TotalEnergies

Sustainability Report 2022

TotalEnergies EP Denmark

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Eric Delattre Managing Director TotalEnergies EP Denmark

A message from the Managing Director

2022 was a turbulent year. The Russian invasion of Ukraine caused significant turmoil to the energy markets. The importance of our gas fields in the North Sea was once again highlighted when supply from Russia to Europe was significantly reduced and prices took off, with severe consequences for people highly dependent on affordable and reliable energy supplies.

A swift response from the European Union (EU) curbed the worst consequences of the supply crisis. Significant volumes of liquified natural gas (LNG) were redirected from overseas markets to Europe and coal-fired power plants were brought back on stream. In Denmark, operators like TotalEnergies were asked to explore the full suite of opportunities to expand production short-term, and with a well-executed well stimulation campaign we delivered our first contribution to this national priority plan.

The key priority during 2022 was to conclude the onshore construction of the new facilities and their installation at the Tyra field. The last module was lifted in place in October 2022, and this paved the way for the final project phase where the new facilities are being prepared for first gas. The field will play an important role in securing gas supplies to Denmark and Europe in the coming decades. We are dedicated to implementing new ways of working and state-of-the-art technologies on Tyra, which can secure a 30% lower carbon footprint per unit compared to the old installation.

While focusing fully on delivering the massive Tyra Redevelopment, we continue the work to maximize production from our operating fields, and keep reducing our footprint from existing assets and activities. A key initiative was the deployment of cutting edge drone-based methane monitoring on all our installations. TotalEnergies is amongst the world leaders in implementing such innovative technologies to reduce this potent greenhouse gas and has set ambitious

"We are dedicated to implementing new ways of working and state-of-the-art technologies on Tyra, which can secure a 30% lower carbon footprint per unit compared to the old field."

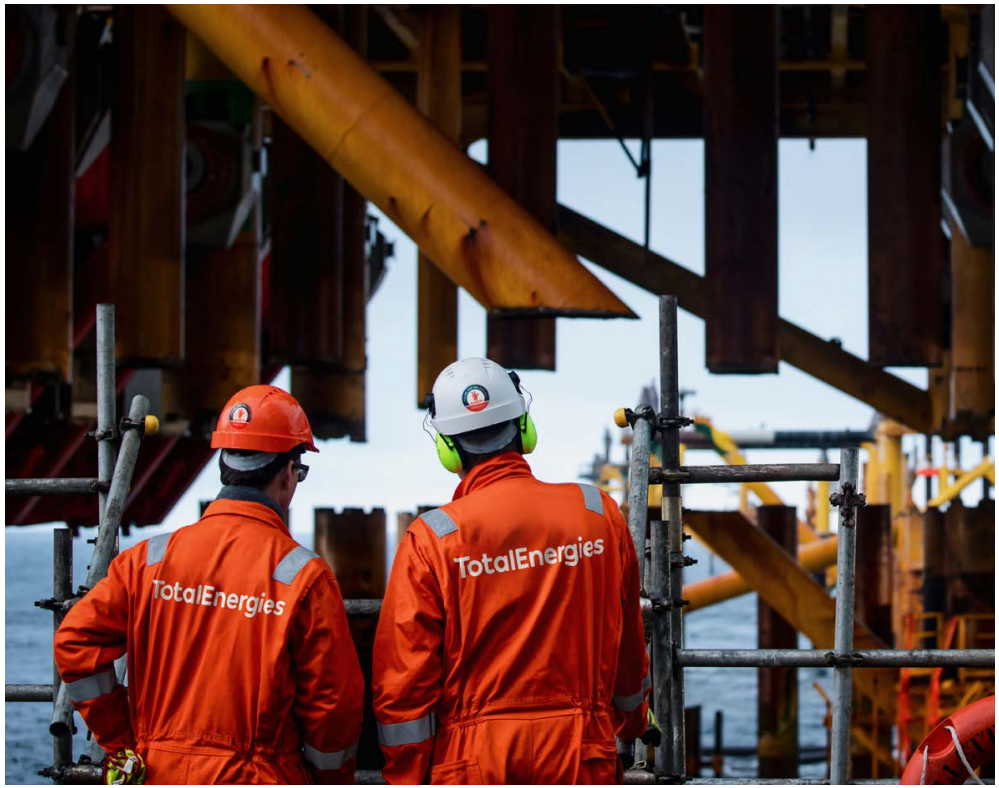
global targets. I am pleased that we here in the Danish affiliate have taken a leading role in this work.

TotalEnergies' strategic ambition is to supply the energy that the World needs today and at the same time build the energy system of tomorrow. Globally, we invest in renewable power, expand our capacity within low-carbon gases like hydrogen and biogas, secure a strong position within natural gas which will be a crucial transition fuel, and develop carbon storage facilities, able to store millions of tons of CO_2 in deposits deep underground.

To support the journey ahead, we are investing heavily in our people so that they have the necessary skills and knowledge to work with the new energies. Our global training program VISA was rolled out during 2022 and I was proud to see the commitment from employees, trainers and management. More than 500 employees participated in these inspiring sessions, a strong testimony to the relevance and importance of this ambitious program in paving the way to the future.

Finally, I want to highlight the progress we are witnessing in our biodiversity efforts. In 2022, we continued our support of various research initiatives by universities and research institutes around our fields, and prepared the first detailed Biodiversity Diagnosis, the fundamental step towards developing our Biodiversity Action Plan in 2023. We also formalized a close and promising partnership with the Wadden Sea National Park to jointly develop projects to support people and environment in our local UNESCO heritage site here in the Esbjerg area.

