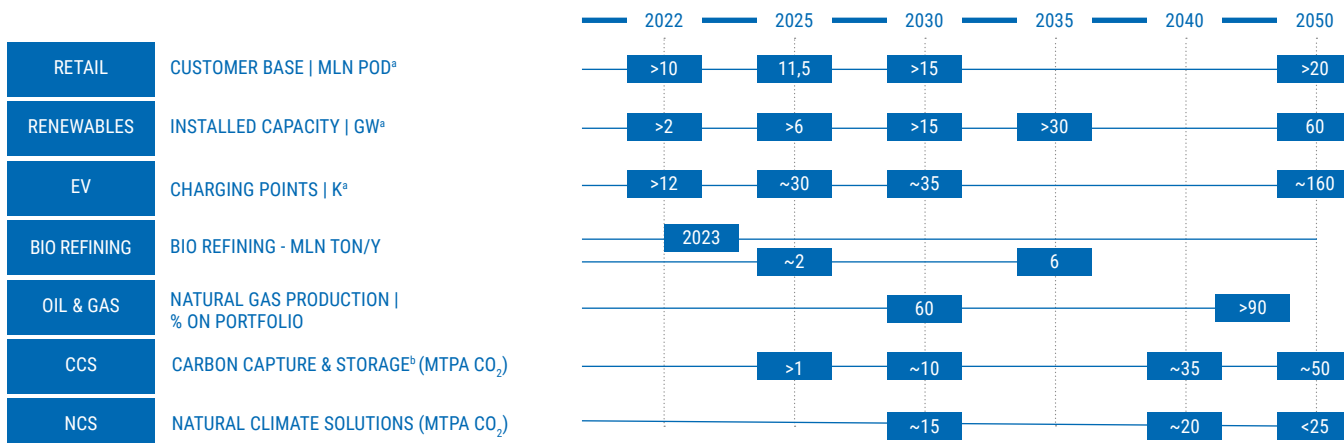
- reduction in oil volumes in the medium to long term with a progressive growth of gas share up to 60% by 2030 and over 90% after 2040;
- conversion of traditional refining into circular economy hubs, with an increase in biorefining capacity up to 6 million tonnes by 2035 (around 2 million tonnes in 2025), palm oil free from 2023;

- creation of entities dedicated to sustainable mobility which bring together biorefining and marketing activities (service stations), to offer customers a multiple range of green, bio and low carbon products and other services;
- "vertical" integration of the organic business to secure feedstock supply through the development of agro-hubs, with a target of 35% integration by 2025;
- Plenitude supply of decarbonised electricity (by 2030) and gas (by 2040) in relation to a growth in the customer base to > 15 million in

2030 and above 20 million in 2050, with more than 15 GW of renewable capacity installed by 2030, rising to 60 GW by 2050 and development of EV charging points with a target of 30,000 by 2025 and around 160,000 by 2050;

- strengthening of technological solutions for the use of waste (e.g. biomethane, waste to fuel), recycling of end products (e.g. chemical and mechanical recycling) and chemicals from renewable sources (e.g. bioplastics and biofertilisers);
- production of electricity from natural gas with CO<sub>2</sub> capture;
- plan to implement the first commercial magnetic confinement fusion plant in the next decade, exploiting the competitive advantages built in recent years, potentially paving the way for an unlimited source of clean energy;
- progressive increase in the production of new energy carriers, including low-carbon and green hydrogen, which will contribute around 4 MTPA by 2050;
- increasing CO<sub>2</sub> storage capacity for hard-to-abate emissions from Eni and third-party industrial sites, reaching a storage capacity of about 50 MtCO<sub>2</sub> in 2050;

### MAIN BUSINESS TARGETS



a) Plenitude 100%

b) Including CCUS services for third parties

13 Collective target to reduce methane emissions by 30% by 2030 (vs. 2020), supported by more than 100 countries at COP26.



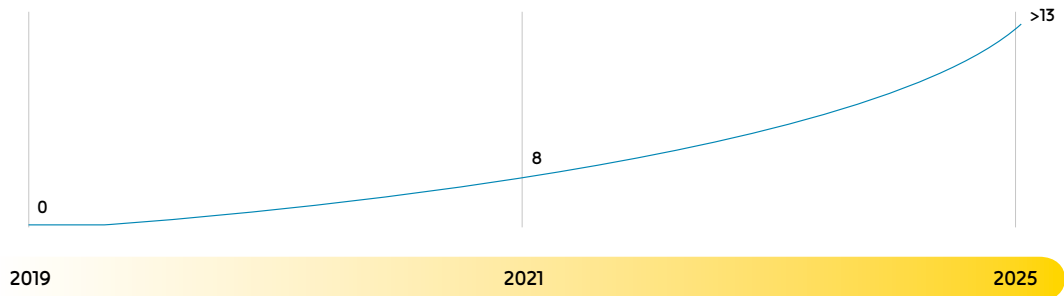
Eni has adopted in 2021, first in the sector worldwide, a Sustainability-Linked Financing Framework

- Natural Climate Solution initiatives, which contribute to the reduction of residual emissions (< 25 million tons CO<sub>2</sub>/year in 2050, less than 5% of Scope 1+2+3 emission reduction).
- Sustainability of Eni's industrial operations is combined with financial sustainability, having adopted in

2021, first in the sector worldwide, a Sustainability-Linked Financing Framework<sup>14</sup>, based on which future financing contracts will include, where possible, a mechanism linking the cost of financing to the achievement of one or more of targets related to decarbonization. In application of this framework, in

June 2021, Eni issued the first sustainability-linked bond of its sector, worth €1 billion, connected to the achievement of the targets on Net Carbon Footprint Upstream (Scope 1 and 2) and installed capacity for the production of electricity from renewable sources.

SUSTAINABLE INSTRUMENTS\* € BLN



\*Includes bonds, loans, bank credit lines and rate derivatives.

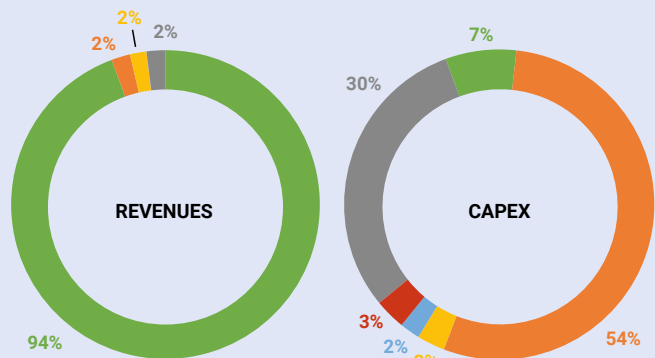
FOCUS ON

TAXONOMY

The European Taxonomy is the classification system for economic activities that the European Union has adopted to direct financial flows towards environmentally sustainable projects. In 2021, delegated acts establishing technical criteria for the definition of 'sustainable' activities for the purposes of climate change mitigation and adaptation (the first two of six objectives provided for by the Taxonomy) were published. In order to implement the reporting requirements for the first year of application of the Taxonomy Regulation, Eni mapped its operated economic activities eligible according to Taxonomy, for the achievement of the first two environmental objectives. The main Eni activities<sup>15</sup> eligible for the climate change adaptation and mitigation targets are:

- Chemistry activities connected to energy transition
- Manufacture of biofuels for use in transport
- Renewable electricity generation (solar, wind)
- Infrastructure for low carbon road transport and public transport (EV charging columns)
- Electricity generation and cogeneration from biomass
- Permanent geological storage of CO<sub>2</sub>
- Manufacture of hydrogen

MAIN ENI'S ACTIVITIES ELIGIBLE FOR THE PURPOSES OF CLIMATE CHANGE MITIGATION AND ADAPTATION



- Transition chemistry activities
- Renewable electricity generation (solar, wind)
- Generation and cogeneration of electricity from biomass electricity generation
- Permanent geological storage of CO<sub>2</sub>
- Installation of EV charging points
- Other eligible activities

14 For more information on Eni's sustainable finance see [Eni for 2021 - A Just Transition](#), pag. 21.

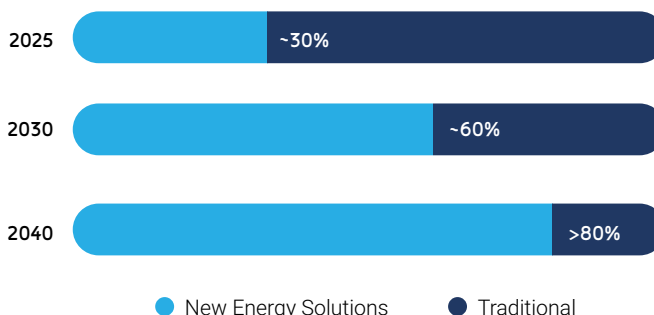
15 For more details on Taxonomy and Eni's eligible activities, see the relevant section of the [Consolidated Non-Financial Statement](#) (pages 188-190).



## CAPITAL ALLOCATION

For the next four-year period 2022-25, Eni has planned investments in decarbonisation, circular economy, renewables and retail portfolio development for around €9.7 billion, including supporting scientific and technological research activities. The evolution towards a fully decarbonised product portfolio will be supported by a progressive increase in the share of investments dedicated to the expansion of renewable generation capacity, the growth of biofuels and green chemistry, the scaling up of new energy solutions and carbon capture and storage (CCS) services as well as energy efficiency initiatives and decarbonisation of legacy assets. Therefore, in terms of capital allocation, the share dedicated to new energy solutions and services will reach about 30% of total investments in 2025, about 60% in 2030 and more than 80% in 2040. In ten years, these activities will generate

### CAPITAL ALLOCATION



positive Free Cash Flow and reach a 75% contribution to the group's cash flow starting 2040.

The plans and investment decisions are aligned with Eni's decarbonisation strategy towards Net Zero by 2050. The share of expenditure dedicated to Oil & Gas activities will be gradually reduced, selecting main investment projects based on their emission profile and in coherence with the targets set for reductions in emissions, with the gradual phasing out of invest-

ments in carbon-intensive activities or products.

The most significant investments are subject to an approval process that includes also a lifecycle GHG emissions assessment, in order to identify potential impacts on the achievement of Eni's medium/long-term decarbonisation objectives, and a resilience test on the impact of potential costs associated with GHG emissions on project returns, based on hydrocarbon and CO<sub>2</sub> prices adopted in IEA's low carbon scenarios.

Around 9.7 billion spending planned for decarbonization, circular economy, renewables and retail portfolio development in 2022-2025

FIGURES IN BILLION € <sup>16</sup>	2022-2025
Power generation from renewable sources	4,3
Reduction of GHG emissions	1,0
Circular economy	1,1
Research for decarbonisation and circular economy projects	0,5
Retail portfolio development (including e-mobility)	2,0
Other initiatives (including Natural Climate Solutions and Venture Capital)	0,9

16 Consolidated data.





## UPSTREAM TRASFORMATION TOWARDS NET ZERO

### ENHANCEMENT OF THE UPSTREAM PORTFOLIO THROUGH DECARBONISATION

#### PORTFOLIO RESILIENCE

Eni's decarbonisation path envisages a hydrocarbon production profile that will reach a plateau of 1.9 million boe/d in 2025, followed by a downward trend, mainly in the oil component in the medium-long term. With the adoption of a model of operational excellence based on successful exploration at competitive costs, reduction of the time-to-market for reserves, a phase-based approach to project development and continuous

control of operating expenditure, Eni has built a resilient Oil & Gas portfolio.

As of today in fact, the main upstream projects under execution show an overall internal rate of return (IRR) of approximately 21% in Eni's price scenario and continue to be solid and competitive even in less favourable scenarios; in particular, in correspondence with a 20% price reduction, the IRR becomes 17%. In addition, management carried out a sensitivity analysis on the recoverability of the book values of all the CGUs in the E&P<sup>17</sup> segment, using the IEA SDS and Net Zero NZE 2050 WEO 2021 scenarios (developed using

a backcasting approach<sup>18</sup>), without making revisions to cost profiles or rescheduling activities in terms of project development and production. The outcome of these sensitivity analyses showed that the headroom, i.e. the difference between the Net Present Value and the book value of the assets, was substantial. In particular:

- in the IEA SDS WEO 2021 case, the headroom compared to the book value is approximately 76% in the case of taxes linked to CO<sub>2</sub> or 75% if not.
- in the IEA NZE 2050 case, the headroom compared to the book value is about 35% in the case of taxes linked to CO<sub>2</sub> or 32% if not.

## ANALYSIS OF RESERVES IN THE CURRENT UPSTREAM PORTFOLIO

### RESILIENCE

- ▶ In terms of resilience, the analysis carried out on the 2P reserves has shown that the average Brent breakeven price, meaning the price that guarantees a return on investment equal to the cost of capital, is around 20 \$/bl.

### FLEXIBILITY

- ▶ In terms of flexibility, turns out that around 90% of the value in terms of NPV and 80% of the volumes of 2P reserves could be produced by 2035. This leaves broad freedom to plan exploration and development campaigns to support future production and to adapt to sudden market changes without incurring stranded asset risk.

### THE ROLE OF GAS

In the evolution of Eni's hydrocarbon production mix, gas will play an increasingly important role with the aim of achieving a share of 60% by 2030 and more than 90% after 2040. LNG plays a decisive role in the growth of gas whereas Eni is developing a new model which guarantees a leading position in the market. Over the next few years, the portfolio is expected to grow with a forecast for traded volumes above 15 MTPA<sup>19</sup> by 2025. This growth will mainly come from new projects in Congo, Angola, Egypt, Indonesia,

Nigeria and Mozambique. In Congo, the export project consists of two modular and flexible LNG liquefaction plants, which will allow a highly competitive time to market, with LNG production starting in 2023. These actions will contribute to making Eni's portfolio more sustainable and enhance the value of natural gas as a fossil fuel with lower CO<sub>2</sub> emissions<sup>20</sup>. Moreover, within the decarbonization strategy, use of technological solutions such as Carbon Capture, Utilisation and Storage applied to power generation plants, LNG plants and blue hydrogen production,

will allow reduction of the carbon footprint of gas from equity productions and achievement of the targets set. Aware of the importance of maximising the benefits from the use of gas, as well as the need to achieve the important contribution to the 1.5°C objective that the reduction of methane emissions can bring in the short-to-medium-term, Eni is committed to implementing actions to monitor and minimise methane emissions from its Oil & Gas value chain with the aim of reducing them in line with the Global Methane Pledge and the objectives and ambitions

17 Excluding Vår Energi AS.

18 For more information on the scenarios, see the [Reference Scenario section \(page 8\)](#).

19 Millions of tonnes per year.

20 Relates to end-use emissions compared to those from oil and coal.



of the numerous partnerships in which Eni is involved (see section "Methane emissions"). A relevant aspect is Eni's commitment in researching and developing energy resources for local markets, and in projects for energy access and energy mix diversification<sup>21</sup> towards lower impact sources such as gas and renewables.

### CCUS – CARBON CAPTURE UTILIZATION AND STORAGE

The role of CCUS in the energy transition is linked to the decarbonisation of industry and in particular of the so called "Hard-to-Abate" sectors (steel plants, cement factories, chemical industry, paper, glass, etc.), for which, due to their high energy consumption and the characteristics of the production processes, CCUS currently represents a tangible opportunity for CO<sub>2</sub> emissions reductions. In particular, Eni has the engineering, geological and organisational skills to carry out large capture and storage projects efficiently, rapidly and safely. Leveraging the development of its CCS project portfolio, Eni is targeting a storage of around 10 MTPA by 2030, with a total gross capacity of 30 MTPA.

In Italy, a project has been launched to create a hub for CO<sub>2</sub> capture and storage in the depleted offshore reservoirs in Ravenna, which have a total storage potential of more than 500 million tonnes. The development programme envisages an initial phase with the capture of 25,000 tonnes/year of CO<sub>2</sub> from the Casalboretto gas compression station and the transport and storage in the Porto Corsini Mare Ovest reservoir. The first injection of CO<sub>2</sub> into the reservoir is expected by 2023, once all the necessary authorisations have been obtained, for which

Eni has submitted an application to the competent authorities<sup>22</sup>. The second phase of the programme involves the development of the project on an industrial scale with the injection of CO<sub>2</sub> into the offshore reservoirs off Ravenna, which in the initial period will grow to 4 million tonnes per year from both Eni's industrial activities and third parties. Storage operations are expected to start in 2027.

In the UK, Eni is a strategic partner in the HyNet North West project for the decarbonization of the industrial estates in the North West of England and North Wales, through the construction of the UK's first CO<sub>2</sub> capture and storage (CCS) infrastructure and the future production of low carbon hydrogen. The project, one of the first to access the British Government's funding to support the development of CCS projects in the UK, will provide important support to the country's decarbonisation process, contributing to the UK's recent Net Zero Strategy targets (October 2021) with 10 MTPA against a target of 20-30 MTPA of CO<sub>2</sub> storage capacity and around 80% of the 5 GW of low carbon hydrogen by 2030. CO<sub>2</sub> injection activities are scheduled to start by 2025. In the initial phase operations, the initiative envisages a storage capacity of up to 4.5 million tonnes/year, which will be increased from 2030 to 10 MTPA. Additional capture and storage projects are under consideration in the United Arab Emirates, Libya and Egypt. Regarding the capture and utilization of carbon dioxide, Eni is developing a proprietary technology called e-CCM - Carbon Capture and Mineralisation - to convert CO<sub>2</sub> into a stable, inert and safe material with excellent mechanical properties that can be used in cements

blends. At the beginning of 2022, a partnership was announced with the cement manufacturer Holcim to develop a technology demonstration plant and test its integration into a cement factory.

### NATURAL CLIMATE SOLUTIONS

The implementation of projects aimed at fostering and preserving the ability of natural systems to contribute to climate change mitigation, known as Natural Climate Solutions (NCS) represent the main lever for offsetting residual emissions within Eni's decarbonisation process. NCS also include initiatives focused on the conservation, restoration and sustainable management of forests, mainly in developing countries, which are considered among the most important international initiatives in the context of climate change mitigation strategies. These initiatives lie in the so-called REDD+ (Reducing Emissions from Deforestation and Forest Degradation) framework. The REDD+ scheme, defined and promoted by the United Nations (in particular under the UNFCCC - United Nations Framework Convention on Climate Change), provides for forest conservation activities with the objectives of reducing emissions and improving the natural storage capacity of CO<sub>2</sub>. These projects foster an alternative model of development for local communities through the promotion of socioeconomic activities in line with sustainable management, and at the same time they valorise forests and biodiversity conservation. In a global context in which the high rate of deforestation, especially in primary forests of tropical and subtropical areas, in addition to compromising biodiversity, causes the emission of billions of tons of CO<sub>2</sub> and other greenhouse gases, countering for-

Eni targets a storage capacity of around 10 MTPA by 2030, with an overall gross capacity of 30 MTPA

Natural Climate Solutions represent the main lever for offsetting residual emissions within Eni's decarbonisation process

21 For more information see the "Access to Energy" section in [Eni For 2021- A Just Transition](#).

22 Ministry for Ecological Transition.



In 2021, the credits generated by REDD+ projects amounted to more than 2 million tonnes of CO<sub>2</sub>eq

est destruction and degradation is a key element in the fight against climate change in the short-term. For these reasons, Eni's first activities in the field of NCS have been those related to forests protection, supporting governments, local communities and dedicated UN agencies, in line with the NDCs (Nationally Determined Contributions), the National Development Plans and the UN Sustainable Development Goals (SDGs). Over time, Eni has built a solid network of agreements with recognized international REDD+ project developers such as BioCarbon Partners, Terra Global, Peace Parks Foundation, First Climate, Carbonsink and Carbon Credits Consulting. Such agreements allow Eni to monitor the development and implementation of projects of interest in order to verify their compliance to REDD+ scheme, necessary condition for the achievement of the certification of carbon reductions (Verified Carbon Standard - VCS) and positive social and environmental impacts (Climate Community & Biodiversity Standards - CCB), according to the highest internationally recognized standards.

