

PGNiG Upstream International activities in Norway

04 September 2013





T	Main facts about the NCS		
П	PGNiG's activities in Norway		
	а	Key facts	
	b	The Skarv development project	
	с	Exploration activities	
Ш	NCS potential		





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Norway – upstream activities

- Norway is ranked as the third largest gas exporter in the world and the world's seventh largest oil exporter.
- Crude oil production amounted to 1,9 million barrels of oil per day (including NGL and condensate) and 111 billion standard cubic meters (BCM) of gas per year (2011 data).
- It is expected that in the upcoming years, petroleum production from the NCS (Norwegian Continental Shelf) will increase slightly in the coming years before the expected decline in the long-term perspective.
- Gas production has increased significantly in recent years. It is connected with the natural depletion of the oil fields and gradual recovery of gas from these fields (that was previously injected to enhance oil recovery).









Historical and expected gas production (in BCM). Source: NPD



Norwegian Continenal Shelf

- The Norwegian continental shelf is the continental shelf over which Norway exercises sovereign rights as defined by the United Nations Convention on the Law of the Sea.
- The area of the shelf is four times the area of Norway mainland and constitutes about one-third of the Europe continental shelf.
- The Norwegian Parliament (Storting) has opened most of the North Sea, the Norwegian Sea and the southern Barents Sea for petroleum activities.
- So far, about 44 per cent of the estimated total recoverable resources on the Norwegian continental shelf have been produced.
- Estimates prepared by the Norwegian Petroleum Directorate of undiscovered resources in areas on the shelf total around 2.5 billion Sm3 of recoverable oil equivalents (15.7 billion boe).
- The resources are fairly evenly distributed between the three regions, with about 33% in the North Sea, about 30% in the Norwegian Sea and about 37% in the Barents Sea.



Source: OGJ, NPD



NCS infrastructure

- In 2003 virtually all of Norway's gas transport systems were integrated in a major new joint venture called Gassled.
- Gassled serves as the formal owner of the Norwegian gas transport infrastructure and Gassco, fully state owned company, is the system operator

Key figures transport 2012	
Regularity ¹	99.69%
Quality ²	99.99%
Total volume of gas delivered to receiving terminals	106.6 bn scm
Highest daily volume delivered	356.9 mill scm
Total volume of other products ³ delivered from the gas transport system	7.96 mill tonnes

¹ Regularity: Regularity is measured as the volume delivered from the transport system (Gassled area D) in relation to shipper orders.

² Quality: Quality standards are specified in Gassled's terms and conditions, and are measured in relation to the gas quality delivered from the transport system (Gassled area D).

³ Ethane, propane, butanes, naphtha and condensate (light oil).



Source: Gassco, NPD



Norway – key players on the NCS

Recoverable resources according to NPD in million b.o.e. (as of Dec 2012)



- The seven largest companies with resources exceeding 500 Mboe. have the most significant position on the NCS
- In the recent years, the most active players on the NCS are the subsidiaries of European utilities

- The interest in the NCS has increased in the past few years. Since 2000, more than 50 newcomers have entered the NCS (including the PGNiG Group)
- Since 2007, PGNiG secured recoverable reserves of 68 million boe in the following fields: Skarv, Snadd (Snadd – not counted in the below presented calculation)









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PGNiG in Norway – key facts

- PGNiG started activities in Norway in 2007
- We invested so far more than 1.4 billion USD in our activities on the NCS
- The company has currently ~27 employees with extensive experience both from the Norwegian Continental Shelf (NCS) and Poland
- Main asset the Skarv field on the Norwegian Sea (operated by BP) commenced production in the end of 2012
- Skarv area contains significant proven reserves: 576 million boe (68 mboe net to PGNiG)
- In the coming years the Company will generate strong cash flow as a consequence of production from the Skarv field and significant losses carried forward from development phase
- PGNiG is currently involved in 13 production licences on the NCS
- The company is pre-qualified as an operator and is for the time being operating one licence







Skarv FPSO





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Skarv – our main project

Main facts about the Skarv development

- The field is located in the Norwegian Sea
- Skarv was discovered in 1998 and the development plan was sanctioned in 2007. Currently it is a biggest development project on the NCS
- The project is operated by BP (~24%) with Statoil (~36%) and E.ON Ruhrgas (~28%) and PGNiG Norway (11.9175%) as partners
- The development project, comprising the Skarv and Idun discoveries, contains 576 million barrels of oil equivalent
- Skarv is delayed in comparison with the original schedule, right now:
 - Production started in **December 2012**
 - Reserve base is higher than assumed in the PDO
- The total development cost of Skarv is estimated to be ~NOK 44 billion
- The Skarv area contains substantial additional exploration potential





