



METHANE
GUIDING
PRINCIPLES

Methane Guiding Principles Signatory Reporting

TOTAL SE

April 15th 2021



COMPANY: **TOTAL SE**

DATE: **April 15th 2021**

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

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



Principle One: Continually reduce methane emissions

2020 completed activity	2021 intended activity
<ul style="list-style-type: none"> • In 2020, Total’s methane emissions stood at 64 kt, 98% of which came from upstream operations. This represents a methane emissions intensity of 0.15% of commercial gas produced at all operated upstream oil and gas facilities and less than 0.1% for gas facilities. The goal is to maintain those intensities below 0.2% on operated oil and gas facilities, and below 0.1% on operated gas facilities • to maintain that methane emissions intensity at less than 0.2%. Upstream methane emissions declined by 50% between 2010 and 2020. • To do that, Total is addressing the primary sources of methane emissions: flaring (Total is committed to zero routine flaring by 2030 and has reduced this type of flaring by 80% since 2010) venting and fugitive emissions. 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, Total uses ground-based infrared cameras to measure leakage on a regular basis. Those efforts will be supplemented with satellite-based or drone-mounted aerial devices as well as continuous measurement devices made possible by advances in technology. AUSEA 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. They have been tested at Total’s industrial sites and also at the Group’s Total Anomaly Detection Initiatives (TADI) facility, located at a former plant site in Lacq, in southwestern France. There, Total tests and evaluates innovative technologies for detecting and measuring gas leaks. • Total 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, Total has signed onto a new phase with the Oil & Gas Methane Partnership 2.0 for a more extensive methane reporting framework. 	<ul style="list-style-type: none"> • Total strategy to reduce methane emission addresses the various sources of methane – mainly flaring, venting and fugitive emissions – and follows strict design standards to ensure near-zero emissions for its new projects. Total is committed to zero routine flaring by 2030 and has reduced this type of flaring by 80% since 2010. • The Group has an extensive research program to develop emission measurement technologies – with fixed camera, drones or satellites – and has established, in the south of France, a specific dedicated testing site for such technologies (TADI – Total Anomaly Detection Initiatives). • Total has also 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. • Total is Implementing the OGMP 2.0 principles as part of its new commitment.



What are your organisation's total methane emissions?

2020 completed activity	2021 intended activity
<ul style="list-style-type: none"> • In 2020, Total's methane emissions stood at 64 kt, 98% of which came from upstream operations with 62 kt. (operated scope) • Total operated upstream methane emissions declined by around 50% between 2010 and 2020. The Group anticipates that this downtrend will continue, thanks primarily to projects to reduce flaring and venting. • 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). • Since 2006, Total has implemented methane emissions reporting, which is verified yearly by a third party. This detailed reporting system operates at each site level, more accurately 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 (EY), with a limited assurance, based on the ISAE 3000 standards. Detailed information is available in Total's 2020 Universal Registration Document. 	



Does your organisation report methane intensity?
If so, please specify the intensity.

2020 completed activity	2021 intended activity
<ul style="list-style-type: none"> In 2020, Total 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. Total'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. 	

Do you have a methane emission target?

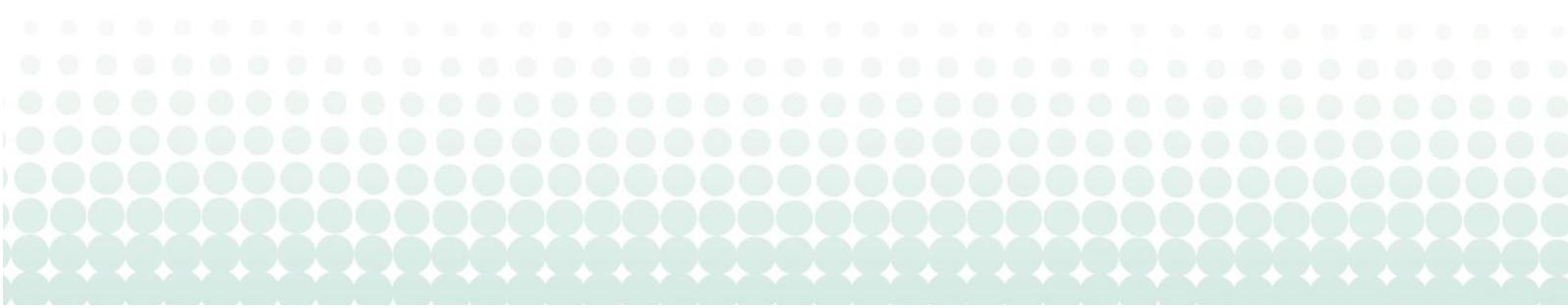
2020 completed activity	2021 intended activity
<ul style="list-style-type: none"> In 2018, Total set an intensity target of 0.2% of the commercial gas produced on operated upstream oil and gas facilities. In 2020, Total announced a new objective for its gas operated facilities to below 0.1% of the commercial gas produced. Total has cut its emissions by around 50% since 2010, the O&G operated facilities intensity was 0.30% of the commercial gas produced in 2017 and represents in 2020? 015% of the commercial gas produced. More information is available on Total CDP 2020 Climate Change questionnaire, question (C4.2b). To control those emissions, Total addresses the various sources of methane – mainly flaring, venting and fugitive emissions – and follows strict design standards to ensure near-zero emissions for its new projects. Total is committed to zero routine flaring by 2030 and has reduced this type of flaring by 80% since 2010. 	



