The Norwegian way: what Poland and others can learn to develop their shale gas

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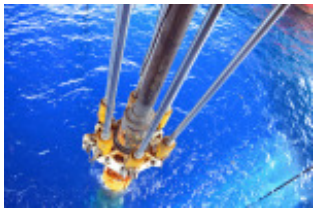
Lidia Puka, Ole Gunnar Austvik, Aleksandra Gawlikowska-Fyk May 28, 2015

The shale gas hopes of Poland and other countries in Eastern Europe have crumbled now that foreign investors have departed. An important reason for this failure is an inadequate political framework, write Lidia Puka and Aleksandra Gawlikowska-Fyk of the Polish Institute of International Affairs (PISM) and Ole Gunnar Austvik of the Norwegian Institute of International Affairs. They argue that these countries could learn from the Norwegian model, which is based on strong public-private cooperation, in which the State plays a central role in coordinating activities and promoting competition.



Maersk Developer drills exploratory well for Statoil in Gulf of Mexico (photo JournoJen)

The optimistic estimates on Poland's unconventional hydrocarbon potential led to an influx of foreign oil and gas companies to Poland from 2010. However, lack of political agreement, lengthy legislative processes and unclear competence sharing soon undermined investment stability. Although all major foreign investors have left, Poland's potential for unconventional hydrocarbon production remains unclear. Data on this aspect of the country's geology are still scarce. Thus Poland might have a second chance if the government can create a system that attracts investments and exploration. Moreover, there is a need to strengthen national institutions and their control over hydrocarbon exploration, and increase the transparency of operations in the sector.

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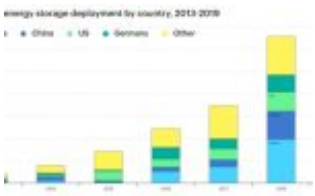
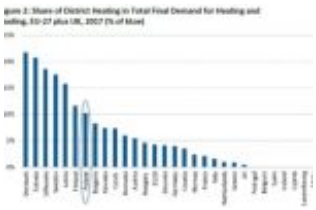
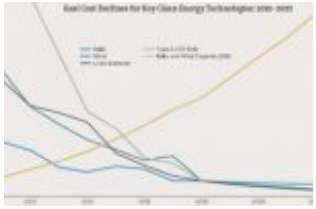
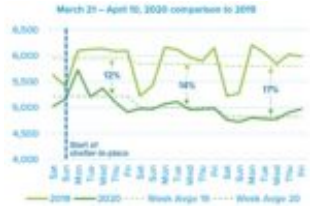




We believe that central elements of the Norwegian approach could be useful also for Poland – and others – to emulate. Norway built a competitive national oil and gas industry in a few decades, without any prior competence in the sector, and all within the dynamic framework of volatile markets and, later, regulations of the European Union. Obviously not all parts of the Norwegian story can be easily transferred to other countries, but the Norwegian case does provide useful pointers and lessons, especially when it comes to how the state and businesses can interact in the energy sector.





The Norwegian way

Norway is a significant player in international energy markets. It consumes only some 10% of the oil it produces, and barely any natural gas, making it the world's third largest gas exporter and the tenth largest oil exporter. In the combined oil and gas export rankings, it is third, behind only Russia and Saudi Arabia. On the other hand, Norwegian reserves represent only 1% to 2% of total world petroleum reserves, and these are depleting relatively faster than, for example, in Arab countries. At the current pace of production, the country's proven reserves will suffice for a decade of oil exports and two decades of gas exports. However, since many discoveries have not yet been evaluated, the estimates for future production are highly uncertain and depend on both new finds and the extension of existing fields. Thus, Norway may remain a significant producer of oil and gas at today's levels for many decades.

> ***In contrast to its counterparts in countries such as the UK and Canada, the Norwegian state has remained at the helm of the oil and gas sector***

Petroleum activities in Norway are characterised by a highly developed model based on cooperation between business and government. The leading idea behind this model is that the state, through the Ministry of Petroleum and Energy (MPE), its subordinate the Norwegian Petroleum Directorate (NPD), and (before privatisation in 2001) national oil company Statoil, should control and approve all steps at all levels of exploration, production and transportation, with a goal to promote both competition and cooperation, so that the value of production licences will be maximised. The creation of a gas sales monopoly in the 1980s, and later a Supply Committee for gas, were other demonstrations of strong state power in relation to the industry as well as towards the outside world and markets. Since the 1990s, the Norwegian state has changed its role to become less interventionist, playing more of a regulatory role concerning private companies' economic activity, though it has continued to control, and reap most of the profits from its resources.

