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**Gulbrand Wangen**  
 Managing Director INTSOK



## INTRODUCTION

Norway has developed an internationally competitive, technology-driven petroleum industry, delivering advanced products and systems. The industry's international expansion has been faster and more successful than anyone had hoped for. Analysis from Norwegian consultancies like Menon, Econ Pöyry and Rystad Energy show substantial growth in the petroleum cluster's international turnover.

INTSOK partners expect continued international growth. A survey among our partners in 2009 illustrated our high ambitions. Close to 40% of the respondents look for more than 100% growth internationally in the next five years. The survey confirmed that the INTSOK partners perceive themselves as being highly competitive in international markets with their technologies and products and services.

The partners see Brazil and the US Gulf of Mexico as the most exciting markets with the highest potential for further growth. The neighbouring UK market continues to be of significant value to the Norwegian petroleum cluster, whilst countries in the Middle East have moved up the priority list. The slowdown in the Russian market has influenced short-term expectations. Russia is still seen as an important market, but fewer rank it as very important.

The opportunities internationally are great. The INTSOK Annual Market Report developed by Douglas-Westwood concluded that close to USD 1 trillion will be spent in the INTSOK markets between 2009 and 2013. Many held back spending during the financial crisis in 2009, but expenditure plans are back on track again in most of the markets. The reduced demand and growing supply of LNG and unconventional gas has, however, introduced a new uncertainty in the global gas markets which has had an immediate impact in Russia as well as in Norway by slowing down investments. The delay in the Shtokman field development, a project high on the INTSOK agenda, is just one example.

## MAIN MARKETS

Angola  
Brazil  
China  
Russia  
UK  
US GoM

## PRIORITY MARKETS

Australia  
Canada  
India  
Indonesia  
Kazakhstan  
Malaysia  
Mexico  
Middle East  
Nigeria  
Shipyards in Asia

## MARKETS UNDER OBSERVATION

Caspian Region  
North Africa  
Venezuela

INTSOK was set up in 1997 with the aim of promoting the Norwegian oil and gas industry in international markets to enable the industry to use its competence and technology beyond the Norwegian Continental Shelf. The expenditure level on the NCS will remain high for several years to come. Investments are, however, no longer driven by large projects, but by maintenance, modifications, increased oil recovery, tie-ins of smaller reservoirs, and development of smaller fields and utilisation of infrastructure.

The Norwegian oil industry has proved that it has the potential to grow abroad; this was clearly observed in a study of eight regional clusters in the Norwegian petroleum sector in 2008. Norwegian companies are global market leaders in seismic, subsea, marine drilling equipment, floating production and supply services. Many clusters, like the drilling cluster in the south of Norway, have become highly international. Some now have a higher turnover abroad than in Norway.

The Norwegian Continental Shelf has been a breeding ground for innovation and technological development and will continue to be so.

INTSOK now has more than 200 partners. Many new companies joined us in 2009, even though it was a difficult year for many.

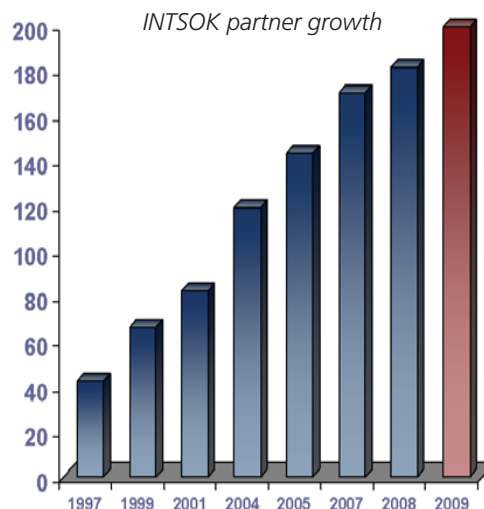
International expansion is not only on the agenda in the larger companies. INTSOK's partnership growth in recent years has been strong from small and medium-sized companies. We have therefore expanded our assistance to the SMEs to help them enter new markets, whether it is Brazil, the Gulf of Mexico, Russia, Middle East or Southeast Asia.

In the last two years, we have also increasingly tried to promote the companies' capabilities to a wider audience. Norway is a global front-runner in improved oil recovery technologies. We have also

developed a petroleum sector with less emissions and discharges than any other country. INTSOK has developed a catalogue documenting the IOR capabilities in the industry. Close to 50 companies and research institutes are represented in the catalogue. The next step is to identify and highlight the industry's capabilities and competence in delivering technologies for cleaner production.

A new initiative based on the experience of INTSOK has been set up to address the opportunities in the renewable sector. INTPOW has joint offices with INTSOK, enabling us to share experience and market information. The two organisations' work goes hand-in-hand, adding to competitiveness of the Norwegian energy industry abroad.

We are well positioned for future technological challenges, including carbon management and a greener energy sector.