Eric Delattre
Managing Director
TotalEnergies EP Denmark



Our sustainability ambition

TotalEnergies' sustainability strategy in Denmark is structured around four pillars which support the company ambition to build sustainable energy systems of tomorrow while continuing to supply the energy the world needs today.

In 2022, more than 27,000 TotalEnergies employees were involved in workshops to develop indicators and objectives aligned with the UN Sustainable Development Goals (SDGs). TotalEnergies EP Denmark will during 2023 adopt an action plan with targets to be reached by 2025. Under the name Sustainab'ALL, this plan will set out how we contribute materially to the four pillars outlined below.

In Denmark, our operations are carried out as part of the Danish Underground Consortium (DUC) together with our partners BlueNord (36.8%) and NordsøFonden (20%). Numbers and targets in this report include total DUC activities and not just TotalEnergies' 43.2% equity share.

nordsøfonden BlueNord

	Climate and Sustainable Energy	People's Well-Being	Care for the Environment	Creating Shared Value
Ambition:	TotalEnergies' ambition is to be a major player in the energy transition and to get to net zero by 2050, together with society, by taking steps to: • Reduce emissions from our operated industrial facilities (Scope 1+2) • Reduce indirect emissions associated with the use of our products (Scope 3)	TotalEnergies wants to set the benchmark as an employer and responsible operator. To that end, we endeavor to: • Ensure people's safety • Uphold human rights in our operations and those of our suppliers • Put our employees at the heart of our transformation	TotalEnergies wants to mobilize its operational excellence on behalf of nature and the environment. To do that, the Company has identified three priorities: • Act for biodiversity • Preserve water resources • Be a player in the circular economy	TotalEnergies wants to create shared value for a just transition by: • Making commitments to all of our stakeholders • Ensuring accessible, affordable energy for all • Sharing the economic value we create
Focus areas 2022 in Denmark:	• Carbon footprint reduction journey • Developing carbon storage solutions • Methane detection and reduction	• Diversity & inclusion • Training	• Biodiversity • Waste management • Tyra recycling	• Partnerships • Employee volunteering • Local sponsorships

2022 highlights

2022 was a year of significant progress within the sustainability area.

CO_2 storage licence

Participated in the first ever tender round for licenses to store CO_2 below the sea bed of the Danish North Sea with licences allotted in the beginning of 2023.

Read more →

Drone-based methane monitoring campaign

Continued the drone monitoring deployment in the Danish North Sea. The measurements help us learn more about how we can minimize our emissions and produce ever more sustainably.

Read more →

Carbon reduction journey

Established a core, dedicated team for Carbon Footprint Reduction tasked with identifying and screening opportunities to reduce emissions.

Read more →

VISA training

A global training program was rolled out to inform employees about climate challenges and to better understand the Company's transition journey.

Read more →

Tyra recycling

98.5% of the materials from the old Tyra platform have either been directly reused or recycled.

Read more →

Biodiversity focus

Joined the Danish Biodiversity Council dialogue forum to help advise the government on its biodiversity-related efforts.

Read more →

Wadden Sea National Park partnership

Partnered with Wadden Sea National Park to help protect the values of one of the most important wildlife habitats of Northwestern Europe.

Read more →

Climate and Sustainable Energy

TotalEnergies' ambition is to be a major player in the energy transition and to get to net zero by 2050, together with society.

A shrinking carbon footprint

TotalEnergies EP Denmark's Carbon Footprint Reduction (CFR) team is identifying and screening opportunities to reduce Greenhouse gas (GHG) emissions. Several initiatives are proceeding successfully, with reduction of flaring just one example among many.

A pressure control valve on the Dan field in the Danish North Sea was passing gas – resulting in an additional 5,000 standard cubic meters per day extra flare.

The repair of internal parts was undertaken during a planned shutdown of the NOGAT pipeline in September 2022 and a subsequent inflow test confirmed the valve was tight.

The successful repair reduced the emissions by 4,100 tons of CO_2 per year and is just one example of TotalEnergies EP Denmark's CFR initiatives. This began in 2019 and has made considerable progress, with plenty more to do to achieve ambitious targets for 2025, 2030 and ultimately net zero 2050. For 2030, the aim is a 40% reduction vs 2015 net emissions Scope 1 and 2 from operated assets.

↓40%

reduction of CO_2 by 2030 vs 2015 net emissions Scope 1 and 2 from operated assets is the aim, and ultimately net zero in 2050.

"With strengthened leadership focus, reducing our carbon footprint is spreading automatically and we get a lot of support from other departments both on- and offshore."

– Susanne Frederiksen, CFR Manager

"We want to accelerate and do more," says Susanne Frederiksen, CFR Manager. "With strengthened leadership focus, reducing our carbon footprint is spreading automatically and we get a lot of support from other departments both on- and offshore."

Efficiency focus

TotalEnergies global top management has outlined plans to spend $1 billion over two years to become more energy efficient, adding further momentum to climate footprint efforts.

The company is seeking to reduce energy consumption across all of production, logistics and sales operations. This will also reduce costs and increase competitiveness while also resulting in more sustainable consumption of energy. The work of the CFR team in Esbjerg is a direct outcome of an intense focus on carbon reductions and the formation of a dedicated team is a great advantage.