To maintain control, enhance efficiency and reduce costs, the Ministry of Petroleum and Energy awards production licensces to groups of companies, and never to single enterprises, and designates an operator for the joint venture. The licensee group

functions as an internal control system where each licensee's role is to monitor the work done by the operator. As all activity is reported to the Norwegian Petroleum Directorate, it enables the state to access the information. Moreover, licences for production on the big fields are often granted to a combination of Statoil, the State's Direct Financial Interests (SDFI) and some private companies, while prospective smaller fields are more often given to smaller companies. Together with the group of companies, the state also participates in geological research (for example, recently collecting seismic data from the Barents Sea before the exploration licensing round).

The state uses licensing and taxation policies to share risks with private companies and to maintain a high rate of exploration and production. Today, more than 50 companies are present in exploration, production and infrastructure development, making the industry much more diverse in terms of competition and smaller field developments than only one decade ago. Moreover, some of the smaller companies have found big fields (such as the recently discovered Johan Sverdrup field, the largest oil find since the '80s). Oil production has stopped declining and seems to have stabilised at around two million barrels per day. Gas production is stable at around 110–120 billion cubic metres (bcm) annually.

> ***In the first phase of shale gas developments in Poland there was a deep belief that there are abundant resources, but little real knowledge of the country's geology***

The state's take from petroleum production has remained significant. Norway, through the Ministry of Finance, takes most of the economic rent (except for local property taxes), including a special tax on petroleum activities (a total of 78% of company profits), and through direct ownership of parts of the fields (100%, through SDFI).

Management of petroleum revenues lies at the core of the "Norwegian model" and aims to avoid resource curse and/or Dutch Disease. To avoid the overheating of the economy, the whole state take (the "Net Cash Flow") from petroleum activities is transferred to the largest sovereign wealth fund in the world, the Government Pension Fund "Global" (commonly known as the "Petroleum Fund"), and invested in international assets (stocks, bonds and property). Each year, a maximum 4% of its value can be used to balance domestic fiscal budgets. The Petroleum Fund was valued at some €790 billion in March 2015, placing the Norwegian state in a unique position as a substantial net creditor for other industrialised countries. In spite of a relatively low contribution to the domestic employment rate (some 4% of the total Norwegian work force, including oil and gas companies and supply industries), the direct and indirect effects of the petroleum industry are substantial in terms of high wages and demand for products and services.

Thus, four decades of development and revenues from the resources on the Norwegian Continental Shelf enabled Norway to climb up the global economic rankings. From 1970 to 2013 it doubled its share of the world's GDP (to 0.7%), and boosted the wealth of its

citizens, jumping from 18th to 4th place in GDP per capita. The petroleum sector is Norway's largest industry, measured in terms of value creation, state revenues and export earnings (about €70 billion in 2013).

Change and engagement

As indicated, since the 1990s, the Norwegian model has become less interventionist. Part of the reason for this change was the increasing engagement of Norway with the EU, which was related to Norway's increasing production of natural gas.

> ***The control of strategic sectors may also be lost or weakened through mergers and acquisitions by foreign companies that have concerns other than the host's national interest***

While oil can be transported relatively cheaply all over the world, the cost of transporting gas by pipeline is much higher and has made nearby markets the only alternative for exporters. Although an expanded global LNG market will gradually modify this, Norway currently follows mainly the traditional mode, and exports around 96% of its gas through pipelines. Hence, EU countries are the natural markets for Norwegian gas (and largely also for oil). Norway is the biggest gas supplier to the EU after Russia, and depends on its exports to the EU, where it sells more than 90% of its oil and gas. The EU and Norway have a common interest in maintaining stable trade, and see the situation as a win-win case. At the same time, price interests are to some extent (naturally) the opposite for seller and buyer. Moreover, EU market regulations intend to optimise European economic developments, and not primarily Norway's national economic interests. To this end, the European Union exerts twofold pressure on Norway. First, it develops liberalisation, competition and climate rules, binding on Norway, and second, it is engaged in long-term transformation of the EU towards a low-carbon economy, which may create the risk of shrinking demand for Norwegian oil and gas.