## INTERNATIONALISATION OF THE NORWEGIAN PETROLEUM INDUSTRY

*More than 100 countries in the world produce oil and gas. INTSOK has decided to focus its attention on the markets most attractive to partners. The INTSOK markets do, however, represent more than 50% of global offshore oil and gas production and a major share of total global expenditure.*

INTSOK is supporting companies' international expansion by providing advice, market and project information to partners and communicating the capabilities of the Norwegian petroleum cluster to key clients in overseas markets. The database on priority projects has detailed information on close to 100 major projects around the world and is updated continuously.

INTSOK is developing an annual analysis of the planned expenditure in the priority markets in partnership with Douglas-Westwood, a global leader in providing business research and analysis. The report is based on a project-by-project forecast up to and including 2013 and it showed substantial growth in expenditure in the upstream sector. Total expenditure within INTSOK's target offshore markets will amount to USD162.8 billion in 2009, growing to USD222 billion in 2013. The level of expenditure in modification, maintenance and operations will grow steadily and represents the largest market segment. The onshore expenditure in the targeted countries is substantial, especially in the US, the Middle East, China, Russia and Canada.

Partners used INTSOK services more extensively in 2009 than ever before, but the potential for further involvement is still substantial. It is a high priority for INTSOK to use the experience of the local advisors and the regional directors to contribute with more direct market advice and guidance for individual partners.

New advisors with deep insight into their local areas are now present in Abu Dhabi, Angola, Brazil, India and Mexico. Advisors make frequent visits to Norway to meet INTSOK partners and to present the business environment and the opportunities in their markets as well as to be available for consultation in their markets. The local advisors assisted companies 320 times in 2009. The advisors in Brazil, China, Russia, the Middle East and the US have been most active in advising companies in their respective markets.



In addition to market and country reports, partners are able to meet key clients in customer meetings and workshops. INTSOK organised 26 seminars and workshops in 2009, meeting more than 50 key clients and creating major opportunities to develop contacts and relationships with important customers. Seminars in the US attracted close to 140 partners, whilst events in Russia gathered around 100 firms. The partnership programme in Russia has become an important tool for new entrants to the Russian market and an efficient way to evaluate potential Russian business partners.

INTSOK events attracted more partners than ever before, reflecting the growing appetite for international expansion.

INTSOK's annual International Oil and Gas Business Day has become a traditional meeting place for partners and clients. The 2009 event was organised in cooperation with the Norwegian Ministry of Petroleum and Energy.

The two-day conference offered updates on market trends, and major oil companies presented their project portfolio and technological challenges. Arctic and cold climate issues attracted substantial interest.

INTSOK was involved for the first time in the FPSO International event in Oslo. This meeting gathers relevant players in the FPSO sector and has become an excellent meeting place for the exchange of information on market trends, technologies and company performance with more than 200 people attending.

Network meetings enable partners to exchange experience and insights from the markets. INTSOK also organised three regional network meetings to present the plans for the years to come and address some of the challenges and opportunities in the markets. Anti-corruption issues remain an important issue on the network agenda.





## BRAZIL – AN AMBITIOUS DEVELOPMENT PROGRAMME

*Brazil is becoming one of the largest global oil producers and has emerged as the market ranked as the most important by the INTSOK partners. The market's ambition is to grow production from 2.5 million barrels of oil and gas in 2009 to more than 5.7 million barrels oil equivalents by 2020. Petrobras will spend close to USD100 billion in the Brazilian upstream sector through 2013 and is engaged in an extensive procurement programme, both in Brazil and internationally.*

Many Norwegian firms are well established and have built a significant market position. INTSOK has developed a new catalogue presenting the Norwegian oil and gas industry's capabilities relevant to the Brazilian developments. Norwegian financial institutions are increasingly providing finance and guarantees for projects in Brazil. Statoil will begin production from its Peregrino field in 2010, one of its first operated fields outside Norway.

Petrobras is the dominant operator, operating alongside with several foreign and national oil and gas companies. The Government has proposed new reforms that will make Petrobras the sole operator in developing future presalt discoveries.

The presalt discovery spans a large area along the coast from the state of Espírito Santo to Santa Catarina and is located 300 kilometres off the coast of Rio de Janeiro. It includes offshore fields such as Tupi, Guar, Bem-Te-Vi, Carioca, Jupiter, Sugar Loaf and Iara. Tupi, discovered in November 2007, has estimated reserves of 8 billion barrels of oil equivalents. Petrobras estimates that reserves at the Sugar Loaf field could be even larger and that the Jupiter field could contain reserves similar in size to Tupi's. Exploration activities in the presalt area have shown unprecedented success rates.

Throughout its history Brazil has sought to balance its pursuit of energy security with a sense of pragmatism and strong nationalistic tendencies. Success in the oil and gas sector is partially the product of maintaining an open investment environment, which has created a dynamic and competitive sector where experienced and technologically advanced companies joined forces with Petrobras. Brazil has now introduced an ambitious national content programme with substantial expansion of the domestic oil and gas industry and this is stimulating international firms to establish themselves in the country to serve the growing demand.