Whereas people used to work on CFR alongside their regular jobs, there is now a core team of three in Denmark working alongside team representatives from other departments. Well over 100 initiatives have been identified to reduce carbon footprint – some are still to be screened, some are found not to be feasible, others are on hold, but many receive a green light and dedicated resources.

"Now we have this core team and we have accelerated the maturation of projects," says Lars Hvejsel Hansen, Lead CFR Engineer. "People want to buy in on this journey, especially regarding reducing emissions from our facilities. Everyone is very engaged."

4,100

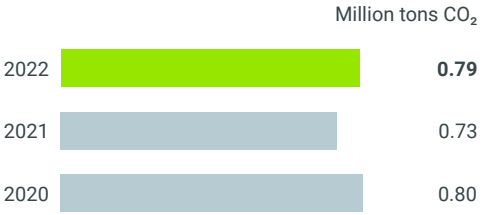
tons of CO_2 reduced per year after repairing a pressure control valve on the Dan field. This equals the emissions from driving ~20 million km in a car.

TotalEnergies CFR focus areas

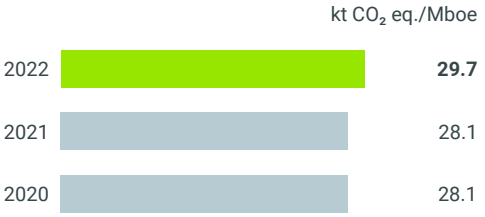
- **Flare reduction opportunities:** recover flare using ejectors, replace hydrocarbon gas with nitrogen for purging
- **Reduce methane emissions:** continue drone and Q-LDAR* surveys
- **Fuel gas usage reduction:** air filter replacements, mature electrification opportunities
- **Improve communication** to engage employees and external stakeholders to deliver on targets

* Quantitative Leak Detection And Repair

GHG emissions 2020–2022



GHG intensity 2020–2022



Racking up the reductions

Flaring is necessary from a safety and operational perspective but results in CO_2 emissions. TotalEnergies EP Denmark actively works to reduce its emissions and minimize gas flaring from offshore installations, to operate as safely and environmentally responsibly as possible. We target zero flaring by 2030 and will achieve zero routine flaring in 2023 in our Danish operations.

There were several other important reductions in carbon footprint in 2022. This includes the use of vessels using batteries and shore power connections, installing a back-up compressor on Dan, partial re-route of the Halfdan oil from Gorm to Dan, GHG reductions from the well performance team and acquiring the ISO 50 001 Energy Management System certification.

"It's a change in mindset from just a few years ago, with a lot more attention and focus from everybody on trying to get better and optimize," says Frederiksen. "And we have a lot of good plans to work on for the future."

Definition of flaring

The purpose of a flare is to safely dispose off unwanted gas, through controlled combustion, which cannot be utilized for various reasons.

Definition of Scope 1 and 2

Scope 1: Total GHG emissions from sources at facilities owned (partially or wholly) and/or operated by TotalEnergies. Direct GHG emissions correspond to Scope 1 emissions as defined by the GHG Protocol.

Scope 2: GHG emissions that occur at the point of the energy generation (owned or operated by a third party) for electricity, heat or steam imported (i.e. purchased) for use on site. Indirect GHG emissions from imported energy correspond to Scope 2 emissions as defined by the GHG Protocol.

In 2025, the first large-scale carbon capture project in Denmark is expected to begin operations. The captured CO_2 is planned to be transported by ship to the Northern Lights storage facility off the Norwegian West coast. Northern Lights is a joint venture between TotalEnergies, Shell, and Equinor.

From stack to storage

The International Panel on Climate Change (IPCC) has pinpointed Carbon Capture and Storage (CCS) as a key technology to reduce emissions and meet the climate ambitions of the Paris Agreement. The North Sea has a particular role to play and TotalEnergies is investing heavily to develop this climate technology of tomorrow.

TotalEnergies is at the forefront of developing groundbreaking CCS technology in the Danish North Sea. The first ever tender round for licences to store CO_2 below the seabed in the Danish North Sea was held in October 2022 and TotalEnergies was awarded two license areas in February 2023.

TotalEnergies plans to store at least five million tons of CO_2 annually by 2030 in the two areas in a first phase. One licence area covers the depleted oil and gas field Harald, and the other is in a nearby saline aquifer. The geology of the aquifer is not mapped and analyzed as accurately as the Harald field, and TotalEnergies is therefore conducting seismic surveys during 2023 to understand the full potential of the storage site.

The reservoir in the Harald field has been the subject of a two-year study supported by the Danish public Energy Technology Development and Demonstration

5

million tons of CO_2 stored annually by 2030 in two reservoirs in the Danish North Sea are planned for the first phase by TotalEnergies.

See the film about TotalEnergies' involvement in Project Bifrost here.