Moreover, Eni continues in evaluating further NCS initiatives such as those related to sustainable forests resources management or ecosystem restoration (including humid and coastal ecosystems such as mangroves) in Africa, Latin America and Asia. The target in the medium-long term, is to progressively increase the share of Carbon Dioxide Removal credits to offset for residual emissions.

#### ENI AND THE REDD+ PROJECTS IN ZAMBIA MEXICO AND TANZANIA

The launch of NCS initiatives was formalized in the 2019 with the credit purchase agreement with BioCarbon Partners, through which Eni also acquired a role in the governance of the Luangwa Community Forests Project (LCFP) in Zambia. The LCFP project covers an area of around 1 million hectares, involving approximately 200,000 beneficiaries also through economic diversification initiatives, and is currently one of the largest REDD+ projects in Africa to have obtained the CCB 'Triple Gold' standard validation for its outstanding social and environmental impact from VERRA, a leading non-profit

organisation in the certification of carbon credits. Eni has committed to buying the carbon credits generated by the project until 2038. During 2021, purchase agreements of credits generated by Ntakata Mountains (Tanzania) and Lower Zambezi (Zambia) REDD+ projects were finalized. Eni's purchase of credits finances the annual costs of implementing these nature-based projects, as well as enabling local communities living in the forest to have access to important social services such as health and education. In addition, Eni has signed an agreement with Terra Global and First Climate, whereby Eni has committed to finance the start-up of the Amigos de Calakmul project in Mexico, securing a role in monitoring its development as well as the purchase of future credits. In 2021, the credits generated by these projects amounted to more than 2 million tonnes of CO<sub>2</sub> equivalent. Eni is continuing to evaluate further initiatives in several countries through the establishment of other partnerships with governments and international developers in Africa, Latin America and Asia.

## FOCUS ON

### THE ROLE OF NATURAL CLIMATE SOLUTIONS (NCS) IN ACHIEVING NET ZERO

NCS are actions aimed at the protection, sustainable management and restoration of natural ecosystems, increasing carbon storage and/or avoiding greenhouse gas (GHG) emissions in forests, natural grasslands and wetlands. In addition to the positive impacts directly related to climate change, NCS also provide benefits in terms of biodiversity protection, increased resilience and adaptive capacity of ecosystems, and economic development for local communities. The role of NCS in achieving net zero is also recognized by the IPCC, which envisages the use of carbon Dioxide Removal systems, including NCS, in most scenarios compatible with the goal of limiting temperature to within 1.5°C compared to pre-industrial times. In terms of availability, accredited sources<sup>23</sup> estimate a GHG abatement potential for NCS of 5-12 GtCO<sub>2</sub>EQ by 2030, on average equal to 30% of the GHG emission reduction needed to align the global emission trajectory with a 1.5°C compatible scenario.

Eni's decarbonisation strategy envisages using GHG emission reductions generated through NCS projects, in the form of high-quality carbon credits, to offset residual GHG emissions that cannot be reduced with current technologies at reasonable cost.





## NEW ENERGY SOLUTIONS RENEWABLE ENERGY PROJECTS AND PLENITUDE

Eni is a player in the renewable energy sector (solar and wind) and is engaged in the development, construction and management of plants for the production of energy from renewable sources. The objectives in this area will be achieved through the organic development of a diversified and balanced portfolio, complemented by selective asset and project acquisitions and strategic partnerships at an international level. As part of the initiatives aimed at extracting value from the restructuring of the portfolio by creating independent and focused vehicles capable of attracting capital, creating value and accelerating growth, the process for listing Plenitude Eni's subsidiary that integrates the retail activities Gas & Power, renewables and electric mobility with the objective of decarbonising the customer portfolio and contributing to the achievement of Eni's long-term targets, has begun. Plenitude, by virtue of its financial and operational autonomy, will be one of the drivers of Eni's decarbonisation pathway, achieving the Net Zero target for emissions associated with its customers by 2040 thanks to the supply of gas and

power coming 100% from renewable, bio or carbon neutral (hydrogen) sources and by offsetting residual emissions with high quality certified credits.

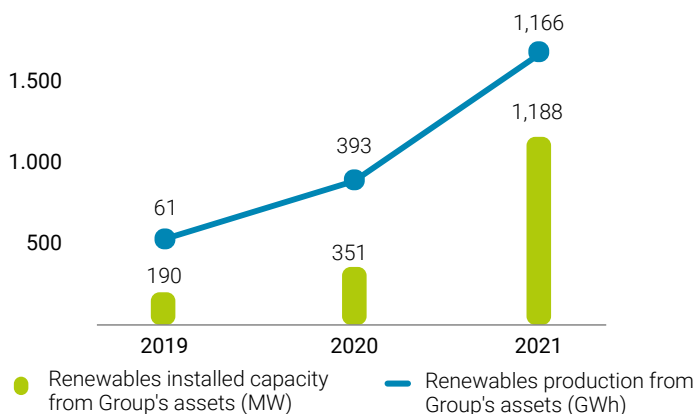
The main medium-to-long-term strategic aims of Plenitude include the synergic development of the installed capacity for the production of energy from renewable sources with targets<sup>24</sup> to reach more than 15 GW by 2030 and 60 GW by 2050 and more than 20 million supply contracts in the portfolio of retail customers, through both the selection of areas for expansion of renewables linked to the presence of customers as well as the development of activities in areas where Eni already operates. In 2040, Plenitude's retail customers are expected to be supplied with decarbonised products mainly from Eni's portfolio (energy from renewables and biomethane) and new generation services. The plan to 2025 provides for more than 11 million supply points compared to the current 10 million, a 3-fold increase in installed capacity to more than 6 GW compared to 2022, and the expansion of the EV charging point network to around 30,000 units by 2025. The driving force behind this development will be the integration of renew-

able electricity production and retail customers.

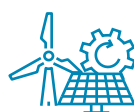
In 2021, Eni's renewables business grew significantly, reaching an installed capacity of 1,188 MW (more than triple compared to 2020). This acceleration, obtained mainly as a result of the recent acquisitions in Europe and the United States, has also been carried out with the broader aim of integrating Plenitude's retail business to exploit all the possible synergies between the two businesses. Renewable energy production therefore reached 1,166 GWh due to the greater installed capacity. Expansion in the domestic and international renewable energy markets took place with a strong acceleration in the build-up of generation capacity, also thanks to targeted acquisitions that could be rapidly integrated into Eni's portfolio. In particular, in 2021, acquisitions were finalised for a portfolio of thirteen on-shore wind farms in operation in Italy, with a total capacity of 315 MW, and a portfolio of nine renewable energy projects in Spain: three wind farms in operation and one under construction for a total of 234 MW, and five photovoltaic projects at an advanced stage of development for approximately 0.9 GW. Furthermore, still in 2021, the acquisition of Dhamma En-

In 2021, Eni's renewables business grew significantly, reaching an installed capacity of 1,188 MW, more than triple compared to 2020

### RENEWABLES DEVELOPMENT



1,166 GWh  
Renewable energy production



>2 GW  
Renewable installed capacity, including under construction

24 100% Plenitude.



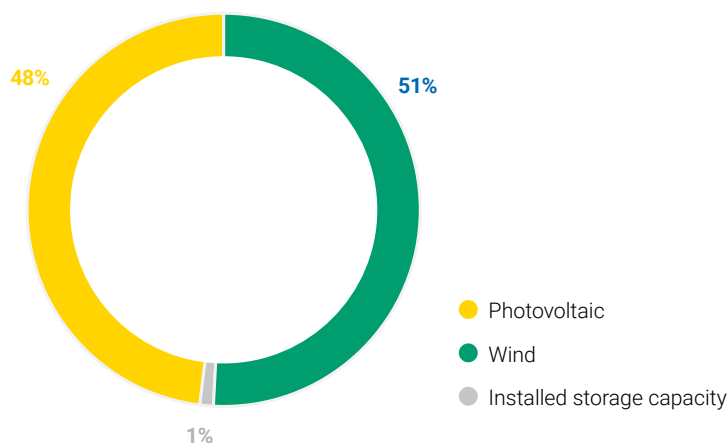
ergy Group was finalised, owner of a platform for the development of photovoltaic plants (in France and Spain), with projects for approximately 3 GW in the pipeline, as well as plants in operation or under construction with a capacity of approximately 120 MW, and in January 2022, the company Solar Konzept Greece was acquired, which owns a platform for the development of photovoltaic plants in Greece with projects for approximately 800 MW in the pipeline, which will allow further development of the renewable energy portfolio in the country. In the UK offshore wind market, a 20% stake was acquired in 2021 from Equinor and SSE Renewables in the 1.2 GW Dogger Bank

C project, the third cluster of the world's largest offshore wind farm (3.6 GW) currently under construction in the UK North Sea (which will start production in stages between 2023 and 2025). In February 2022, the portfolio of renewable capacity in the United States was expanded with the acquisition from BayWa r.e. of a total capacity of 466 MW in Texas relating to the Corazon I photovoltaic plant (approximately 266 MW), in operation since August 2021, which will produce approximately 500 GWh per year, as well as the Guajillo storage project, in an advanced stage of development, for approximately 200 MW/400 MWh.

### PLENITUDE AND THE ENERGY EFFICIENCY SOLUTIONS

Efficient management of electricity demand and consumption is a key aspect of the energy transition, as it enables energy demand to be reduced and the energy produced to be used more efficiently. For this reason, Plenitude has implemented in recent years a growth plan that, thanks to the acquisition of important companies and collaboration with numerous business partners, has allowed the development of a wide range of energy efficiency solutions, active in the different countries where Plenitude operates, ranging from the energy requalification of buildings to the sale and installation of photovoltaic systems.

#### PLENITUDE - BREAKDOWN OF INSTALLED CAPACITY BY TECHNOLOGY AT THE END OF 2021\*



\*The figure refers to 1,137 megawatts, or renewable installed capacity Plenitude's renewables at 31.12.2021 (data for Eni share)

#### FOCUS ON

### PLENITUDE AND THE SPREAD OF A CULTURE OF SUSTAINABLE CONSUMPTION



In July 2021, Plenitude has upgraded its By-laws to Benefit Company status, becoming the first major Italian company in the energy sector to do so. Plenitude is committed to four specific aims of common benefit: spreading the culture of sustainable energy, solutions and technologies for the responsible use of energy, safeguarding diversity and integration and customer focus through a transparent and fair relationship. During 2021 various communication activities were launched with the production of special contents dedicated to the efficient use of energy, mostly aimed at customers and employees. Among these, Plenitude has created a dedicated section on its website where news from the world of energy are published with monthly updates.



**SUSTAINABLE MOBILITY**

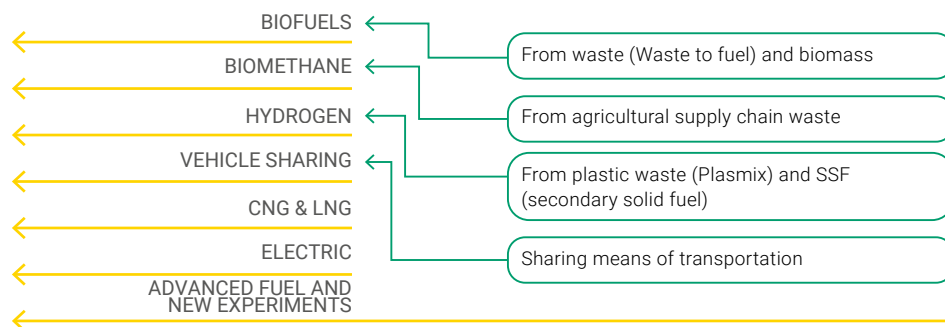
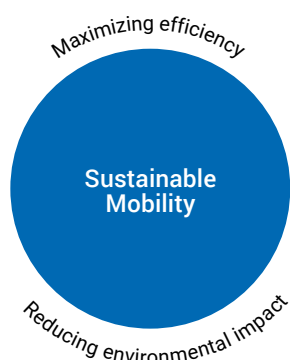
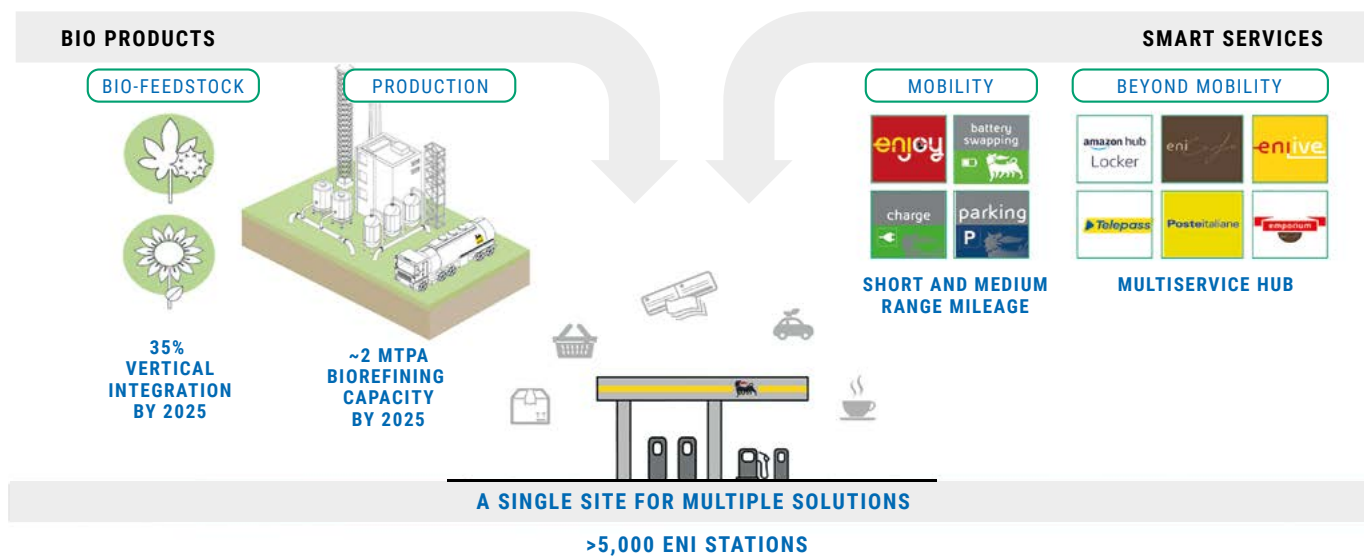
Within the roadmap towards term carbon neutrality, Eni plays a key role in promoting a holistic, technology neutral approach to sustainable mobility, with a focus on promoting a synergistic mix of innovative solutions to guarantee minimisation of the environmental impact and increased efficiency for the benefit of and with the contribution of consumers. To maximise value generation Eni is combining its biorefining and marketing activities in a dedicated sustainable mobility entity, uniquely positioned

as a multi-energy and multi-service customer-focused business. The company, in line with Eni's distinctive strategic approach based on new tailored business models focused on their customers and with the ability to independently access capital markets, will operate in the context of a mobility energy mix, moving towards sustainable fuels over the next decade based on a strong customer base and vertical integration with biorefineries. Eni aims to reach about 2 MTPA of biorefining capacity by 2025, thanks also to the expansion of the Venice

plant and another conversion of a traditional refinery, and to reach 6 MTPA in the next decade. Such growth requires a solid supply of diversified raw materials and to this end, Eni is developing a network of agro-hubs and signed agreements in several African countries. These hubs will ensure an integrated contribution of bio-based raw materials for processing, aiming for 35% of supply by 2025. In line with this strategy, Eni will be able to provide its customers with a range of green, bio and low carbon products available at service stations.

Eni supports an holistic, technology neutral approach to sustainable mobility, with a focus on promoting a synergistic mix of innovative solutions to guarantee minimisation of the environmental impact and increased efficiency

**SUSTAINABLE MOBILITY**  
MULTI-ENERGY E MULTI-SERVICE HUB



CIRCULAR ECONOMY  
INITIATIVES

**BIOFUELS**

Biofuels are derived from plant-based biomass, waste and refuse and can already contribute to transport decarbonisation. Since 2014, alongside its traditional business, Eni has been producing biofuels by turning vegetable oils, waste and scrap into an innovative biofuel, HVO (Hydrotreated Vegetable Oil), which – when added to diesel fuel – gives rise to Eni Diesel+, Eni's premium fuel. Used cooking oils (UCO), properly collected, can create an alternative solution to processed vegetable oils in biorefineries and are an example of how the circular economy can help develop solutions for sustainable mobility starting from urban waste. Thanks to the partnerships signed by Eni with the consortia CONOE, RenOils and Utilitalia, and the agreements signed with several multi-utility companies in charge of waste collection and treatment, about 50% of the UCOS collected in Italy are processed in Eni's biorefineries (for more information see Biorefineries page 27). The production of Sustainable Aviation Fuel (SAF) will also play a significant role in Eni's product mix, in line with industry scenarios and market trends, aiming to reach a capacity of at least 500,000tonnes/year of biojet fuel by 2030. In line with this target, Eni has entered into strategic commercial agreements with Aeroporti di Roma (ADR) and the management company of Milan's airports (SEA) to promote decarbonisation initiatives in the aviation sector and accelerate the ecological transition process of its airports.

**HYDROGEN**

Hydrogen is an energy carrier with high development potential and represents a viable option for sustainable mobility of heavy goods vehicles in the medium to long term, where hydrogen could be a solution for maritime mobility or the aviation sector. To date, the development of European hydrogen-based mobility has been hampered by high production, storage and distribution costs and the lack of an adequate infrastructure network. With this in mind, Eni is working on the construction of two hydrogen refuelling stations, the first of which has been completed in Mestre (Italy) and will be inaugurated in the first half of 2022 (see at page 29, Hydrogen section).

