STATOIL’S CLIMATE ROADMAP

Creating a low carbon advantage
INTRODUCTION FROM ELDAR SÆTRE, STATOIL CEO

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We believe a low carbon footprint will make us more competitive in the future. We also believe there are attractive business opportunities in the transition to a low carbon economy. Statoil wants to be a part of this transformation in order to fulfil our purpose of turning natural resources into energy for people and progress for society.

In February 2017, we shared our sharpened strategy, with a focus on safety first, high value and low carbon. Embedded in the strategy is a new set of principles to guide our decision-making. One of these principles is that we should leverage our low carbon advantage.

Our Climate Roadmap explains how we plan to achieve this and how we will develop our business, in support of the ambitions of the Paris Climate Agreement.

It is a platform - and an invitation - to work with us to realise our vision of shaping the future of energy.

Eldar Sætre
CEO and president Statoil
WHY WE ARE EMBEDDING CLIMATE IN OUR STRATEGY

Positioning to create a low carbon advantage

Fundamental changes are happening in our industry. We see those changes as opportunities to realise our vision: shaping the future of energy. Our strategy – Always safe; high value; low carbon – positions us as an energy company committed to long term value creation in a low carbon future.

We will actively shape our portfolio to create high value with a low carbon footprint: so that Statoil remains fit for the future towards 2030 and beyond. Oil and gas will continue to form the basis of our portfolio, with a growing contribution from new energy solutions. Mid- and downstream activities will enhance value creation from all business lines.

Statoil is already a leader in the industry on carbon intensity. CDP recently ranked us as the oil and gas company best prepared for a low carbon future*. Now we are further embedding climate into our strategy. We do this in two ways: First, we are building a high value oil and gas portfolio with a lower carbon footprint, ensuring that the right hydrocarbons are produced and that they are produced as efficiently as possible. Second, we are building a material industrial position in new energy solutions. This long-term perspective is designed to make us more competitive, in support of the ambitions set out in the Paris climate agreement.

Statoil provides millions of people with energy every day. We embrace the energy transition as an opportunity for sustainable growth. Maintaining our position as an industry leader in carbon efficiency while growing renewables and low carbon energy solutions will help Statoil to manage the energy transition smoothly – and at the same time position us to ensure a competitive advantage in a low carbon world.

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*www.cdp.net

*Compared to 2017 **Barrel of oil equivalent.
ENERGY IN TRANSITION

The world needs energy producers who can deliver at low cost, with lower emissions

The world needs affordable and reliable energy to supply growing demand. At the same time it needs to reduce greenhouse gas emissions. The decoupling of energy use from emissions represents a fundamental challenge to all of us.

Renewables will account for a significant share of power generation in the future and are becoming competitive without subsidies. New renewables are set to represent up to 5-15% of the energy mix by 2040, compared with less than 2% today. This is a business opportunity for Statoil.

Oil and gas may fall below today’s 50% share, but will almost certainly continue to make up a sizeable part of the energy mix in 2040. Sectors such as heavy transport, aviation, industry, petrochemicals and heating or cooling in buildings will continue to rely on oil and gas in many regions for decades to come.

Natural gas as a replacement for coal in power generation is a critical part of a credible low carbon strategy. The natural gas we currently supply to Europe is helping the EU and other countries deliver on their emission reduction commitments. These are the reasons why we continue to explore for and invest in oil and gas projects. Without new investments, production from global oil and gas fields currently in operation would decline at around 3-6% per year, which would not be sufficient to meet demand over the next few decades. However, oil and gas margins are under pressure and we expect competition for attractive resources to intensify. As a response, the industry must lower the cost curve for new projects.

Statoil is exploring to find the most competitive barrels and this will be shaped by a combination of factors: production cost (break-even price), energy prices and technology. Not all oil and gas resources will be developed. Some resources will not have a place in our future strategy.

There are many uncertainties in the transition to low carbon energy. Game-changing technologies are likely to emerge, climate policies will shift in unexpected ways and new entrants will disrupt the energy industry. We cannot predict exactly how Statoil will look in 2030, never mind 2050, but we do know the direction of change. We also know that nothing prepares us better than our ability to adapt to change and always pay attention to what is ahead.

New renewables include wind, solar, geothermal, and marine power, plus small scale hydro power, biofuels and biomass used for power generation.

Source: Statoil Energy Perspectives 2016
BUILD A HIGH VALUE AND LOWER CARBON OIL AND GAS PORTFOLIO
REDUCING OUR OWN EMISSIONS

We aim to achieve CO₂ emission reductions of 3 million tonnes per year by 2030*. 