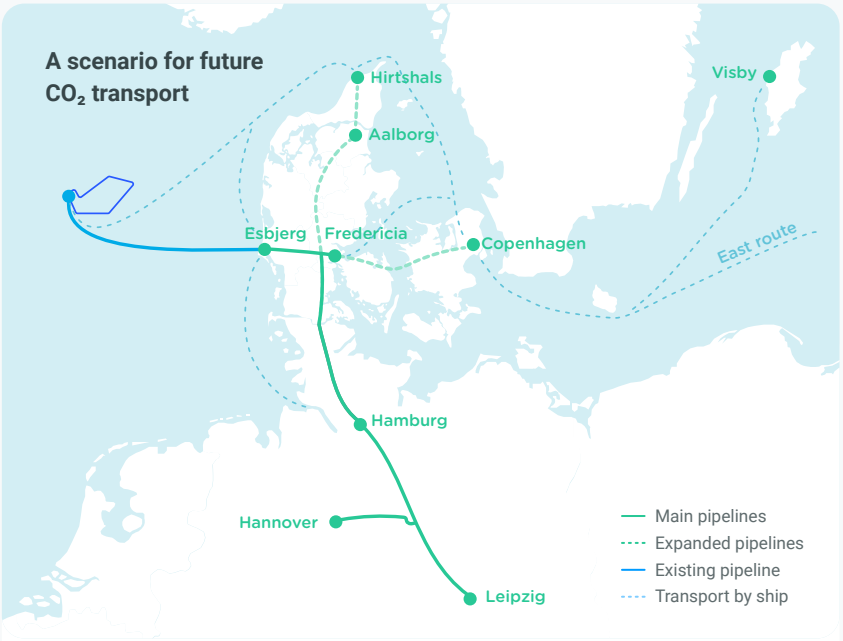
Programme (EUDP). Under this program, TotalEnergies – together with the DUC partners Nordsøfonden and BlueNord – has worked with Denmark's Technical University and Ørsted to develop a concept for transport, injection, and storage of CO_2.

The geological composition of the Danish underground is particularly well suited for storage and TotalEnergies will be looking into additional opportunities.

The Geological Survey of Denmark and Greenland (GEUS) has estimated the storage potential in the Danish North Sea to be between 12 and 22 billion tons of CO_2. With proximity to big industrial emitters in Germany and around the Baltic Sea, Denmark therefore has a unique potential to provide solutions on a European scale.

What is CCS?

With CCS, CO_2 is captured, transported, and injected permanently and safely in underground reservoirs onshore or offshore. Thereby CCS effectively reduces large emissions from e.g. heavy industries or incineration plants, sectors which are otherwise challenging to decarbonize.



Establishing the right CCS infrastructure with pipelines

Building the right transport system for CO_2 will be vital to bring down costs. The ambition is to store millions of tons of CO_2, and to do that best, the big emitters in Denmark and neighboring countries will need pipelines to bring the CO_2 to storage facilities. Ships, trains and lorries will also play a role to bring the liquid CO_2 to pipelines or storage facilities.

Eye in the sky

Methane is a GHG with Global Warming Potential approximatively 30 times that of CO_2 when compared over 100 year period. Monitoring with drones is providing more accurate details on emissions from TotalEnergies' assets. It also shows more precisely where those emissions are located, allowing for improved interventions.

Example of drone usage offshore.

What better than a bird's eye view, to see exactly what's going on?

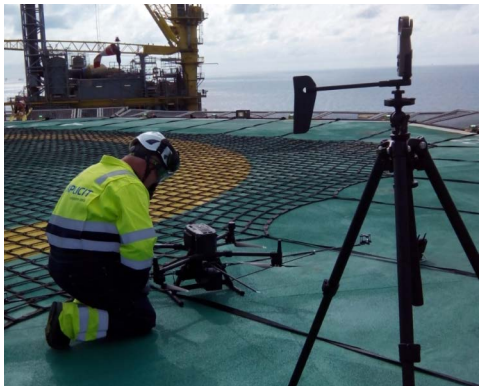
In the summer of 2022, TotalEnergies EP Denmark conducted methane and carbon dioxide emissions monitoring of its offshore installations using drones equipped with bespoke AUSEA (Airborne Ultralight Spectrometer for Environmental Application) sensors. AUSEA detection technology, which consists of an ultra-light CO_2 and CH_4 sensor mounted on a drone, was developed in cooperation with the French National Center for Scientific Research (CNRS) and Université de Reims Champagne Ardennes. It is at the cutting edge of scientific research for detecting and quantifying methane emissions on site, with a high level of accuracy (>1kg/h).

As part of TotalEnergies' global ambition to get to Net Zero by 2050, the aim of the drone campaign was to identify, quantify and reduce methane emissions from our operations. Previously, emissions could only be estimated, and the use of drones allows us to detect and measure emissions on site in real-life conditions.

"Drone monitoring shows whether estimates used previously are representative. What we have found is that in most cases our emissions are relatively lower than the estimates we use and report externally," says Charlotte Larsen, Senior Environmental Advisor.

"Methane reduction is a high priority in our efforts to shrink our carbon footprint. In early 2022, TotalEnergies set very ambitious methane reduction targets for the decade ahead, calling for a 50% reduction from 2020 levels by 2025 and by 80% by 2030."

– Dana Nasr, Environmental Manager



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– Charlotte Larsen, Senior Environmental Advisor

The data foundation

The drones are flown in a specific pattern, descending vertically in the emissions plume down-wind of a platform to monitor the level of methane and carbon dioxide. This results in an image which shows hot spots, like a thermal photograph. The sensors can detect methane molecules even if it is windy and the drone can work effectively in wind speeds of up to 9 meters per second.

"This is the second year we have been flying with drones, so we are creating the data foundation and we plan to repeat this in 2023. It's good that we can continue to show that the data is consistent and document our performance with regard to emissions, as well as gaining an idea of where we can make the most effective interventions to reduce emissions," says Larsen.

With regard to safety, a lot of precautions are taken, such as the drones flying next to, rather than over the platform, and a new permit to work is secured for each flight.

Effective and safe

The AUSEA campaign in 2022 measured the concentration of methane and carbon dioxide in flare plume transect and turbine plume transects. The results were compared to production data for reconciliation as well as to compare the measurements with operational conditions on the day of the flight.