Petrobras' management has emphasized that one of its major challenges is to manage the logistics of the expansion, including developing a reliable chain of suppliers ready to deliver people, infrastructure, rigs, FPSOs, equipment and services within the time-frame outlined by Petrobras management. Strict implementation of the national content requirements may slow down the development of the resources.

The dialogue between Brazilian and Norwegian firms has become more extensive than ever before. The advanced technologies delivered by the Norwegian oil industry have been of substantial interest to Petrobras. Norwegian research institutes and research programmes are exchanging knowledge and experience with their Brazilian counterparts.

INTSOK's main workshop held in Rio de Janeiro in 2009 was entitled "More Barrels at Lower Costs". Petrobras had expressed strong interests in this topic. Increased recovery has priority in Brazil's national oil company.

Petrobras' investment plan will result in a considerable increase in demand for the supply of equipment and systems for an extensive construction programme at existing and new yards in Brazil. INTSOK has developed a catalogue presenting all INTSOK partners relevant to the construction programme. This will be succeeded by business delegations with Norwegian suppliers to Brazilian clients.

Innovation Norway, in cooperation with INTSOK, has established an incubator office to assist Norwegian companies looking to establish themselves in Brazil. The facilities allow Norwegian firms to gain insight into the Brazilian markets more quickly and in a more cost efficient way.

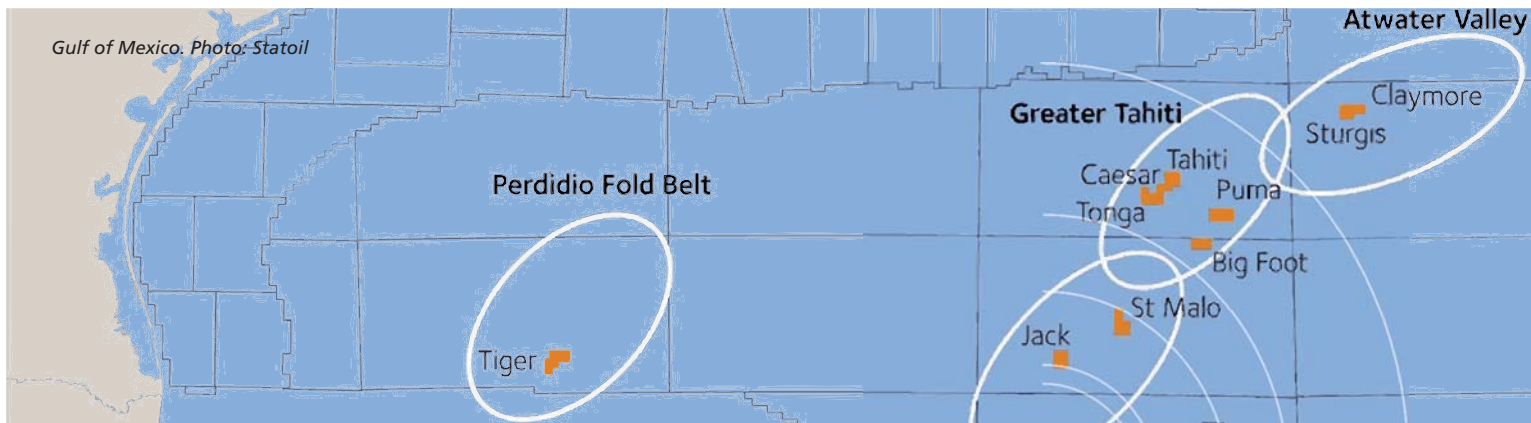


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INTSOK Oil and Gas Advisor, Brazil





## THE US GULF OF MEXICO – A STREAM OF NEW PROJECTS

*The US Gulf of Mexico remains the largest offshore market in the world with some USD150 billion in total expenditure in the period 2009-2013. The US Gulf of Mexico is a mature basin where the first platform was installed in shallow waters in 1942. Since then, over 6,800 platforms have been installed, predominantly in shallow waters. The first platform was decommissioned in 1973. There are now some 4,800 active platforms in the region.*

Several world-class discoveries have been made in recent years. BP has become the largest oil producer and it has made a number of exciting deep water discoveries, like the multibillion barrel fields Kaskida and Tiber. BP has six new projects scheduled to come on stream in 2012-2015. The Gulf of Mexico has also become one of Statoil's core areas with several fields, like Jack/St. Malo, Big Foot and Caesar Tonga, under development. Statoil is now the fourth largest license holder in the Gulf of Mexico.

The giant shale gas developments in the US have changed the outlook of the global gas market. The US is no longer expected to be a major LNG importer, but instead can meet gas demand from domestic sources.

Houston plays a major role as the centre for development not only of the projects in the Gulf of Mexico, but also for major international projects. Most of the major oil companies are based in the city which hosts 5,000 energy related firms. Six hundred companies are engaged in the upstream sector. It is therefore an ideal place for networking and developing business relationships. More than 100 Norwegian companies are present in Houston and others are looking at establishing a presence in the market. A "Norway House" has been opened with the opportunity for new companies to rent office space in a separate business centre.

