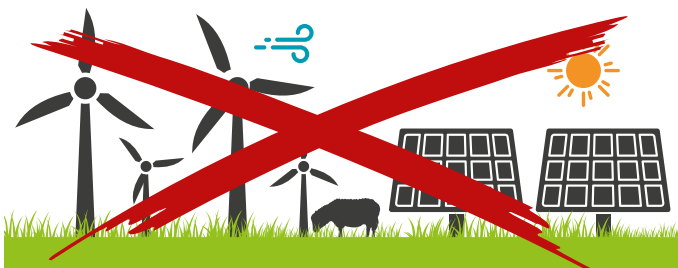


10 Reasons Not to Invest in Wintershall Dea

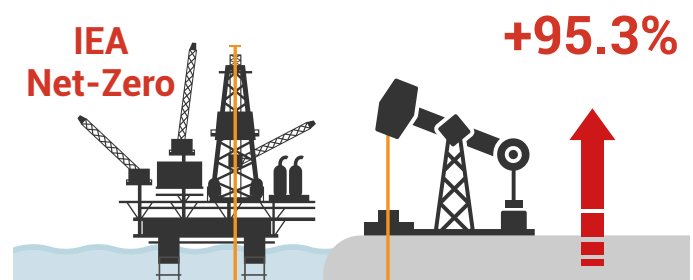
Wintershall Dea is the largest German oil and gas company. It produces crude oil and fossil gas, in Germany as well as abroad. The company is also active in gas transport and plans to expand its CO₂ disposal business. The main shareholder, BASF, intends to sell Wintershall Dea once.

1. Fossil business model without a recognizable transformation strategy



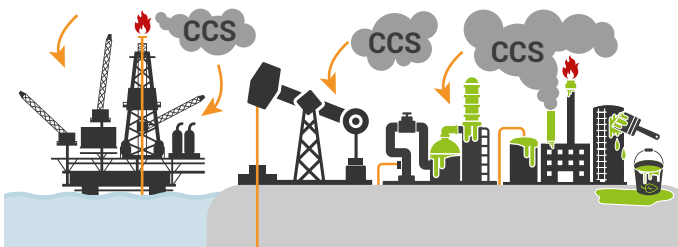
Wintershall Dea has no specific measurable climate targets for indirect emissions in the value chain (Scope 3). These accounted for 97.6% of the company's emissions in 2022.¹ The company has only set short- and medium-term climate targets for a small proportion of its emissions (Scope 1 and 2). However, it remains unclear how much of these targets Wintershall Dea intends to achieve through questionable practices such as fossil hydrogen, carbon capture and storage (CCS), and offsetting. The company does not invest in renewable energy.² Overall, Wintershall Dea remains a climate-damaging, purely fossil fuel company and poses a reputational as well as an investment risk.

2. 95.6% of near-term expansion plans exceed the 1.5°C limit



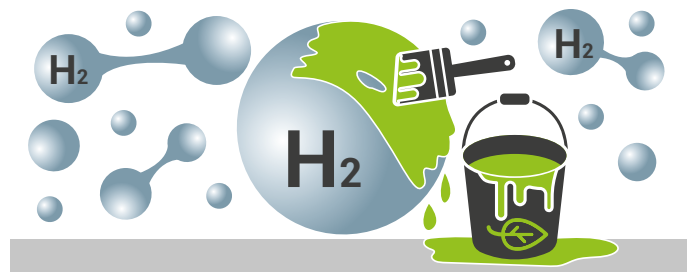
To limit global warming to 1.5°C, the International Energy Agency's Net Zero Emissions by 2050 scenario foresees no further development of new oil and gas resources, except for projects approved by the end of 2021.³ An analysis by Urgewald using data from Rystad Energy shows that 95.3% of Wintershall Dea's short-term expansion exceeds this scenario. According to the analysis, Wintershall Dea invested an average of almost \$170.2 million per year in the exploration of additional oil and gas resources between 2021 and 2023.