FPSO development concept

- The development concept is based on a geostationary turretanchored FPSO:
 - The licenses awarded contract for fabrication of the Skarv FPSO Hull to Samsung HI in South Korea
 - The vessel was constructed in the Geoje yard
 - FPSO approximate cost 2 billion USD
- Technical details of the Skarv FPSO:
 - The vessel has a length of 292 meters, breadth of 50.6 meters and is 29 meters depth
 - The hull weight, including living quarter is 40,600 tonnes and accommodates ~100 persons in single cabins
 - Total FPSO weight is 60,530 tonnes (dry installed) and 62,000 tonnes (operating installed)
 - FPSO crude oil storage capacity is 875,000 bbls. The maximum available loading capacity of shuttle tankers operating in the North Sea region is approximately 850,000 bbls
 - This is the largest harsh water gas processing FPSO in the world

Skarv FPSO anchored at the field





Skarv area

	Skarv	PGNiG's share
All (mmboe), incl.	576	68,6
Gas (bcm)	57	6,8
Oil (mmtones)	16,5	2,0
NGL (mmbbl)	94	11,2

> The reservoir development plan includes

- 7 oil producers
- 6 gas producers
- 4 gas injectors (reverted to gas producers in later field life)
- 7 additional wells to be drilled











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PGNiG activities on the NCS

- PGNiG Upstream International has the ambition to become an active exploration company, building its presence in certain, carefully selected core areas on the NCS.
- In addition to the Skarv project, the Company is planning to secure more oil and gas reserves through its own E&P activities.
- The abovementioned activities should lead to prove additional hydrocarbon reserves for PGNiG. Exploration activity is one of the main tools for long-term growth for PGNiG Upstream International.
- Core area for exploration on the NCS as of today is the Norwegian Sea. Our main asset in this region is the Skarv area with the surrounding exploration licenses.
- In addition there is a possibility for creating a second core area in the deep water area of the Norwegian Sea around the licences PL599 and PL600 and the newly awarded PL702 and PL703.
- Further growth will be focused around the Barents Sea licences PL707 and PL711, awarded in the 22nd Licensing Round.
- PL707 could provide a stepout opportunity in to the previously disputed eastern Barents Sea zone and PL711 offers the possibility to be part of the early phase of developing a new gas basin.



Source: NPD, Google Earth





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Norwegian oil&gas market potential

- One of the most capital intensive industries in this region of Europe (information source: NPD):
 - The investment level on the Norwegian shelf has been high in recent years.
 - In 2012, more than NOK 175 billion was invested on the NCS, including investments related to exploration;
 - The investments in 2012 amounted to nearly 29 per cent of the Norway's total fixed capital investments;
 - The operating costs in 2012 amounted to about NOK 60 billion;
 - Both investments and operating costs are expected to remain high in the years to come
 - The activity level on the shelf will represent a significant market for the supplier industry for many years.
- The main characteristics of the Norwegian oil&gas market:
 - Premium, high-priced market (e.g. offshore costs are higher than on similar, neighboring UKCS)
 - High focus on HSE
 - Technically advanced projects (deepwater, harsh conditions, artic regions)
 - Sophisticated contract structures
- Number of opportunities in short to medium-term:
 - In 2012, the authorities approved the plans for development and operation (PDOs) for Skuld, Jette, Åsgard subsea compression, Martin Linge, Edvard Grieg, Bøyla and Svalin.
 - The PDOs for Gina Krog, Ivar Aasen and Aasta Hansteen are awaiting approval by the authorities.
 - In 2013, development plans are expected for Zidane, Flyndre and Oseberg Delta 2.



Key succes factors

- Top quality standards
- Engineering excellence
- Focus on HSE
- · Flexibility and tailor-made approach
- Follow market standards (e.g. procurement best practices, join Achilles JQS*)
- Exchange of information with the market incumbents
- Identify business niches: e.g. abandonment projects



* Achilles JQS (Join Qualification System) is a supplier register and pre-qualification system used by the buyers in the Norwegian and Danish oil and gas sector to manage supplier information and risk. International community in: Norway & Denmark



THANK YOU



External financing

- On August 31st 2010, PGNiG Norway signed a 400 million USD credit facility agreement with seven banks
- The facility is the first financing instrument in the Company's history employing the Reserve Based Loan formula and one of the first such facilities in Central Europe
- Reserve Based Loan is a project-finance solution, under which the lenders' claims are secured primarily on specific crude oil or natural gas reserves

Advantages of securing RBL

- Reserve Based Loan enhances the PGNiG Group's debt capacity
- Banks advancing an RBL focus primarily on the project's technical and commercial risk, therefore reserve based financing is not available for all projects
- The amount and terms of financing under the RBL formula depend on the quality of reserves rather than on the borrowing company's credit rating or performance



The Skarv FPSO in South Korea, before installation of the production modules (end 2009)

- Skarv was highly assessed by the specialist Technical Banks. Currently it enables the Company to secure credit to the amount of ~600 milion USD
- Technical Banks in the credit facility perform regular valuations of reserves in the field.