**GAS (CNG and LNG)  
and BIOMETHANE**

Methane is the most technologically mature among the alternative fuels with the lowest environmental impact, and is already available thanks to a distribution network of about 1,500 service stations (in Italy) and a consolidated market. From the second half of 2021, Eni will distribute biomethane in its own network (around 110 service stations), currently purchased from the GSE or through bilateral agreements. In addition, Eni has 15 service stations that supply liquid methane. In the next four years, 25 new points of sale for LNG (for development in the heavy transport sector) will be created. From the first half of 2022, fossil LNG will be progressively replaced by bio-LNG.

**ELECTRIC MOBILITY**

In the field of electric mobility, Eni has a four-year programme to create an Eni Charge network in Eni Live Stations with the installation of 1,000 electric charging stations in as many service stations in Italy. The charging points will be all fast and ultra fast and will therefore be able to recharge electric cars in just a few minutes.

Furthermore, Plenitude, through its subsidiary Be Charge, has a network of more than 6,200 charging points that will be expanded both in Italy and in Europe with around 30,000 planned by 2025. Thanks to the interoperability agreements already signed with EnelX and Be Charge, the Eni Live App already allows recharging at more than 20,000 recharging points in Italy, also guaranteeing the possibility of paying with a multiscard at Eni and Be Charge columns.

**ADVANCED FUELS  
AND NEW EXPERIMENTS**

Eni is evaluating new fuels produced from waste, such as hydrogen or methanol from non-recyclable plastic waste (Plasmix, a mix of currently non-recyclable plastics and CSS, Secondary Solid Fuel), which are currently used in waste to energy plants or sent to landfill, with a so called waste to energy project in one of the refineries, based on an innovative gasification technology. The synthesis gas produced can be used for methanol synthesis or for the production of pure hydrogen, helping to reduce emissions associated with conventional waste treatment and conventional hydrogen and methanol production. It can be also used in gasoline by transformation into MTBE or mixed with experimental high alcohol content gasoline together with bioethanol (A20 petrol).

**VEHICLE SHARING**

Enjoy is Eni's vehicle sharing service active in Milan, Rome, Florence, Turin and Bologna. As at the end of 2021, Enjoy had over 1.2 million members. An electric car sharing service with XEV YOYO vehicles (city cars that can also be recharged with the battery swapping system) will be launched in 2022.

**FOCUS ON****THE NEW ENI STATION: FROM SERVICE STATION TO ENI MOBILITY POINT**

The transformation of Eni Live Stations into "mobility points" integrates the offer of traditional fuels with new energy carriers capable of immediately contributing to the decarbonisation of light and heavy transport, such as electricity, biofuels, biomethane and hydrogen, for which Eni intends to create a network of recharging points: the Eni Live Station in Mestre (Venice) is the first service station in Italy for the refueling of hydrogen in urban areas. Eni Live Stations also provide services designed to meet the different needs of on-the-go customers, who can make the most of the stop needed for refueling without further travel. In addition, an agreement between Eni and the car manufacturer XEV provides for the development of an innovative "battery swapping" service (replacement of flat batteries with charged batteries) in a selected number of Eni Live Stations and in 2022 the electric city cars XEV YOYO will be part of the Enjoy fleet. The new Eni Parking car parks, built in some Eni Live Stations and in redeveloped Eni sites, offer parking spaces equipped with smart parking and electric recharging, that can be accessed with a fully digital subscription, paying by credit card and debit card. The car parks can be used by both private customers and Enjoy cars, thus transforming them into real intermodal hubs.



**BIOREFINERIES**

Biofuels produced by Eni's biorefineries will contribute to the decarbonisation of all Eni's products and processes by 2050. Thanks to the development of proprietary technologies, patented in its own Research Centres, the Venice and Gela refineries allow processing of raw materials of organic origin such as vegetable oils, oilseed

processing residues, animal fats, used cooking oils or oils extracted from algae. Eni has a total processing capacity of 1.1 million tonnes/year and has set a target of nearly doubling total capacity by 2025 to 6 million tonnes/year over the next decade. Furthermore, from 2023 the biorefineries will be palm oil free, using alternative feedstocks (e.g. used cooking and frying

oils, animal fats and vegetable oil processing waste) and advanced feedstocks (e.g. lignocellulosic material and bio-oils). Eni's R&D is working to expand the range of bio feedstocks for biorefineries by researching new inputs, studying new processes that make it possible to use current feedstocks after a pre-treatment phase or creating new products.

**VENICE  
BIOREFINERY**

- ▶ Venice was the world's first example of a traditional refinery converted into a biorefinery. Launched in 2014 with a capacity of 360 kton/year, thanks to further plant upgrades, a processing capacity of 560 kton/year is planned by 2024, with an increasing share of feedstock coming from food production waste, such as waste oils, animal fats and other advanced by-products.

**GELA  
BIOREFINERY**

- ▶ The Gela biorefinery was launched in 2019. The plant has the capacity to process around 750 kton/year of used vegetable oils, frying fats, animal fats and by-products of waste/leftovers, and energy crops from land not in competition with the feed and food sector, to produce high quality biofuels. In addition, in 2021, the new BTU (Biomass Treatment Unit) plant was started up and tested, which will allow utilization of biomass that is not in competition with the food chain, i.e., used cooking oils and animal fats. The aim is to create a circular economy model to produce HVO (hydrotreated vegetable oil). Furthermore, engineering activities are underway for the construction of a biojet fuel production unit that will allow, from 2024, the production of an additional 150 thousand tonnes/year of sustainable aviation fuel (SAF).

**BIOMETHANE**

The production of biomethane lies within the circular economy framework, allowing the use of agricultural and livestock waste and effluents, strengthening the relationship between the worlds of agriculture and energy with a view to long-term sustainability. Eni intends to play a key role in this area and is promot-

ing the entire biomethane supply chain with cooperation agreements such as those with Consorzio Italiano Biogas, Coldiretti and Confagricoltura and negotiating with biogas production companies to promote production of biomethane deriving from anaerobic digestion of biomasses, livestock manure and OFMSW (organic fraction of mu-

nicipal solid waste). In 2021, Eni acquired FRI-EL Biogas Holding, Italian leader in biogas production with 21 plants for electricity generation from biogas and a plant for OFMSW treatment, which Eni intends to convert to the production of biomethane laying the foundations to become the leading producer of biomethane in Italy.

**FOCUS ON**

**BIOMASS TRANSPARENCY AND TRACEABILITY**

As part of its responsible approach on biomass, Eni is committed to transparency and disclosure of information relating to the biomass used and the country of origin, providing this information at least once a year<sup>25</sup>. In 2021, 100% of the mills and plantations from which its palm oil was sourced for the Venice and Gela biorefineries were traced and 100% of the palm oil used is ISCC certified.

25 For more information see Eni for 2021 - Sustainability performance, page 13.



The initiatives will promote rural development and land rehabilitation through sustainable and regenerative agriculture, with positive effects on socioeconomic development

#### AGRO FEEDSTOCK INITIATIVES

During the year, Eni finalised agreements with the authorities of Kenya, Congo, Angola, Algeria, Kazakhstan and the Ivory Coast to promote agricultural initiatives for the cultivation of oilseed crops to use as low ILUC (Indirect Land Use Change) feedstocks for Eni's biorefineries, enhancing the value of marginal areas not intended for use in the food chain. The development plan of the identified activities is based on vertical integration and involves agreements with local farmers and cooperatives to whom the production of oilseeds is entrusted and the construction by Eni of oil collection and extraction centres (Agri-hubs). The by-

products of the production chain will be destined for local markets and possibly for export.

The initiatives will also promote rural development and land rehabilitation through sustainable and regenerative agriculture, with consequent positive effects on socioeconomic development with employment spin-offs, market access opportunities as well as protection of human rights, health and food security. The definition of further programmes, similar to the model adopted, is being evaluated in other countries. Production at industrial level is initially planned to start in: (i) Kenya, where the development programme foresees the construction of 20 agri hubs with

start-up scheduled for 2022. Furthermore, the agreement defined also provides for engineering activities aimed at transforming the current refinery in Mombasa into a biorefinery for the production of HVO and Biojet fuel as well as collecting UCO (Used Cooking Oil) for use as feedstock; (ii) Congo where the start-up of the planned activities is expected in 2023.

The full capacity is expected to be 350,000 tonnes from 2026 onwards and to involve about 300,000 farmers. Total production is subsequently expected to reach an agro-feedstock volume of more than 800 thousand tonnes by 2030, thanks to the contribution of additional initiatives in other countries.

#### FOCUS ON

#### PARTNERSHIP WITH BONIFICHE FERRARESI

As part of its development model focused on sustainable agriculture, in November 2021, Eni finalised a strategic partnership with the Italian Bonifiche Ferraresi Group through the establishment of a 50:50 joint venture. The agreement provides for: (i) agricultural research and testing of oilseed crops to be used as feedstock in biorefineries; (ii) support for the development of Eni projects in the countries of interest through the transfer of know-how, supply of seeds, equipment and agricultural products.



## HYDROGEN

Eni recognizes the value of low-carbon and renewable hydrogen as a key lever in the decarbonisation process. Hydrogen will play a central role in the decarbonisation of industries that already use it in their processes, such as chemicals and refining, and in hard-to-electrify industries (e.g. steelworks, paper mills, ceramics, paper and glass production). Eni, the main producer and consumer of hydrogen in Italy, is working on the development and implementation of decarbonised

hydrogen production processes: from steam reforming of natural gas in combination with emission capture; from electrolysis powered by renewable energy; and from gasification of non-recyclable waste according to a circular economy approach. Eni is also involved in research and development for new hydrogen technologies (such as methane pyrolysis), and promotes the creation of a hydrogen ecosystem through partnerships and membership of the European Clean Hydrogen Alliance and Hydrogen

Europe. The aim is to become a leader in the low carbon and renewable hydrogen supply chain by investing in projects:

- in synergy with CCS, RES and magnetic fusion activities;
- with international partners;
- for self-consumption, industrial use and mobility.

As part of its strategy and with the aim of having a further concrete option to decarbonise hard-to-abate production processes, Eni has identified this as a major opportunity for transformation.

### ENI'S MAIN ACTIVITIES FOR HYDROGEN PRODUCTION FROM LOW-CARBON AND RENEWABLE SOURCES

#### LOW CARBON HYDROGEN FROM STEAM REFORMING OF NATURAL GAS WITH CCS (BLUE HYDROGEN)

- ▶ Eni has several projects underway in the world of CCS and CCU technology with the aim of producing low carbon hydrogen by steam reforming natural gas with CO<sub>2</sub> capture associated with the production process. This will help reduce the carbon footprint of hydrogen used as feedstock in Eni plants, in line with the progressive decarbonisation of energy products. In Italy, the Ravenna area represents a unique opportunity for blue hydrogen production, thanks to the Ravenna CCS Hub project. The combination of depleted offshore gas fields and existing infrastructure can provide a safe storage site for all industrial emissions in the area.

#### HYDROGEN FROM RENEWABLE SOURCES

- ▶ Eni is developing projects to produce hydrogen from renewable sources through the electrolysis of water and, in partnership with Enel, is implementing the first two green hydrogen projects in Italy that will power two proprietary sites (Gela biorefinery and Taranto refinery) where it can be a viable option for decarbonisation. Each of the two pilot projects will feature an electrolyser of about 10-20 MW. A further possibility, currently under study, is the production of hydrogen using magnetic confinement fusion to provide electricity for electrolysers or heat for chemical processes.

#### HYDROGEN FOR SUSTAINABLE MOBILITY

- ▶ In 2019 Eni launched a partnership with Toyota to accelerate the development of hydrogen refuelling stations in Italy. Eni will open a hydrogen refuelling station in Venice in 2022 and another station in San Donato Milanese in 2023, where hydrogen will be produced on site using an electrolyser. Furthermore, in November 2021, Air Liquide and Eni signed a Letter of Intent with the aim of fostering the development of an extensive network of hydrogen refuelling stations in Italy.

#### RESEARCH AND DEVELOPMENT

- ▶ Eni's R&D department is developing kGas, a technology that can be used to convert natural gas into syngas, the mixture of hydrogen and carbon monoxide that, through the partial catalytic oxidation of natural gas, can become a valuable source of H<sub>2</sub>. kGas, in addition to producing syngas and hydrogen with a significant reduction in CO<sub>2</sub> emissions and directly using biomethane, could become a key technology for the production of blue hydrogen as it enables more efficient capture of CO<sub>2</sub>. Hydrogen can also be used for electricity generation, and Eni has considerable experience in burning mixtures of hydrogen and natural gas in existing gas turbines. In this area, Eni is testing a technology to increase the percentage of hydrogen used to power Enipower's gas turbines to produce low carbon electricity. Finally, in order to accelerate the development of a hydrogen industry in Italy, the Polytechnic University of Milan and its Foundation, together with Edison, Eni and Snam, launched the Hydrogen Joint Research Platform in November 2021, an initiative dedicated to the development of hydrogen-related technologies, whose key activities will include: hydrogen production from renewable and low carbon sources, hydrogen transport solutions and advanced storage/accumulation systems, innovative electrochemical and thermal applications in residential, industrial and transport-related environments, development of best practices for the planning and development of hydrogen transport and storage infrastructure.



### MAGNETIC CONFINEMENT FUSION

The commitment to magnetic confinement fusion is part of Eni's strategic vision for the transformation of the energy world, in which this source will play an essential role. It is a safe form of energy, with zero emissions of CO<sub>2</sub> and an energy density around ten million times greater than coal and oil, low fuel consumption and is virtually inexhaustible: almost the perfect energy for both power and heat generation. Eni's goal is not academic but industrial, and for this reason the company, being the first among large energy companies to invest in magnetic confinement fusion projects, has opened up a number of important fronts:

- the investment in Commonwealth

Fusion Systems (CFS), a spin-off of the Massachusetts Institute of Technology (MIT). Using advanced, high-performance superconductors, the company is developing a compact, high-magnetic field Tokamak with a significantly accelerated roadmap compared to other initiatives.

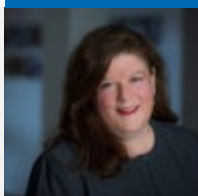
- Engaging in a scientific programme with MIT (LIFT project) to accelerate the identification of solutions in terms of materials and plasma control.
- The entry into the DTT project launched by ENEA for the construction of an experimental apparatus to manage the large amount of heat developed in a fusion power plant. Our industrial

know-how, skills in the management and development of large projects as well as our distinctive expertise in the design and development of robotic systems for applications in hostile environments, combined with ENEA's scientific research excellence, are the basis for the realisation of this important initiative, based primarily on Italian skills and technologies. Collaboration with the CNR<sup>26</sup> through the Joint Research Centre in Gela, which aims to develop know-how on fusion through basic research, carry out advanced modelling and increase local expertise through doctorates and research grants.

➤ [For more information: eni.com](https://www.eni.com)

26 National Research Council (CNR), the largest public research institution in Italy.

### INTERVIEW



**Jennifer Ganten**, Chief Movement Builder at Commonwealth Fusion Systems

Jennifer joined the CFS team in 2021, with the aim of leading a cross-functional team, to build a "fusion movement" and increase global support for this technology as a potential solution to climate change. Jennifer brings in CFS decades of experience in energy policy and advocacy, partnership building and global market expansion.

➤ [Full interview on eni.com](https://www.eni.com)

### What is CFS?

Commonwealth Fusion Systems (CFS) has the fastest, lowest cost path to commercial fusion energy. CFS is collaborating with MIT to leverage decades of research combined with new groundbreaking high-temperature superconducting (HTS) magnet technology. HTS magnets will enable compact fusion power plants that can be constructed faster and at lower cost. The mission is to deploy fusion power plants to meet the world's growing energy demands and combat climate change. CFS has a team of leaders in tough tech, fusion science, and manufacturing with a track record of rapid execution.

### What are the innovation opportunities and advantages of CFS?

CFS is working to bring commercial fusion energy to the grid at a scale much smaller and faster than ever thought possible. Fusion power is a new source of clean,

safe, cost competitive dispatchable power. It is a game changing technology that can support global decarbonization efforts.

### What are the challenges CFS has to overcome?

A key milestone in CFS roadmap to commercialisation of energy from fusion has been the construction and technical demonstration of the key technology, a 20-tesla high temperature superconducting (HTS) magnet. These magnets will enable fusion to become an economically viable energy source. In 2021, CFS built and successfully tested an HTS magnet, the most powerful of its kind in the world, paving the way to build compact and cost-effective grid-connected systems. CFS is now focused on building and launching SPARC, a pilot plant, expected to launch in 2025, that will use these magnets to produce positive net fusion energy.

### How and why has Eni's involvement been useful for the development of CFS and its activities?

Since the beginning, Eni has been a strong believer in CFS and their approach to commercial fusion energy. Eni has been an important partner, backing CFS through investment, project management support, and engineering expertise, bringing a wealth of knowledge in the energy industry as CFS works to scale and deliver fusion power plants.





**CHEMICALS FROM RENEWABLES AND FEEDSTOCK DIVERSIFICATION**

In order to contribute to carbon neutrality objectives in the long-term and to concretely address global climate challenges, Versalis, Eni's chemical company, has implemented numerous initiatives and projects to develop chemistry from renewable sources and in the area of circularity, aimed for example at diversifying feedstock<sup>26</sup>.

**CHEMICALS FROM RENEWABLE SOURCES**

Versalis is pursuing its commitment to strengthen its competitive positioning in chemicals from renewable sources, creating synergies between its own research projects and developing integrated technological platforms in line with the development strategy undertaken in recent years. In early 2022, Versalis restarted the production at the Crescentino site, using proprietary Proesa<sup>®</sup> technology, of second-generation bioethanol from residual biomass which will be used in blends of gasoline with a renewable component to support sustainable mobility. The site is completely energy independent, thanks to the use of the biomass share that cannot be converted into ethanol, i.e. lignin, in the thermal power plant. The raw material needed is residual biomass that is not in competition with the food chain and waste from the timber industry, whereas supply comes mainly from

short supply chains. In 2021 ISCC EU certification was obtained for the sustainability of its biofuels and an agreement was signed with Saipem for the worldwide promotion of the innovative Proesa<sup>®</sup> technology, in order to provide integrated and technologically advanced solutions for the production of bioethanol. At Crescentino, Versalis also produces the bioethanol-based hand and surface disinfectant Invix<sup>®</sup>, a medical device authorised by the Italian Ministry of Health.

In Porto Torres (Sardinia), with the Matrica Joint Venture, Versalis has set up an innovative platform for chemicals from renewable sources to produce biointermediates for high added value applications (e.g. paints and inks, bioplastics, biolubricants and bioherbicides). In 2021, using these biointermediates, Versalis entered the market of renewable agricultural protection products with Sunpower<sup>®</sup>, the renewable herbicide with broad-spectrum action that combats annual and perennial weeds in urban and industrial environments. The product was created thanks to an agreement with Alpha-Bio Control, a research and development company specialising in natural crop protection formulations. Under the agreement with Bridgestone, in 2021, activities continued to create synergies and accelerate development of a technology platform based on guayule (a plant native to

the Mexican desert/Arizona) for the production of natural rubber and resins from the guayule shrub, as a sustainable alternative for production from Hevea Brasiliensis.

