

## Successful oil and gas policy

By Kjell Pedersen, president and CEO of Petoro AS

(Please note that the spoken word at the ONS conference is the final.)

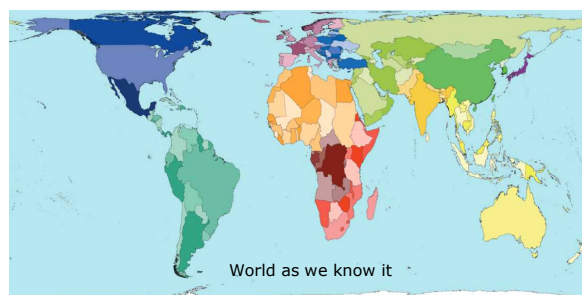
### A MULTIPOLAR WORLD

Ladies and gentlemen,

it's a privilege to be asked to talk about a successful petroleum policy in the context of a multi-polar world. Having worked in several oil provinces in the world, I will try to avoid coming out with a too narrow-minded view, as I am sharing my observations of the Norwegian experience with you. I hope that Norway's development to a full fledged offshore petroleum province may be of interest and relevance to an international audience. I will talk about past successes – but also share some thoughts on why ways of the past may not bring us to where we want to be in the future.

But first, the context: Energy for more people, the oil and gas industry – and implications of a multi-polar world:

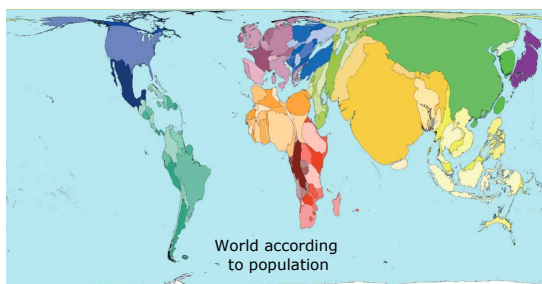
A multipolar world



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A multipolar world

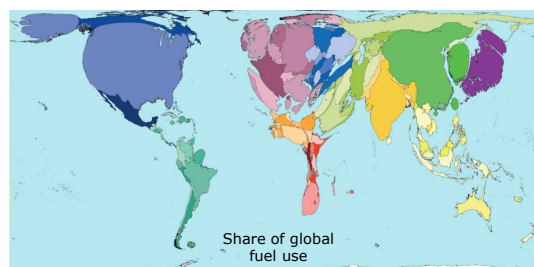


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As addressed in yesterday's discussions and by other speakers this morning, there is no lack of polarity in this world. There is also no lack of population. This first map shows us *the world as we know it* to be, while the second one shows you what the world would look like, if we let the *number of people* determine the relative geographical extent of each country. Already "polarity" seems like a pretty relevant term – particularly between East and West, and with China and India taking up far more space than what geography would suggest.

A multipolar world



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(Source of maps: Worldmapper)

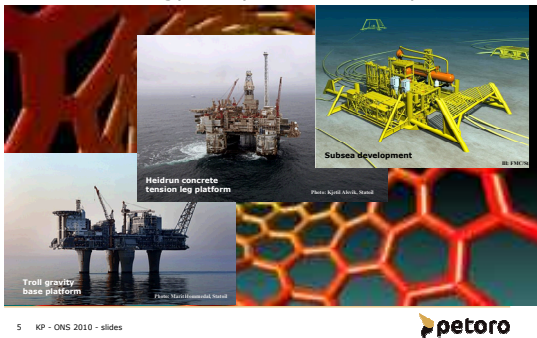
If, however, each country's *fuel consumption* determines its land area, the densely populated East are being overshadowed by the great consumers of the West – and the US in particular. You don't have to use much imagination to understand that the world be even less recognizable, had we drawn the map according to fuel use *per capita*.

## **SUCCESSFUL PETROLEUM POLICY**

The overall title of this session would allow me to talk about successful petroleum policy to deal with polarity of the richer and the poorer, or the producers and the consumers, the developed and the developing, the “petroholics” and the total abstainers, right and left, east and west.

