

Norwegian Energy Policy: Looking Northwards

- Ladies and gentlemen, good morning
- I am honored to be here at the World Affairs Council, giving a talk on Norwegian energy policy. Norway and Alaska are both “lands of the midnight sun”. In many aspects we are similar. The climate is fairly cold, the land is sparsely populated, we enjoy rich nature and wildlife and we are major oil & gas producers. In my opinion, Alaska’s motto “North to the Future” is very fitting for Norway too. Finally, both Norway and the US have important interest in the Arctic. Consequently, I think we have a lot to learn from each other.
- This morning I would like to
 1. share my reflections on global energy realities with you and
 2. discuss status and challenges for Norway as an exporter of oil and gas, with a special focus on the High North

Energy Realities

Slide 2

- Since I took office this spring, I have used a lot of time to educate the Norwegian opinion on **energy realities**.
- My message should not be controversial – the world need **more, cleaner** and **secure** energy.
- We need more energy because more than 1.5 billion people live without modern energy. 3 billion people live for less than USD 2.50 per day, and the global population will increase by 2 billion people to 2050. Recently the world population reached 7 billion. Access and use of modern energy is necessary for the people of the world to get a better life, and for their local communities to prosper.

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- Therefore the World’s need for energy continue to grow, and the answer is:
 - Produce and consume fossil fuels in a more sustainable manner
 - Find more gas to substitute oil and coal.
 - Substantially enhance efforts on energy efficiency.
 - Substantially enhance efforts to increase the use of renewable energy

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- Even within the International Energy Agency’s scenario of a 2 degree Celsius world, use of fossil energy will in 2035 be almost the same as in 2008.

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- These next pictures are taken by my Deputy Minister. She took them last year when she stayed with a family in the rural part of Ghana. During the first two days of the stay, they had no electricity. It did not affect their daily life. Daily life was not built on availability of modern energy:
 1. The children, on their heads, carried home water from the source in the village.
 2. The food was bought on the market every day. Refrigerator was not needed.
 3. Cooking at the open fire.
 4. Washing clothes, by hand, in cold water
 5. The day started at 5 am at sunrise, and ended 7 pm at sunset.
- Access to affordable, modern energy would have made a big difference.
 1. Better hygiene (availability of hot water)
 2. Improved health (air quality)
 3. Better education (less work for children, electric light)
- I think this example show how better access to modern, affordable energy is needed to improve quality of life for billions of people. Only a small portion of the world's people enjoy the level of energy services as people do in Oslo or in Anchorage. We need to have these differences in mind when discussing global energy realities.

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- We need cleaner energy to solve health problems from local pollution – and to tackle global warming. Fossil fuels will be used for decades to come. We have the solutions to handle local pollution. We can do a lot by replacing coal with natural gas. But we need to develop technologies like carbon capture and storage as well. Without such technologies, it will be much more difficult to curb global warming to 2 degrees Celsius above pre-industrial level, as we all agree should be done.

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- In Norway, we have stored CO₂ captured from the well stream at the offshore Sleipner field for 15 years with good results. 1 million tons CO₂ is stored yearly far below the seabed. The same storage is done at the Arctic Snow White field as well. At this field, the CO₂ is separated out of the well stream onshore and thereafter transported back to the field, 150 km offshore, in a dedicated pipeline.
- We are also close to start-up a test center for CO₂ capture from flue gas at our western coast. The capture of CO₂ from flue gas is much more demanding and costly than from a well stream of a gas field. Capture from flue gas is important when discussing CCS as a solution to climate change. At the test center we will test different technologies. The facility has a significant capacity – 100.000 tons CO₂ a year.

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- Norway is a large hydro power producer; in fact we are the second largest hydropower producer per capita in the world (after Iceland). Norway has, together with Iceland, the largest share of renewable energy production in Europe.
- Norway will increase its share of renewable energy in the total energy consumption from about 60 per cent today to 67.5 per cent by 2020. The average for the 27 EU countries is around 12 per cent.
- In other words, Norway is a major producer of renewable energy. We have a history of more than 100 years of developing hydropower.
- We now see a shift of paradigms. Our investments in renewable energy have been relatively moderate the last two decades, but we are now entering a new phase with major investments both in production capacity and grid.

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- We need secure energy supply. Energy is the blood of the global economy. Without energy supply an economy would stop. Therefore, security of supply is an important issue for all countries.