The many world-class projects are of interest to the Norwegian petroleum cluster, which is able to deliver advanced technological solutions well suited for the challenges in the Gulf of Mexico. INTSOK has therefore maintained its high level of activity, focusing on the leading oil companies and contractors. Several of the events, which have become an integral part of the Houston agenda, have attracted the relevant companies.



*BW Pioneer sailaway to the US Gulf of Mexico.  
Photo: BW Offshore.*



The SURF event was organised for the seventh time. SURF looks at the latest technology developments within Subsea, Umbilicals, Risers, Flow lines, and the 2009 workshop concentrated on the theme "Ensuring Technology Development Meets the Needs of Business". More than 200 people attended, which made it a success.

The 11th Annual Houston Week looked at a theme that is fast becoming a high priority for the oil industry, "Cleaner Production and Energy Efficiency". The keynote presentation was given by the Norwegian Deputy Minister of Petroleum and Energy, Mr. Robin Kåss. The Annual Houston Week is important for relationship building and for partners to present their capabilities to key clients in the major oil companies and contractor companies.

INTSOK also organised its first EPC Week to establish a dialogue with leading engineering and contractor firms based in Houston. The event will now become an annual activity.

Two of the leading oil companies in Houston, Chevron and ConocoPhillips, received INTSOK partners in order to present their technology requirements and project portfolio and listen to the Norwegian firms latest technology innovations.



**Werner G. Karlsson**  
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INTSOK Oil and Gas Advisor, USA





Building process for a Moss Maritime semisubmersible hull at Vyborg shipyard in Russia. Photo: Moss Maritime

## RUSSIA – MORE FOCUS TOWARDS THE EAST

*The Russian gas giant Gazprom has felt the market effects of the financial crisis. Demand in its main export market, the European market, has fallen sharply and new volumes of LNG have made its way into Europe. Until a year ago, it was widely assumed that gas demand would continue to increase. This assumption underpinned most discussions of the timetables for Gazprom's major new giant production projects, Yamal and Shtokman. The uncertainties of the long-term demand have produced a new set of investment dilemmas for Gazprom, posing the question how much new gas will the market need and when? Investment programmes in the gas sector have been scaled back and major investment decisions postponed.*

Gazprom and its partners, Total and Statoil, has therefore delayed the decision to move ahead with the Shtokman project in the Arctic offshore. Investments in Yamal have also been slowed down.

Russia is still a major market with significant investments in West Siberia and increasingly in East Siberia and Sakhalin where oil and gas can find a growing market in Asia. The Government has improved the tax regime in East Siberia to enable projects to move ahead.

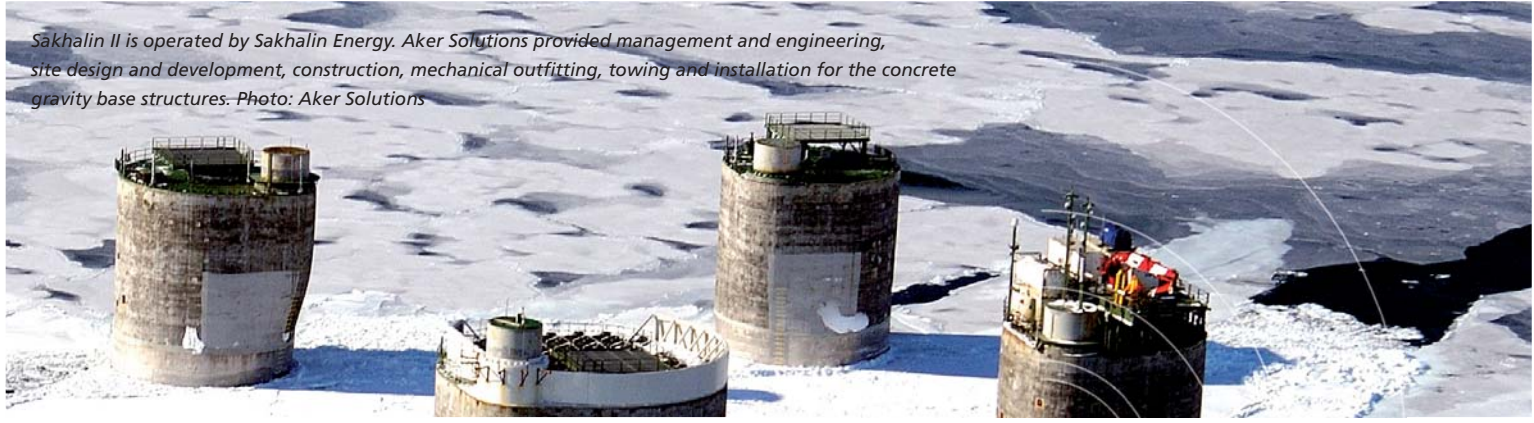
INTSOK has developed good relations with the major Russian oil and gas players and with the Shtokman project organisation. INTSOK will closely monitor progress and maintain its relationship with the Shtokman partners.