In my view, a common denominator is that the world will continue to demand more energy than ever in order to develop and flourish in the decades ahead. In this context, it is very important that current and new petroleum nations and companies develop strong and efficient policies to maintain a reputation as reliable, stable, efficient and sustainable suppliers with a sharp focus on safety and the environment.

Technology – key to NCS development



One way to describe successful Norwegian petroleum history in a nutshell is to say that mid-way, i.e. 20 years after the Ekofisk discovery, Norway had moved from zero oil to becoming one of top 2-3 net oil exporters in the world. Huge gravity based concrete platforms had been designed to take petroleum production from water depths of 70 meters to 3-400 meters in harsh North Sea waters. Innovative gas contracts allowed the laying of deep and ultra long pipelines to carry corresponding huge volumes of gas to the UK and continental Europe. Norway had become one of two key suppliers to the European gas market. Norwegian technology and suppliers gained competence that later developed into a global competitive edge in terms of rigs, supply vessels and services, subsea development etc.

At the same time, politics, laws and regulations, government institutions and state owned companies provided a firm national hand on the steering wheel, resulting in about 80 % of the value generation coming back to the state.

Moving on to some of the key elements behind the success, I do want to stress to this international audience that there is no “one-size-fit-all” way of doing this. Every country and company must find its own way, taking into account level of industrialisation, competence, politics, legal framework, business culture etc. I have, however, registered great interest in learning about Norway’s experience from several other petroleum producing nations and companies world wide.

So what are some of the key elements in this success?

## Key to the success

- Acknowledging value of IOCs
- Predictable framework
- National cluster of oil companies and supply companies
- Sound resource management
- Oil and gas belongs to the people
- Oil fund to protect economy, and share with future generations

- From the start, Norway managed to attract, retain and learn from leading international oil companies. Government politics, rules and regulations acknowledged the competence of leading industrial players. Their ability to take great financial risk was also very much appreciated, and with that came an acceptance for the companies' need to handle that risk by participating in a business-like decision making process for exploration, development and operations of oil and gas fields.
- Secondly: A predictable framework and a willingness by the Norwegian government to share risk with the companies, through a carefully designed tax system and through direct government ownership in the business. By and large I think many foreign companies would agree that this has been a good system, although some of them would no doubt have liked the balance of ownership to have been less government and more private companies.
- In parallel with a professional relationship to the international oil companies, Norway managed to build up its own national oil companies, Statoil, Hydro and Saga. The Norwegian government was furthermore a key player in creating an environment where competition and diversity of technology, experience and competence went hand-in-hand with extensive cooperation. This cooperation has been between the companies themselves, between international and national oil companies, government and the industry, operators and the supply industry, business and academia etc. This environment was conducive to the build-up of a national industry cluster of international format.
- Sound resource management was introduced very early on, with a clear policy of not allowing flaring of associated gas in oil fields. Later on tough ambitions was set on recovery, and today the average recovery rate offshore Norway is forecasted at 46 % compared to a world average around 35 %. At the same time pursuing national goals on the environmental side has spurred industry innovation as well as strict procedures and mindful operations in environmentally sensitive areas.
- A step-by-step move into new areas along with a wide sharing of information among the players was also part of this success and lead to reduced risk and a strong record in terms of exploration success.
- Norwegian politicians early on reached a robust consensus that the oil and gas resources belongs to the country and should benefit its people. This in turn created a strong popular support for the industry.
- The establishment of an oil fund was a bold move by politicians to reduce the risk of overheating the national economy – the so-called Dutch disease – as well as to share the petroleum wealth with future generations. Saving money in an oil fund also had a positive effect for the industry compared to alternative policies to prevent overheating the national economy – such as introducing a production ceiling or holding back project approval. As many of you know, the fund is annually being filled up by cash flow from direct state

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 ownership and petroleum taxes to the tune of some 50-65 bn \$ per year over the last five years and was last week valued at 460 bn \$.

