



METHANE
GUIDING
PRINCIPLES

Methane Guiding Principles Signatory Reporting

TotalEnergies SE

January 2022





COMPANY: **TotalEnergies SE**

YEAR OF JOINING METHANE GUIDING PRINCIPLES: **May 2017**

SENIOR REPRESENTATIVE: **Stéphane Michel, President Gas, Renewables and Power.**



Principle One: Continually reduce methane emissions

2021 completed activity	2022 intended activity
<ul style="list-style-type: none"> In 2020, TotalEnergies' methane emissions stood at 64 kt, 98% of which came from upstream operations. TotalEnergies has reduced its company-wide methane emissions by ~50% since 2010. This represents a methane emissions intensity of 0.15% of commercial gas for all operated upstream oil and gas facilities and less than 0.1% for gas facilities. TotalEnergies addresses the primary sources of methane emissions: flaring, venting and fugitive emissions. TotalEnergies is committed to zero routine flaring by 2030 and has reduced this type of flaring by 80% since 2010. For new projects, the Group follows design standards intended to ensure near-zero methane emissions. They include eliminating the use of instrument gas and continuous cold venting and systematically installing closed flares. To detect fugitive emissions, TotalEnergies uses ground-based infrared cameras during Leak Detection And Repair (LDAR) campaigns on a yearly basis. TotalEnergies is involved in international partnerships and industry initiatives to improve and widely disseminate knowledge about methane emissions, as well as methods to detect, measure and reduce them, in particular Oil & Gas Methane Partnership 2.0. 	<ul style="list-style-type: none"> TotalEnergies has set the objective to further reduce its methane emissions by 20% between 2020 and 2025 TotalEnergies has set the target to maintain methane intensities below 0.2% on operated oil and gas facilities, and below 0.1% on operated gas facilities TotalEnergies will continue to address the primary sources of methane emissions: flaring, venting and fugitive emissions. TotalEnergies has launched a major campaign to reduce emissions associated with venting and is phasing out the use of instrument gas at all of its existing facilities. TotalEnergies will continue to implement OGMP 2.0 reporting framework and reinforce reporting on non operated assets.



Principle Two:

Advance strong performance across the gas supply chain

2021 completed activity	2022 intended activity
<ul style="list-style-type: none"> • A member since 2014, TotalEnergies joined in 2020 the second phase of the Oil & Gas Methane Partnership (OGMP 2.0) of the United Nations Environment Programme (UNEP), which brings together industrial companies, governments and NGOs to better monitor and report methane emissions in order to reduce them. • TotalEnergies was member of the Methane Guiding Principles Non-Operated Joint Venture (NOJV) Working Group, in charge of defining collaboration initiatives and an actionable plan for 2021 (with EDF, BP and Chevron), and has attended 5 NOJV webinars in 2020. • TotalEnergies has sponsored and delivered in 2021 one Methane Guiding Principles NOJV initiative (Methane Reduction Influencing Toolkit) and participated to two other NOJV initiatives. 	<ul style="list-style-type: none"> • Deployment of the OGMP 2.0 principles as part of its new commitment. • Methane Masterclass e-learning was developed by the Sustainable Gas Institute, Imperial College, and TotalEnergies will make this e-learning available to all TotalEnergies employees • TotalEnergies will participate to several MGP NOJV initiatives.