**FEEDSTOCK DIVERSIFICATION**

Versalis is strongly committed to replacing the use of traditional feedstock with secondary raw materials or raw materials from renewable sources. In 2021 it obtained ISCC PLUS certification for all its Italian production sites. In addition, Finproject (a Versalis company) also obtained ISCC PLUS<sup>27</sup> certification in the same year for three Italian sites. Thanks to this certification, Versalis can offer a new range, called Balance™, of monomers, intermediates, polymers and decarbonised and/or circular elastomers obtained from sustainable raw materials, specifically: "Bio-attributed" and "Bio-circular attributed" products from bio naphtha produced with biological raw materials or with biological and circular raw materials; for these feedstocks Versalis benefits from integration with Eni's biorefineries; "Circular attributed" products where the raw material is a "recycled oil", pyrolysis oil obtained from the chemical recycling of mixed plastic waste. These products, compared to the equivalent traditional fossil product, save GHG emissions maintaining the performance, quality and properties, and not differing in chemical composition.

In 2021 Versalis extended ISCC PLUS certification to all its Italian and foreign production sites

**FOCUS ON**

**ELECTRIFICATION OF THE STEAM-CRACKING PROCESS**

In 2021 Versalis joined "Cracker of the Future", a consortium that aims to accelerate the development of an innovative technology for the electrification of the steam-cracking process. This new technology will allow a substantial reduction in GHG emissions from steam-cracking, which is currently among Versalis' highest impact processes in terms of emissions. Together with founding members Borealis (a member of the OMV Group), BP and TotalEnergies SE, the consortium covers about 1/3 of the European Union's steam-cracking capacity.

<sup>26</sup> For more information see the Circular Economy section of *Eni for - A just Transition*.  
<sup>27</sup> Certification system (International Sustainability & Carbon Certification) for sustainability of biomass and biomass products.



### ROLE OF RESEARCH AND DEVELOPMENT IN THE ENERGY TRANSITION

Producing energy with the lowest carbon footprint is the challenge that every energy company must meet. To achieve this, Eni has chosen to invest in scientific and technological research. Continuous innovation is the basis of the company's organic growth, as it allows know-how to be consolidated and enriched, contributing to the development of Eni people's skills and to technological evolution. Research and development activities (R&D) aimed at achieving Eni's decarbonisation targets account for approximately 70% of total planned expenditure on R&D, equally distributed among activities to reduce the carbon footprint of operations, projects related to the circular economy and the de-

velopment of new bio-based products, projects for the development of renewable energy and magnetic confinement fusion. Below are some examples of Eni's R&D activities for decarbonization.

Research plays a fundamental role in the development of Carbon Capture Storage (CCS), and Eni is investing in research and innovation throughout the entire chain: from capture, where the technological challenge is to develop innovative technologies with high separation efficiencies and reduced costs and energy consumption, to storage, where Eni has developed innovative algorithms thanks to its experience in numerical modelling for oil field development and the power available in the Green Data Center, and monitoring, where Eni is developing technologies for air monitoring through aerial and ma-

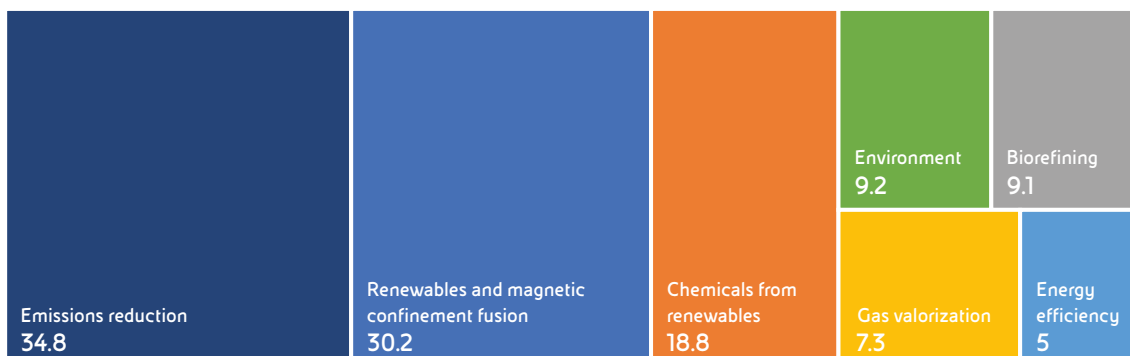
rine drones, up to the use of CO<sub>2</sub>, where technologies for transforming it into added value products are being studied.

Biorefineries are also the result of Eni's constant commitment to research and technological innovation, and Eni was the first energy company in the world to convert a traditional refinery into a biorefinery (Venice in 2014) thanks to proprietary technologies patented in Eni's Research Centres.

Eni is committed to the development of solar energy, such as concentrating solar power or technologies to improve the efficiency of traditional photovoltaics, and also to renewable energies such as marine and wind power. In addition, efforts are being made to develop energy storage solutions that reduce the discontinuity typical of renewable energies.

70% of total planned expenditure on Research and development activities is related to Eni's decarbonisation targets

#### BREAKDOWN OF R&D EXPENDITURES FOR CARBON NEUTRALITY, RENEWABLES AND CIRCULAR ECONOMY (2021) - MLN €





**ENI'S COMMITMENT TO OPEN INNOVATION**

**ENI NEXT**

As part of Eni's energy transition strategy, an important contribution is linked to the Corporate Venture Capital activity developed by the subsidiary Eni Next. The mission of Eni Next is to invest in early-stage start-ups with revolutionary technological innovations in sectors synergistic with Eni's business and falling into three areas: Clean Technology, Industrial and Digital. The decision-making process assesses technology, breakthrough level, economic and financial impacts, effectiveness

of solutions in terms of carbon footprint, energy efficiency, digitalisation of processes, new ways of producing/transporting/storing energy and the circular economy. Eni Next has therefore made investments in start-ups operating in magnetic confinement fusion energy, hydrogen production, quantum computing, long-term energy storage and conversion and emissions reduction. Start-ups are developed through financial support and corporate engagement, with the aim of contributing to decarbonisation, operational enhancement, protection of natural resources and

generating returns in the medium-to-long-term. The Eni Next plan is to select and invest in up to 5 start-ups per year with a commitment of around \$5 million each, except for strategic investments that follow a dedicated budget (such as magnetic confinement fusion energy). As at the end of 2021, Eni Next had 7 start-ups in its portfolio with a total investment of approximately USD 465 million. Activities involve continuous interaction with third parties worldwide including research centres, regulatory bodies and other investors, all known for their commitment to the SDGs.

AREA	STARTUP: OBJECTIVES AND CHALLENGES
<b>ENERGY STORAGE</b>	<ul style="list-style-type: none"> <li>▶ <b>FORM energy:</b> iron-air battery system capable of storing wind and solar energy for several consecutive days, for more than 100 hours. New battery technology will enable a year-round renewable electricity grid.</li> </ul>
<b>MAGNETIC CONFINEMENT FUSION</b>	<ul style="list-style-type: none"> <li>▶ <b>CFS:</b> industrial-scale development of an innovative technology for high-temperature superconducting magnets. According to the CFS programme, this technology will enable the construction of compact and cost-effective plants, connected to the grid.</li> </ul>
<b>HYDROGEN FROM METHANE PYROLYSIS</b>	<ul style="list-style-type: none"> <li>▶ <b>C-ZERO:</b> innovative thermo-catalysis to extract carbon from natural gas as a solid (and to reduce carbon dioxide emissions). Technology that can be used to decarbonise a wide range of industries, for basic hydrogen production and refining processes.</li> </ul>
<b>QUANTUM COMPUTERS AND SOFTWARE</b>	<ul style="list-style-type: none"> <li>▶ <b>PASQAL:</b> design and development of quantum computer: the technology developed is based on cold atoms and enables massive computational calculations for the energy transition.</li> </ul>
<b>ACID GAS SOFTENING AND HYDROGEN PRODUCTION</b>	<ul style="list-style-type: none"> <li>▶ <b>THIOZEN:</b> Low cost, low emission hydrogen production from hydrogen sulphide and water; the process can reduce emissions in the energy sector.</li> </ul>
<b>HYDROGEN PRODUCTION FROM RENEWABLES</b>	<ul style="list-style-type: none"> <li>▶ <b>SHYP:</b> hydrogen production from renewable energy and seawater.</li> </ul>
<b>ENERGY EFFICIENCY</b>	<ul style="list-style-type: none"> <li>▶ <b>OBANTARLA:</b> reducing emissions from gas flaring and fuel production.</li> </ul>

**JOULE**

Joule is Eni's Business School whose mission is to support the growth of innovative and sustainable businesses operating in the field of energy transition and climate action. In 2021, more than 8000 aspiring en-

trepreneurs enrolled in the free Open training programme and 10 calls for start-ups were launched, receiving more than 700 applications. To date, around 60 start-ups have been supported through Joule pre-incubation, incubation, acceleration and experi-

mentation programmes. The innovation areas of the proposed business projects range from circular economy to decarbonisation of the value chain, from renewable energy to agribusiness.

➔ [For more information: eni.com](https://www.eni.com)

**AGREEMENTS AND PARTNERSHIPS FOR THE GROWTH OF INNOVATIVE AND SUSTAINABLE START-UPS****ZERO -  
CLEANTECH  
ACCELERATOR**

- ▶ Launched in April 2021, it is the first Italian accelerator for startups in the field of sustainability and decarbonisation, the result of a collaboration between CDP<sup>29</sup> Venture Capital Accelerator Fund and Eni. With an initial budget of 4.6 million euros, the initiative aims to support over three years the growth of 30 Italian start-ups and innovative SMEs and international companies wishing to develop their business by opening an operational headquarter in Italy. The collaboration has also been extended to other companies (Acea, Microsoft, Maire Tecnimont) in a view of maximum openness to the ecosystem. Nine start-ups have been accelerated in 2021, three of which (Windcity, Aura, Pixies) are about to start experiments with Eni.

**TECH4PLANET**

- ▶ Established in November 2021 by CDP Venture in cooperation with the Polytechnic University of Milan and involving the Turin and Bari Polytechnics, it is the second national technology transfer hub aimed at facilitating market access and the growth of new enterprises conceived within research laboratories dedicated to environmental sustainability. With a total investment of up to 55 million euros, the initiative aims to accelerate 60 start-ups over four years by promoting technology transfer between northern and southern Italy. Through Joule, Eni is one of the industrial players involved in the initiative.

**FAROS -  
BLUE ECONOMY  
ACCELERATOR**

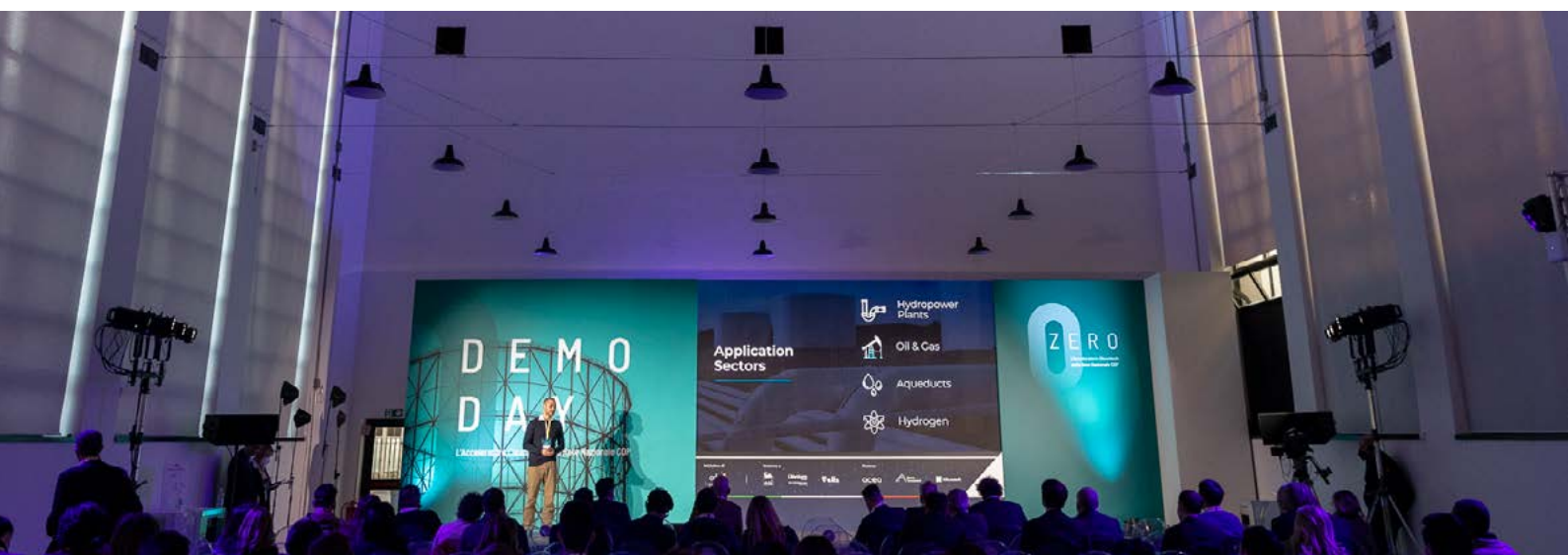
- ▶ Launched by CDP Venture in December 2021 in partnership with the Port Network Authority of the Ionian Sea - Port of Taranto, Faros aims to boost the growth of start-ups that develop innovative products or solutions in the areas of logistics and port automation, sustainable use of marine resources and coastal tourism. With an initial budget of 3 million euros, the initiative aims to support the growth of 24 innovative start-ups over three years. Eni has joined the initiative as a corporate partner through Joule.

**VENISIA -  
VENICE  
SUSTAINABILITY  
INNOVATION  
ACCELERATOR**

- ▶ Launched in June 2021 by Ca' Foscari University of Venice, VeniSIA is a sustainable innovation accelerator dedicated to the development of business ideas and technological solutions for circular economy and climate change. Through Joule, Eni is the main partner of the initiative in which other companies are also involved. The aim of the initiative is to repopulate the city with innovators and support an ecosystem based on the connection between research and the corporate and entrepreneurial fabric.

**OPEN ITALY**

- ▶ An innovation ecosystem created within the Elis Consortium with the aim of fostering dialogue and collaboration between large companies, Italian start-ups/SMEs and innovation enablers such as accelerators, research centres, venture capitalists and young talents through concrete innovation projects. Joule has been part of the Open Italy programme since 2020 and to date has activated five experimental projects with Italian companies operating in the circular economy, water management and biomass energy generation sectors.





## PARTNERSHIPS FOR CARBON NEUTRALITY BY 2050

Partnerships are one of the strategic drivers of Eni's decarbonisation path, as the company has been working for a long time together with the academic world, civil society, institutions and businesses to support the energy transition, allowing to exploit and generate knowledge, share best practices and support initiatives that can simultaneously create value for the company and its stakeholders.

### CLIMATE ADVOCACY

National and international institutions have a key role to play in achieving the goals of the Paris Agreement through the development of effective and sustainable strategies and policies. Eni engages with policymakers directly and indirectly, through trade associations, contributing its experience as an international energy company to the definition of strategies and regulations aimed at accelerating the transition towards Net Zero.

Within the framework of its partnerships and advocacy activities, Eni supports and shares in a clear and transparent manner its positioning on the principles considered essential for climate protection, in line with its strategy:

1. supporting the goals of the Paris Agreement and in particular Net Zero by 2050;
2. identifying the role of natural gas in the energy transition;
3. supporting carbon pricing mechanism;
4. supporting increased energy efficiency and the development of low and zero carbon technologies;
5. promoting the role of Natural Climate Solutions;

6. supporting transparency and climate disclosure.

Eni's participation in several industry associations at a national and international level is aimed at (i) developing, sharing and promoting best practices and standards with peers in the sector; (ii) contributing to drafting advocacy positions on climate policies and regulations; (iii) identifying new approaches to satisfy stakeholders' expectations; and (iv) taking part in joint actions in the industry to mitigate the risks related to climate change and in support of the energy transition.

Periodically, Eni updates its "Assessment of industry association's climate policy positions", which reports the results of the assessment of the alignment between the positioning of Eni and the business associations in which Eni participates in relation to the six principles related to climate change. The 2022 assessment, first produced in 2020 and updated on a bi-annual basis, evaluated the public positioning of 40 associations, selected on the basis of their relevance and influence in the international climate and energy debate.

As one of the main direct climate advocacy activities in 2021, Eni has signed up to the guiding principles for reducing methane emissions along the supply chain of natural gas consumed in Europe. These principles translate into recommendations to the European legislator on areas such as Monitoring, Reporting and Verification (MRV) of methane emissions along the Oil & Gas value chain, "leak detection and repair" actions, management and reduction of venting and flaring. Furthermore, Eni expressed its position in the public consultations called by the

European Commission on the legislative proposals included in the "Fit for 55 package", including the new regulation on the Carbon Border Adjustment Measure and the revision of the Emissions Trading System and Renewable Energy Directives. In the area of Natural Climate Solutions, Eni participated in the drafting of the report "Natural Climate Solutions for Corporates", which defines the principles for the generation and use of high-quality carbon credits to offset the residual GHG emissions of private companies.

### WORKING WITH INDUSTRY

Among the many international climate initiatives in which Eni participates, the Oil and Gas Climate Initiative (OGCI) plays a key role in accelerating the Oil & Gas industry's response to the challenges of climate change. Established in 2014 by 5 Oil & Gas companies, including Eni, OGCI now counts twelve companies, representing about one-third of the global hydrocarbon production. The CEOs of the participating companies sit on the initiative's Steering Committee. To reinforce its commitment to reduce GHG emissions, in 2021 OGCI announced the new collective target of Net Zero Operations<sup>28</sup>, which adds to the GHG emission intensity and methane intensity reduction targets of the Upstream assets, announced respectively in 2020 and 2018. In March 2022, OGCI launched the new initiative Aiming for Zero Methane Emissions<sup>29</sup>. The commitment has continued with the joint investment fund, which has arrived at over 1 billion dollars, for the development technology to reduce GHG emissions throughout the energy value chain and the CCUS Kick-Starter initiative, launched in 2019 to promote the large-scale commer-

<sup>28</sup> Relates to Scope 1+2 emissions of the operated assets within the terms established by the Paris Agreement.

<sup>29</sup> For more information see the initiative's website <https://www.ogci.com/ogci-members-aim-to-eliminate-methane-emissions-from-oil-and-gas-operations-around-2030/>



➤ [To learn more: Eni for 2021 - Sustainability Performance](#)

cialisation of CO<sub>2</sub> Capture, Use and Storage (CCUS).

Eni is also a member of the Executive Committee of IPIECA, one of the most important and largest trade associations in the oil and gas industry, active in environmental and social issues that aims to support a path towards a net-zero future.