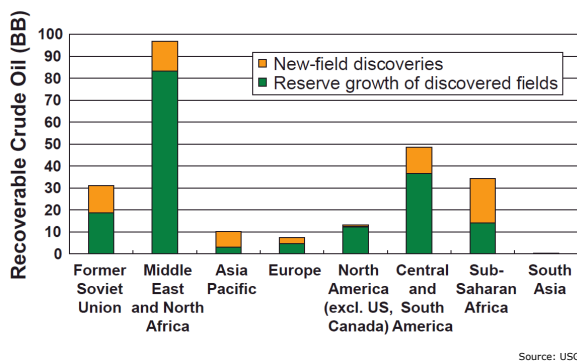
One sign of the success may be that despite securing most of the value creation for the country itself, Norway has still managed to keep major international companies active in its waters for four decades. Most of them still apply for new licenses. Furthermore the merged Norwegian oil company, Statoil, has moved into the league of international oil companies, and contractor companies like FMC, Aker Solution and Seadrill have gained strongholds in key international markets. Of a total petroleum related turnover of 40 bn \$ last year for contractors registered in Norway 19 bn \$ or almost half, was generated abroad.

If I've painted the picture too rosy now, I have to add that there has been cost involved in the development of this oil and gas industry adventure. The early years in particular saw some terrible fatal accidents within diving, helicopter transport and of course the worst of them all, the Alexander Kielland catastrophe in 1980 when 123 people died. Also, the Ekofisk Bravo blow-out in 1977 still has a strong presence in the minds of industry and government people.

### CONTINUED SUCCESS – WHAT WILL IT TAKE?

So, which parts of the recipe of success should be brought forward? How sustainable is a successful policy in the entrepreneurial phase, when we move on to a more mature end? This is when oil and gas may be harder to find and develop and profits per barrel are likely to drop – maybe even to levels where oil money begins to look like any other kroner, dollars or Euros.

Global reserves addition from mature fields

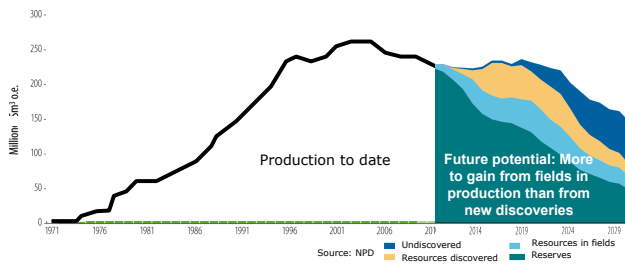


This graph may be all too relevant for many of you here. We have for some time now seen much more oil being added through reserves growth of existing fields, than from new discoveries. In 2020 around 50 per cent of the global oil production will come from fields older than 20 years.

Another challenge is how we maintain the enthusiasm and drive from the entrepreneurial period when we now are dealing with what seems to be the downhill side of this adventure. This is important because we are still facing huge and complex tasks within technology and operations in order to make the most of those declining giants.

And we really need to extend the field lives of the giants, as their processing and transportation facilities will be a prerequisite to profitable development of new and smaller discoveries in the future.

## Future of NCS depends on mature fields



Norwegian oil production peaked in 2001 and since then oil production has fallen by a third. But gas is still on the rise and if we are successful, we may keep total production at current level for as long as 2020 or 2025. Even in 2030 we may see production at the level of 1990 – when Norway was the world’s second biggest net exporter after Saudi Arabia.

But such a positive development is not going to happen by itself. As this slide suggests, it requires both new discoveries and to make the most out of the big mature fields.

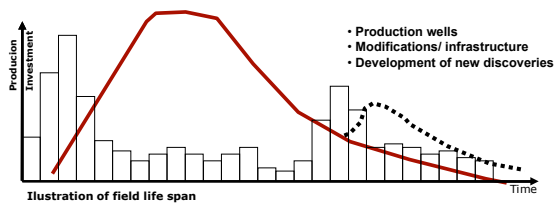
In terms of making new discoveries, the Norwegian government a few years ago registered a sharp fall in exploration activities by the companies present offshore Norway. A change of the petroleum tax system provided strong incentives for new and smaller companies to apply for acreage. The change resulted in a marked upturn of exploration activity – and much greater diversity of players, experience and ideas on that side of the business.