As a large producer of oil and gas, Statoil emits a significant amount of greenhouse gases – over 15 million tonnes of CO₂ equivalents in 2016**.

We have implemented emission reduction measures summing up to about 1.8 million tonnes CO₂ avoided per year by 2016 compared to 2008, largely through better energy management, energy efficiency measures, technical design and flaring reductions.

We are now accelerating our initiatives to achieve annual CO₂ emission reductions amounting to 3 million tonnes by 2030, compared to estimated emissions in 2017***.

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* Emission reductions are defined as reductions achieved by implementing a specific measure compared to the expected emissions at an installation.

** This number reflects the total (100%) emissions from assets where Statoil is the operator.

*** This includes the already agreed Norwegian Konkraft target of implementing emission reduction initiatives amounting to 2 million tonnes of CO₂ per year by 2030 compared to 2020, as well as efforts outside of Norway.
AN INDUSTRY LEADER IN CARBON EFFICIENCY

We will reduce the carbon intensity of our upstream oil and gas portfolio from 10kg CO₂/boe to 8kg CO₂/boe by 2030.

We believe there is a significant correlation between cost and carbon intensity - and minimising both is crucial to ensuring that our portfolio is resilient as we move towards a low carbon future.

We intend to reduce the carbon intensity of our oil and gas portfolio, by prioritising high value exploration and development projects with a lower carbon footprint. This shift helps us to reduce the business risk associated with climate change, while also reducing our costs.

We aim to remain an industry leader in carbon efficiency, emitting as little carbon as possible from each barrel produced. The carbon intensity of our operated upstream production is currently around 10 kg per barrel of oil equivalent, compared with an industry average of 18 kg/boe*. We have already set ourselves an upstream target of reducing that to 9kg CO₂/boe by 2020. We are now pursuing a broader ambition to reduce it to 8kg CO₂/boe by 2030.

The 2030 ambition is based on production and emission forecasts, sensitivity testing to portfolio developments, as well as emission reduction targets for each business area. This is an ambitious target. We have a portfolio with many ageing fields, particularly in Norway, and the carbon intensity of a field increases as it gets older, since more energy is required to produce smaller amounts of oil and gas. Though our emission reduction ambition is challenging, we believe that sustaining our carbon leadership will strengthen our competitiveness.

To achieve our goals, we will systematically pursue energy efficiency measures, electrification and low carbon energy sources at our installations. We need big leaps that will come from new technologies, but we also need many small steps initiated by our employees and in collaboration with business partners.

*Source: International Association of Oil and Gas Producers (2015), Environmental Performance Data 2015
OUR CLIMATE ROADMAP

We will develop our business in support of the Paris climate agreement.

WHAT

Build a high value, lower carbon portfolio.
Create a material industrial position in new energy solutions.

HOW

Embed climate into our strategy, incentives and decision making.
Amplify our climate actions through collaboration.

By 2030 new energy has the potential to constitute around 15-20\% of investments/annual capex.

2030
we aim to reduce the carbon intensity of our upstream oil and gas portfolio to 8kg CO₂/boe by 2030.* Statoil-operated.

2016
Carbon intensity of 10kg CO₂/boe

2015
Powering 650,000 homes with offshore wind

2017
Carbon intensity target 9kg CO₂/boe

2020
15-20\% of capex to new energy solutions

Carbon intensity ambition 8kg CO₂/boe

2030
Aiming to achieve CO₂ emission reductions of 3 million tonnes per year

2008
Capturing and storing more than 23 million tonnes of CO₂ to date

1996-2016: Stored more than 23 million tonnes of CO₂

2008-2016: CO₂ emission reductions of 1.8 million tonnes per year

1990-2030: EU/Norway: 40\% CO₂ reduction target

1990
Carbon intensity target 9kg CO₂/boe

1990-2016: CO₂ emission reductions of 1.8 million tonnes per year

1996
Sleipner CO₂ storage

1996-2016: Stored more than 23 million tonnes of CO₂

Methane emissions from our gas value chain to Europe are below 0.3\% of gas delivered to the market.

Aiming to eliminate continuous production flaring at our installations by 2030.* Statoil-operated.

Break-even of next generation portfolio*:

3 million
Aiming to achieve annual CO₂ emission reductions of 3 million tonnes by 2030 compared to 2017.