3. Climate and environmentally damaging CCS technology as an exercise in greenwashing



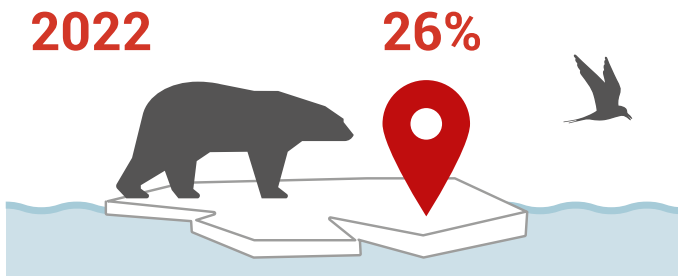
Wintershall Dea is banking on carbon capture and storage (CCS).⁴ However, CCS is not yet technically and economically feasible at the necessary scale. For example, most CCS projects require enormous subsidies. In addition, they have almost always failed to attain the promised quantities of compressed CO₂ and have often even led to further depletion of existing oil and gas fields.⁵ On top of this, there are incalculable costs for the continuous monitoring of the reservoirs, the high energy expenditure of CO₂ compression, and possible leaks.⁶

4. Fossil hydrogen as a sham sustainable solution



Wintershall Dea wants to produce blue hydrogen based on fossil gas and presents this as a climate-neutral solution.⁷ In practice, blue hydrogen causes similar or sometimes even higher emissions than the direct use of fossil gas.⁸ The production of blue hydrogen relies on CCS (see 3.), which is very energy-intensive.⁹ The extraction of fossil gas also inevitably causes methane emissions.¹⁰ Methane has a significant negative climate impact, which is up to 86 times greater than the impact of the same amount of CO₂ over 20 years.¹¹

5. 27% oil and gas production in the Arctic



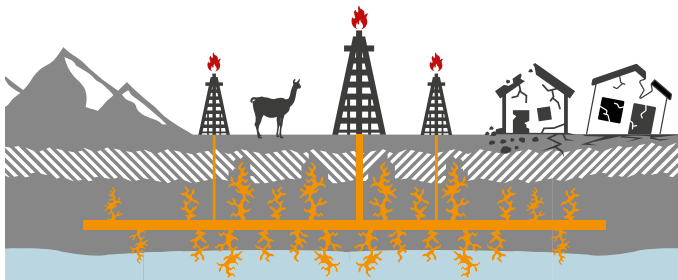
Wintershall Dea extracts large quantities of oil and gas from the Arctic. According to an analysis by Urgewald based on data from Rystad Energy, 26% of the company's total oil and gas production comes from the Norwegian Arctic. Even 58.6% comes from the Arctic if the Russian assets are taken into account.¹² In a peer group comparison,¹³ the company produces the most in the Arctic relative to respective total production volume. Even minor oil spills can have serious consequences. This is because oil removal in the cold and turbulent waters of the Norwegian Barents Sea is extremely difficult.¹⁴

6. New offshore projects in high-risk locations



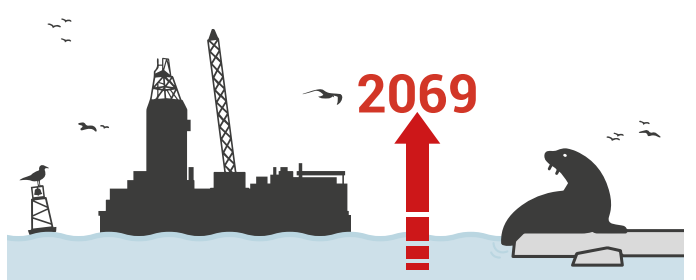
Wintershall Dea produces oil and gas in remote and high-risk locations. As part of a joint venture, Wintershall Dea has decided to develop the world's southernmost gas project – Fénix – in the Patagonian Sea.¹⁵ Accidents at such sites, for example due to earthquakes or seabed subsidence, would have devastating effects on the fragile ecosystem and would be difficult to contain.¹⁶ Wintershall Dea is also involved in the "Gasha" gas project off the coast of the United Arab Emirates. This endangers the sensitive marine fauna of the Marawah Biosphere Reserve, home to endangered sea turtles and dugongs live, among others.¹⁷

7. Fracking destroys the livelihoods of indigenous people in Argentina



Wintershall Dea produces gas in Argentina using "hydraulic fracturing" (fracking). In the Vaca Muerta region, the local population regularly holds mass protests against the fracking industry and the enormous environmental damage it causes.¹⁸ The most serious impacts of fracking include extreme water consumption, contamination of drinking water, air pollution, negative impacts on agriculture, toxic waste such as drilling muds, as well as earthquakes.¹⁹ Wintershall Dea has still not sold its Russian assets. If these are included, the fracking share of Wintershall Dea's total production is as much as 26%.²⁰