Principle Three: Improve accuracy of methane emissions data

2021 completed activity	2022 intended activity
<ul style="list-style-type: none"> In 2020, TotalEnergies joined OGMP 2.0, aimed at defining a more ambitious reporting framework, expanded to the entire gas value chain and non-operated scope. That expanded framework includes itemized emissions by facility, reporting of inventory methodologies, the deployment of aerial measurement campaigns and the definition of target reductions for operated activities. TotalEnergies' membership in this new partnership is a tangible reflection of the Group's methane strategy and its commitment to sharing best industry practices. TotalEnergies has an extensive research program to develop emission measurement technologies – with fixed camera, drones or satellites. They have been tested at TotalEnergies's industrial sites and also at the Company's TotalEnergies Anomaly Detection Initiatives (TADI) facility, located at a former plant site in Lacq, in southwestern France. There, TotalEnergies tests and evaluates innovative technologies for detecting and measuring gas leaks. For instance, AUSEA (Airborn Ultralight Spectrometer for Environmental Application) drones, developed in partnership with France's National Center for Scientific Research (CNRS), use miniaturized sensors to quantify emissions, estimate their dispersion pattern and locate their source. 	<ul style="list-style-type: none"> Implementation of the OGMP 2.0 principles as part of its new commitment. Continuation of the Company's extensive research program to develop and test emission measurement technologies – with fixed camera, drones or satellites. TotalEnergies will continue to discuss with the European Commission to make TotalEnergies Anomaly Detection Initiatives (TADI) facility an homologated test center for measurements technologies in the framework of EU Methane regulation and Global Methane Pledge. TotalEnergies will accelerate AUSEA drones deployment internally on all operated sites in order to increase measurement campaigns significantly



Principle Four:

Advocate sound policy and regulations on methane emissions

2021 completed activity	2022 intended activity
<ul style="list-style-type: none"> • TotalEnergies supports policies to reduce methane emissions from natural gas production and consumption. In November 2019, TotalEnergies wrote to the US agency in charge of the environment (US EPA), through a public consultation process, to oppose the projected lowering of regulatory requirements on methane emission control in the oil and gas industry. • TotalEnergies is a member of the Methane Guiding Principles EU Policy Working Group, and has supported five recommendation papers published in September 2021 covering a number of key policy areas highlighted in the EU methane strategy and • Through OGCI, TotalEnergies is an active member of the Methane Global Alliance, and has participated to several workshops and exchanges in several region and countries. • TotalEnergies reviews on a yearly basis the alignment of its industry association on key climate criteria, including methane. • TotalEnergies has decided to withdraw beginning 2021 from the American Petroleum Institute especially because API supported the rollback of US regulation on methane emissions. TotalEnergies withdrew also from the Canadian Association of Petroleum Producers in 2020. 	<ul style="list-style-type: none"> • TotalEnergies will continue to support policies to reduce methane emissions from natural gas production and consumption. • TotalEnergies will participate to the Methane Guiding Principles EU Policy Working Group, and continue to support the Global Methane Alliance through OGCI.



Principle Five:
Increase transparency

2021 completed activity	2022 intended activity
<ul style="list-style-type: none"> In 2020, TotalEnergies joined OGMP 2.0, a new phase of the partnership aimed at defining a more ambitious reporting framework, expanded to the entire gas value chain and non-operated scope. That expanded framework includes itemized emissions by facility, reporting of inventory methodologies, the deployment of aerial measurement campaigns and the definition of target reductions for operated activities. TotalEnergies discloses detailed information on its methane strategy and emissions in its annual Universal Registration Document, its annual Climate report, and the CDP Climate change questionnaire 	<ul style="list-style-type: none"> Implementation of the OGMP 2.0 principles as part of its new commitment.