The results have shown that TotalEnergies CO_2 emissions in Denmark – covering the calculated, monitored and reported values – are aligned with results for all installations covered. The data also show methane emissions tend to be lower than the calculated values most of the time, though some peaks were identified, mostly due to variations in production operations.

"This is the safest way to do monitoring, having machines do the measuring. If there is any kind of problem, the drones revert to a location away from the platform and a flight can easily be aborted," Larsen adds. "And at the end, the data gives us a more solid base of evidence, with real values instead of estimated."

80%

by 2030 in methane reduction is TotalEnergies' ambition. The local drone campaign is a part of this, where the aim is to identify, quantify and reduce methane emissions linked to its operations.

People’s Well-Being

TotalEnergies wants to set the benchmark as an employer and responsible operator.

A little piece of the world in Esbjerg

TotalEnergies EP Denmark has an extremely diverse workforce in Denmark, bringing many benefits. Training and employee engagement help to develop a strong culture and guide employees to identify and pursue career opportunities across the company.

From Indian to Italian and Nigerian to New Zealander, TotalEnergies EP Denmark operations are a multicultural mixture, with employees representing 48 nationalities.

It reflects the diversity of the organization, which benefits from a broader range of perspectives, an improved understanding of stakeholders and access to a much wider pool of talent for recruitment as a result.

"It's a little piece of the world here on the harbor in Esbjerg," says Michael Brandt Kristensen, Talent Development Manager. "Because we have so many backgrounds, it becomes a wonderful big melting pot of differences that are embraced."

An absolute enhancement

While TotalEnergies EP Denmark has broad diversity in terms of nationalities and cultural backgrounds, progress is still needed in terms of gender balance, particularly for offshore positions, which have traditionally been male dominated. However, gender diversity numbers have started to improve.

In 2022, the first Danish female Offshore Installation Manager (OIM) was appointed in the Danish part of the North Sea, with Malene Birkemose Knudsen taking charge of the Halfdan field.

"There are so many positive aspects that come from having so many different backgrounds. There is a lot of cultural training, especially for new arrivals, and we focus on management style and how we interact with each other. It doesn't hinder us – it absolutely enhances the way we work," says Jennifer Stien, Human Resources Manager.

48
nationalities are employed by TotalEnergies EP Denmark.

19%
of women represented across the workforce.

>2,200
training programs available to all employees, covering a huge range of topics.

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– Jennifer Stien, Human Resources Manager

That is part of a far wider training program, which aims not only to help people in their current roles, but to prepare them for future opportunities in a global organization. All employees go through the VISA onboarding program, which expands their knowledge and prepares them for the company's energy transition.

Then, there are more than 2,200 training programs available to all employees, covering a huge range of topics from gas, renewables and electricity to digital transformation, health and safety, or learning a new language. Employees can be nominated by a manager or select training themselves to learn new skills that can be useful in their current roles and for their future ambitions, and there are more than 40 different local training courses available for offshore workers in Denmark.

"The beauty of working for such a big company is that you have a lot of options. You can build your career here in Denmark. You also have the option to work elsewhere if that's what you aspire – there's something for everybody," says Kristensen.

Inspiring transition

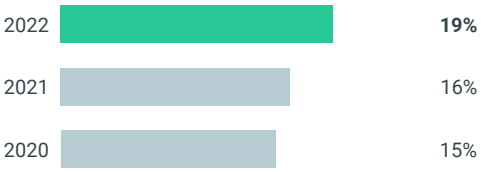
The global VISA program was launched in 2022, focusing on the energy transition and TotalEnergies' ambitions to become a multi-energy company. This training is for all employees and it featured local presenters in Denmark discussing climate change, wind and solar power and CCS as well as the role of oil and gas in the energy transition.

"Our people are excited about the energy transition and are engaged in it. We're on the journey and they can see a future that wasn't just oil and gas related – going from knowing everything about platforms and talking about barrels of oil equivalent to different forms of hydrogen and megawatts and joules," says Stien.

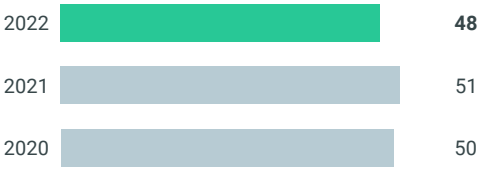
Such training is an important element in employee engagement. A local survey identified clearer career opportunities in the company as it transitions as well as leadership style, given the sheer variety of cultural backgrounds, as areas for improvement. Results were strong on trust, as people enjoyed working together and looked out for each other.

"Everything can always be improved and it's a work in progress," Stien adds. "Locally, we see that our people find the transition inspiring but there's always more we can do to help them in their development."

% of women in workforce



Number of nationalities



Care for the Environment

TotalEnergies wants to mobilize its operational excellence on behalf of nature and the environment.

Our commitment to biodiversity

In November 2022, TotalEnergies EP Denmark, as part of Dansk Offshore, was invited to participate in the Danish government's Biodiversity Council dialogue forum.

This is a forum where all the relevant stakeholders are invited to have a direct dialogue with the Biodiversity Council, consisting of nine scientists appointed by the Minister of Environment tasked to advise the government on its biodiversity-related efforts.

"The aim was to create a dialogue on biodiversity. Taking part is a very significant step and allows us to have a direct dialogue with the government, ministries, and NGOs," says Katrina Povidisa-Delefosse, Senior Environmental Advisor.