8. Oil production threatens UNESCO World Heritage Wadden Sea National Park



Wintershall Dea operates Germany's largest oil and gas field in the UNESCO World Heritage Wadden Sea National Park.²¹ The company even plans to expand production until 2069.²² The daily operation of the production platform endangers the protected area, as even small oil leaks are toxic to marine life. Any accident would have catastrophic consequences for the unique ecosystem. Millions of birds and marine animals such as seals and harbor porpoises could lose their habitats. Seagrass beds, which are important carbon sinks and spawning grounds, could be irreparably damaged by an oil spill.²³

9. Wintershall Dea's Russian joint ventures may have supplied raw material for the production of military fuel



Wintershall Dea did not announce its withdrawal from Russia until January 2023 – much later than many other Western oil and gas companies.²⁴ As recently as 2022, oil and gas production in Russia accounted for 46.2% of Wintershall Dea's aggregate oil and gas production.²⁵ All production from Wintershall Dea's Russian joint ventures was sold to Gazprom at the wellhead.²⁶ Media reports suggest that gas condensate from the Russian joint ventures may have possibly been used to produce fuel for Russian fighter jets involved in war crimes in Ukraine.²⁷ In late April 2023, new evidence emerged from Global Witness and Radio Free Europe suggesting supply chain links between the joint ventures' Siberian gas fields and fuel for the Russian military.²⁸

10. Climate lawsuit could spell the end of the fossil fuel business model



On 5 October 2021, Environmental Action Germany (DUH) filed a lawsuit against Wintershall Dea.²⁹ With its global fossil fuel production, the company is responsible for emissions to the tune of almost 80 million metric tons of CO₂ per year – more than the country of Austria.³⁰ The company is even planning to develop new oil and gas fields, which contradicts the Paris Climate Agreement and the German Climate Protection Act. So far, Wintershall Dea blatantly ignores civil society's demands to comply with a CO₂ budget. Therefore, DUH expects a court ruling that will force the company to radically reduce its greenhouse gas emissions.

Failure to include Scope 3 emissions in emissions reduction targets.



Proportion of Wintershall Dea's emissions included (Scope 1 and 2) and excluded (Scope 3) in emission reduction targets up to 2030

