



METHANE  
GUIDING  
PRINCIPLES

# Methane Guiding Principles Signatory Reporting

TotalEnergies SE

January 31<sup>st</sup> 2023

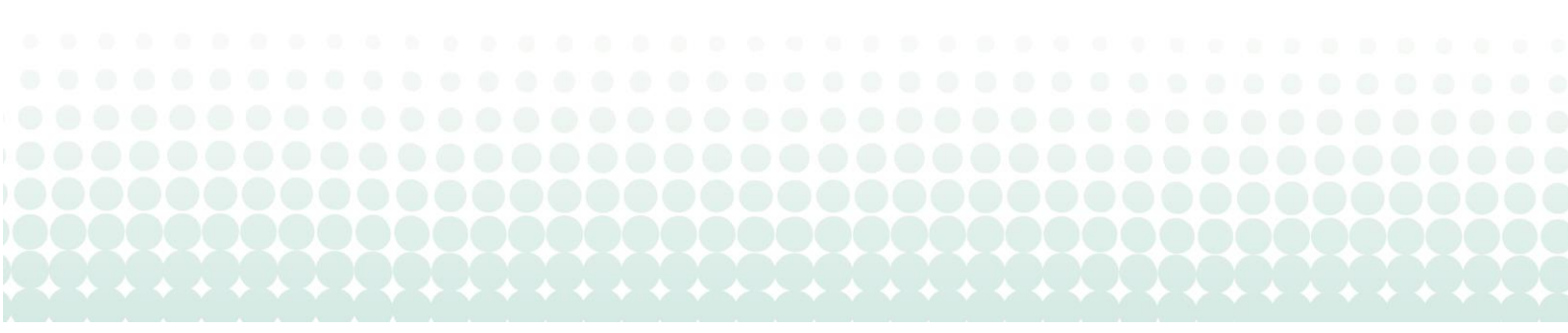




COMPANY: **TotalEnergies SE**

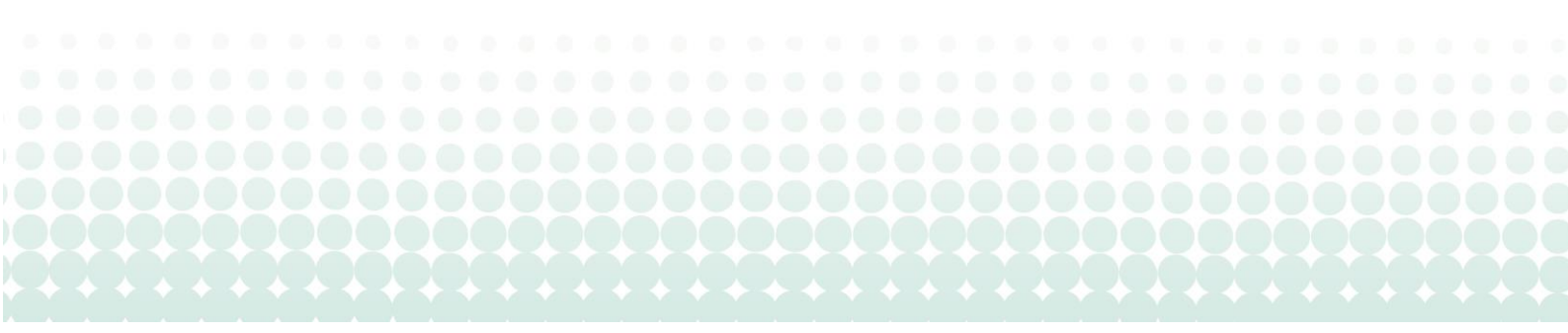
YEAR OF JOINING METHANE GUIDING PRINCIPLES: **May 2017**