The activities in Russia continue to attract significant interest from partners and from Russian companies.

The Partnership Programme between the Russian and Norwegian Oil and Gas Industries was launched in 2005 and it has become a major success. Its objective has been to support increased partnership between the Russian and Norwegian oil and gas industries with a focus on the Arctic region, to support the Russian ambition of increasing the involvement of local industries and to support internationalisation of Norwegian and Russian technologies and services.

More than 40 companies have been part of the programme, which provides market overview, business culture, legal framework, anti-corruption issues and experience transfer. Sixteen new companies joined in 2009 with the aim of developing strategies for entering the Russian market.

*Sakhalin II is operated by Sakhalin Energy. Aker Solutions provided management and engineering, site design and development, construction, mechanical outfitting, towing and installation for the concrete gravity base structures. Photo: Aker Solutions*



The 7th Annual Russia-Norway Oil and Gas Conference was held in Moscow in January and it focused on project management. The Norwegian Deputy Minister of Petroleum and Energy, Ms Liv Monica Stubholt, opened the conference. The event also included successful business-to-business meetings between Russian and Norwegian firms; close to 200 people attended.

INTSOK organised a workshop in Murmansk with the Shtokman Development Company to look at the opportunities and the challenges of the project. Partners were also shown the mega projects in Yamal in meetings with Gazprom and Gazprom subsidiaries. In Astrakhan, INTSOK partners were shown the development in the Russian Caspian. The workshop looked at Lukoil's large Filanovsky project and several INTSOK partners were able to document their relevant capacity and capabilities.



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The 3rd UK-Norway Mentor programme is run for 26 companies. Here participants meeting during the second meeting at Statoil in Stavanger. Photo: Statoil

## UKCS – OPENING NEW POTENTIAL IN THE WEST OF SHETLAND AREA

*The UK oil and gas sector still offers significant opportunities. The Government has presented a multi-billion pound package to stimulate development of the oil and gas reserves in the West of Shetland area. The industry body Oil & Gas UK reports that the number of offshore oil and gas projects currently under consideration for development has risen sharply over the last 12 months.*

Seventy-three potential new field developments are under evaluation compared with 56 fields a year ago. Most of the projects are small, but some can open a new province and lead to higher activities. Total is aiming to deliver first production of gas from its Laggan and Tormore fields in the West of Shetland area by 2014. The two fields lie in about 600 metres of water. The development is seen to cost in the order of USD 3 billion and may open the door for other fields in the area.

Over the next 15 years, the abandonment market on the UKCS will also grow considerably.

UK produced 2.48 million barrels of oil equivalents per day in 2009, down 6% on 2008 and reflecting the 20% slowdown in capital expenditure since 2006. 2009 saw the lowest volume of new reserves brought on stream in the history of the UK Continental Shelf. Eight new fields began production, the lowest number in nine years, and only six new fields were given development approval, compared with 12 in 2008. The number of companies operating wells fell to 24 last year from 43 in 2008.

For many years the UKCS market has been one of the largest and most important markets internationally for the Norwegian oil industry. More Norwegian companies are engaged in activities on the UKCS than in any other international market. Many small- and medium-sized companies are successful in the UK. Some 100

Norwegian firms exhibited at the large Offshore Europe exhibition and conference in Aberdeen. The event was larger than ever before in 2009.

The London and Aberdeen weeks provide INTSOK partners with an opportunity to develop their relationships with key clients like Apache, BP, BG, Chevron, Maersk, Nexen, Total, M.W.Kellogg, Amec, Wood Group, ConocoPhillips and Marathon.

The spring event in Aberdeen and the London event provided INTSOK partners with the opportunity to present their expertise and technology with a focus on subsea, umbilicals, risers and flow-lines. The autumn event in Aberdeen discussed improved oil recovery technologies and strategies.

The cross-border cooperation between Norway and the UK established a mentoring scheme which has become a major success and a third programme began in 2009. The mentee companies have especially highlighted the network opportunities which the programme provides. Twenty companies, mentor and mentees, from both countries are involved in the programme.

**Einar Holmefjord**  
Advisor and Regional Director, UK





An INTSOK delegation has been to Abu Dhabi and met with high-level personnel from the ADNOC group of companies. Here, delegation participants together with the management of ADMA-OPCO. Photo: INTSOK

## ABU DHABI IN FOCUS IN THE MIDDLE EAST

*The Middle East has the world's largest oil and gas reserves and a number of world-class projects are under way in many of the countries. The investment level is high both upstream and downstream in Saudi Arabia and Abu Dhabi. Iraq has signed ten service contracts with leading international and national oil companies. The reserves in the ten fields are close to 80 billion barrels. Investments under the contracts may reach USD100 billion over the next decade.*

Iraq's oil production may in the future grow towards 10 million barrels per day as a result of the international companies' introduction of new technologies. Thousands of wells will be required to deliver the promised production, but the obstacles are still substantial.