Wintershall Dea – questionable climate strategy

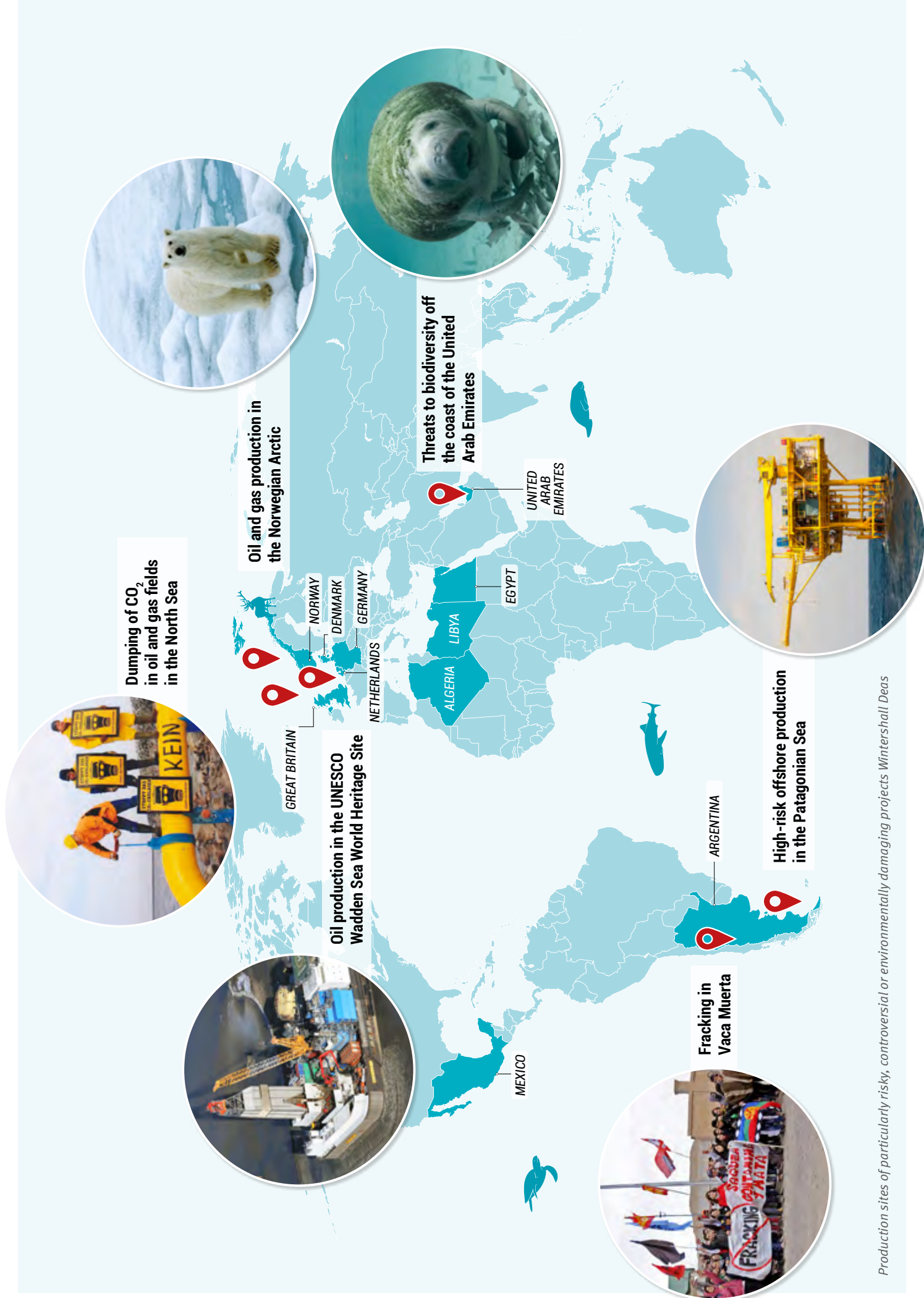
Wintershall Dea claims to pursue an ambitious climate strategy.³¹ The company allegedly wants to reduce its own greenhouse gas emissions from upstream activities by 25% by 2025 and to net zero by 2030. However, these targets only cover emissions from oil and gas production directly, e.g., from drilling and refineries, or indirectly, e.g., from generating the electricity needed for production (Scope 1 and Scope 2).³² The targets do not cover emissions resulting from the combustion of the extracted fossil fuels by end users (Scope 3). This limitation of the climate targets is highly problematic, since 97.6% of Wintershall Dea's emissions in 2022 fell into the Scope 3 category.³³ For a credible, 1.5°C compatible climate strategy, Wintershall Dea must also include specific Scope 3 emission reduction targets. Competitors such as BP, Eni, or Total Energies³⁴ also need to make significant improvements here, but at least they have already set medium-term Scope 3 targets.

Furthermore, Wintershall Dea does not provide clear information on the extent to which its own decarbonisation targets will rely on questionable practices such as blue hydrogen, carbon capture and storage (CCS), and offsetting. This information is important to

assess the true extent of the absolute greenhouse gas reductions the company plans to achieve and the credibility of its emission reduction targets.

In addition, there is no sign of Wintershall Dea's willingness to shift to renewable energies. The company continues to rely on fossil fuels and is pursuing an expansion strategy. More than 99% of Wintershall Dea's revenues in 2022 came from oil and gas.³⁵ The company has not launched any renewable energy projects so far – except for a stake in the Hywind Tampen wind farm, which generates electricity for oil and gas production.³⁶

Instead of renewable energy, Wintershall Dea relies on CCS and hydrogen based on fossil gas. The company presents this choice as a climate-neutral solution. However, blue hydrogen causes similar or possibly even higher emissions than the direct use of fossil gas and creates further fossil path dependencies by building new infrastructure. With this questionable "climate strategy", Wintershall Dea is cementing its climate-damaging fossil business model and thus remains a reputational and investment risk.



Dumping of CO₂ in oil and gas fields in the North Sea

Oil and gas production in the Norwegian Arctic

Oil production in the UNESCO Wadden Sea World Heritage Site

Threats to biodiversity off the coast of the United Arab Emirates

Fracking in Vaca Muerta

High-risk offshore production in the Patagonian Sea

Low CO₂ disposal capacity of Wintershall Dea's Snøhvit CCS model project.



Snøhvit CO₂ disposal capacity – plan and result in the Tubåen layer.⁵³ As a result, more additional disposal capacity had to be found

CCS – a rescue attempt for the fossil business model?