TotalEnergies EP Denmark made good progress with its biodiversity work in Denmark in 2022. A pilot project on the Regnar platform continues to monitor marine life around the structure. This will support decisions on what to do with decommissioned structures, which can be homes to much sea life.

"It's very important that the offshore industry is a player in biodiversity. Our offshore structures are there and have an impact, also potentially as hot spots for fish and other wildlife. We are investing in research and sharing our data, and this dialogue is a great opportunity to speak and get in touch with the outside world," says Povidisa-Delefosse.

A broader biodiversity diagnosis was also carried out, looking at all environmental assessment and impact studies and creating a baseline so gaps in knowledge can be identified, as well as sensitivities around the platforms. This provides the basis for a biodiversity action plan, which is planned to be developed during 2023.

"Our approach is to reconcile our operations with the protection of biodiversity to build a sustainable future. We apply the Mitigation Hierarchy approach of Avoidance, Reduction/Restoration and Compensation to all our activities and projects."

– Louise Koldig, Health, Safety, and Environment Manager

The value of waste

Waste can be a valuable commodity if it is treated right. A full audit of waste management at TotalEnergies EP Denmark highlighted transparent and documented ways to sort and treat waste so that it brings more environmental and economic value.

"In 2022, we increased our focus on circular resource management, starting with responsible management of our waste. We valorized 86% of our waste that year in Denmark, and want to continue improving on that front in the coming years with particular attention on recycling given our successful experience with the Tyra project."

– Dana Nasr, Environmental Manager

Issues are opportunities

We need to become better at reusing, recycling, and repairing products to create less waste and protect the environment and climate. In 2022, active sites operated by TotalEnergies affiliates globally generated 498,000 tons of waste, of which 61% was valorized. The company aims to recover and valorize more than 70% of its waste by 2030.

A headquarters waste review in Denmark, conducted over two weeks, checked through documents, processes, subcontractors, waste streams and found that as an affiliate we had strong waste management setup supported by the developed waste infrastructure of Denmark. It also identified some golden opportunities to even better understand how our waste is being managed and potentially improve.

86%

of TotalEnergies EP Denmark's waste was valorized in 2022.

We all have to care

The vast majority of TotalEnergies' waste in Denmark is valorized. Around 60% of that is burnt and energy recovered and sent back to the grid, but recycling waste produces more value and is better for the planet. In 2022, 39% of TotalEnergies EP Denmark's waste was recycled and the aim is for that to be 50-55% by the end of 2023.

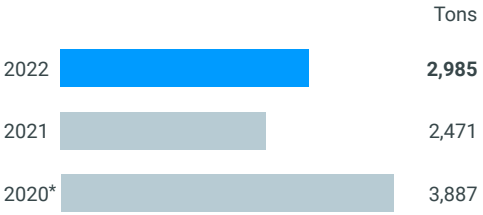
More granularity of the different waste streams is one of the means to improve.

"In 2022, we worked together with our waste contractor to launch a custom-made customer portal suited for our particular needs, based on their template. Our ambition is to be able to follow the waste throughout the value chain and figure out exactly where it comes from, and that means we can take action to reduce and better use our waste," says Katrina Povidisa-Delefosse, Senior Environmental Advisor.

Once the details will become available on waste from platforms, the environmental teams both locally and at headquarters will be able to spot trends and work with offshore and onshore colleagues to improve the waste management.

By using the waste contractors' portal, the HSE team will be able to see which platform is sending mixed waste, meaning it can't be recycled and will have to be incinerated for energy recovery.

Total waste 2020–2022



Recycled waste 2020–2022

* 2020 includes extra waste from the decommissioning of the Tyra platform.

"It's a dialogue – we are not telling people what to do, but rather sharing our experience to improve. We have initiated the dialogue to create an offshore waste forum, where we can get input from the platforms and ask them if certain initiatives will work. We all have to care about it," says Povidisa-Delefosse.

61%

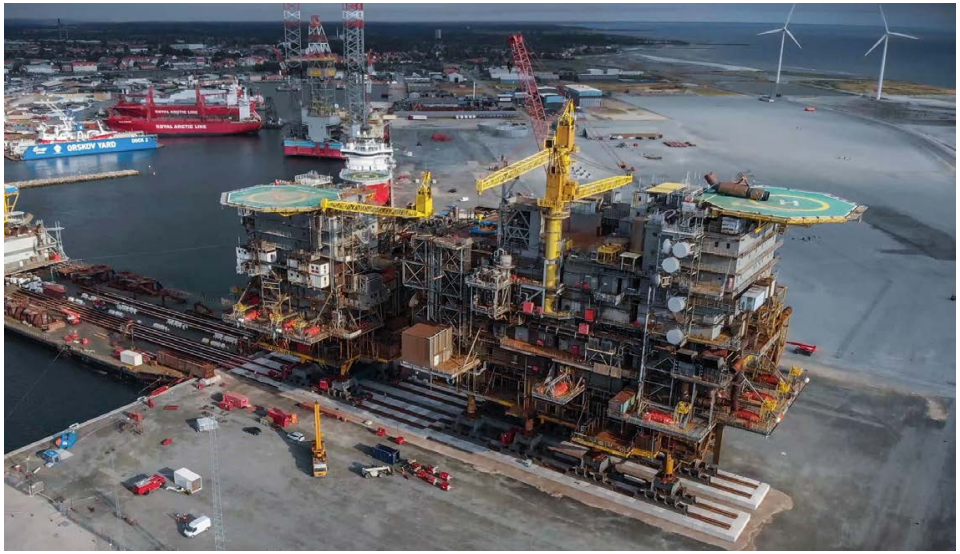
of the generated waste of 498,000 tons from active sites operated by TotalEnergies affiliates globally, was valorized in 2022.