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



## Principle One: Continually reduce methane emissions

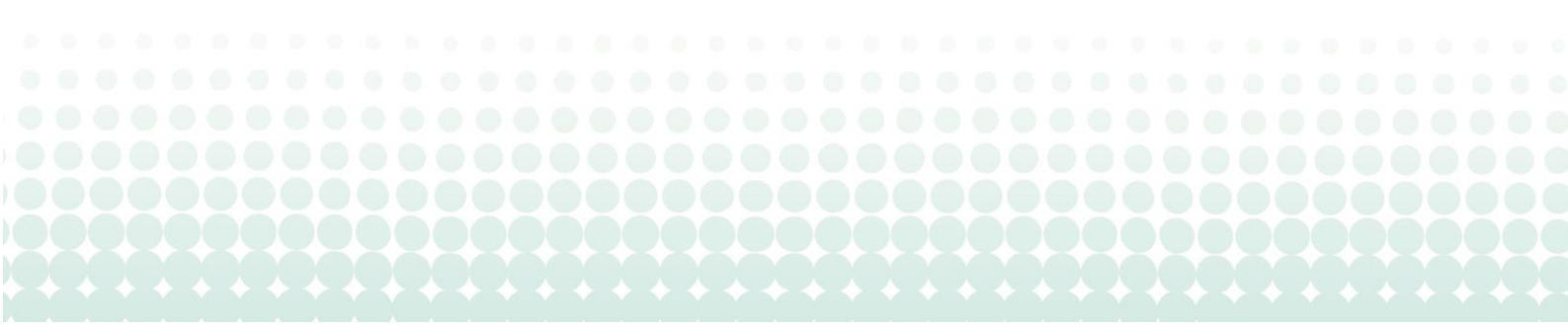
2022 completed activity	2023 intended activity
<ul style="list-style-type: none"> <li>In 2021, TotalEnergies' operated methane emissions stood at 49 kt, 98% of which came from upstream operations. TotalEnergies has reduced its company-wide operated methane emissions by ~60% since 2010.</li> <li>This represents a methane emissions intensity of 0.13% of commercial gas for all operated upstream oil and gas facilities and less than 0.1% for gas facilities.</li> <li>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.</li> <li>For new projects, the Company 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.</li> <li>To detect fugitive emissions, TotalEnergies uses ground-based infrared cameras during Leak Detection And Repair (LDAR) campaigns on a yearly basis.</li> <li>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 &amp; Gas Methane Partnership 2.0.</li> </ul>	<ul style="list-style-type: none"> <li>TotalEnergies has set two objectives to reduce its absolute operated methane emissions by 50% in 2025 and by 80% in 2030 compared to 2020</li> <li>TotalEnergies will continue to maintain methane intensities below 0.2% on operated oil and gas facilities, and below 0.1% on operated gas facilities</li> <li>TotalEnergies has set the objective to reduce routine flaring below 0.1Mm<sup>3</sup>/d in 2025</li> <li>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.</li> <li>TotalEnergies will continue to implement OGMP 2.0 reporting framework managed by UNEP</li> </ul>



## Principle Two:

### Advance strong performance across the gas supply chain

2022 completed activity	2023 intended activity
<ul style="list-style-type: none"> <li>• A member since 2014, TotalEnergies joined in 2020 the second phase of the Oil &amp; 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.</li> <li>• As part of its OGMP 2.0 commitment, TotalEnergies has engaged with partners in NOJVs and organized workshops with operators to share best practices and bring methane emissions reduction on the top of partners priorities.</li> <li>• TotalEnergies shared with OGMP 2.0 members from the whole value chain its strategy to measure and reduce methane emissions during an OGMP 2.0 technical experience sharing workshop dedicated to site-level measurements in November 2022.</li> <li>• TotalEnergies participates to the Methane Guiding Principles Non-Operated Joint Venture (NOJV) Working Group in two subgroups : Expand Partner Collaboration Campaign and Manage and Reduce GHG Emissions in NOJVs.</li> </ul>	<ul style="list-style-type: none"> <li>• TotalEnergies will continue to collaborate with UNEP and to share best practices with OGMP 2.0 members.</li> <li>• TotalEnergies is actively promoting OGMP 2.0 adhesion among the industry and among its partners.</li> <li>• TotalEnergies will continue to engage with partners in NOJVs and to organize workshops with operators in order to influence and bring methane emissions reduction on the top of their priorities.</li> <li>• TotalEnergies will continue to participate to several MGP NOJV initiatives.</li> </ul>