Wintershall Dea is reportedly seeking to establish a Europe-wide CCS value chain to drive “the decarbonisation of industry” and to dispose emissions from its own blue hydrogen production.³⁷ In North Africa, the company is also considering the use of CCS in the fossil fuel industries.³⁸ The Group has already acquired two storage licenses - Luna and Havstjerne - in the Norwegian North Sea and two further licenses - Camelot und Poseidon - in the North Sea off southwest England.³⁹ In addition, Wintershall Dea has launched the first disposal of CO₂ in Denmark at the Greensand CCS project and is planning NOR-GE together with Equinor. The latter involves the construction of a new CO₂ pipeline from Germany to the Norwegian seabed. Wintershall Dea plans to use the new business line to dispose of 20 to 30 million tons of CO₂ annually by 2040.⁴⁰ Wintershall Dea's future CCS plans pose massive environmental problems and financial risks.

One of the problems so far is that CCS can only reduce CO₂ emissions to a very limited extent. In recent years, many CCS projects have failed to attain their originally estimated capacity.⁴¹ According to the Institute for Energy Economics and Financial Analysis (IEEFA), for example, the disposal capacity of the model project Snøhvit, in which Wintershall Dea is involved, was many times lower than originally expected.⁴² Larger, more complex CCS projects could face proportionately more serious capacity problems.⁴³ Second, the energy input of CCS for capture, transport, and disposal is very high. This implies large energy efficiency losses.⁴⁴ Third, CCS technology is unsafe because both the extraction and the disposal of liquid CO₂ carry the risk of leakage. For example, in Wintershall Dea's Greensand CCS project in Denmark, it is not clear how CO₂ injected at high pressure will affect the surrounding rock.⁴⁵ Decades of oil and gas production in the North Sea have left behind more than 15,000 wells that could leak CO₂ in the medium and long term if used as reservoirs.⁴⁶ The ecological risk of numerous or large leaks can include water acidification.⁴⁷

In addition, Wintershall Dea's “bet” on CCS carries high financial risks. In the case of the Snøhvit CCS model project, total costs more than doubled due to the need for additional disposal capacity.⁴⁸ However, even without unforeseen additional costs, the development of a Europe-wide CCS value chain entails extremely high expenditures compared to emission savings or investments in renewable energies. According to the Intergovernmental Panel on Climate Change (IPCC), the costs of CCS are disproportionate to the disposal capacities currently achievable, which are insufficient for the technology to have a substantial impact on reducing global CO₂ emissions.⁴⁹ Oil and gas companies argue that it makes sense to use CCS at old production sites because the necessary infrastructure is already in place. However, pipelines for transporting CO₂ would have to meet different requirements than those for transporting oil and gas. This would require considerable investment along the entire value chain, for which Wintershall Dea would probably need government subsidies. Yet there is a lack of social acceptance⁵⁰ for such government support, and so far there is also a lack of a legal framework.⁵¹ Therefore, it is currently uncertain whether the massive application of CCS on the scale Wintershall Dea envisions can be made economically viable.

Wintershall Dea will continue to invest in the expansion of its oil and gas business and sees this as “two sides of the same coin” with carbon management and blue fossil hydrogen.⁵² A real change in the fossil business model is still nowhere in sight. The group's CCS investments are thus merely an illusory and financially risky attempt to salvage its fossil business model.

Doubling of Snøhvit's capital costs over the course of the project due to the expense of additional disposal capacity