In terms of specific partnerships for the reduction of methane emissions, Eni is part of the Oil & Methane Gas initiative Partnership coordinated by UNEP, which is focused on fostering an improved understanding of methane emissions across all Oil & Gas segments, with the goal of supporting companies and governments in the definition of a strategic plan for reducing methane emissions (see section dedicated to Methane Emissions).

#### ENGAGEMENT WITH SUPPLIERS

In 2021, as part of JUST (Join Us in a Sustainable Transition), the initiative dedicated to Eni's suppliers with the aim of involving them in a just and sustainable energy transition path, Eni undertook concrete actions to stimulate the competitiveness of supply chains and support suppliers in the path of improving their mESG performance. Among the many initiatives undertaken in 2021 are:

- integration of supplier evaluation criteria, both in qualification and in tenders, with the assessment of sustainability aspects, with reference to both environmental issues, such as energy efficiency, and social and governance impacts;
- training for third-party companies with dedicated webinars and workshops with suppliers on sustainability issues for the identification

of development indicators and the definition of improvement plans, meetings with experts to examine ESG issues in greater depth (such as methodologies for calculating CO<sub>2</sub> emissions);

- creation of a digital platform, ➤ [Open-es](#), accessible and free for all Eni's suppliers and industrial supply chains, which aims to measure and improve sustainability aspects;
- creation, with Elite and Illimity Bank, of an innovative financial instrument, the Sustainable Energy Basket Bond, dedicated to the energy supply chain, to finance projects and investments aimed at sustainable development, with a particular focus on environmental, social and economic guidelines;
- stimulation of energy efficiency improvement of plants, machinery and facilities thanks to solutions and services functional to the energy transition (in collaboration with Plenitude);
- strengthening of contractual standards to integrate sustainability incentives.

#### TRANSPARENCY AND LEADERSHIP IN CLIMATE DISCLOSURE

In terms of transparent disclosure, Eni supports the definition of best practices for comprehensive climate disclosure and in its reporting adopts the recommendations of the TCFD, published in 2017. Eni was the only Oil & Gas company involved from the very start of TCFD's work and has contributed to developing the voluntary recommendations for corporate reporting on climate change issues. Eni also promotes the need for alignment among the methodologies for

GHG reporting in order to make the Oil & Gas sector performances and decarbonisation targets comparable. In this sense, Eni collaborates in the Science Based Target Initiative (SBTi), which is working on the definition of guidelines and standards applicable to the sector to define decarbonisation targets in line with the objectives of the Paris Agreement.

Transparency in climate change-related reporting and the strategy implemented by the company have enabled Eni to be confirmed, again in 2021 in the leadership group of the CDP Climate Change Programme<sup>30</sup>. The Arating achieved by Eni exceeds the global rating average of B, in a scale ranging from D (minimum) to A (maximum). Furthermore, in 2021, the TPI assessment<sup>31</sup> gave Eni the highest rating for management quality in the strategic analysis of climate-related risks and opportunities, and recognized, for the first time in the carbon performance assessment, the alignment of long-term emission targets with the Paris Agreement's more ambitious goal of limiting the rise in the average global temperature to 1.5°C by the end of the century. In the same period, Carbon Tracker<sup>32</sup> ranked Eni first among peers thanks to the completeness of its GHG emissions accounting methodology, its medium-to-long-term intermediate targets and its company-wide emissions accounting scope. In March 2021, the first CA100+<sup>33</sup> Net-Zero Company Benchmark showed Eni as one of the companies most closely aligned with the coalition's requirements, confirming its leadership role in reporting and ambition in the area of climate action.

<sup>30</sup> CDP (formerly the Carbon Disclosure Project) is an internationally recognized organisation among the leading institutions in assessing the climate performance and strategy of listed companies.  
<sup>31</sup> Transition Pathway Initiative, an investor-led global initiative that assesses companies' progress in low carbon transition. The report published in November 2021 is an update of the TPI assessment published in 2020.

<sup>32</sup> An independent financial Think tank initiative that for years has been conducting analyses to assess the impact of energy transition on financial markets.

<sup>33</sup> Climate Action 100+ is the largest shareholder engagement initiative on climate change issues with more than 570 investors to date. CA100+ objectives include increasing ambition on emission reduction targets, improving climate governance and strengthening climate-related financial disclosure.



MAIN PARTNERSHIPS	OBJECTIVE AND ACTIONS
<b>OIL &amp; GAS CLIMATE INITIATIVE (OGCI)</b>	▶ A Business Partnership of 12 among the major Oil & Gas companies, representing over a third of world hydrocarbon production, with the aim of demonstrating leadership in the fight against climate change by investing in technologies to reduce GHG emissions across the Oil & Gas supply chain.
<b>CLIMATE AND CLEAN AIR COALITION - OIL &amp; GAS METHANE PARTNERSHIP (CCAC OGMP)</b>	▶ A Public-Private Partnership coordinated by UNEP and focused on reducing methane emissions along the Oil & Gas supply chain through voluntary commitments to the implementation of monitoring, reduction and reporting projects on key sources of methane.
<b>GLOBAL METHANE ALLIANCE</b>	▶ An initiative coordinated by UNEP which, by involving the Oil & Gas sector and governments, international organisations and NGOs, aims to promote the adoption of targets for the reduction of methane emissions in the Oil & Gas sector. The Countries participating in the initiative undertake to include these reduction targets in their respective NDCs.
<b>GLOBAL GAS FLARING REDUCTION (GGFR)</b>	▶ A Public-Private Partnership led by the World Bank which aims to reduce the practice of flaring at a global level, including through the launch of the Zero Routine Flaring initiative, whereby participating parties undertake to eliminate gas sent to routine flaring by 2030.
<b>INTERNATIONAL EMISSIONS TRADING ASSOCIATION</b>	▶ IETA is the main association supporting the implementation of market-based trading schemes for GHG emissions, involving businesses in the pursuit of climate actions in line with the objectives supported by the UNFCCC.
<b>METHANE GUIDING PRINCIPLES</b>	▶ An initiative currently bringing together 21 Oil & Gas companies with the aim of reducing methane emissions across the Oil & Gas supply chain, by involving the main stakeholders in the supply chain.
<b>TCFD (TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES)</b>	▶ A Task Force launched by the Financial Stability Board with the aim of establishing recommendations and guidelines to improve corporate disclosure on financial aspects related to climate change. Eni is also part of the TCFD Oil & Gas Preparers' Forum for development of sector-specific guidelines.
<b>IPIECA</b>	▶ IPIECA is the main association in the Oil & Gas industry active on the most important environmental and social issues.
<b>WBCSD (World Business Council for Sustainable Development)</b>	▶ An association of companies committed to sustainability issues. The WBCSD coordinates the Oil & Gas focus group for the implementation of the TCFD recommendations.
<b>MIT CFS</b>	▶ A partnership with the Massachusetts Institute of Technology and Commonwealth Fusion Systems for the industrial development of technologies for the production of energy by magnetic confinement fusion.
<b>ERCST (European Roundtable on Climate Change and Sustainable Transition)</b>	▶ An independent non-profit organisation working on European and global climate change policies.
<b>SCIENCE BASED TARGET INITIATIVE (SBTI)</b>	▶ The Science Based Target Initiative is an initiative promoted by CDP, WWF Global Compact and WRI to establish shared target setting and disclosure methodologies on low carbon transition issues. The Oil & Gas transition project is part of this process, which involves various O&G companies and other stakeholders in the development of a shared methodology for the sector that will allow tracing of the emission performances of the companies and their level of alignment to the goals of the Paris Agreement.
<b>WEF-WBCSD NATURAL CLIMATE SOLUTIONS ALLIANCE</b>	▶ Multi-stakeholder platform (including business, NGOs, solutions providers) aimed at identifying opportunities and barriers to develop the full potential of Natural Climate Solutions on a global scale. The platform also serves as a means of knowledge sharing and technical capacity building.
<b>ITALIAN CIRCULAR ECONOMY STAKEHOLDER PLATFORM (ICESP)</b>	▶ An ENEA platform to bring together initiatives, experiences, issues and perspectives relating to the circular economy and to promote the circular economy in Italy through specific actions.

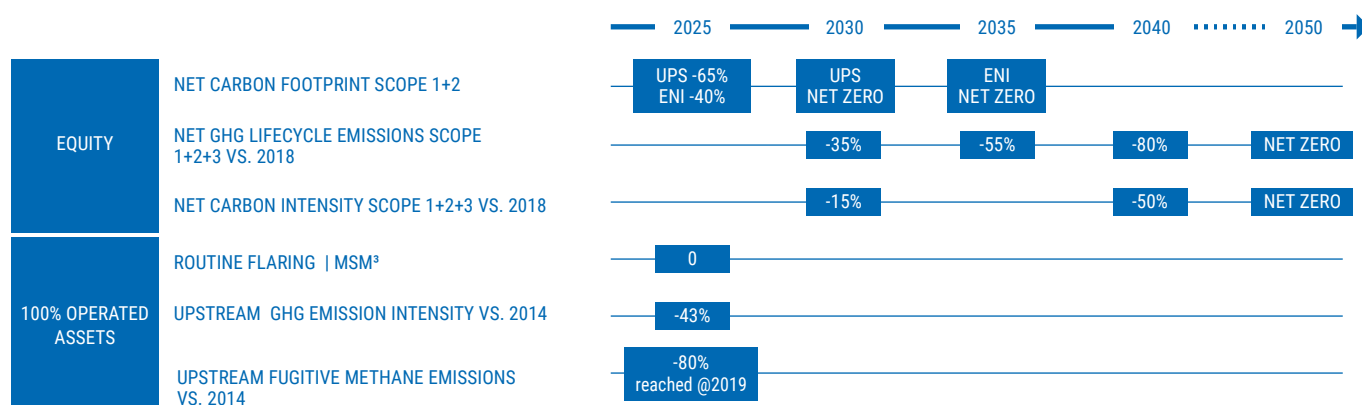


## Metrics & Targets

Eni has historically been committed to reducing its direct GHG emissions and was among the first in the industry to define, starting in 2015, a series of objectives aimed at improving performance

related to GHG emissions from operated assets, with specific indicators that illustrate the progress achieved to date in terms of reducing GHG emissions into the atmosphere. Since 2020, indica-

tors calculated on an equity basis have been included, which trace Eni's path towards carbon neutrality both in absolute (Net GHG Lifecycle Emissions) and in intensity terms (Net Carbon Intensity).



### GHG INDICATORS FOR CARBON NEUTRALITY

The pathway towards carbon neutrality in 2050 includes a series of steps that foresee net zero emissions (Scope 1+2) for the upstream business by 2030 and for Eni's group by 2035, then net zero emissions by 2050 for all GHG Scope 1, 2 and 3 emissions associated with the portfolio of products sold. Accounting for emissions is guaranteed by the application of a reporting model that considers all GHG emissions, direct and indirect, associated with the value chain of the energy products sold by Eni, including both those deriving from own production and those purchased from third parties<sup>34</sup>.

Below are Eni's key medium/long-term GHG emissions targets and the performance of the associated indicators, accounted for on an equity basis.

**Net Zero Carbon Footprint upstream by 2030:** the indicator considers Scope 1+2 emissions from all upstream assets, operated by Eni and by third parties, net of offsets mainly from Natural Climate Solutions. In 2021, the indicator is substantially stable as the slight increase in emissions related to emergency shutdowns in Nigeria and Angola and the resumption of onshore activities in Libya was balanced by increased offsetting through NCS of 2 MtCO<sub>2</sub>eq.

**Net Zero Carbon Footprint Eni by 2035:** the indicator considers Scope 1+2 emissions from activities carried out by Eni and third parties, net of offsets, mainly from Natural Climate Solutions. In 2021, the indicator is substantially stable as the slight increase in emissions, in line with the Upstream trend indicator, was balanced by increased offset-

ting through NCS of 2 MtCO<sub>2</sub>eq. **Net Zero GHG Lifecycle Emissions by 2050:** the indicator refers to all Scope 1, 2 and Scope 3 emissions associated with Eni activities and energy products sold along their value chains and net of offsets, mainly from Natural Climate Solutions. In 2021, it increased mostly in relation to the resumption of activities following the health emergency and higher sales of oil & gas retail products.

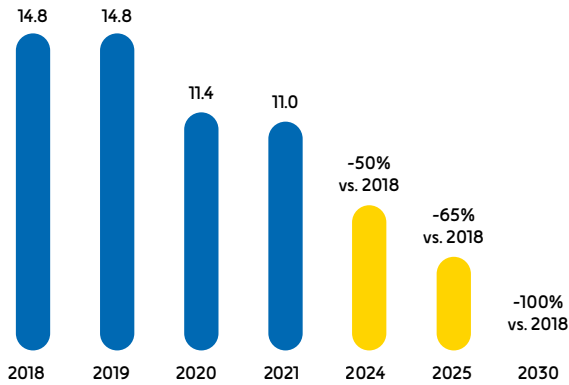
**Net Zero Carbon Intensity by 2050:** the indicator is calculated as the ratio between Net GHG Lifecycle emissions (Scope 1, 2 and 3) along the value chain of energy products and the amount of energy they contain. In 2021 it decreased by 2% compared to 2020 thanks to the increase of gas share in the energy mix and an increased contribution from NCS offsets.

34 For more details see: [The value chain approach, at pag. 39.](#)

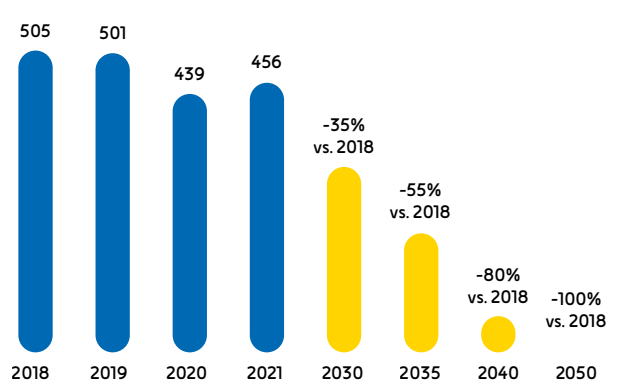




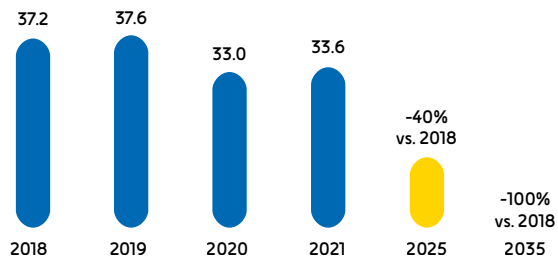
NET CARBON FOOTPRINT UPS (MTCO<sub>2</sub>eq)



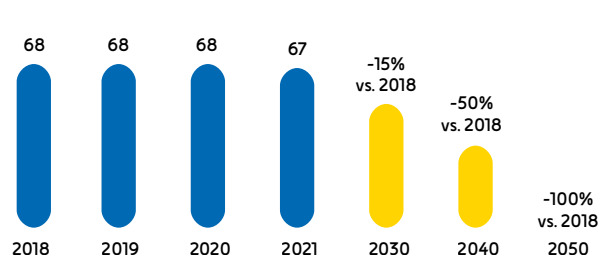
NET GHG LIFECYCLE EMISSIONS (MTCO<sub>2</sub>eq)



NET CARBON FOOTPRINT ENI (MTCO<sub>2</sub>eq)



NET CARBON INTENSITY (SCOPE 1, 2 AND 3) (GCO<sub>2</sub>eq/MJ)



➤ For more information: Eni for 2021 - Sustainability Performance

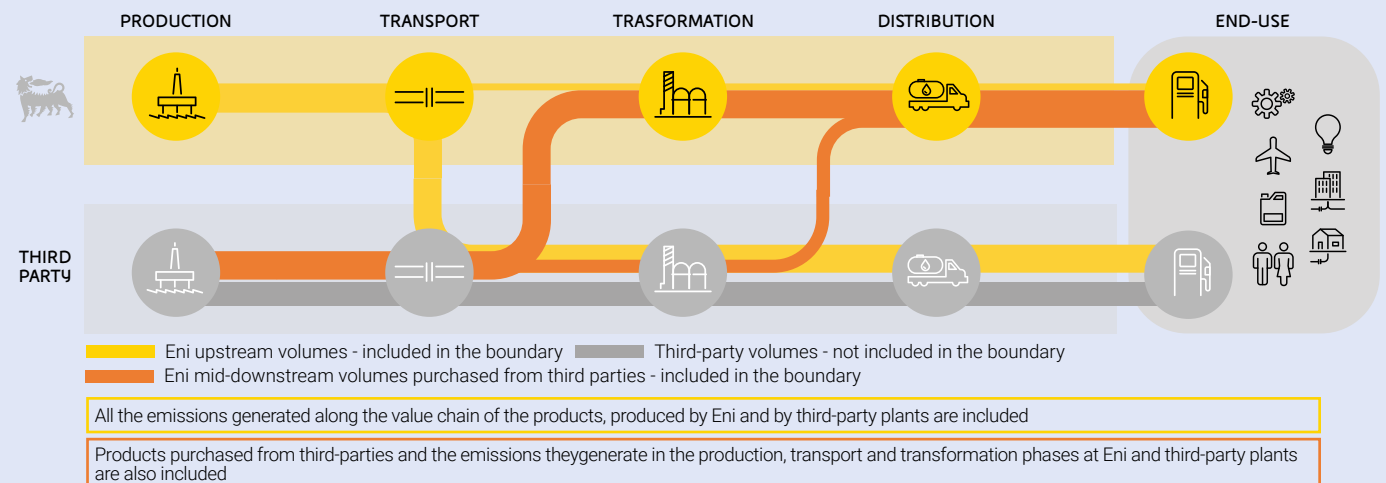
FOCUS ON

THE VALUE CHAIN APPROACH

Eni has adopted an approach inspired by **lifecycle** analysis as the most suitable and representative tool for tracing progress towards carbon neutrality. Accounting of GHG emissions from Eni's value chains refers to a distinctive proprietary methodology that allows an integrated view of Scope 1+2+3 GHG emissions related to all energy products sold by Eni.

This approach therefore includes **all energy products managed by the various Eni businesses and all the emissions that they generate across the entire value chain**. For each of these products, the methodology includes all significant sources of GHG emissions, following a **well-to-wheel approach**. The volumes of energy products considered are quantified based on an **extended boundary**, which includes both equity production and volumes purchased from third parties.

The methodology was developed with the collaboration of independent experts, and is being progressively improved to reflect the latest developments in GHG emissions reporting standards. The resulting indicators are published annually and certified by the financial auditor.





### GHG EMISSIONS FROM OPERATED ASSETS

GHG Scope 1 and Scope 2 emissions are accounted according to the operatorship criteria (100% of the share relating to activities operated by Eni at a global level), in all reference businesses. Since 2019, these emissions have been subject to a “reasonable assurance” verification by the audit firm.