USD 27/bbl

$2.3 billion
invested in our offshore wind portfolio so far

By 2020 we expect up to 25\% of research funds to be devoted to new energy solutions & energy efficiency

Over the next 4-7 years, we plan to invest USD 200 million through our Statoil Energy Ventures

We are a partner in the USD 1 billion OGCI Climate Investments

* Statoil and partner-operated projects, sanctioned since 2015 or planned for sanction, with start-up by 2022.
MINIMISE METHANE EMISSIONS

Methane emissions in the gas value chain from Norway to Europe are below 0.3% of gas delivered to the market

Methane is the second most impactful greenhouse gas contributing to human induced climate change. It has a much shorter lifetime in the atmosphere than CO₂. A global warming potential that is 25 times higher than CO₂ in a 100 year perspective is commonly used*. While gas releases significantly less CO₂ than coal when combusted, methane emissions during production and distribution reduce its advantage. A key part of our climate focus going forward is therefore to track methane emissions through all stages of the natural gas value chain.

An extensive review of methane emissions at Statoil’s offshore operated assets in Norway, undertaken in cooperation with the Norwegian Environment Agency in 2015, showed that direct methane emissions from our North Sea oil and gas operations are low**. A further review of Statoil’s data and third party studies*** suggests that methane emissions in the whole gas value chain from Norway to Europe are below 0.3% of gas delivered to the market. At this level, the climate benefit of gas is indisputable.

Emissions data related to distribution to the final consumer is still uncertain. These represent around 4/5 of the total emissions. That is why we are working with industry associations and initiatives, including the Oil and Gas Climate Initiative (OGCI), on studies to obtain higher quality data. This work is an important component in ensuring the competitiveness of Norwegian gas.

Measuring and reducing methane emissions from our US onshore operations is a key priority for Statoil. This is a challenge due to the nature of the unconventional oil and gas industry, with its multitude of wells. However, in 2017 we will establish a baseline for methane emissions in our US onshore gas operations and develop an action plan to reduce emissions.

ELIMINATE ROUTINE FLARING

We will eliminate routine flaring by 2030

One of our biggest successes so far in emissions reduction has come from initiatives to stop flaring. Statoil’s upstream flaring intensity for our operated assets is around 0.3% of hydrocarbons produced, significantly lower than the industry average of 1.4% (IOGP 2015). We are working towards a target of 0.2% by 2020 for our operated assets, set as part of our commitment to the Sustainable Energy for All Initiative. Our aim is to stop continuous production flaring in our operations altogether by 2030 at the latest, in line with a World Bank Zero Flaring by 2030 initiative. In Norway we do not have routine flaring.

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* Aligned with the IPCC Fourth Assessment Report (AR4)
** M-515 (2016): Cold venting and fugitive emissions from Norwegian offshore oil and gas activities - summary report.
*** Energi (July 2015); DBI (October/December 2016); Markogaz (February 2016).
CREATE A MATERIAL INDUSTRIAL POSITION IN NEW ENERGY SOLUTIONS

2009
Hywind offshore
FLOATING DEMO NORWAY

2.3 MW
ENERGY FOR
220,000
HOUSEHOLDS

2012
Sheringham Shoal
UK NORFOLK COAST

317 MW
ENERGY FOR
410,000
HOUSEHOLDS

2017
Dudgeon
UK NORFOLK COAST

402 MW
ENERGY FOR
410,000
HOUSEHOLDS

2017
Hywind Scotland
FLOATING WIND FARM

30 MW
ENERGY FOR
20,000
HOUSEHOLDS

2019
Arkona
BALTIC SEA. GERMANY

385 MW
ENERGY FOR
400,000
HOUSEHOLDS
Statoil is an energy company, and low carbon energy is a core activity. Our ambition is to scale up investments in new energy solutions, to gradually complement our oil and gas portfolio. That makes sense industrially, because we can use our competence from large, offshore industrial projects to create value in new areas. And it makes sense financially, because we see potential for profitable opportunities with an acceptable risk profile. Our plan is ambitious: we expect 15-20% of our investments to be directed towards new energy solutions by 2030, assuming we can access and mature profitable projects.

Statoil currently focuses on offshore wind, using decades of offshore experience to develop large-scale wind farms and innovative floating platform technology. We have so far invested approximately USD 2.3 billion in wind energy assets to become part of a fast-changing offshore wind industry. Our wind farms are on track to deliver electricity to a million homes in Europe and we have begun to develop our offshore wind business in the USA. Additionally, through our Statoil Energy Ventures fund, we plan to invest around USD 200 million in new energy solutions over the next 4-7 years.

We expect our offshore wind portfolio to grow significantly over the next few years. Costs are decreasing, and efficiency has increased dramatically through the use of larger wind turbines, better design and streamlined operations. We believe that our offshore wind projects will, over time, become commercial without support schemes and that they hold significant energy and business potential.

We are also exploring new opportunities in solar and geothermal power where we can use our innovation capabilities to create long-term value. We believe this will open up new opportunities and possibly even industries.