Snøhvit capital costs - plan and result⁵⁴

Endnote

- 1 <https://wintershaldea.com/en/what-we-believe/sustainability/2022-sustainability-report>, p.26. Wintershall Dea only states that it intends to reduce Scope 3 emissions after 2030.
- 2 The only exception is a stake in the Hywind Tampen wind farm. These are 11 wind turbines that Wintershall Dea is building together with Equinor, Petoro, OMV, Vår Energi, and INPEX Idemitsu for power generation in the Snorre and Gullfaks oil and gas fields in the North Sea. However, since the energy generated by wind power is intended for fossil production, we do not count it as an investment in a new green business. <https://www.equinor.com/news/20221114-first-power-from-hywind-tampen>
- 3 <https://www.iea.org/data-and-statistics/data-product/net-zero-by-2050-scenario>
- 4 <https://wintershaldea.com/en/newsroom/wintershall-dea-and-equinor-partner-large-scale-ccs-value-chain-north-sea>
- 5 <https://ieefa.org/media/3007/download?attachment>
- 6 <https://www.ciel.org/carbon-capture-and-storage-ccs-frequently-asked-questions/#Is%20CCS%20the%20same%20as%20carbon%20dioxide%20removal?>
- 7 <https://wintershaldea.com/en/newsroom/wintershall-dea-and-nwo-agree-plans-hydrogen-production-wilhelmshaven>
- 8 Howarth, RW, Jacobson, MZ. How green is blue hydrogen? Energy Sci Eng. 2021; 9: 1676- 1687. <https://doi.org/10.1002/ese3.956>
- 9 <https://www.umweltbundesamt.de/themen/wasser/gewaesser/grundwasser/nutzung-belastungen/carbon-capture-storage#grundlegende-informationen>
- 10 <https://www.umweltbundesamt.de/themen/wasser/gewaesser/grundwasser/nutzung-belastungen/carbon-capture-storage#grundlegende-informationen>
- 11 IPCC, 2013: Anthropogenic and Natural Radiative Forcing. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.
- 12 The analysis did not include assets of the Russian joint ventures. The Arctic was defined here according to AMAP: <https://www.amap.no/about/geographical-coverage>
- 13 The companies selected for comparison were self-reported as a peer group by Wintershall Dea and consist of: Aker BP, BP, Eni, Equinor, Galp, Lundin Energy (acquired by Aker BP in 2022), OMV, Shell, and Total. <https://wintershaldea.com/sites/default/files/media/files/Wintershall%20Dea%20Investor%20Presentation%20February%202021.pdf>, P.13
- 14 <https://cdn.equinor.com/files/h61q9gi9/global/29b45c3a96d662f91b1c735358ae379cbdc7a4cd.pdf?vedlegg=hoeringskommentarer-wisting-equinor.pdf>, P.33-34
- 15 <https://wintershaldea.com/de/newsroom/700-millionen-us-dollar-fuer-gasprojekt-fenix-argentinien>
- 16 Jernelöv, A. The Threats from Oil Spills: Now, Then, and in the Future. AMBIO 39, 353-366 (2010). <https://doi.org/10.1007/s13280-010-0085-5>
- 17 <https://secure.protected-carbon.org/wp-content/uploads/2023/05/Marawah-Case-Study-English.pdf>
- 18 <https://aida-americas.org/es/ltima-frontera-pol-ticas-p-blicas-impactos-y-resistencia-al-fracking-en-am-rica-latina>, <https://www.lavoz.com.ar/politica/una-organizacion-mapuche-bloquea-los-accesos-a-vaca-muerta-y-denuncia-un-desastre-ambiental/>
- 19 <https://www.urgewald.org/five-years-lost>, P.34-37
- 20 www.gogel.org
- 21 Although the Mittelplate oil platform and the planned areas of further test drilling are located in the Wadden Sea National Park, they have been designated by UNESCO as "exclaves" excluded from the World Heritage Site. <https://www.schutzstation-wattenmeer.de/naturschutz/gefaehrungen/rohstoffgewinnung/oelfoerderung/>; <https://whc.unesco.org/en/extractive-industries>; <https://whc.unesco.org/en/extractive-industries/>
- 22 <https://www.duh.de/presse/pressemitteilungen/pressemitteilung/neue-oelbohrungen-im-nationalpark-wattenmeer-deutsche-umwelthilfe-fordert-wintershall-dea-zum-sofort/>
- 23 https://www.wwf.de/fileadmin/fm-wwf/Publicationen-PDF/Fuenf_Jahre_danach-Deepwater_Horizon_und_die_Folgen.pdf, P.2
- 24 <https://wintershaldea.com/de/investor-relations/ir-23-01>
- 25 https://wintershaldea.com/sites/default/files/media/files/Wintershall_Dea_Geschaeftsbericht_2022%20%281%29.pdf, P. 153