Slide 10

- Different countries have different concerns when it comes to energy security. Importing countries are focused on availability and cost of future supply. Exporting countries are focused on security of future demand to pay for expensive new projects and infrastructure.
- I am a strong believer in open and transparent markets as a key element to increase energy security for both exporters and importers of energy. Price signals are the most efficient way to allocate resources. And we can now see the effect of the higher prices of oil and gas seen the last decade.
- America's assumed need to import natural gas has vanished. The break-through of shale gas has changed the world of energy. One question now is, will the economic viability of oil sands and shale oil, together with more efficient use of oil products, do the same for oil?
- In Europe the interdependence between gas consumers and producers have significantly contributed to the prosperity after World War II. Even during the cold war, Russian gas supply was stable and reliable for consumers in Western-Europe. However, the perception of insecurity when it comes to availability of gas is still living in capitals in Europe.
- Energy policy is important as well. If politicians say they will not accept use of certain fuels in the future. Availability of the fuel is not independent of importing countries

energy policy. It takes long time from a decision to develop, for instance a gas field and infrastructure, is taken and for production to start.

- Clearly, open and transparent markets will affect countries energy security.
- These challenges are interdependent. They need to be solved together. We need to solve the **energy**, the **climate change** and the **energy security** challenge simultaneously. We need to take all these issues into consideration into our policy making.

Norway – a large exporter

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- This analysis is relevant for Norway's strategy as a large exporter of oil and natural gas. My small country, with 5 million inhabitants, is the second largest gas exporter and the seven largest oil exporters globally.
- In a world experiencing an acute need to curb global warming and to create welfare and reduce poverty. Norway will be a part of the solution to help produce more, cleaner and secure energy for the world.

Norwegian Oil and Gas Activities

- That brings me over to the second part of my presentation. I will give an update on our oil and gas activities – with a special focus on the High North.

Slide 12

- Norway was in a lucky situation in the 1960 when the idea came that our continental shelf might hold significant oil and gas resources.
- The country was a stable democracy. Law and order existed. We had an educated and competent civil service. A protestant culture of equality existed. We also had a well established regime for regulating other natural resources – as hydro power. I think, these elements are very important for our success in managing the resources.
- It was also important that the key policy principles were established before the activity started. That makes it much easier for the regulator. Equally important, the right to any subsea deposits of oil and gas is vested with the State. This is crucial, when you want to manage the resources to the benefit of the people.
- To invite the international petroleum industry to take a lead in the first phase of our oil and gas activities was necessary and gave results. We had the resources under the seabed. The companies contributed with their skills and knowledge. Both to

discover fields and to develop and produce them. At the same time they were obliged to help us build national expertise.

- This provided results. Production and activity increased. State income increased. Norwegian oil companies, as well as a supply and a knowledge industry were created.
- Today, the international companies are still important players at our Shelf. They have been joined by many more companies lately. This competition between different players, with different strategies is fundamental for the State to capitalize on our full oil and gas potential.
- Onshore, Norway, today, has a large supply industry. They deliver their products and service both domestically and internationally. They hold cutting edge technology and are one of the most competitive industries in Norway today.

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- Our story is also one going north. Activities started in the south; in our part of the North Sea. Later it moved north to the Norwegian Sea and the Barents Sea. Today we have producing fields in all these three areas.
- The green areas on the slide are open for oil and gas activities today. The red is not open. In the yellowish we are going through processes and analysis these days to decide whether to open them up or not. I will come back to those processes later.
- Even if the North Sea still is dominant when it comes to production, the areas further north has a huge potential for future activities. All new areas are in the north.

Slide 14

- Our story is also the one about a sustainable activity. Our petroleum policy focus on all the three elements related to having sustainable petroleum activities.
 1. You need economic activity. Without value creation, there will be no society
 2. You need to take care of the social dimension. Also to keep the license to operate
 3. And, of course, you must take care of the concerns on the environment – including climate change.
- My opinion is that it is possible to have sustainable petroleum activities. Our experience in the North Sea, the Norwegian Sea and the Barents Sea supports that it is possible in all this areas. How do we secure that it is possible?
- We use several tools.