Definition of waste valorization

Waste valorization is a waste-to-wealth strategy meaning that waste products are given economic value through the process of recycling or composting waste materials and converting them into more useful products, including materials, chemicals, fuels, or other sources of energy.

The recycling of the old Tyra set an industry benchmark

Recycling and reuse have been an integral part of the Tyra Redevelopment project from the start, where TotalEnergies EP Denmark and the DUC partners have set high demands for the recycling yards and envisioned sustainability in all stages of the planning process.



Specially trained personnel have methodically removed and dismantled the enormous old Tyra platforms, and as such ensured that 98.5% of the materials have either been directly reused or recycled.

The recycling of the old Tyra is the largest recycling project of offshore installations in Denmark's history, and many processes and guidelines were built from scratch as no regulations existed in the country at the time. This contributes to a wealth of knowledge needed for future projects in the industry.

Tyra Redevelopment

Tyra is Denmark's largest natural gas field and has been a center for processing and exporting more than 90% of the natural gas produced in the Danish North Sea since 1984. Due the field's natural compaction after many years of production, the seabed below the Tyra platforms sank more than five meters. This reduction ultimately meant that a redevelopment was necessary to enable continued safe and efficient production.

In 2017, the decision was taken with the Danish Government to rebuild Tyra, presenting the largest investment ever taken in the Danish North Sea. The Tyra Redevelopment includes three main elements: decommissioning and recycling of the old Tyra platforms; modification of the six old well head and riser facilities; construction of a new process platform and a new accommodation platform.

"Some parts of the old Tyra are reused in their original form. For example, a few of the generators are used again elsewhere. Other parts are processed and traded on the international market as part of the circular economy. For instance, the steel from Tyra was remelted and can be reused for new construction projects and alike."

– Jens Kloster, former Tyra Redevelopment Decommissioning Manager for TotalEnergies EP Denmark

>50,000

tons of steel from the old Tyra has been recycled, an equivalent of seven Eiffel Towers.

2.8

billion cubic meters gas per year is the field expected to deliver once Tyra II is fully operational.

In September 2019, the production of Tyra was suspended to enable the redevelopment. Since then, the old facilities were removed and recycled, and the new modules were constructed at yards around the world and successfully installed in the Danish North Sea.

The redevelopment is currently in its final phase, and all hands are on preparing the restart of Tyra's production.

What is Tyra II?

The modernized Tyra II will be one of the world's most advanced gas fields which is taking productivity, innovation, and environmental standards to new heights.

The new facilities are equipped with around 100,000 data points retrieved from sensors on critical equipment, which will continuously be monitored and analyzed by the onshore control room team. At the same time, Tyra II has a simplified infrastructure and improved energy efficiency. Thanks to new technology and ways of working, Tyra II will be able to produce gas with 30% lower CO_2 emissions compared to the former platforms.

Once fully operational, the field is expected to deliver 2.8 billion cubic meters gas per year making Denmark again a net-exporter and self-sufficient in natural gas, and as such the field will contribute to Danish and European energy security and independence.

Read more: https://tyra2.dk

Creating Shared Value

TotalEnergies wants to create shared value for a just transition.

Engaging with local partners

TotalEnergies EP Denmark is one of the largest companies in the Esbjerg area. This position comes with special obligations to the local society.

Partnerships, sponsorships, and an active role in the local community to develop and protect the region's unique values are key focus points in this work.

The nature of our operations involves close collaboration with local communities in the areas where we operate, which is why TotalEnergies EP Denmark funds, supports, and participates in local activities beyond the traditional business scope.

Our four priority areas

- EDUCATION AND INCLUSION
- ROAD SAFETY
- CLIMATE, COASTAL AREAS AND OCEANS
- CULTURAL DIALOGUE AND HERITAGE

The Action! program

Through the Action! program, every employee can volunteer for local causes by donating up to three working days per year. These opportunities allow individuals to play a part, either individually or collaboratively, in our local community, whether it's helping underprivileged children, inspiring youth to pursue Science, Technology, Engineering and Math careers, or taking care of natural spaces. Engaging with and giving back to communities holds significant importance for TotalEnergies EP Denmark, and Action! exemplifies our commitment to driving positive change at a local level.

In 2022, 118 employees have spent around 307 hours of volunteering and completed 14 initiatives in TotalEnergies EP Denmark.

118

employees have spent around 307 hours of volunteering and completed 14 initiatives in TotalEnergies EP Denmark in 2022.

Partnering with the Wadden Sea National Park to protect wildlife and cultural heritage

TotalEnergies EP Denmark became an official partner of the Wadden Sea National Park in September 2022. Now, the employees will engage in projects to support e.g. the wildlife in the national park.

Examples of projects could be those on the local islands Rømø, Fanø and Blåvand, where TotalEnergies EP Denmark employees can volunteer to set up fences around bird breeding areas, monitor the fenced areas, and remove the fences once the breeding season is over.

The Wadden Sea

The Wadden Sea is one of the most valuable tidal areas in the world. Recognized as a UNESCO World Heritage Site and classified under IUCN (category II), the Wadden Sea stretches from Skallingen, Denmark, through northwest Germany, all the way to Den Helder in the Netherlands. Every year more than 10 million water birds pass through the Wadden Sea area during migration along the East-Atlantic flyway.