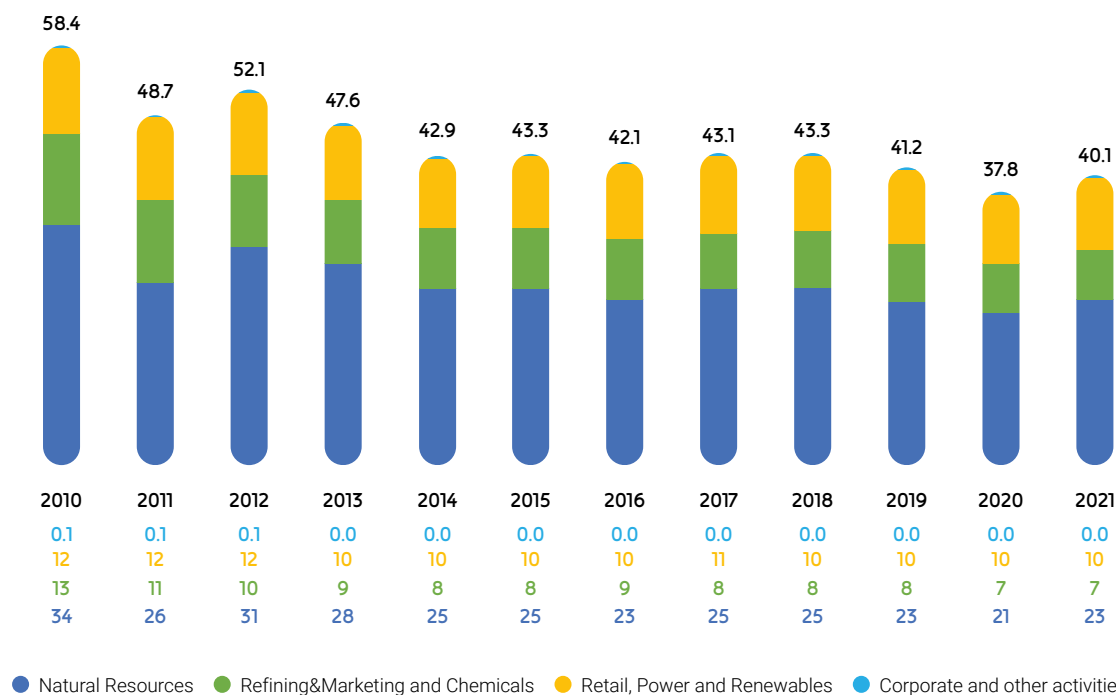
Eni’s GHG Scope 1 emissions in 2021 amounted to 40.1 million tons of CO<sub>2</sub>eq, up 6% compared to 2020, mainly due to the resumption of activities in the upstream and gas transport, power and chemicals

sectors. Approximately 45% of GHG emissions are subject to carbon pricing schemes, mainly the European Emission Trading Scheme, which covers all major mid-downstream facilities, and 57% of direct emissions come from the Exploration & Production sector. The main contribution to emissions is from combustion and process, related to the energy consumption of production assets. Eni’s GHG emissions are mainly linked to activities in Italy and Africa. The remaining being located in Asia, Oceania, Rest of Europe and America. Indirect emissions resulting from the purchase of electricity, steam and

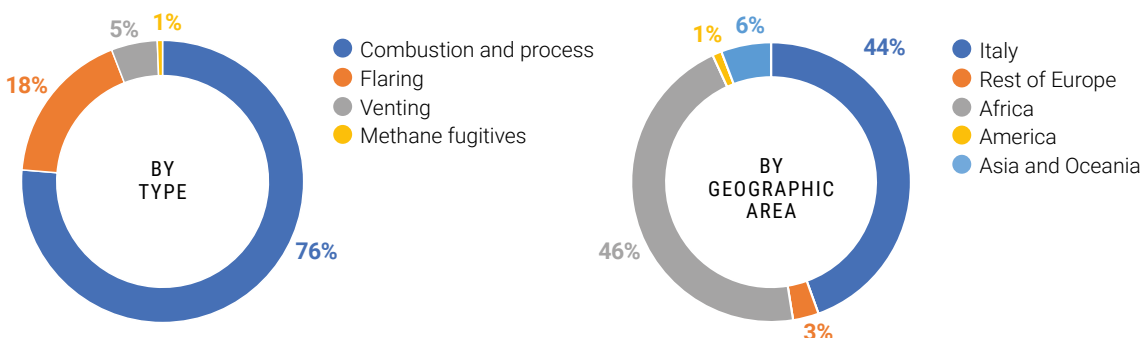
heat from third parties (so called Scope 2) are quantitatively negligible for Eni (approximately 0.8 Mt-CO<sub>2</sub>eq in 2021), since in most cases electricity generation is carried out through Eni’s own installations and the associated GHG emissions are accounted among direct emissions. Regarding indirect Scope 3 emissions, they are reported in Eni’s according to the 15 categories of the GHG protocol and applying IPIECA guidelines, which envisage an analysis by activity (for more details, see page 40 *GHG statement*).

**➤ To learn more:** [Eni for 2021 - Sustainability Performance](#)

### ENI DIRECT GHG EMISSIONS (MTCO<sub>2</sub>eq)



### GHG EMISSION SCOPE 1 2021 BY TYPE AND BY GEOGRAPHIC AREA



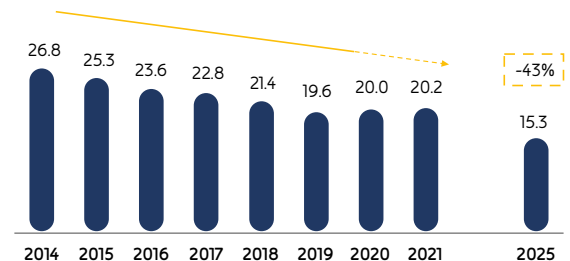


### UPSTREAM GHG INTENSITY

In line with the progressive decarbonization of the Oil & Gas portfolio, Eni continues in the progressive reduction of the Upstream GHG emission intensity of operated assets, in line with the target of a 43% reduction by 2025 compared to 2014.

The upstream GHG intensity index, expressed as the ratio of direct Scope 1 emissions to gross production, was substantially stable in 2021. The trend is mostly related to emergency shutdowns in Nigeria and Angola and the resumption of onshore activities in Libya. The effect is partially balanced by a reduction in fugitive emissions, thanks to monitoring and maintenance activities, and a general optimisation of consumptions.

### UPSTREAM GHG INTENSITY TCO<sub>2</sub>eq/KBOE

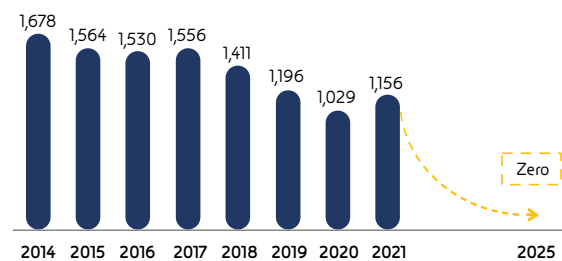


### ZERO ROUTINE FLARING

One of the drivers for reducing the emission intensity of the upstream sector is the progressive reduction of routine flaring (“process flaring”). As part of this, Eni joined the “Zero Routine Flaring” initiative promoted by the World Bank Global Gas Flaring Reduction Partnership (GGFR), which brings together governments, oil companies and international development organisations. The Zero Routine Flaring initiative aims to phase out routine flaring by 2030. Eni, which anticipated the initiative objective in to 2025, is active in specific programmes for the reduction of flaring by using gas to produce electricity for local populations, distribution for domestic consumption or export. Where these procedures are not possible, Eni has built facilities for natural gas re-injection in the field.

In 2021, volumes of hydrocarbons sent for routine flaring increased compared to 2020 mainly due to the resumption of operations at the Abu-Attifel and El Feel facilities in Libya, which were shut for most of 2020.

### VOLUME OF HYDROCARBONS SENT TO ROUTINE FLARING MSm<sup>3</sup>

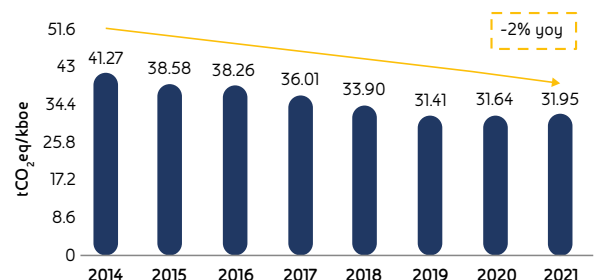


### COMMITMENT TO ENERGY EFFICIENCY

Since 2018, Eni has been monitoring the emission intensity of its industrial activities through a specific index, which expresses the intensity of GHG Scope 1 and Scope 2 emissions per unit of energy production, thus measuring their degree of efficiency in a decarbonisation context. An target of incremental improvement of 2% per year was set on this index compared to the 2014 index value. This objective refers to an overall Eni index, maintaining the appropriate flexibility in the trends of individual businesses.

In 2021, the index was around 32 tonCO<sub>2</sub>eq/mgI boe, slightly higher compared to 2020, mainly due to the resumption of activities which are not yet fully operational, and in line with the trend for the upstream sector, which significantly weighs on the overall index. This effect was partially offset by the energy efficiency projects launched or completed during the year.

### CARBON EFFICIENCY INDEX (SCOPE 1+2) (TCO<sub>2</sub>eq/kboe)





In 2022, Eni confirmed its commitment in reducing methane emissions from the Upstream business, in line with Global Methane Pledge

In 2021, Eni continued its investment plan both in projects aiming directly at increasing energy efficiency of assets (€10 million) and in development and revamping projects with significant effects on the energy performance of operations. The interventions carried out during the year led to an actual saving of primary energy compared to baseline consumption of 391 ktoe/year, mainly from upstream projects (about 81%), with a benefit in terms of emissions reduction of about 0.9 million tonnes of CO<sub>2</sub>eq. If scope 2 emissions, i.e. from purchased electricity and heat, are also taken into account, the CO<sub>2</sub> savings from efficiency projects amount to almost 1 million tonnes of CO<sub>2</sub>eq. The effort to extend the energy management system approach to the Upstream sector's businesses continued in 2021, covering more than 75% of the assets consumption with energy assessment and starting an analysis of the potential for integrating the ISO 50001-compliant energy management system with the HSE systems already adopted and certified.

## METHANE EMISSIONS

### CONTEXT AND ENI'S PARTNERSHIPS FOR METHANE EMISSIONS

The issue of methane emissions has become central to the international climate debate, given its high climate-altering potential and its recognized role in terms of opportunities to mitigate global warming in the short to medium-term. The Global Methane Pledge, a collective target to reduce anthropogenic methane emissions by 30% in 2030 (vs. 2020 levels), was launched at COP26 during 2021, and is already supported by more than 100 countries. Eni has

long been committed to reducing methane emissions, been one of the first companies to define an absolute reduction target for fugitive methane emissions in 2016, and confirming its commitment in 2022 to further reduce methane emissions from its Upstream businesses in line with the Global Methane Pledge. Eni also participates in the major international methane partnerships and initiatives, including:

- as part of the **Oil & Gas Climate Initiative**, in addition to participating in the collective target to reduce upstream methane intensity (well below 0.2%), Eni is among the promoters of the launch of the Aiming for Zero Methane Emissions Initiative and is engaged in monitoring and testing innovative technologies for measuring and mitigating emissions<sup>35</sup>;
- during 2021, as part of the **Oil & Gas Methane Partnership 2.0**, Eni reached the "Gold Standard" reporting level, having presented an implementation plan including the actions needed to progressively improve the quality and accuracy of methane emissions, with an increasing commitment to direct measurement;
- as a signatory to the **Methane Guiding Principles** initiative, Eni is committed to 5 key principles in the management of methane emissions (reduction, performance improvement, accuracy, policy and disclosure) and has supported, together with other companies and organisations, the definition of the European methane strategy.

### RESULTS AND MITIGATION ACTIONS

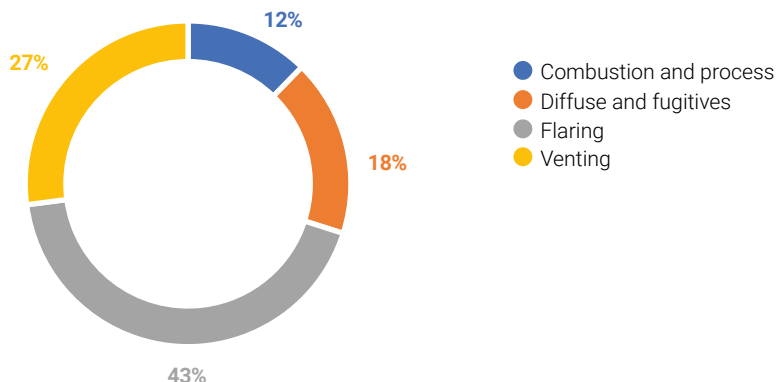
Eni continues its commitment to optimising its monitoring and re-

porting processes to reduce methane emissions from its operated assets. In 2021, Eni's methane emissions were 1.37 MtCO<sub>2</sub>eq, stable compared to 2020 and essentially concentrated in Upstream activities (95% of the total). Emissions are associated with unburnt methane from flaring (43%) and production processes (12%), venting (27%) and fugitive emissions (18%). Regarding the planned mitigation actions for each category:

- **Flaring:** In addition to the reduction contribution from flaring down projects, Eni is analysing technologies for measuring and optimising the combustion efficiency of flares and conducting feasibility studies for the implementation of closed flares;
- **Unburnt methane:** ongoing energy efficiency projects, energy assessment (ISO 50001) and the application of the best available technologies to improve performance and reduce consumption (digitalisation, electrification and integration with renewable energies);
- **Venting:** ongoing mitigation of fixed sources (e.g. compressors, tanks) for existing assets; for all new assets minimum design criteria for zero venting have been defined;
- **Fugitive:** monitoring and maintenance campaigns (Leak Detection And Repair - LDAR) continued during the year and contributed to maintaining the reduction trend. To date, 95% of the Upstream operated production is covered by LDAR programmes (corresponding to about 60 sites). The overall reduction in upstream fugitive emissions compared to 2014 is 92%, confirming the early achievement since 2019 of the 80% reduction target set for 2025.

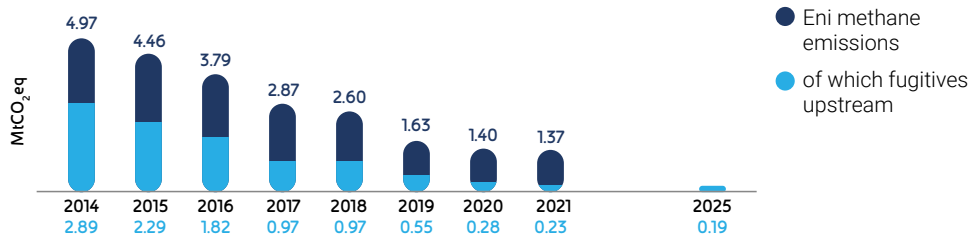


### ENI'S METHANE EMISSIONS BY CATEGORY



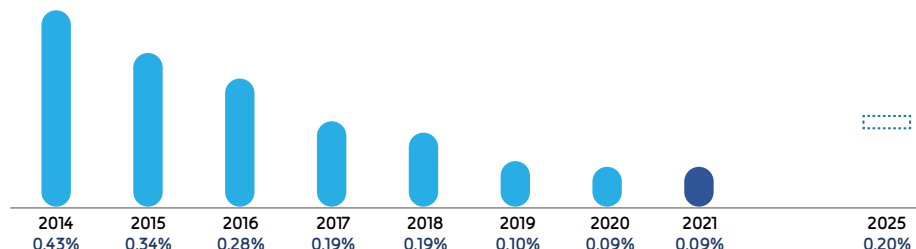
In absolute terms, in 2021 Eni achieved a reduction of more than 2.65 MtCO<sub>2</sub>eq of fugitive upstream methane emissions vs. 2014, reaching the 80% reduction target by 2025 six years ahead of schedule, in 2019.

### ENI METHANE EMISSIONS MTCO<sub>2</sub>eq



The upstream methane emission intensity index (0.09% in 2021) remained stable compared to 2020. Eni contributes to the OGCI collective target of reducing upstream methane intensity from 0.32% in 2017 to 0.25% in 2025, with the ambition to reduce it to 0.20%.

### UPS METHANE INTENSITY (M<sup>3</sup>CH<sub>4</sub>/M<sup>3</sup> GAS SOLD)



➔ To learn more: [Eni for 2021 - Sustainability Performance](#)

## FOCUS ON

### TECHNOLOGIES TO REDUCE METHANE EMISSIONS

In the short-to-medium-term, technological innovation will play a key role in facilitating the monitoring and progressive reduction of methane emissions from Oil & Gas operations.

The instrument most commonly used in Eni sites for LDAR programmes is the OGI (Optical Gas Imaging) camera, a highly specialised version of an infrared camera that can detect a gaseous compound based on their wavelength. In 2021, the programme for the acquisition of thermal imaging cameras by the subsidiaries continued, and a training programme has begun for local teams for the appropriate use of these instruments and the monitoring methodology, in accordance with the best international standards such as OGMP-CCAC and EPA, which are incorporated into the company's operating instructions. The availability of the thermal imaging camera on site ensures the possibility of more frequent monitoring, at least annually, for each site and in conjunction with maintenance activities.

In addition to the use of more traditional technologies, Eni is testing new technologies for detecting and estimating emissions using portable systems, satellites, aircrafts, drones and fixed monitoring locations. The different platforms can be used together in order to optimally exploit their coverage, accuracy and detection threshold. During 2021, testing activities concerned the acquisition of satellite data through the GHGSAT platform on specific assets operated by Eni. These acquisitions will continue in 2022 with the extension to new countries. In addition, aerial monitoring was carried out on various types of installations in northern Italy, and special valves were installed with a technology to virtually eliminate fugitive emissions. The technologies tested are part of the OGCI Climate Investment portfolio.



## METRICS

Below are the metrics used to evaluate and manage risks and opportunities related to climate change.