Norway follows EU regulations inasmuch as it has been a member of the Single Market through the EEA agreement (Agreement on the European Economic Area) since 1994. As a result, Norway has applied general EU market liberalisation regulations and adheres to the EU's competition and climate laws. But the reform of Norway's energy model was not only caused by its engagement with the EU. The more general liberal international economic regime after the break-up of the Soviet Union, low oil prices in the 1990s, and industrial and market maturity also created a necessity for greater flexibility and freedom of decision making for companies. Thus, the partial privatisation of Statoil around the year 2000 was not triggered by the EU, but initiated by the company, to adjust to changing international conditions and international

engagements.
Yet, despite the (EU) pressures for liberalisation, the state has managed to retain control over the country's energy sector. For example, although EU gas directives and competition laws challenged the organisation of Norwegian gas sales, requiring the disbanding of the centralised gas sales monopoly, Gassforhandlingsutvalget, the consequences have been limited as Statoil remains responsible for around 70% of Norwegian gas exports, through sales of its own and SDFI gas. The state still holds a two-third's majority (67%) of Statoil's shares.

Another example concerns licensing practice. The EU Licensing Directive outlaws preferential treatment of Norwegian companies. However, discrimination against foreign companies had already largely ended, as a natural development resulting from the maturing of the sector in the early 1990s. But the state, through the Ministry of Petroleum and Energy, still retains control over licensing procedures, selection of the areas for exploration, and the choice of operator, with the support of the Petroleum Directorate.

Another important element is the role of the state owned company, Petoro which secures state economic interests, as a licensee of the SDFIs. It controls about one third of Norway's oil and gas reserves, 33 producing fields, and shares in 15 pipelines and land-based plants. Thus, in contrast to its counterparts in countries such as the UK and Canada, the Norwegian state has remained at the helm of the oil and gas sector.

> ***Norway has shown that the industrial political tool box is not empty in a liberal economic EU regime***

This has not impaired its relations with the EU. Although not a member of the EU, and often criticised domestically for a passive political attitude towards the union in general, Norway aims at strengthening relations through an active European policy in the energy field, and increased channels of communication. These include direct contacts with the European Commission (DG Energy), participation in working meetings in Brussels, organisation of Baltic-Nordic breakfast meetings before the councils to communicate Norway's interests, etc.

EU climate regulations influence Norwegian resource policy in two ways. Directly, they set binding environmental requirements on petroleum production, and indirectly, they influence petroleum demand in Europe. Since 2008, the joint EU Emissions Trading System (ETS) has covered the operations on the Norwegian continental shelf. Yet, so far, this has not influenced petroleum production, as the price of allowances has remained low. With other EU regulations that could have influenced the energy sector, Norway has adopted the same strategy as many EU Member States; it has either delayed implementation, or questioned their relevance to the EEA. The dispute around the Offshore Safety Directive is an illustration of the latter.

None of this has harmed Norway's market position. The country has actually increased production in recent years to adjust to European energy needs. Despite a drop in EU gas consumption by 15% over the last three years, Norwegian exports have continued to rise, although there is of course no guarantee that this will remain the case.

The Polish path

Poland followed a very different path from Norway. In the first phase of shale gas developments in Poland there was a deep belief that there are abundant resources, but little real knowledge of the country's geology in this respect. Initial incentives for investors were based on the high resource estimates given by the U.S. Energy Information Administration (EIA), together with a low state take (around 20% of gross profits, mostly from the usual corporate tax, as royalties were close to zero).

> ***A dynamic mixture of roles for the state as landlord and entrepreneur, within an overall political enterprise, is better than adhering only to one or the other***

The subsequent reform of the national system did not reassure investors. The taxation system failed to incentivise exploration drillings and the political debate was dominated by the management of (hypothetical) revenues to the benefit of future generations. The idea of creating a national investor and minority shareholder on each licence, to share the exploration risks, as well as potential profits (Narodowy Operator Kopalin Energetycznych, NOKE), in part inspired by the Norwegian model, was abandoned in February 2014. Not only did shale companies oppose it, it also found insufficient support within the government.