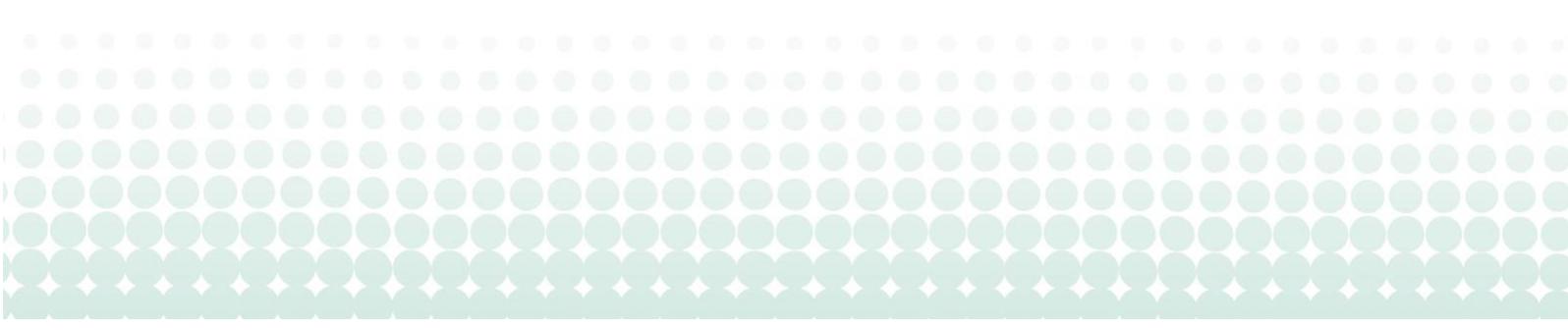


Methane Emissions

<p>Do you report absolute methane emissions within your sustainability report? <i>If so provide link.</i></p>	<ul style="list-style-type: none"> • Yes, in TotalEnergies 2020 Climate report and in 2020 Universal Registration Document, • Since 2006, TotalEnergies has implemented methane emissions reporting, which is verified yearly by a third party. This detailed reporting system operates at each site level, at each emitter type level, and the data are aggregated at each level up to the corporate level. The details of this reporting system were published through Society of Petroleum Engineers paper n°179288-MS. • The verification of methane emission is performed on an annual basis by a third party (currently EY), with a limited assurance, based on the ISAE 3000 standards. Detailed information is available in TotalEnergies’s 2020 Universal Registration Document.
<p>Do you report a methane intensity within your sustainability report? <i>If so provide link.</i></p>	<ul style="list-style-type: none"> • Yes, in TotalEnergies 2020 Climate report and in 2020 Universal Registration Document,
<p>What are your organisation’s total absolute methane emissions? Provide a figure in tonnes. Provide latest data publicly available.</p>	<ul style="list-style-type: none"> • In 2020, TotalEnergies’s methane emissions stood at 64 kt, 98% of which came from upstream operated assets with 62 kt. • TotalEnergies’ operated upstream methane emissions declined by around 50% between 2010 and 2020. • In 2020, methane emissions were caused by: <ul style="list-style-type: none"> - 26%: incomplete combustion of gases flared, estimated on a standardized basis at 2% (flaring) - 55%: occasional or continuous gas venting at selected facilities (cold venting) and certain units and equipment, including water treatment, oil and gas loading and unloading, glycol dehydration and gas-powered pneumatic devices (process venting) - 10%: leaks from valves, flanges and couplings (fugitive emissions)



	- 9%: incomplete gas combustion, particularly in turbines, furnaces, steam generators and heaters, estimated at 0.5 to 1% depending on the equipment (combustion).
State your methodology.	
State your reporting boundary.	<ul style="list-style-type: none"> • For 2020 emissions, operated upstream oil and gas facilities
What are your organisation's methane intensity? Provide latest data publicly available.	<ul style="list-style-type: none"> • In 2020, TotalEnergies methane emissions represented a methane emissions intensity of 0.15% of commercial gas produced at all operated upstream oil and gas facilities and 0.1% (near zero) at all operated upstream gas facilities.
State your methodology.	<ul style="list-style-type: none"> • TotalEnergies's methane intensity is presented as percentage figures, which represent the volume of methane emissions for the upstream sector (oil and gas facilities or gas facilities) as a percentage of the volume of the commercial gas produced for the same upstream sector. This methodology is aligned with the methodology defined by the OGCI in 2018 and available on the OGCI website.
State your reporting boundary.	<ul style="list-style-type: none"> • Operated upstream oil and gas facilities
Do you have a methane emission target? If yes, please state what it is, including the boundaries and methodology. If no, are you developing such a target? Please state your intended timeline.	<ul style="list-style-type: none"> • TotalEnergies has set the objective to further reduce its methane emissions by 20% between 2020 and 2025 • TotalEnergies has set the target to maintain methane intensities below 0.2% on operated oil and gas facilities, and below 0.1% on operated gas facilities





Commentary

More information on TotalEnergies methane reduction strategy is available on [TotalEnergies.com](https://www.totalenergies.com), or sustainable-performance.TotalEnergies.com, and the following reports and documents :

- [2020 Universal Registration Document](#),
- [TotalEnergies 2020 Climate report](#)
- [TotalEnergies answer to the 2021 CDP Climate change questionnaire](#)