Investments in low carbon technologies, such as carbon capture, use and storage (CCUS), is vital to reduce overall emissions from oil and gas and other sectors. Statoil has long been a pioneer in CCUS, and we are currently operating some of the largest carbon storage projects worldwide, capturing and permanently storing more than 23 million tonnes of CO₂ to date. These projects have helped demonstrate the technical viability of CCUS. Now we are trying to develop new business models to make CCUS commercially viable too.

In a study in 2016 Statoil confirmed the feasibility of offshore carbon storage on the Norwegian continental shelf. This can pave the way for realisation of the first projects in Europe for offshore storage of CO₂ from land-based industry and marks a potentially important step forward for carbon capture and storage. The next phase is a front end engineering and design study for CO₂ storage.
INVESTING IN NEW ENERGY AND ENERGY EFFICIENCY RESEARCH AND TECHNOLOGY

We expect to devote up to 25% of our research funds to new energy solutions and emission reduction efforts by 2020.

Leveraging our research and development (R&D) and innovation capabilities will be key to developing new energy solutions at an acceptable cost. We are focusing on options to maintain the competitiveness of oil and gas in a low carbon future, with efforts in the area of storage and utilisation of CO₂, decarbonisation of natural gas through hydrogen value chains, and low carbon fuel transportation solutions.

We are also exploring synergies between renewables and oil and gas value chains. Currently, around 17% of our R&D spending addresses energy efficiency, carbon capture and renewables. Now we are making new energy solutions one of our top R&D topics. By 2020, we expect to be devoting around 25% of research and development spending to new energy solutions and emission reduction efforts.

We are also exploring early stage opportunities for converting gas to hydrogen, while capturing and storing the CO₂, as a potential way to help our customers in the power and heating sectors to meet their climate targets. It is still early days for hydrogen, but we see this as an exciting opportunity for natural gas in the future.

BUILDING A PROFITABLE NEW ENERGY BUSINESS

Capex potential per year (USD million)

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2017-20</th>
<th>2020-25</th>
</tr>
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<tbody>
<tr>
<td>Capex</td>
<td>500</td>
<td>750</td>
<td>1500</td>
</tr>
</tbody>
</table>

GROWTH OPPORTUNITIES

- 15-20% of capex in 2030* 
- Offshore wind and other options 
- Low carbon solutions

*Indicative, based on potential future corporate portfolio.
ACCOUNTABILITY AND COLLABORATION

3
We have created a range of short, medium and long-term targets designed to measure progress and incentivise performance across the entire company - starting at the top. Climate performance (CO2 intensity) is a key performance indicator and impacts executive pay.

To keep our portfolio robust in future, we have introduced a number of new principles. Oil sands and extra heavy oil will not have a place in our future strategy. We require all potential projects and investments to be assessed for carbon intensity and emission reduction opportunities, at every phase of the evaluation process from design and concept selection to project development and operations. In other words, all future investment decisions will take into account their impact on the carbon intensity of our whole portfolio.

For investment analysis, we apply an internal carbon price of at least USD 50 per tonne CO2. In countries where the cost of carbon is above USD 50, e.g. in Norway, we apply the actual cost of carbon in our investment analysis.

**CHANGING HOW WE WORK**

We will embed climate into our strategy, incentives and decision-making

We have created a range of short, medium and long-term targets designed to measure progress and incentivise performance across the entire company – starting at the top. Climate performance (CO2 intensity) is a key performance indicator and impacts executive pay.

**INVESTMENT PRINCIPLES TO MANAGE CLIMATE RISK**

We apply a minimum internal carbon price of USD 50 per tonne CO2 to all projects

To keep our portfolio robust in future, we have introduced a number of new principles. Oil sands and extra heavy oil will not have a place in our future strategy. We require all potential projects and investments to be assessed for carbon intensity and emission reduction opportunities, at every phase of the evaluation process from design and concept selection to project development and operations. In other words, all future investment decisions will take into account their impact on the carbon intensity of our whole portfolio.

For investment analysis, we apply an internal carbon price of at least USD 50 per tonne CO2. In countries where the cost of carbon is above USD 50, e.g. in Norway, we apply the actual cost of carbon in our investment analysis.
Our business needs to be resilient to the multiple risks – both upsides and downsides – posed by the response to climate change. These include potential stricter climate regulations, changing demand for oil and gas, technologies that could disrupt our market, as well as physical effects on our operations caused by the direct impact of climate change.