Statoil has joined Lukoil in developing the West Qurna 2 projects with estimated reserves of around 12.9 billion barrels. The two companies plan to produce 1.8 million barrels of oil per day at peak.

The Board of INTSOK has initiated a Middle East strategy based on an alignment of Norwegian interests in the region. The strategy's objective is to have a coordinated effort between the Norwegian Government, the industry and Statoil. Technological cooperation between UAE and Norway and between Saudi Arabia and Norway has been proposed as part of the strategy.

INTSOK has engaged an experienced advisor in the Middle East based in Abu Dhabi. This new appointment reflects INTSOK's new Middle East strategy which will address the opportunities for the Norwegian petroleum cluster throughout the region and not just individual countries as in the past. Priority areas for future cooperation may be clean production of energy and energy efficiency, reservoir management and well construction as well as integrity management.

Partners have shared information on how to do business in the region in network meetings. Saudi Aramco and the Belbadi Group attended a network meeting in Oslo in November and presented potential opportunities for cooperation.

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Regional Director,  
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**Nasrollah Gharesifared**  
INTSOK Oil and Gas Advisor, Middle East



CNOOC/INTSOK 2nd Annual Technology Workshop for "Offshore Gas Field Development" in Beijing where DNV and COOEC signed their strategic cooperation agreement. Photo: INTSOK



## CHINA – ACCELERATING THE SEARCH FOR OIL AND GAS

*China's energy strategy is very ambitious. The country is accelerating exploration and development of its domestic resources as well as expanding its international upstream activities. Chinese national oil companies are acquiring assets in most of the promising hydrocarbon basins around the world and are among the leading investors in Iraq. The Chinese National Offshore Oil Corporation (CNOOC) has also started drilling in the deep waters off China and is expanding its deep water capacity.*

LNG features prominently in China's energy strategy and the country is building a large number of terminals to receive LNG from the Middle East, Australia and Indonesia. China is considering different options for gas import, creating a degree of uncertainty over incremental Chinese LNG demand. A new pipeline carrying gas from Central Asia to China has been constructed. A new import pipeline from Myanmar is under development. Gas pipeline connection to Russia is under discussion with Russian leaders.

The three leading Chinese national oil companies are maintaining their high level of investment, backed by Government financial support. Substantial growth is expected to continue in the drilling segment onshore, in onshore MMO and not the least in the development of the gas infrastructure, LNG plants and pipelines.

The Chinese oil and gas industry is expressing strong interest in developing closer relations with the Norwegian petroleum cluster. The three largest oil and gas firms, CNPC/PetroChina, Sinopec and CNOOC are becoming important customers for the Norwegian petroleum cluster. Chinese shipyards are working closely with INTSOK partners and INTSOK organised a road show to several Chinese shipyards for a number of partners with the aim of becoming preferred partners to the offshore industry in China.

Gas has been a high priority on the 2009 agenda. CNOOC hosted the 2nd INTSOK/CNOOC Technology Workshop in Beijing in 2009; its focus was on "Offshore Gas Field Development". The workshop provided Norwegian companies an opportunity to present relevant products and services to CNOOC specialists in the midst of developing offshore gas fields in the Bohai Bay. INTSOK partners were also able to present their ideas and capabilities to CNPC, Sinopec, CNOOC and Husky Energy at a Gas Value Chain Conference opened by the Norwegian Deputy Energy Minister, Ms. Liv Monica Stubholt.

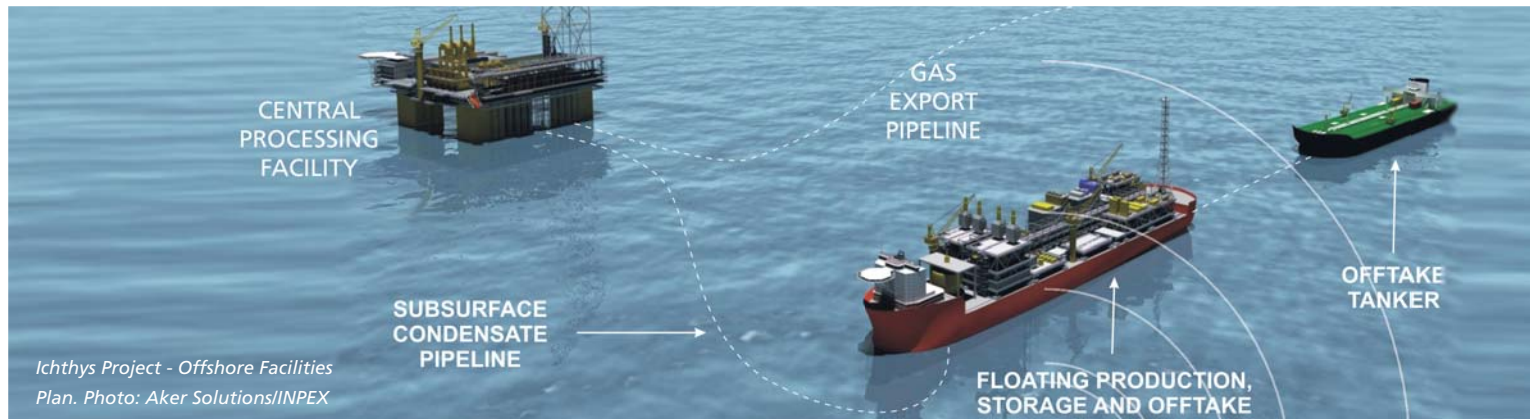
Carbon capture and storage is also becoming an area for potential business opportunities for INTSOK partners in China.