Principle Two:

Advance strong performance across the gas supply chain

2020 completed activity	2021 intended activity
<ul style="list-style-type: none"> • A member since 2014, Total 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. This second phase of the partnership aims at defining a broader and more ambitious methane-reporting framework, extended to the entire gas value chain and to non-operated assets. Total's CEO attended the Press Conference at the launch of the OGMP 2.0 with UNEP and EDF. • Total funded methane outreach sessions from SGI, Imperial College (both executive class and masterclass) in Oman in February 2020 (as part of the IGU Gas Forum), and a masterclass for Total employees. • Total was member of the Methane Guiding Principles 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. 	<ul style="list-style-type: none"> • Deployment of the OGMP 2.0 principles as part of its new commitment. • Total will sponsor one Methane Guiding Principles NOJV initiative, and participate to several NOJV initiatives as proposed in the NOJV 2021 action plan.



Principle Three: Improve accuracy of methane emissions data

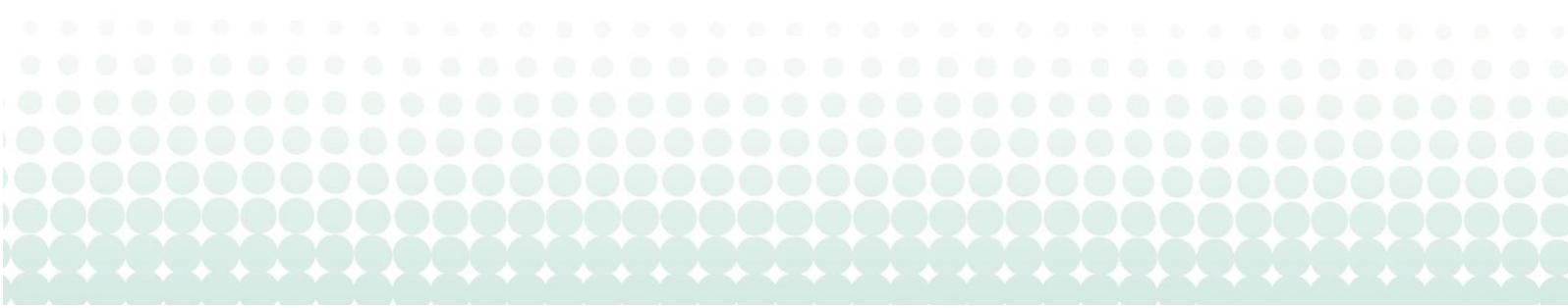
2020 completed activity	2021 intended activity
<ul style="list-style-type: none"> • Total is member of the Oil & Gas Methane Partnership (OGMP) of the United Nations Environment Programme, which brings together private businesses, governments and NGOs. The initiative promotes efforts to measure, reduce and report methane emissions. In 2020, Total 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. Total’s membership in this new partnership is a tangible reflection of the Group’s methane strategy and its commitment to sharing best industry practices. • The Group has an extensive research program to develop emission measurement technologies – with fixed camera, drones or satellites – and has established, in the south of France, a specific dedicated testing site for such technologies (TADI – Total Anomaly Detection Initiatives). Total has developed 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"> • The Group has an extensive research program to develop emission measurement technologies – with fixed camera, drones or satellites – and has established, in the south of France, a specific dedicated testing site for such technologies (TADI – Total Anomaly Detection Initiatives). • Implementation of the OGMP 2.0 principles as part of its new commitment. • Total is a member of the IOGP/OGCI/IPIECA task force on methane detection and quantification. • Total will participate in a Methane Guiding Principles flaring proposal, sponsored by BP and Rosneft.



Principle Four:

Advocate sound policy and regulations on methane emissions

2020 completed activity	2021 intended activity
<ul style="list-style-type: none"> • Total supports policies to reduce methane emissions from natural gas production and consumption. In November 2019, Total 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. • Total is a member of the Methane Guiding Principles EU Policy Working Group, and has signed a set of methane policy recommendations submitted to the European Union in July 2020. • Though OGCI, Total is an active member of the Methane Global Alliance, and has participated to several workshops and exchanges in several region and countries. • Total reviews on a yearly basis the alignment of its industry association on key climate criteria, including methane. 	<ul style="list-style-type: none"> • Total supports policies to reduce methane emissions from natural gas production and consumption. • Total 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

2020 completed activity	2021 intended activity
<ul style="list-style-type: none"> In 2020, Total 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. Total 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 	<p>Implementation the OGMP 2.0 principles as part of its new commitment.</p>

Commentary:

More information on Total methane reduction strategy is available on total.com, or sustainable-performance.total.com, and the following reports and documents :

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