LONG-TERM INDICATORS <sup>(a)</sup>		2017	2018	2019	2020	2021
Net Carbon Footprint Upstream (Scope 1 e 2)	(million tonnes CO <sub>2</sub> eq)	n/a	14.8	14.8	11.4	11.0
Net Carbon Footprint Eni (Scope 1 e 2)		n/a	37.2	37.6	33.0	33.6
Net GHG Lifecycle Emissions (Scope 1, 2 e 3) <sup>(b)</sup>		n/a	505	501	439	456
Net Carbon Intensity (Scope 1, 2 e 3) <sup>(b)</sup>	(gCO <sub>2</sub> eq/MJ)		68	68	68	67
Renewable installed capacity <sup>36</sup>	(GW)	0,01	0.04	0.19	0.35	1.19
Capacity of biorefineries	(million tonnes/y)	0,36	0.36	1.11	1.11	1.10
KEY PERFORMANCE INDICATORS <sup>(b)</sup>		2017	2018	2019	2020	2021
Eni direct GHG emission (Scope 1)	(million tonnes CO <sub>2</sub> eq)	43.15	43.35	41.20	37.76	40.08
of which: CO <sub>2</sub> eq from combustion and process		33.03	33.89	32.27	29.70	30.58
of which: CO <sub>2</sub> eq from flaring <sup>37</sup>		6.83	6.26	6.49	6.13	7.14
of which: CO <sub>2</sub> eq from fugitive methane emissions		1.14	1.08	0.56	0.29	0.24
of which: CO <sub>2</sub> eq from venting		2.15	2.12	1.88	1.64	2.12
Indirect GHG emissions (Scope 2)		0.65	0.67	0.69	0.73	0.81
Indirect GHG emissions (Scope 3) from use of sold products <sup>(c)</sup>		229	203	204	185	176
Carbon Efficiency Index (Scope 1 + Scope 2)	(tCO <sub>2</sub> eq/kboe)	36.01	33.90	31.41	31.64	31.95
Upstream GHG emissions (Scope 1)/gross hydrocarbon production 100% operated (UPS)	(tCO <sub>2</sub> eq/kboe)	22.75	21.44	19.58	19.98	20.19
GHG emissions from refineries (Scope 1)/input processed quantities (raw and semi-finished materials) (R&M)	(tCO <sub>2</sub> eq/kt)	258	253	248	248	228
GHG emissions (Scope 1)/Equivalent electricity produced (EniPower)	(gCO <sub>2</sub> eq/kWheq)	395	402	394	391.4	379.6
Upstream methane emissions	(thousands of tonnes CH <sub>4</sub> )	105.2	97.8	63.6	51.4	51.9
of which fugitives		38.8	38.8	21.9	11.2	9.2
Methane intensity Upstream (m <sup>3</sup> CH <sub>4</sub> /m <sup>3</sup> marketed gas)	%	0.19	0.16	0.10	0.09	0.09
Total volume of hydrocarbons sent to flaring	(millions of Sm <sup>3</sup> )	2,291	1,945	1,913	1,799	2,185
of which: routine		1,556	1,411	1,196	1,028	1,156
Production of hydrocarbons in equity	(kboe/day)	1,816	1,851	1,871	1,733	1,682
Gross production hydrocarbons 100% operated	Million boe	998	1,067	1,114	1,009	1,041
R&D expenditure	(€ mln)	185	197	194	157	177
of which: for decarbonisation and circular economy	(€ mln)	72	74	102	74	114

(a) Indicators accounted for on an equity basis.

(b) Unless otherwise specified, KPIs for GHG emissions and consumption refer to data for 100% of operated assets.

(c) Category 11 of GHG Protocol Corporate Value Chain (Scope 3) Standard. Estimate based on Eni's share of upstream production in line with IPIECA methodologies. Since 2018, the Scope 3 emissions calculation methodology has been refined in order to better represent emissions from the use of products sold (Scope 3 end-use).

<sup>36</sup> This KPI represents Eni's share and relates primarily to Plenitude. 2020 and 2019 values have been appropriately restated.

<sup>37</sup> From 2020, the indicator includes all Eni emissions deriving from flaring, also aggregating the contributions of Refining & Marketing and Chemical, which, until 2019 are accounted for in the combustion and process category.



## OTHER METRICS

Hydrocarbon resources (3P+Contingent) at 31/12/2021: % gas on total (%)	(%)	>50%
Break-even price of 2P reserves		Brent@ca. 20 \$/bl l
Internal rate of return (IRR) of new upstream projects in progress		21% @ Eni Scenario
Carbon pricing - Eni scenario	(\$/tonne)	45 real terms 2021
Stress test: resilience of upstream portfolio (100% cash generating unit)		
• @ IEA SDS scenario WEO 2021	headroom vs. book values	76% (75% in case of non-deductibility)
• @ IEA NZE 2050 scenario	Surplus %	35% (32% in case of non-deductibility)
2022 Sensitivity: Brent (+1 \$/bl)	(billion €)	Adjusted operating profit: 0.21 Adjusted net profit: 0.14 Free cash flow: 0.14

## REFERENCE TABLE OF TCFD RECOMMENDATIONS - ENI REPORTING

		Consolidated non-financial report	Eni for - carbon neutrality by 2050
<b>GOVERNANCE</b>			
Disclose the organisation's governance around climate-related risks and opportunities.	a) Oversight by the BoD	✓ Key elements	a) Role of the Board page 10
	b) Role of management		b) Role of management page 11
<b>STRATEGY</b>			
Represent the current and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material.	a) Risks and opportunities related to climate	✓ Key elements	a) Risks and opportunities related to climate change pp. 13-15
	b) Incidence of risks and opportunities related to climate		b) Risks and opportunities related to climate change pp. 13-15
	c) Strategy resilience		c) Strategy pp. 16-37
<b>RISK MANAGEMENT</b>			
Represent how the Company identifies, evaluates and deals with risks connected to climate change.	a) Identification and evaluation processes	✓ Key elements	a) Integrated climate risk management model pp. 12-13
	b) Management processes		b) Integrated climate risk management model pp. 12-13
	c) Integration into overall risk management		c) Integrated climate risk management model pp. 12-13
<b>METRICS &amp; TARGET</b>			
Represent metrics and targets used to evaluate and manage risks and opportunities linked to climate change wherever the information is material.	a) Metrics used	✓ Key elements	a) Metrics pp. 44-45
	b) GHG emissions		b) Metrics pp. 44-45
	c) Targets		c) Metrics & Targets page 38

Furthermore, Scope 1 and Scope 2 GHG emissions are subject to reasonable assurance by PwC with the aim of ensuring even greater solidity of these data of strategic importance for Eni (for further information, see the "Statement on GHG accounting and reporting - year 2021" attached to this document). A further level of disclosure detail is provided by responses to the CDP Climate Change questionnaire).



# Statement on GHG emissions accounting and reporting - Year 2021

This section contains details Eni Group's annual GHG performance and the methodologies and processes used to account for emissions, relating to direct Scope 1, indirect Scope 2 and indirect Scope 3 GHG emissions associated with the operations and activities of the value chain of Eni SpA and its subsidiaries. The report also includes the Emissions indicators associated with the medium to long-term decarbonisation targets, namely Net Carbon Footprint Upstream, Net Carbon Footprint Eni, Net GHG Lifecycle Emissions and Net Carbon Intensity. The figures are aligned with the ones stated in Eni's institutional publication, namely the Annual Report 2021 (Consolidated disclosure of Non-Financial information).

Level of assurance: Reasonable (Scope 1, Scope 2); Limited (Scope 3, medium-to-long-term Emissions Indicators); Assurance standard: ISAE 3410.

## Organisational boundaries

### Scope 1, Scope 2, Scope 3

Eni applies the operational control approach to set the GHG organisational reporting boundary for Scope 1 and Scope 2 emissions. According to this approach, Eni reports 100% of GHG emissions from assets over which it has operational control, that is where Eni can enforce its own operative policies and procedures, even when it holds less than 100% of the value (for example in a joint venture). The organisational boundary includes all companies in joint operations, with combined control or connected, where Eni owns the operational control. The inclusion is based on a risk-based clusterization process to define the impact and the materiality of each company in terms of HSE issues, including GHG emissions. Given the variability of each emission category, the bound-

ary of Scope 3 emissions reporting is more heterogeneous; specificities and limitations are detailed in table [at page 49](#). For the category 11, (use of sold products), which is the most relevant, the reference boundary is the upstream equity hydrocarbon production sold.

### Indicators for net zero

Accounting of the indicators associated to the net-zero targets, is carried out based on the equity share approach. The reference boundary for Net GHG Lifecycle emissions and Net Carbon Intensity includes the GHG emissions associated to the lifecycle of Eni's energy products, net of offsets, mainly from Natural Climate Solutions (NCS)<sup>38</sup>. As far as the Net Carbon Footprint Upstream and Net Carbon Footprint Eni indicators, the reporting boundary includes GHG Scope 1+2 emissions of activities operated both by Eni and third parties, accounted for on an equity basis (Revenue Interest for Upstream, corporate equity shares for the other BUs), net mainly from NCS<sup>39</sup>.

### Operational Boundaries

In terms of Operational Boundaries, Scope 1 and Scope 2 GHG emissions include the operations of all Eni's businesses, its Italian and abroad subsidiaries, sites and all companies listed in the 2021 Annual Report.

Some categories of Scope 3 indirect emissions are not within the scope of Eni's Scope 3 reporting (in line with GHG Protocol classification), as described in the [table at page 49](#). In detail: Category no. 8 - Upstream leased assets, Category no. 9 - Downstream transportation and distribution, Category no. 13 - Downstream leased assets and Category no. 15 - Investments.

GHG emissions sources tracked/monitored/reported are classified ac-

ording to the WBCSD/WRI GHG Protocol Initiative Standard and technical standard ISO 14064-1 on direct emissions (Scope 1) and indirect emissions (Scope 2 and Scope 3). In the following paragraph, the emissions areas are defined (Scope 1, 2 and 3) and some sources relevant to Eni are identified. The GHG gases considered are CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O<sup>40</sup>. GWP over 100 years as set by the 4th Assessment Report by IPCC are applied to convert emissions into CO<sub>2</sub>eq<sup>41</sup>.

### GHG Emissions Accounting

Eni has implemented a process to collect, account for and report GHG emissions based on the following elements:

- Internal procedures have been implemented for the identification of material GHG emission sources and for the identification of common methodologies to calculate GHG emissions at the bottom-up level. Methodologies are broadly inspired by WBCSD GHG Protocol, IPIECA O&G Guidance and API Compendium;
- Centralised tools have been implemented to ensure a proper calculation of GHG Emissions at a bottom-up level. Information tools are managed by centralised units and verified to ensure that the emissions are estimated with the same approach throughout the subsidiaries, minimising the risk of error and in compliance with regulatory requirements (e.g EU ETS);
- Specific procedures for data collection are applied, consistently with the organisational structure of the Company, clearly identifying roles and responsibilities and the reporting timeline. Data are collected with a bottom-up approach: GHG operators of sites and facilities within Eni's operational boundary insert data into Eni's database.

38 For 2021 equal to 2 MtCO<sub>2</sub>eq from NCS.

39 For 2021 equal to 2 MtCO<sub>2</sub>eq from NCS.

40 Eni has carried out an analysis to assess the materiality of other GHG gases (HFCs, PFCs and SF6) based on available reported data. The analysis showed that these are not material for Eni as well as for the Oil & Gas industry, as they contribute about 0.2% of the total CO<sub>2</sub>+CH<sub>4</sub>+N<sub>2</sub>O, as stated in the Kyoto protocol.

41 The GWP used in calculations since 2015 are: 25 for CH<sub>4</sub> and 298 for N<sub>2</sub>O.





This data is then consolidated by the Central Unit and stored on a server, through Eni's internal rules and procedures with a dedicated. Quality Assurance/Quality control procedures are applied to ensure the accuracy and consistency of emissions data. Additional information is also collected to ensure data consistency, to track performance and to better explain potential changes in trends and objectives. Finally, internal auditing is also planned at various levels, also covering GHG emissions data.

Regarding the level of uncertainty associated with activity data (consumption) and emission factors, appropriate measures are implemented, where possible, to minimize the uncertainty, such as: (i) the application of regulated standards and the use of accredited laboratories for the analysis of fuel characteristics in order to determine emission factors; (ii) the use of measurement instruments, calibrated periodically in accordance with international standards, to account for energy consumption (activity data).

**GHG ACCOUNTING METHODOLOGIES**

**Direct GHG Emissions - Scope 1**

Stated Scope 1 GHG emissions come from sources owned or controlled by Eni Group, including:

- Emissions from "core" and support operations owned or controlled by Eni, including GHG emissions connected with energy generation export to both Eni's and third party sites;
- Emissions from leased assets/operations (leased vehicles fleet).

Scope 1 GHG emissions are classified in categories listed in the table below:

<b>GHG emissions from combustion and process</b>	GHG Emissions from stationary combustion, mobile sources and industrial process operations.
<b>GHG emissions from flaring</b>	GHG emissions from the controlled combustion of hydrocarbons. This type of source includes emissions deriving from: routine flaring, non-routine and emergency flaring.
<b>GHG emissions from venting</b>	GHG emissions from venting in Oil & Gas exploration and production operations, power generation and gas transportation operations. In detail: CO <sub>2</sub> and CH <sub>4</sub> within unburned gases discharged through venting openings and CO <sub>2</sub> from oilfields associated with Upstream production.
<b>CH<sub>4</sub> fugitive emissions</b>	Unintentional leaks from plant's equipment like pumps, valves, compressor seals, open end lines, etc.

GHG emissions are expressed in metric tonnes of CO<sub>2</sub> equivalent, using Global Warming Potential (IPCC, 4AR) as the conversion factors for CH<sub>4</sub> and N<sub>2</sub>O.

The calculation of emissions is derived from estimated Activity data (e.g. fuel consumed, electricity, distance travelled). Based on their physical origin, data are taken from: (i) fuel meter records; (ii) utility bills, e.g. for electricity consumption; (iii) direct measurement (such as LDARs for fugitive emissions); (iv) other methods used at some Eni sites and facilities.

Emission factors used are mostly calculated using the chemical composition of the gas<sup>42</sup> or taken from the literature, in line with:

- EU-ETS Regulation 2018/2066:

Table of national standard parameters for the year 2021. Revised and published by the Ministry of Ecological Transition, applied to: natural gas, LPG, refinery fuel gas, oil-derived gas, flare gas;

- API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry 2009 for CO<sub>2</sub>, CH<sub>4</sub> e N<sub>2</sub>O.

In Eni's sites and facilities where a leak detection and repair programme (LDAR) is in place, fugitive GHG emissions are estimated, reported and monitored through periodic measurements. Emission factors are mainly derived from API or EPA standards (e.g. EPA Protocol No. 453) and emissions are expressed in tCO<sub>2</sub>eq/year. Whereas the LDAR program is not

yet in place, fugitive emissions are estimated through emissions factors, achieved starting from oil and gas production (API Compendium 2009).

**Scope 2 indirect emissions**

This category includes GHG emissions from the generation of electricity and steam purchased from third parties and consumed by Eni. The general criterion for estimating emissions is the same as that used for Scope 1. Emissions are estimated by applying a location-based approach, considering the average energy mix in countries where third party purchases occur.

The references for Scope 2 Emissions factors from electricity purchases are: "IEA 2019 Emissions of

<sup>42</sup> In Eni's facilities which are within scope of European Trading Scheme, if mandatory and chemical composition of fuel gas or flare gas are known, a source specific emission factor is calculated; otherwise emissions factors from references above are used. In Upstream sites, if the chemical composition of fuel gas, flare and vented gas are known, a specific emission factor is calculated, otherwise emissions factors from the API Compendium are used.



CO<sub>2</sub> from fuel combustion” for the emissions of CO<sub>2</sub> and “API Compendium 2009” for CH<sub>4</sub> and N<sub>2</sub>O. Emissions factors used to calculate indirect emissions from steam purchases are derived from the API Compendium 2009.

The trading of electricity carried out by Eni and their relevant GHG emissions is accounted for as Scope 3, Category no. 3 “Fuel and Energy-related activities”.

#### Scope 3 indirect emissions

GHG emissions connected with the Eni value chain and not accounted for as either Scope 1 or Scope 2 GHG emissions. According to the

WBCSD/WRI GHG Protocol of the Corporate Value Chain (Scope 3) accounting and reporting standard, and the IPIECA standard, Scope 3 indirect GHG emissions are classified according to the categories listed in table at page 49.

For the Oil & Gas sector, the most relevant category is that related to the use of the products sold (cat.11). For this category the GHG emissions are estimated as if all oil and natural gas production sold were consumed in 2021. To set the activity data, the net volume accounting method has been applied<sup>43</sup>, considering only upstream

equity hydrocarbons production, which represents the greatest hydrocarbon volumes along Eni’s Oil & Gas value chain according to a main supply chain viewpoint. Internal elaborations, based on the IEA refining conversion rates from the standard oil barrel, have been used to calculate the final products sold. Emissions calculation takes also into account the assumptions on the final destination of the products sold<sup>44</sup>.

#### GHG EMISSIONS DATA

The Scope 1 GHG emissions categorised by type of gas and Business Unit are reported below:

Scope 1 GHG Emissions [t]	Upstream	GGP	GTR&M	Versalis	Enipower	Other	Eni
CO <sub>2</sub>	20,829,621	956,621	3,785,025	2,880,087	9,972,896	19,285	38,443,536
CH <sub>4</sub>	51,865	1,852	78	378	429	88	54,691
N <sub>2</sub> O	557	25	58	81	170	0	891
<b>tCO<sub>2</sub>eq</b>	<b>22,292,324</b>	<b>1,010,295</b>	<b>3,804,294</b>	<b>2,913,769</b>	<b>10,034,158</b>	<b>21,511</b>	<b>40,076,352</b>

Emissions reported as Upstream also include contributions of the Torrente Tona (Italy) and IPP Okpai (Nigeria) power plants generating electricity not linked with hydrocarbon production. Excluding

this contribution, Upstream GHG emissions related to hydrocarbons production in 2021 are equal to 21,015,635 tCO<sub>2</sub>eq. This figure is used to calculate the Upstream GHG emissions intensity indicator.

The following table displays 2021 Scope 2 indirect Emissions from the use of purchased electricity and steam disaggregated by business line:

Scope 2 GHG Emissions [t]	Upstream	GGP	GTR&M	Versalis	Enipower	Other	Eni
CO <sub>2</sub>	239,567	3,288	46,631	427,683	12,248	45,728	775,144
CH <sub>4</sub>	15	0	3	18	0	3	40
N <sub>2</sub> O	37	1	12	62	1	11	123
<b>tCO<sub>2</sub>eq</b>	<b>250,931</b>	<b>3,455</b>	<b>50,134</b>	<b>446,729</b>	<b>12,606</b>	<b>49,086</b>	<b>812,940</b>

Scope 2 GHG emissions broken down by type of energy purchased are:

GHG Emissions Vectors	[tCO <sub>2</sub> eq]
Purchase of electricity	629,007
Steam purchases	183,933
<b>Overall GHG Scope 2</b>	<b>812,940</b>

43 References: Estimating petroleum industry value chain (Scope 3) greenhouse gas emissions. Overview of methodologies, IPIECA – 2016.

44 Share of petroleum products delivered to non-energetic uses (e.g petrochemical) or associated to decarbonized products (e.g blue hydrogen, power with CCS) according to IEA WEO 2021.