However, the newcomers are by and large not participants in the big mature fields, accounting for a very high share of total production. In these fields, Statoil, Petoro and the large international companies are the players. Their attention and focus on these mature fields may be affected by several considerations, ranging from materiality in a global context for IOCs, to economics and capital budgets. In the case of Petoro, it will be important that we secure the necessary resources to work on these important issues. I believe that diversity of opinions and solutions is key to the continued success in the mature phase.

I am also very confident that technology and methods of the past will not bring us to where we want to be. We need to do things differently in order to:

- develop discoveries tens or even a hundred times smaller than those of the 70s and 80s
- make large investments in existing fields to ensure maximum economic recovery
- curb those dramatic cost increases we have seen over the past 5-6 years
- secure sufficient diversity of experience, competence and capital to manage continued high technical and financial risk

Investments are time critical



Success on those issues will allow us to change the notion of being in a pure harvesting mode and rather look at the mature phase of the business with new eyes.

In fact, many of the fields are now looking at possible production of 40-60 years. Faced with this kind of potential, we need to revamp some platforms to the extent that new-build, with new and more cost efficient drilling rigs, process equipment and other technical solutions, may be attractive alternatives to consider. Extensive modifications also provide an opportunity to introduce technology solutions with higher energy efficiency and subsequently reduced emissions of climate gases.

A positive consequence of such efforts as seen from the supply industry will be a lot of new contracts and work. Norwegian and other companies that meet the challenges with new and more cost effective solutions may look forward to exciting new opportunities on the Norwegian continental shelf.

Norway can rightly pride itself for having regulatory safety standards beyond most other countries. This is not least due to firm determination by the government and companies not to experience anything like the Alexander Kielland disaster in 1980 or the Ekofisk Bravo blow-out in 1977 again. We learnt from these accidents and made fundamental alterations to our way of running the business and handling its inherent risks. In the same way we now need to ensure that effective learning takes place from the Gulf of Mexico blow-out. At the same time we need to honour the quality of regulations and procedures we already have in place and carefully decide whether findings in the GoM investigation justify additions or changes.

## **LONG TERM GAS**

Let me quickly touch upon the gas business, which also no doubt has been a success story for Norway, from the ban against burning it, to a situation where gas is competing with oil, not only in volume terms, but also in terms of value creation. As you know, the financial crisis has reduced demand for gas in Europe. At the same time, improved and low cost technology for producing unconventional gas – and shale gas in particular, has upped estimates of world gas supplies to a level where we may cover today's consumption for perhaps as long as the next 250 years.

Norwegian gas business has been impacted by these developments, and will continue to be so. But as Europe's indigenous gas supplies depletes and Asia demands increasing gas imports, I believe that Norwegian gas will continue to be valued as a major source of energy to Europe.

Also, gas is clearly a required resource which allows a realistic development of renewable energy. Rather than being just a bridging fuel to renewable energy, the flexibility and global availability of gas can make it part of the long term solution for secure electricity supply when the wind does not blow or the sun does not shine.

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## **POINT FORWARD**

Ladies and gentlemen, looking forward, I will point to two main challenges for the NCS, which I assume may be shared with other petroleum nations: profitable resource management and sustainability.

- On **resource management** we need to accept that our forecast of 46 % or higher recovery on the NCS will only happen if we continue to invest heavily in mature fields. Relative to today's performance, we need to find cost-effective ways to allow two or three times more production wells in the ground per year, we need to accept higher risk by using new technology to drive out more reserves and we need to develop methods for developing radically smaller oil and gas discoveries than today's large mature fields. These investments may be at lower returns, and by the requirements of some IOCs, at low materiality.
- On **sustainability** we need to maintain, or win, government and popular support for continued petroleum exploration and production in the future – or license to operate, if you like.

We need to maintain the highest safety and environmental standards, and the Gulf of Mexico experience shows us that we have to renew our efforts in order to control our industry's potential for harming both people and the environment.

And finally: sustainability may also be about sharing the wealth creation from national natural resources and attracting our most brilliant young people into our industry. This loops back to some of my previous points: do things differently, be part of the solution to climate change, become a work place that bright young people can see themselves in for the long haul.

Most of the future challenges need to be solved by industry itself, while the government should continue to provide a constructive framework and a collaborative mind conducive to future success.

*Thank you for listening*