2022 – progress and challenges

TotalEnergies EP Denmark's operations are situated in the harsh environment of the North Sea and this sets the scene for our focus on safe and reliable operations.

Most of our offshore installations were constructed many years ago and were built for a significantly higher output of oil and gas. In this context, our goal is to operate our mature offshore installations in the safest, most energy efficient manner, with the lowest possible adverse impacts on air, sea and land, both locally and globally.

In 2022, we saw a high level of activity with significant major engineering projects being conducted, such as the redevelopment of Tyra as well as reducing the routine flaring from the oil from the Gorm field to the Dan field by 50%. These projects had major impacts on sustainability numbers.

Climate and Sustainable Energy

	Unit	2020	2021	2022
GHG Emissions [1]				
Total CO_2	mil. Tons CO_2	0.80	0.73	0.79
CH_4	Tons	1,988	1,990	1,909
GHG intensity	kt CO_2 eq./Mboe	28.1	28.1	29.7
Other Emissions				
NO_x	Tons	3,825	3,428	4,117
nmVOC*	Tons	1,602	1,602	1,507
SO_x	Tons	40	39	46
Sources of CO_2 Emissions on Production Platforms				
Fuel gas	%	74	86	88
Flared gas	%	13	13	11
Diesel	%	8	1	1
Consumption of HCFC* gas and HFC* gas				
HCFC	Tons	0	0	0
HFC	Tons	1.9	0.8	1.4
Energy consumption				
Total energy consumption	TJ	12,088.3	11,184.9	12,311.3
Use of extracted hydrocarbons				
For sale	%	75	75	73
For internal energy consumption	%	22	22	24
For flaring	%	3	3	3

1 Scope 1 and Scope 2 from all offshore assets and logistical support

* nmVOC = non-methane Volatile Organic Compounds, HCFC = Hydrochlorofluorocarbons, HFC = hydrofluorocarbons

Care for the Environment

	Unit	2020	2021	2022
Production of water				
Produced water	mil. Tons	22.3	22.2	26.3
Total fluids production (gas, oil and water)	mil. Tons	26.4	26.1	30.2
Produced water reinjected into the reservoirs or discharged into the sea				
Re-injected produced water	mil. m³	5.9	5.5	6.3
Discharged produced water	mil. m³	16.3	16.8	17.6
Oil in produced water discharged into the sea				
Total volume of oil discharge	Tons	92.4	91.7	121.6
Average concentration of oil in produced water discharged into the sea				
Oil concentration	mg/l	5.7	5.5	6.9
Water-based drilling mud and drill cuttings discharged into the sea				
Water-based drilling mud	1,000 m³	0	0	0
Drill cuttings	1,000 m³	0	0	0
Number of wells drilled	Number	0	0	0
Accidental oil spills				
Accidental oil and diesel spills	Tons	0.1	0.9	0.8
Accidental oil and diesel spills	Number	10	8	6
Accidental chemicals spills				
Accidental chemical spills	Tons	0.7	2.7	10.5
Accidental chemical spills	Number	10	29	32

	Unit	2020	2021	2022
Chemicals discharged into the sea				
Green chemicals	Tons	1,095	786	803
Yellow chemicals	Tons	3,214	3,585	4,281
Red chemicals	Tons	0.4	8.5	13.4
Grand Total	Tons	4,309	4,379	5,097
Chemical usage				
Green chemicals	Tons	2,422	2,275	4,065
Yellow chemicals	Tons	6,600	6,634	7,640
Black chemicals	Tons	0	0	0
Red chemicals	Tons	14	53	70.8
Grand Total	Tons	9,035	8,962	11,776
Waste management				
Waste total	Tons	3,887	2,471	2,985
Recycled [2]	%	70.8	47.0	39.0
Incinerated [3]	%	28.4	51.0	62.0
Landfilled	%	0.8	2.0	0.1

2 2020 includes extra waste from the decommissioning of the Tyra platform
3 Incinerated with energy recovery

People's Well-Being

	Unit	2020	2021	2022
Employees				
Workforce onshore	Number	538	521	486
Workforce offshore	Number	371	357	275
Gender				
% of women	%	15	16	19
Among onshore	%	25	26	28
Among offshore	%	2	3	4
Nationalities				
Number of nationalities	Number	50	51	48

Creating Shared Value

	Unit	2020	2021	2022
Action! program – employee participation	%	-	10	16

Operational data

	Unit	2020	2021	2022
Production of oil and gas				
Gas	mil. Tons oil eq	1.2	1.2	1.1
Oil	mil. Tons	2.9	2.7	2.7

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About TotalEnergies

TotalEnergies is one of the biggest energy companies in the world with more than 100,000 employees worldwide and activities within oil, gas, solar, wind, biofuels, hydrogen, and carbon storage.

In Denmark, TotalEnergies is the leading oil and gas company employing a diverse and international workforce of around 1,200 people. We are responsible for 86% of the oil and 89% of the national gas produced and are developing one of the leading carbon storage projects which is expected to save millions of tons of CO_2 in the depleted oil and gas reservoirs in the Danish North Sea. TotalEnergies' operations date back more than half a century, representing an important contribution to Denmark's economy, energy supply and employment. In addition to our oil and gas activities, TotalEnergies is working on establishing new business activities within offshore wind, solar energy, and other renewable energy sources.

Read the Sustainability Report 2022 online

TotalEnergies

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