Id.	CATEGORY	DESCRIPTION
1	<b>Purchased goods and services</b>	GHG emissions associated with goods and services purchased from the first level supply chain, through purchase contracts managed by Eni's procurement department, that provides information on the type of purchases and associated expenditure. The boundary covers Eni and all controlled subsidiaries; some goods and services are not managed by Eni's procurement department and may be included in other categories (e.g. transport, sold products).
2	<b>Capital assets</b>	GHG emissions from capital assets purchased from the first level supply chain and purchase contracts issued by Eni's Procurement department. Relevant capital assets are those identified as Capex in Eni's 2021 Annual Report. The boundary covers Eni and all controlled subsidiaries.
3	<b>Electricity sold</b>	GHG emissions from fuel and energy are not accounted for either in Scope 1 or Scope 2, purchased by Eni and sold to end-users in 2021. Includes Gas & Power sales of Electricity (GGP and Plenitude).
4	<b>Upstream transportation and distribution</b>	GHG emissions from purchased transportation and distribution services paid for by Eni and carried out with vehicles not owned by Eni, including: (i) Crude Oil and Petroleum Product maritime transportation, based on the fuel consumed in direct transportation (laden shipping); (ii) Petroleum Products road transportation; (iii) Equipment and materials transportation by vessels (Upstream).
5	<b>Waste generated in operations</b>	GHG Emissions from waste management carried out by third parties, during disposal and treatment of waste generated in Eni's operations (100% operated, both for production and remediation activities). GHG Emissions of waste sent to landfills include those from both transportation and disposal operations; GHG emissions from waste that undergo incineration, recycling or biological/chemical/physical treatment are limited to their transportation only.
6	<b>Business travel</b>	GHG emissions generated by vehicles not owned by Eni used by Eni's employees for business travel in 2021. It includes emissions from cars, planes and trains, calculated from the tickets provided by Eni Travel Management Support Services.
7	<b>Employee commuting</b>	GHG emissions from commuting from home-workplace and back, carried out by Eni's employees in 2021. Travels by helicopter or by car from/to Eni's offshore facilities with leased or 3 <sup>rd</sup> party vehicles are included in this category. Commuting of Eni Joint Venture Employees is not included.
8	<b>Upstream leased assets</b>	GHG emissions from assets not owned but leased by Eni. Whenever an asset leased by Eni fall within its organisational boundary, the relevant GHG emissions are accounted for as Scope 1 and those from electricity consumption as Scope 2 emissions. According to the above, this category is not material, in accordance with the sectorial guidelines referenced in this section.
9	<b>Downstream transportation and distribution</b>	GHG emissions due to transportation and distribution services of sold products (not paid for by Eni). GHG emissions from transportation and distribution services purchased by Eni are accounted for in Category 4, because the transportation occurs before they are sold to end customers. Indeed, most of Eni's products are fuels, so when they are sold to final customers they are not transported or distributed. Moreover, this category is not expected to be material according to the IPIECA/API methodology for estimating Scope 3 emissions from the O&G Industry.
10	<b>Processing of sold products</b>	GHG emissions from processing carried out by a third party of crude oil and natural gas sold by Eni. It includes equity production of crude oil and natural gas sold to third parties.
11	<b>Use of sold products</b>	GHG emissions from the use of Eni's finished products from quota production of oil and natural gas sold in 2021. Emissions are calculated considering the different types of products sold.
12	<b>End-of-life treatment of sold products</b>	GHG emissions associated with the end-of-life treatment of products not burned during their use. Eni products with relevant end-of-life treatment are: (i) asphalts and lubricants - Refining; (ii) olefins, aromatics, intermediates, styrene polyethylene, elastomers - Petrochemicals.
13	<b>Downstream leased assets</b>	GHG emissions from assets owned by Eni but leased to third parties. The emissions in this category are not considered material, in accordance with the sectorial guidelines referenced in this section. Potential non-material emission contributions may not be accounted also due to the difficulties of data traceability. Eni does not have control on these emissions nor the opportunity to implement mitigation activities.
14	<b>Franchises</b>	GHG emissions from fuel stations under franchises, not included in the Scope 1 and 2 emissions.
15	<b>Investments</b>	GHG emissions from operations, investments and joint ventures (classified as such in the Annual Report) which are not already captured in Scope 1 and Scope 2 boundary. These emissions are not part of the accounting as in case of Eni the GHG inventory is based on the operational approach and also includes 100% emissions of joint venture investments in which Eni is the operator. This leads to an already conservative estimation because operated production is far higher than equity production. Emissions associated with non-operated joint ventures are included in the Scope 1+2 equity accounting.



In the following table the Scope 3 GHG emissions for 2021 per category are displayed:

Id	EMISSIONS SOURCES	[tCO <sub>2</sub> eq]
1	Purchased goods and services	912,688
2	Capital assets	507,243
3	Electricity sold	6,078,093
4	Upstream transportation and distribution	1,413,793
5	Waste generated in operations	131,252
6	Business travel	16,169
7	Employee commuting	101,089
8	Upstream leased assets	-
9	Downstream transportation and distribution	-
10	Processing of sold products	11,078,438
11	Use of sold products	175,890,257
12	End-of-life treatment of sold products	98,954
13	Downstream leased assets	-
14	Franchises	157,343
15	Investments	-

The following table shows 2021 data for the equity-based GHG Emissions Indicators:

Net zero indicators	2021
Net carbon footprint UPS (MtCO <sub>2</sub> eq)	11,0
Net carbon footprint Eni (MtCO <sub>2</sub> eq)	33.6
Net GHG Lifecycle Emissions (MtCO <sub>2</sub> eq)	456
Net Carbon Intensity (grCO <sub>2</sub> eq/MJ)	67



## Annex - References

Data and information included are consistent with "best practices" for inventory development and are derived from the guidance provided by:

- WBCSD/WRI GHG Protocol Initiative, A Corporate Accounting and Reporting Standard;
- UNI EN ISO 14064-1:2012 Italian adoption of EN ISO standard on "Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals";
- Intergovernmental Panel on Climate Change (IPCC), Guidelines for National Greenhouse Gas Inventories, 2006;
- American Petroleum Institute (API), Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry, 2009;
- IPIECA/API, Estimating petroleum industry value chain (Scope 3) greenhouse gas emissions - Overview of methodologies, 2016,
- WBCSD/WRI GHG Protocol Initiative, Corporate Value Chain (Scope 3) accounting and reporting Standard;
- WBCSD/WRI GHG Protocol Initiative, Technical Guidance for calculating Scope 3 emissions (supplement to the Corporate Value Chain (Scope 3) accounting and reporting Standard);
- Intergovernmental Panel on Climate Change (IPCC), 4<sup>th</sup> IPCC Assessment Report Climate Change, 2007;
- EU ETS Regulation 2018/2066,

Table of national standard parameters for the year 2021, reviewed and published by the Italian Ministry for environment sea and land protection;

- UK Government GHG Conversion Factors for Company Reporting, published by the Department for Environment, Food & Rural Affairs (DEFRA) for the year 2021.

Furthermore, Eni Group's protocols and procedures on GHG emissions are applied. For the Net GHG Lifecycle emissions and the Net Carbon Intensity indicators, the reference is the "Methodology for the assessment of GHG emissions along the value chains of Eni products 2020 revision - abstract".



# Independent Auditor's Report



## ***Independent auditor's report on the reasonable assurance engagement of direct (Scope 1) and indirect (Scope 2) GHG emissions and on the limited assurance of indirect (Scope 3) GHG emissions, Lifecycle GHG Emissions Indicators, Net Zero Carbon Footprint Eni and Net Zero Carbon Footprint Upstream (Scope 1 and 2) on an equity basis disclosed in Eni's Statement on GHG Accounting and Reporting – Year 2021.***

To the Board of Directors of Eni SpA

We have been engaged to perform a reasonable assurance engagement on the direct (Scope 1) and indirect (Scope 2) Greenhouse Gases (hereinafter "GHG") emissions and a limited assurance engagement on the indirect (Scope 3) GHG emissions, on the Lifecycle GHG Emissions Indicators and on the Net Zero Carbon Footprint Eni and the Net Carbon Footprint Upstream (Scope 1 and 2) on an equity basis disclosed in the Statement on GHG Accounting and Reporting – Year 2021 of Eni Group (hereinafter the "Group") for the year ended 31 December 2021 (hereinafter the "GHG Statement").

### ***Responsibilities of the Directors for the GHG Statement***

The Directors of Eni SpA are responsible for preparing the GHG Statement in accordance with the applicable criteria, as indicated in the Annex "References" of the GHG Statement.

The Directors are responsible for that part of internal control that they consider necessary to prepare a GHG Statement that is free from material misstatements due to fraud or unintentional behaviours or events.

Moreover, the Directors are also responsible for defining the GHG performance targets of Eni Group, as well as for identifying the stakeholders and the significant aspects to be reported.

### ***Auditor's Independence and Quality Control***

We are independent in accordance with the principles of ethics and independence set out in the Code of Ethics for Professional Accountants published by the International Ethics Standards Board for Accountants, which are based on the fundamental principles of integrity, objectivity, competence and professional diligence, confidentiality and professional behaviour.

Our audit firm adopts International Standard on Quality Control 1 (ISQC Italy 1) and, accordingly, maintains an overall quality control system which includes processes and procedures for compliance with ethical and professional principles and with applicable laws and regulations.

### ***PricewaterhouseCoopers SpA***

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### **Auditor's Responsibilities**

We are responsible for expressing a conclusion, on the basis of the work performed, regarding the compliance of the GHG Statement with the applicable criteria applied as indicated in the Annex "References" of the GHG Statement. We conducted our engagement in accordance with the "International Standard on Assurance Engagements ISAE 3000 (Revised) – Assurance Engagements Other than Audits or Reviews of Historical Financial Information" (hereafter "ISAE 3000 Revised") and "International Standard on Assurance Engagements 3410 – Assurance Engagements on Greenhouse Gas Statement" (hereafter also "ISAE 3410"), issued by the International Auditing and Assurance Standards Board (IAASB) for reasonable assurance (Scope 1 and Scope 2 GHG Emissions) or limited assurance (Scope 3 GHG emissions, Lifecycle GHG Emissions Indicators, Net Zero Carbon Footprint Eni and Net Zero Carbon Footprint Upstream (Scope 1 and 2) on an equity basis) engagements. The standard requires that we plan and perform procedures to obtain reasonable or limited assurance about whether the GHG Statement is free from material misstatement; it also indicates that a "GHG quantification is subject to inherent uncertainty" because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

A reasonable engagement in accordance with ISAE 3410 (carried out with regard to Scope 1 and Scope 2 GHG emissions) involves performing procedures to obtain evidence about the quantification of emissions and related information in the GHG Statement. The nature, timing and extent of procedures selected depend on the practitioner's judgment, including the assessment of the risks of material misstatement, whether due to fraud or error, in the GHG Statement. In making those risk assessments, we considered internal control relevant to Eni Group's preparation of the GHG Statement. A reasonable assurance engagement also includes interviews, primarily with company personnel responsible for the preparation of the information presented in the GHG Statement, analysis of documents, recalculations and the following activities aimed at:

1. understanding of the process and the risks underlying the generation, detection and management of the Scope 1 and Scope 2 GHG emissions data and information reported in the GHG Statement. In order to assess the above-mentioned risks of the subject matter information we have conducted interviews and discussions with the management of Eni Group;
2. performing control testing activities to respond to a set of identified risks; in particular, we have conducted interviews and discussions with the management of Eni Group in order to:
  - select controls to test focusing on those controls deemed relevant for the scope of the assurance activity;
  - assess and consider the risk associated with each control selected for testing, in order to determine the nature, timing, and extent of evidence to be obtained about the control's operating effectiveness;
  - based on the above, evaluate and obtain evidence whether the controls selected for testing have operated effectively;
  - comment and discuss any deviation and understand its materiality.
3. performing substantive testing activities to respond to a set of identified risks; in particular, we have conducted interviews and discussions with the management of Eni Group in order to:
  - understand the processes underlying the preparation, collection and management of the significant qualitative and quantitative information included in the GHG Statement;
  - test the subject matter information for mathematical accuracy, consistency and cross-referencing with relevant documentation acquired;
  - comment and discuss any deviation and understand its materiality.



We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

A limited assurance engagement (carried out with regard to Scope 3 GHG emissions, Lifecycle GHG Emissions Indicators and Net Zero Carbon Footprint Eni and Net Zero Carbon Footprint Upstream (Scope 1 and 2) on an equity basis) undertaken in accordance with ISAE 3000 Revised and ISAE 3410 involves assessing the suitability in the circumstances of Eni Group's use of applicable criteria applied as indicated in the Annex "References" of the GHG Statement as the basis for the preparation of the GHG statement, assessing the risks of material misstatement of the GHG statement whether due to fraud or error, responding to the assessed risks as necessary in the circumstances, and evaluating the overall presentation of the GHG statement. A limited assurance is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records.

Given the circumstances of the engagement, in performing the procedures listed above we have performed the following activities:

- a) understanding of the processes that lead to the generation, detection and management of the Scope 3 GHG emissions, Group's Lifecycle GHG Emissions Indicators and Net Zero Carbon Footprint Eni and Net Zero Carbon Footprint Upstream (Scope 1 and 2) data and information reported in the GHG Statement;
- b) performing of limited verification procedures to ascertain the correct calculation and aggregation of data, by means of interviews and discussions with the management of Eni Group and of limited documentary evidence procedures.

The procedure performed in a limited assurance engagement vary in nature and timing form, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion about whether Eni Group's GHG Scope 3 GHG emissions, Lifecycle GHG Emissions Indicators, Net Zero Carbon Footprint Eni and Net Zero Carbon Footprint Upstream (Scope 1 and 2) on an equity basis have been prepared, in all material respects, in accordance with the criteria applied as indicated in the Annex "References" of the GHG Statement as the basis for the preparation of the GHG statement.

### **Conclusion**

In our opinion, Eni Group's direct (Scope 1) and indirect (Scope 2) GHG emissions for the year ended 31 December 2021 disclosed in the GHG Statement are prepared, in all material respects, in accordance with the applicable criteria, as indicated in the Annex "References" of the GHG Statement.

Based on the limited assurance procedure we have performed, nothing has come to our attention that causes us to believe that Eni Group's:

- indirect (Scope 3) GHG emissions for the year ended 31 December 2021,
- Lifecycle GHG Emissions Indicators for the year ended 31 December 2021,
- Net Zero Carbon Footprint Eni and Net Zero Carbon Footprint Upstream (Scope 1 and 2) on an equity basis for the year ended 31 December 2021,





disclosed in the GHG Statement are not prepared, in all material respects, in accordance with the applicable criteria, as indicated in the Annex “References” of the GHG Statement.

***Other aspects***

We have verified that Eni Group owns plants subject to the *European Union Emissions Trading Scheme* - EU ETS, whose GHG emissions are verified and certified by a third-party certification body in accordance with the relevant legislation. We have carefully analysed the activities performed by the third-party certification body and we have evaluated the sufficiency and appropriateness of the evidence obtained. Therefore, we have deemed appropriate not to perform additional assurance activities on the certified GHG emissions subject to the EU ETS scheme.

Milano, 11 May 2022

PricewaterhouseCoopers SpA

Paolo Bersani  
(Authorised signatory)



# Eni's non-financial reporting

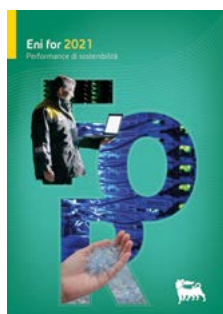
Through its non-financial reporting, Eni wants to proactively describe its role in the energy transition, sharing its values, corporate strategies, objectives and results achieved to date. For this reason, also aware of the increasing centrality of non-financial information, over the years Eni has developed a structured reporting system with the aim of satisfying the information needs of its

stakeholders in a complete and timely manner in terms of both variety and depth.

The **2021 Consolidated Disclosure of Non-Financial Information (NFI)**, prepared in accordance with the requirements of Legislative Decree 254/2016 (transposing European Directive 95/2014) and published in the Annual Report 2021, has the aim of concisely meeting the informa-

tion needs of Eni's stakeholders, further promoting the integration of financial and non-financial information. The NFI provides integrated reporting on the management model, policies applied, main risks and results related to environmental, social, personnel, human rights and anti-corruption issues.

For more information, see the [2021 Annual Report](#)



Your feedback is important to us. If you have any comments, suggestions or questions, please write an email to [sostenibilita@eni.com](mailto:sostenibilita@eni.com)

## Eni for 2021 – A just transition

report that describes how, through the integrated business model, Eni creates long-term value, through the operational excellence model, alliances for local development and carbon neutrality by 2050.

**Eni For 2021 – Carbon neutrality by 2050:** In-depth analysis of governance, risk management activities, strategy

and main Eni metrics and targets on climate change.

**Eni for 2021 – Sustainability performance:** report, available only online, which provides an overview of non-financial performance indicators along the three pillars of Eni's business model.

**Other reports:** in the coming months, Eni will also publish Eni for Human

rights. A report which describes Eni's strategy on promoting and respecting human rights and shows the main activities and performance indicators. In addition to these documents, Eni publishes other local sustainability reports on an annual basis, which will be available in the course of 2022 on the website.

For more information: [eni.com](http://eni.com)

## REPORTING PRINCIPLES AND CRITERIA

Eni for 2021 is prepared in accordance with the "Sustainability Reporting Standards" of the Global Reporting Initiative (GRI Standards) with an "in accordance Core" level of adherence and taking into account the 10 principles of the Global Compact. Eni for 2021 - Carbon Neutrality by 2050 is prepared in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Moreover, in line with the commitment to promote a complete and comparable disclosure, the metrics related to the Sustainability Accounting Standards Board (SASB) standard and the "core" metrics defined by the World Economic Forum (WEF) in the White Paper "Measuring Stakeholder Capitalism - Towards Common Metrics and Consistent Reporting of Sustainable Value Creation" were published (the latter already included in the Non-Financial Information). Finally, as of this year, Eni publishes a table containing the indicators required by the EU Sustainable Finance Disclosure Regulation (SFDR). The reference tables related to the GRI standard, the TCFD recommendations, the SASB standard and the WEF metrics and those required by the SFDR are available in Eni for 2021 - Sustainability Performance and on the website [eni.com](http://eni.com). For more information: [Eni for 2021 - Sustainability performance \(pp. 49-64\)](#)

## EXTERNAL ASSURANCE

Eni for 2021 was also subjected to limited assurance this year by the same independent auditors who also audited the Consolidated Financial Statements and the NFI (p. 109). In addition, GHG Scope 1 and Scope 2 emissions are also subject to a reasonable assurance by the same external auditing company (PwC), with the aim of guaranteeing an even greater solidity of these data having strategic relevance for Eni. For more information: [Eni for 2021 - Carbon neutrality by 2050, \(pp. 52-55\)](#)



## Eni SpA

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Capital Stock as of December 31, 2021: € 4,005,358,876.00 fully paid

Tax identification number 00484960588

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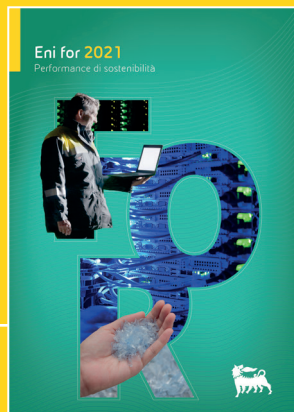
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Eni for 2021 - Sustainability report