### Principle Three: Improve accuracy of methane emissions data

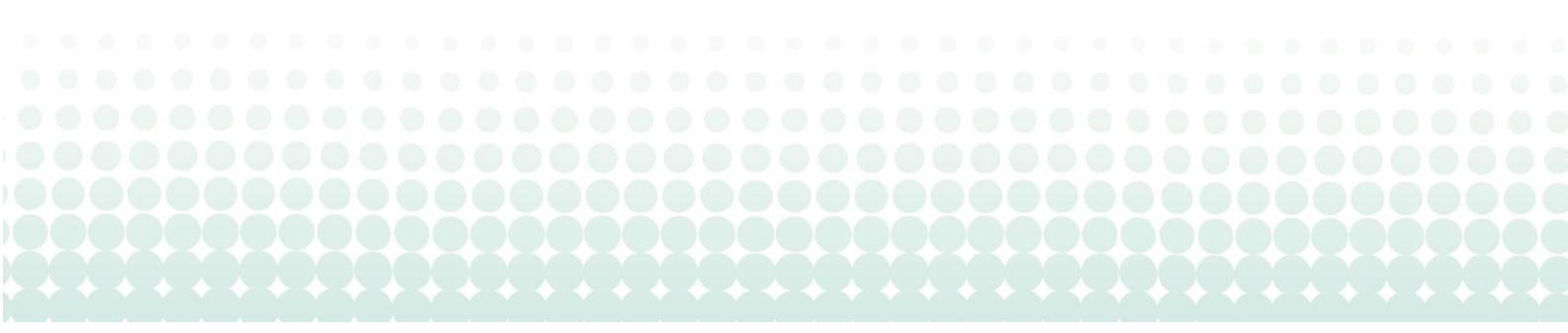
2022 completed activity	2023 intended activity
<ul style="list-style-type: none"> <li>TotalEnergies has launched a worldwide detection and measurement campaign on all its operated upstream sites mostly with AUSEA (Airborn Ultralight Spectrometer for Environmental Application) drones. AUSEA technology uses miniaturized sensors mounted on drones to quantify emissions, estimate their dispersion pattern and locate their source. AUSEA has been co-developed by TotalEnergies and the Groupe de Spectrométrie Moléculaire et Atmosphérique (GSMA - Joint Research Unit of the CNRS and the University of Reims Champagne Ardenne)</li> <li>TotalEnergies has an extensive research program to test detection and measurement technologies – with fixed camera, drones or satellites for example – at its industrial site called TADI (TotalEnergies Anomaly Detection Initiatives). This facility, located at a former plant site in Lacq, in southwestern France, is one of the two sites of this kind in the world with the one at METEC in the US (University of Colorado). At TADI, TotalEnergies tests and evaluates almost all innovative commercially available technologies for detecting and measuring gas leaks.</li> </ul>	<ul style="list-style-type: none"> <li>Continuation of the Company’s extensive research program to develop and test emission measurement technologies – with fixed camera, drones or satellites – and further development of AUSEA.</li> <li>TotalEnergies will finalize AUSEA drones deployment internally on all operated sites and expand it to non-operated sites in string collaboration with operators.</li> </ul>



## Principle Four:

### Advocate sound policy and regulations on methane emissions

2022 completed activity	2023 intended activity
<ul style="list-style-type: none"> <li>• 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.</li> <li>• TotalEnergies has been 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</li> <li>• TotalEnergies reviews on a yearly basis the alignment of its industry association on key climate criteria, including methane.</li> <li>• 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.</li> <li>• At COP27, TotalEnergies' CEO – Patrick Pouyanné – participated on 10<sup>th</sup> November 2022 to a panel dedicated to Advancing the Global Methane Pledge and made a call to invite all Oil &amp; Gas companies (both International and National) to join the OGMP 2.0.</li> </ul>	<ul style="list-style-type: none"> <li>• TotalEnergies will continue to support policies to reduce methane emissions from natural gas production and consumption.</li> <li>• TotalEnergies will continue to review the alignment of its industry association on key climate criteria, including methane.</li> </ul>



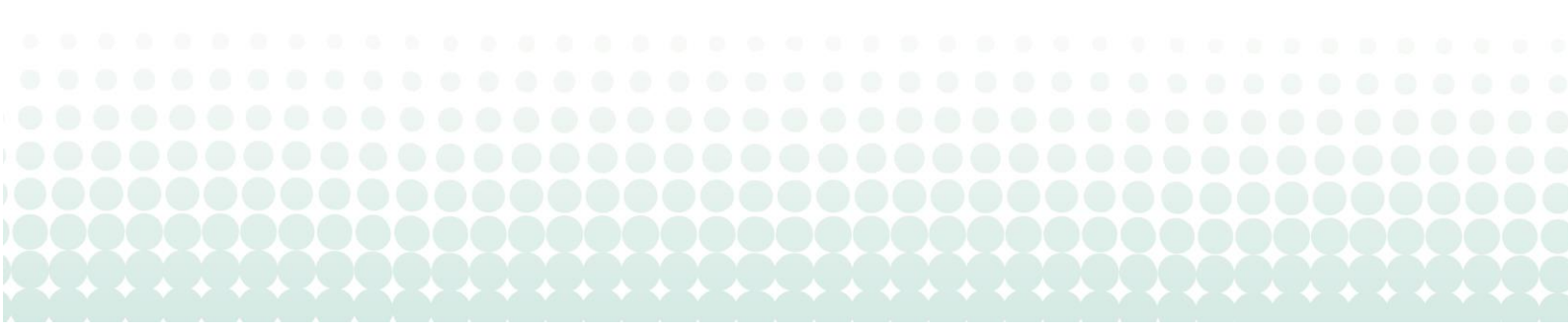
## Principle Five: Increase transparency