Thus, once the results of the initial drillings were found to be disappointing, resource estimates given by the Polish Geological Institute lowered, and the government take was doubled (from 2020 onwards), the vast majority of foreign companies left Poland. The EU legal regime has had an impact on Polish shale gas too, especially as 17 pieces of EU environmental legislation already apply directly to unconventional fossil fuels. For the time being, the European Commission has decided not to draft additional legislation, but this might change with its upcoming assessment of Member States' compliance with non-binding principles for the exploration and production of hydrocarbons using high volume hydraulic fracturing.

So what is to be done? Despite this difficult beginning, Poland should still work on improving the investment environment and regulatory system for its extractive system. As Poland is now a mid-range and increasingly larger economy within an institutionalised liberal EU setting, policies similar to Norway's may serve as an example.

Lessons

What lessons can Poland learn from Norway? Firstly, the Norwegian experience argues that the state should have a vision and policy for economic and social developments of such large industries, such as in Norway's so-called "Ten Oil Commandments" from the early 1970s. The measures used to reach social goals may well in part include liberal, hands-off regimes. However, if a state is politically passive in relation to overall developments, albeit regulatory active in the details, fledgling national industries may not be developed as they may lose out to more competitive foreign companies at the outset. The control of strategic sectors may also be lost or weakened in a mature phase through mergers and acquisitions by foreign companies that have concerns other than the host's national interest.

> ***The higher the industrial and organisational competence in the state apparatus and among politicians, the better the chances of finding and sustaining an optimal policy mixture***

To be sure, shale oil and gas generally has higher costs than large conventional fields. This means that the economic rent to be collected can be expected to be less than where conventional oil and gas is produced. Nevertheless, if the sector becomes big, it may still have significant implications for energy security, the environment, industrial development and other social, political or economic areas. Political measures must be adjusted to what at any time is the existing situation, but national political and administrative competence is paramount all the time.

Secondly, Norway has shown that the industrial political tool box is not empty in a liberal economic EU regime. The creation of the Norwegian energy clusters shows that there is considerable room for a state to facilitate entrepreneurship in a non-interventionist way, similar to the role of governments proposed by Michael Porter. Also, beyond its regulatory role, a state can, in a liberal regime be an industrial player itself, through fully state-owned companies. This has been shown through the ownership of Statoil, and the creation and maintenance of fully state-owned agencies (the Petroleum Directorate, Petoro and Gassco). The state's own competence is important for controlling the sector, and also for matching companies' competences and for making good policy and regulations adjusted to the particularities of the sector. Finally, international regulations may in many cases leave room for different substance even if the form is the same, in as much as states may formally adapt to the international rules and regulations, while at the same time giving their content a strong national flavour through individual interpretation and adaptation and introduction of new policies to reach old goals.

Thirdly, the Norwegian experience demonstrates that a state's ability to develop policy and define visions and preferences is important in a competitive environment. The state has to keep moving to stay in line with industrial and international changes. In this context, a dynamic mixture of roles for the state as landlord and entrepreneur, within an overall political enterprise, is better than adhering only to one or the other. The

higher the industrial and organisational competence in the state apparatus and among politicians in understanding and doing this, the better the chances of finding and sustaining an optimal policy mixture.

For Poland, main questions that remain to be answered are whether a clear and distinct Polish reason for policy can be developed and whether the Norwegian model of a strong state in relations between business and government is acceptable to society. The Norwegian example shows how to ensure control and transparency in the sector, and develop efficiency and geological knowledge, while developing cooperation with business. Norway also shows how to stay engaged with the EU while at the same time preserving and promoting its national interest. Since Poland, as a full member of the EU, is directly engaged in the decision making process in Brussels, perhaps there may also be a possibility in the future for partnership and cooperation between Oslo and Warsaw in influencing and understanding EU policies in the energy sector?

Editor's Note

Lidia Puka (@LidiaPuka) and Aleksandra Gawlikowska-Fyk are researchers at the Polish Institute of International Affairs (PISM @PISM_Poland). Ole Gunnar Austvik is researcher at the Norwegian Institute of International Affairs, the BI Norwegian Business School and Harvard Kennedy School. This is an edited, unannotated and slightly abbreviated version of the original annotated report, which can be found here.