- 26 <https://wintershaldea.com/de/newsroom/spiegel-bericht-zu-sibirischem-kondensat>
- 27 <https://www.spiegel.de/wirtschaft/unternehmen/wintershall-dea-ueberzeugt-dass-an-den-haenden-von-wintershall-ukrainisches-blut-klebt-a-49232609-1f91-440d-b0b7-f112392cfee8>, <https://www.zdf.de/politik/frontal/treibstoff-fuer-putins-krieg-ukraine-verstimmung-wintershall-basf-100.html>
- 28 https://www.urgewald.org/sites/default/files/media-files/urgewald_Wintershall_Dea_Russland.pdf, <https://www.globalwitness.org/en/campaigns/stop-russian-oil-exposing-the-connections-between-wintershalls-siberian-gas-fields-and-russias-military-supply-chain/>
- 29 <https://www.duh.de/presse/pressemitteilungen/pressemitteilung/deutsche-umwelthilfe-klimaklage-gegen-oel-und-gaskonzern-wintershall-dea-eingereicht/>
- 30 <https://www.duh.de/klimaklagen/klimaklagen-gegen-unternehmen/>
- 31 <https://wintershaldea.com/en/what-we-believe/sustainability/2022-sustainability-report>, P.20
- 32 <https://wintershaldea.com/en/what-we-believe/sustainability/2022-sustainability-report>, P.26
- 33 <https://wintershaldea.com/en/what-we-believe/sustainability/2022-sustainability-report>, P.26
- 34 <https://reclaimfinance.org/site/en/assessment-of-oil-and-gas-companies-climate-strategy/>
- 35 https://wintershaldea.com/sites/default/files/media/files/Wintershall_Dea_Geschaeftsbericht_2022%20%281%29.pdf, P.143
- 36 <https://www.equinor.com/news/20221114-first-power-from-hywind-tampen>
- 37 <https://wintershaldea.com/de/newsroom/pi-23-12>, https://wintershaldea.com/sites/default/files/media/files/Wintershall_Dea_Geschaeftsbericht_2022%20%281%29.pdf, p.29
- 38 <https://wintershaldea.com/en/newsroom/media-roundtable-q2-2023>
- 39 <https://wintershaldea.com/de/wer-wir-sind/ccs-wasserstoff/projekte-norwegen>
- 40 <https://wintershaldea.com/en/what-we-believe/sustainability/2022-sustainability-report>
- 41 <https://ieefa.org/articles/carbon-capture-decarbonisation-pipe-dream>
- 42 Estimated disposal capacity dropped from 18 years of production to less than two years. <https://ieefa.org/media/3828/download?attachment>, p.33
- 43 <https://ieefa.org/media/3828/download?attachment>, P.6
- 44 According to the Federal Environment Agency, the use of CCS technology increases the consumption of limited fossil resources by up to 40 percent. <https://www.umweltbundesamt.de/themen/wasser/gewaesser/grundwasser/nutzung-belastungen/carbon-capture-storage#klimapolitische-einordnung-von-ccs>
- 45 <https://background.tagesspiegel.de/energie-klima/co2-einspeicherung-in-daenischer-nordsee-beginnt>
- 46 <https://www.spektrum.de/news/hunderte-tonnen-methan-entweichen-aus-stillgelegten-bohrloechern/1755912>
- 47 <https://www.uni-stuttgart.de/presse/archiv/themenheft/08/grundwasser.pdf>
- 48 The project was commissioned in 2008 and cost \$ 191 million. In 2016, Equinor invested in a new CO2 injection well as part of an additional \$225 million investment campaign to improve production and disposal operations. <https://ieefa.org/media/3828/download?attachment>, P.33-34
- 49 <https://www.ipcc.ch/report/ar6/wg3/figures/summary-for-policymakers/figure-spm-7>
- 50 <https://dsrver.bundestag.de/btd/20/051/2005145.pdf>
- 51 The EU and federal government are currently still drafting legislation to possibly promote CCS. Implementation of the legislation will take time. The adoption of the Net Zero Industry Act at the EU level will not happen until 2024. <https://www.bmwk.de/Redaktion/DE/Pressemitteilungen/2023/03/20230324-stakeholderdialog-zur-carbon-management-strategie.html>, https://eur-lex.europa.eu/resource.html?uri=cellar:6448c360-c4dd-11ed-a05c-01aa75ed71a1.0003.02/DOC_1&format=PDF
- 52 https://wintershaldea.com/sites/default/files/media/files/Wintershall_Dea_Geschaeftsbericht_2022%20%281%29.pdf, P.28
- 53 <https://ieefa.org/media/3828/download?attachment>, P.30
- 54 <https://ieefa.org/media/3828/download?attachment>, P.34