2022 completed activity	2023 intended activity
<ul style="list-style-type: none"> <li data-bbox="213 524 783 842">• 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.</li> <li data-bbox="213 882 775 1072">• TotalEnergies discloses detailed information on its methane strategy and emissions in <a href="#">2021 Universal Registration Document</a>, its <a href="#">Sustainability &amp; Climate 2022 Progress Report</a> and in its answers to the <a href="#">CDP Climate change questionnaire</a></li> </ul>	<ul style="list-style-type: none"> <li data-bbox="820 524 1398 680">• TotalEnergies will continue to implement OGMP 2.0 reporting framework managed by UNEP which is key in terms of transparency in terms of strategy and in terms of reporting both company-wide and at asset level.</li> </ul>



## Methane Emissions

<p><b>Do you report absolute methane emissions within your sustainability report?</b> <i>If so provide link.</i></p>	<ul style="list-style-type: none"> <li>• Yes, in <a href="#">TotalEnergies Sustainability &amp; Climate 2022 Progress Report</a> and in <a href="#">2021 Universal Registration Document</a>,</li> <li>• 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.</li> <li>• 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 <a href="#">2021 Universal Registration Document</a>,</li> </ul>
<p><b>Do you report a methane intensity within your sustainability report?</b> <i>If so provide link.</i></p>	<ul style="list-style-type: none"> <li>• Yes, in <a href="#">TotalEnergies Sustainability &amp; Climate 2022 Progress Report</a> and in <a href="#">2021 Universal Registration Document</a>,</li> </ul>
<p><b>What are your organisation’s total absolute methane emissions?</b> <b>Provide a figure in tonnes.</b> <b>Provide latest data publicly available.</b></p>	<ul style="list-style-type: none"> <li>• In 2021, TotalEnergies operated methane emissions stood at 49 kt and TotalEnergies equity methane emissions – operated and non operated - stood at 51 kt.</li> <li>• TotalEnergies operated upstream methane emissions declined by around 60% between 2010 and 2021.</li> </ul>
<p><b>State your methodology.</b></p>	<ul style="list-style-type: none"> <li>• TotalEnergies reporting methodology is detailed in its in <a href="#">2021 Universal Registration Document</a>,</li> </ul>
<p><b>State your reporting boundary.</b></p>	<ul style="list-style-type: none"> <li>• For 2021, both operated 100% emissions and equity emissions have been published</li> </ul>
<p><b>What are your organisation’s methane intensity?</b> <b>Provide latest data publicly available.</b></p>	<ul style="list-style-type: none"> <li>• In 2021, TotalEnergies methane emissions represented a methane emissions intensity of 0.13% of commercial gas produced at all operated upstream oil and gas</li> </ul>





	<p>facilities and less than 0.1% at all operated upstream gas facilities.</p>
<p><b>State your methodology.</b></p>	<ul style="list-style-type: none"> <li>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.</li> </ul>
<p><b>State your reporting boundary.</b></p>	<ul style="list-style-type: none"> <li>Operated upstream oil and gas facilities</li> </ul>
<p><b>Do you have a methane emission target?</b>  <b>If yes, please state what it is, including the boundaries and methodology.</b>  <b>If no, are you developing such a target?</b>  <b>Please state your intended timeline.</b></p>	<ul style="list-style-type: none"> <li>TotalEnergies has set two objectives to reduce its absolute operated methane emissions by 50% in 2025 and by 80% in 2030 compared to 2020</li> <li>TotalEnergies targets to maintain methane intensities well below 0.2% by 2025 on operated oil and gas facilities, and below 0.1% on operated gas facilities</li> </ul>