- Impacts assessments, integrated management plan, thoughtful regulation in the exploration, the development and the production phases take care of environmental concerns and also handles the co-existence with other user of the oceans; mainly the relation to the fisheries.
- We strive towards, fact and knowledge based cost/benefit analysis in the decision making process. I think this is very important to work towards. Especially in a sector with large margins. The one paying for excessive costs are not the oil companies – but the citizens of Norway.

Slide 15

- The government put forward an updated strategy for the petroleum sector in a white paper before summer. I called the white paper “An industry for the future”. This slide is the key picture from the white paper. And hopefully it explains the title of the white paper for you all.
- It illustrate that a high production from our shelf is possible. The talk of a sunset industry should be shelved!
- The figure illustrate that we have a resource base to exploit. During the past 40 years, we have extracted around 40 per cent of the expected recoverable resources. Sixty per cent of our resources remain in the subsurface. In addition come parts of the previously disputed area to the west of the delimitation line in the Barents Sea and the areas around the island of Jan Mayen. On top of that – as an optimist I see an upside potential also elsewhere.
- A steady activity level must be maintained in order to achieve the goal of long-term management and value creation from the petroleum resources. The strategy we put forward is a parallel and active commitment to
 - Increase the recovery rate in existing fields.
 - There is still a huge potential
 - We are in a hurry since we need to use existing infrastructure
 - Develop all commercial discoveries.
 - 150 discoveries since year 2000
 - Old discoveries becomes economic; technology, higher oil and gas prices.

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- **Fantastic exploration results** in 2011:
 - **Aldous/Avaldsnes** in the mature North Sea
 - Top three globally in 2011
 - Might be among the top five ever done in Norway
 - Oil discoveries. Current estimate from operators: Aldous: 900-1600 mill barrels o.e. Avaldsnes: 800-1800 mill barrels o.e

- **Skrugard** in the Barents Sea
 - Breakthrough in this area. Opens up a new oil province
 - Current estimate from the operator: 150-250 mill fat of. 250 mill fat additional upside potential in the license
- **Norvarg** gas find in the Barents Sea

Slide 17 & 18

- Open new areas
 - Not opened new areas for exploration since **1994**
 - Additional acreage important for **long term** activity and production
 - Most of the interesting not opened area, the red areas in the slide, are in the High North
 - **Thorough process before opening**
 - Impact assessment
 - Resource estimation
 - Decision by the Storting
 - Ongoing processes
 - Opening process of the areas around **Jan Mayen**
 - Opening process for the **new areas in southern part of the Barents Sea**
 - Collection of knowledge in the **North-Eastern Norwegian Sea**
- Time frame for finishing processes:
 - 2013 for Barents and Norwegian Sea, Jan Mayen thereafter.

The High North

- The High North is one of the main focal points of the present Government. Our aim is to work diligently to safeguard a sustainable development in our northernmost regions. This implies expanding economic activities to continuously develop society, employment, growth and welfare, in due consideration of environmental concerns
- We live in an era of high energy prices and growing concerns about energy security. At the same time, we have advanced offshore technologies and there is optimism about the resource potential of the Arctic and hence also the potential for increased activity and development. This forms the basis for looking more closely into the opportunities that the Arctic may provide.

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- Some years ago, the U.S. Geological Survey projected that around a quarter of the world's remaining hydrocarbons may be located in the Arctic.

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- In this respect, some say there is a “race for the Arctic”. The Arctic coastal states have, however, demonstrated during the past few years that there is no “legal vacuum” in the Arctic. The UN Convention on the Law of the Sea largely regulates what we do in the maritime areas. The Arctic coastal states deal with their rights and obligations in a legal and responsible manner. This has left the Arctic as a very stable region. There is no race between the different countries.
- Our common target is sustainable management and responsible cooperation between the Arctic states – and the aim is sustainable economic development. Two days ago I met with the Canadian Minister for energy and natural resources Joe Oliver, and invited him to a meeting in Norway on Ministerial level to discuss common challenges and opportunities in the Arctic. Next week I will meet with US Secretary of the Interior Salazar and invite him also.)

Slide 21

- The High North in Norway is different from the High North in America. Due to the warm Gulf Stream, our waters are ice free, we have no tundra and we have cities and towns all the way to 70 degrees north.

Slide 22

- Furthermore, the distance from the gas fields to the gas market in Europe is reasonable, which has led to a construction of an extensive gas pipeline network. Moreover, the investments in the pipelines are done on a purely commercial basis.