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Australia, China, Russia and Korea



**Guo Jian**  
INTSOK Oil and Gas Advisor, China





Ichthys Project - Offshore Facilities  
Plan. Photo: Aker Solutions/INPEX

## AUSTRALIA – FAST GROWING LNG PRODUCER

***Australia's LNG exports are expected to almost double in the next five years to almost 28 million tonnes per year. Giant projects like Gorgon, Browse, Wheatstone and Pluto LNG will make the country into one of the world's largest LNG exporters.***

Australia's LNG exports are expected to almost double in the next five years to almost 28 million tonnes per year. . Giant projects like Browse, Gorgon, Ichthys, Pluto LNG and Wheatstone will make the country into one of the world's largest LNG exporters.

The USD37 billion Gorgon LNG project in Western Australia is expected to begin producing gas in 2014. As an operator, Chevron will construct three liquefaction trains, each with a capacity of 5 million mt/year. The joint venture has a long-term plan to build another two LNG trains.

The Ichthys Project is expected to have an initial capacity to produce more than 8 million tonnes of LNG per annum, approximately 1.6 million tonnes of LPG per annum and 100 000 barrels of condensate per day at peak.

Australia is also expanding its gas investments through several coal seam gas-based LNG projects. Shell, CNPC, ConocoPhillips and Petronas are in partnership with local firms and aim to bring new projects on stream in Queensland after 2014.

Many Norwegian companies have been active in the Australian market for years. INTSOK has strengthened its own activities and provides more market and project information to partners. In 2009, INTSOK organised a Floating LNG Technology Forum in Perth with some 100 invited participants as well as two technology seminars focusing on recent advances in offshore technology in Melbourne and Perth. INTSOK also participated in the large APPEA conference in Darwin where partners had an opportunity to meet key clients at an INTSOK reception.

**Håkon Skretting**  
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**Rob Parker**  
INTSOK Oil and Gas Advisor, Australia



The opening of The EFCN Fabrication Training Center in Nigeria. The center is a result of the 3.2 Million USD Training and Capability Projects that INTSOK supports in recognition of the need to develop local expertise and capabilities. This project enables seven local fabricators to become suppliers to the deepwater projects. Photo: INTSOK



## WEST AFRICA – A GLOBAL DEEPWATER PROVINCE

*International oil companies have a significant portfolio of potential new deepwater developments in West Africa with substantial potential for the Norwegian subsea cluster.*

BP has 19 discoveries in block 31 in Angola and is considering new projects in block 18 and 31 for investment decisions in 2010 or 2011. Chevron has six deepwater projects under consideration. ExxonMobil is bringing new Kizomba satellites on stream. Total is looking to follow up the Pazflor projects where FMC Technologies are delivering the first deepwater subsea processing and production systems in West Africa. Total's next projects are CLOV and prospects in block 32 where it has made 12 discoveries and is looking at a hub development. Statoil has a strong participating interest in many of the deepwater discoveries made in the last 10 years.

INTSOK maintains a high focus on Angola where the Norwegian subsea cluster continues to secure new major contracts in new deepwater fields. Development in the deepwater sector in Nigeria has slowed down whilst the oil companies wait for the outcome of the reform programme under review by Nigerian authorities. Nigeria has also launched a Master Gas Plan which aims to utilize more of the gas resources in the domestic market and several of the large international oil companies are evaluating gas projects for the domestic market. ExxonMobil is evaluating a major project to feed into power plants. Statoil, FMC Technologies, BW Offshore and a few other INTSOK partners are well established in Nigeria.





Norwegian Minister of Foreign Affairs, Jonas Gahr Støre together with his Angolan counterpart, Assunção dos Anjos at INTSOK CSR seminar held in Luanda in Autumn 2009. Photo: INTSOK

INTSOK is also engaged in capacity building projects in Angola and Nigeria. The Train the Trainers project in Angola reached an important milestone in 2009 when the Instituto Nacional de Petroleo (INP) received 92 new students in March. Rogaland Training & Education Centre (RKK) has been the training contractor engaged by INTSOK since November 2008. The curriculum has been extended and improved and new textbooks are available. The first phase of the project started in 2004.

The Norwegian Embassy in Luanda, together with INTSOK, organised a seminar on “Corporate Social Responsibility as an Opportunity for Business and Development.” The Norwegian Foreign Minister, Mr. Jonas Gahr Støre, delivered the keynote speech to an audience of 170 representatives from industry and government.