To ensure that we take these risks into account, we stress test our project portfolio against the International Energy Agency (IEA) energy scenarios, including a range of price assumptions for oil, gas and carbon. Replacing our own planning assumptions with those used in the IEA’s 450 scenario (broadly aligned with a 2°C framework) in the World Economic Outlook 2016 shows a positive impact of around 6% on net present value over the lifetime of all projects*.

Our portfolio already has a high share of conventional oil and natural gas assets that have relatively low cost and a low carbon intensity. We also have significant capex flexibility going forward. As a result of these efforts, in 2016 Statoil was ranked as the oil and gas company best prepared for a low carbon future by the CDP.

* Both our own and IEA’s price assumptions may differ from actual future oil, gas and carbon prices, so there can be no assurance that the assessment is a reliable indicator of the actual impact of climate change on Statoil.

**OIL AND GAS PRODUCTION**

*Forecasted production based on equity share, including production from accessed exploration acreage.*

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**ASSESSING CLIMATE RISK**

We stress test our project portfolio against low carbon scenarios.
Statoil will continue to call for effective carbon pricing as the best tool – on its own or with complementary measures – to achieve emission reductions on a large scale and in a cost-effective way. We have also teamed up with peer companies in the Oil and Gas Climate Initiative to help shape the industry’s climate response.

We are committed to working with our suppliers, customers, governments and peers to find innovative and commercially viable ways to reduce emissions across the oil and gas value chain. To spur technology development, for example, we have established an R&D partnership with GE to find sustainable solutions for the oil and gas industry. We are also a partner in the USD 1 billion OGCI Climate Investments.

We are also exploring ways to work with companies that use our products, since over 90% of the total emissions from oil and gas comes from their use rather than their production. We work with governments and other organisations to support carbon pricing and complementary climate and energy policies. Through these measures, we encourage fuel switching from coal to gas, growth in renewables, the deployment of CCUS and other low carbon solutions, as well as the efficient production, distribution and use of energy globally.

To succeed, we want all our employees to feel empowered to make their contribution through technological, commercial and operational innovations. We will also work together with our business partners, governments, research institutions and non-governmental organisations to maintain the momentum of change.

OUR PUBLIC POSITIONS

We will continue our strong support for carbon pricing and other cost-efficient energy and climate policies

Statoil will continue to call for effective carbon pricing as the best tool – on its own or with complementary measures – to achieve emission reductions on a large scale and in a cost-effective way. We have also teamed up with peer companies in the Oil and Gas Climate Initiative to help shape the industry’s climate response.

WE ARE COMMITTED TO WORKING WITH OUR SUPPLIERS, CUSTOMERS, GOVERNMENTS AND PEERS TO FIND INNOVATIVE AND COMMERCIAL VIVABLE WAYS TO REDUCE EMISSIONS ACROSS THE OIL AND GAS VALUE CHAIN. TO SPUR TECHNOLOGY DEVELOPMENT, FOR EXAMPLE, WE HAVE ESTABLISHED AN R&D PARTNERSHIP WITH GE TO FIND SUSTAINABLE SOLUTIONS FOR THE OIL AND GAS INDUSTRY. WE ARE ALSO A PARTNER IN THE USD 1 BILLION OGCI CLIMATE INVESTMENTS.

WE ARE ALSO EXPLORING WAYS TO WORK WITH COMPANIES THAT USE OUR PRODUCTS, SINCE OVER 90% OF THE TOTAL EMISSIONS FROM OIL AND GAS COMES FROM THEIR USE RATHER THAN THEIR PRODUCTION. WE WORK WITH GOVERNMENTS AND OTHER ORGANISATIONS TO SUPPORT CARBON PRICING AND COMPLEMENTARY CLIMATE AND ENERGY POLICIES. THROUGH THESE MEASURES, WE ENCOURAGE FUEL SWITCHING FROM COAL TO GAS, GROWTH IN RENEWABLES, THE DEPLOYMENT OF CCUS AND OTHER LOW CARBON SOLUTIONS, AS WELL AS THE EFFICIENT PRODUCTION, DISTRIBUTION AND USE OF ENERGY GLOBALLY.

TO SUCCEED, WE WANT ALL OUR EMPLOYEES TO FEEL EMPOWERED TO MAKE THEIR CONTRIBUTION THROUGH TECHNOLOGICAL, COMMERCIAL AND OPERATIONAL INNOVATIONS. WE WILL ALSO WORK TOGETHER WITH OUR BUSINESS PARTNERS, GOVERNMENTS, RESEARCH INSTITUTIONS AND NON-GOVERNMENTAL ORGANISATIONS TO MAINTAIN THE MOMENTUM OF CHANGE.
Our Climate Roadmap is a platform – and an invitation – to work with us to help shape the future of energy.