Back to slide 21

- Let me use a little time on our relations with our big neighbor in the east – Russia. We have recently ended the more than 30 year old dispute on the maritime delimitation in the Barents Sea. On July 7, 2011 a treaty on the delimitation in the Barents Sea and the Polar Ocean entered into force.
- With this treaty, we are setting an example worldwide of how delimitation disputes can be resolved peacefully, in accordance with international law and within the framework of modern international jurisprudence. With this treaty, Norway and Russia are also making it clear that there is no ongoing race for resources in the Arctic, but that we – as responsible Arctic coastal states – are adhering to international law, including the international law of the sea
- Through our agreement on maritime delimitation in the Barents Sea, we send a signal to all Arctic states and the rest of the world that we deal with differences through negotiations, on the basis of modern principles
- The treaty also covers cooperation in these areas – not least with regard to the exploitation of any transboundary petroleum deposits that are discovered. Such

deposits shall be exploited as one unit. I look forward to our further cooperation in this respect

- The treaty creates new opportunities for petroleum activities and cooperation in areas of the Barents Sea that have so far been closed to such activities. This is the start of a new chapter in our cooperation and our energy dialogue.
- We have already started geological mapping in this area. This is one of the two elements in our ongoing opening process. The second is the impact assessment
- The Barents Sea is one of the cleanest, richest and most productive marine areas in the world. As petroleum exploration and production expand into the Arctic, we must therefore balance the need to maintain the qualities of the Barents Sea against our work towards continuous and sustainable development

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- We struggled for many years to solve the secrets of oil and gas in the Barents Sea. Even if we did the first discovery in 1980, it took more than 25 years to get it into production.
- Today the future looks much brighter. We have LNG production ongoing. We have an oil discovery under development. We have done a large oil discovery this year – the earlier mentioned Skrugard. We have done a gas find to build upon, and many new exploration wells are drilled in the near future. 30 years since the opening, the province has finally done a big push forward.
- And we already see ripple effects onshore. The town of Hammerfest is growing; population decline is turned to growth. Public services is no longer scaled down but expanded.
- The positive effects oil and gas has brought to Hammerfest, has been an inspiration to other regions and local communities in our northernmost region. Regional and local spin-off effects are, of course, vital to regional support of the activities offshore.
- Building competence and skills is very important in an early phase. Local people must have the right skills to compete for work in, and contracts from, future oil and gas activities. The people and the existing industry in the north must take action to qualify themselves for future engagement in the oil and gas activities. We in Oslo can make a contribution – but the people in the north have the main responsibility to take benefit of the opportunities created.

The Supply Industry

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- Let me say a few more words about the supply industry in Norway.
- 40 years with challenges on the Norwegian Continental shelf has created an internationally competitive Norwegian petroleum industry with world class technology and expertise.
- Concrete technology - which we see at one of this picture – is a technology well suited for a harsh environment, be it in Alaska or Norway. In recent years concrete platforms have also been built by the Norwegian company Kværner (Aker Solutions) at the Sakhalin island in Russia (for ExxonMobil and Shell).
- The other two picture show to other familiar part of the value chain where Norwegian players have made a difference, namely in the subsea area and in seismic.
- Norwegian petroleum industry has grown its international operations substantially in recent years, winning contracts in all major petroleum provinces.

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- Before closing, I would like to say some words about our Government Pension Fund Global. This is actually the biggest sovereign wealth fund in the world. Currently it is roughly 600 billion USD. We created this fund to keep the income from the oil & gas sector separate from the Norwegian Economy. The reasoning being to avoid inflation, increased wages and loss of competitiveness.
- Every year the government uses approximately 4% of the fund. This money is allocated to the state budget.

Closing

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- The world need more, cleaner and secure energy. Norway will do her share to deliver that.
- By a parallel and active commitment to both increased recovery rate, development of discoveries, exploration and new acreage, we will deliver stable production for decades to come. We will make production and consumption of oil and gas ever more environmentally friendly. A main goal is to always reconcile Norway's role as a large energy producer with a pioneering position on environmental and climate issues.

- A significant part of our oil and gas future is in the High North. We will continue to work actively to secure long term and sustainable exploitation of the petroleum resources of the High North. It is not a question of whether oil and gas activities should take place in challenging regions like for instance the Arctic, but on what conditions
- Thank you for your attention!