In Nigeria, the Fabrication Training Centre was officially opened in 2009. The centre is the result of the USD3.2 million training and capability project initiated by INTSOK and will enable seven local fabricators to become suppliers to the deepwater projects. The Fabrication project began in 2008. The long-term plan is for the centre to become a self-sustained foundation with the objective of developing the capabilities and skills of Nigerian companies.

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<p><b>Rosario Jacinto</b> INTSOK Oil and Gas Advisor, Angola</p>	
<p><b>Per Hagen</b> Regional Director, Mexico, Nigeria, Malaysia and Indonesia</p>	



Participants at the Stranded Gas Seminar in Indonesia, organized by INTSOK in cooperation with BPMIGAS, PETRAD and CCOP held at Yogyakarta. Photo: INTSOK

## ASIAN COUNTRIES MOVING INTO DEEP WATERS

*New discoveries in deep waters have stimulated the oil and gas sector in India, Indonesia and Malaysia. Natural gas is also a priority in these countries. The three national oil companies, ONGC, Pertamina and Petronas, as well as many private sector companies, are interested in developing relations with Norwegian technology companies. INTSOK has therefore maintained a close dialogue with relevant partners in the three countries with support from local advisors in India and Malaysia.*

ONGC and Petronas are well established in international markets and Pertamina's aim is to grow its international presence.

In Indonesia, the INTSOK agenda in 2009 has covered deepwater development and stranded gas reserves. A seminar was hosted together with Petrad, CCOP and BPMIGAS in Yogyakarta where Norwegian financial institutions have contributed to the seminars by presenting potential financial solutions. INTSOK hosted another seminar in Jakarta together with the Norwegian Embassy and the Indonesian regulator, BPMIGAS, where INTSOK partners presented their technologies, including floating LNG solutions.

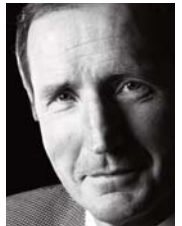
**Gulbrand Wangen**  
Managing Director and  
Regional Director, India and Venezuela



**Tejas Sharma**  
INTSOK Oil and Gas Advisor, India



**Per Hagen**  
Regional Director,  
Mexico, Nigeria, Malaysia and Indonesia



**Tuan Hai Ewe**  
INTSOK Oil and Gas Advisor, Malaysia





Norwegian Minister of Foreign Affairs at INTSOK's Kazakhstan - Norway Energy Seminar, which was held in connection with the official opening of the Royal Norwegian Embassy for Central Asia in Astana. Photo: Statoil

## EXPANDING THE TIES TO KAZAKHSTAN

*Kazakhstan is emerging as a major international oil and gas producer. Norway will strengthen its relationship with Kazakhstan further as a result of the new Norwegian embassy in Astana, opened by HRH Crown Prince Haakon and the Norwegian Foreign Minister in early 2010. The Crown Prince also addressed the government-industry seminar on local content hosted by the Norwegian Embassy and INTSOK in connection with the Embassy opening.*

Kazakhstan's oil production is expected to grow from approximately 1.5 million barrels per day in 2010 to 4 million in 2030. A major share of the new production will come from the Kashagan discovery in the shallow waters in the North Caspian. The field is one of the largest oil discoveries in the world in recent years and will dominate Kazakh oil and gas investments in the years to come. The ambition

here is also to expand production at the two other large fields, Karachaganak and Tengiz. New projects are also under way in the Caspian Sea.

Several INTSOK partners are involved in the large oil and gas projects in the country, with Aker Solutions being the most active. INTSOK has been organising a "Norwegian Day" during the large KIOGE Oil and Gas Conference in the last few years. The 2009 event focused on the development of partnership as a means for local content, which is a high priority issue in the country. Kazakhstan is keen to learn from Norwegian experience in developing a highly competitive petroleum cluster.

INTSOK is also monitoring development in Azerbaijan and Turkmenistan with the ambition of supporting the Norwegian petroleum cluster in future projects.



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Regional Director, Angola, Kazakhstan and Caspian Region



**Aidyn Tumyshev**  
INTSOK Oil and Gas Advisor, Kazakhstan





*Pemex delegation visiting Norway in June 2009. INTSOK together with PEMEX, composed a comprehensive visiting program covering a large number of leading contractors, service companies, suppliers and research institutes. Photo: INTSOK*

## MEXICO – HOPING FOR DEEPWATER SUCCESS

*Mexico's oil production has continued to decline and the national oil company, Pemex, is expanding its exploration efforts to stop further fall in production. Deepwater prospects have moved up on the agenda. So far Pemex has made two deepwater discoveries that may be developed, one heavy oil discovery and one gas field. Most of the exploration wells have not discovered commercial volumes.*

Pemex is currently evaluating schemes for working more closely with experienced international oil companies and contractors with deepwater competence and technologies.

INTSOK has developed good relations with Pemex over the last few years. The 2009 visit by the Norwegian Crown Prince and Crown Princess and the Minister of Petroleum and Energy offered new opportunities to deepen this relationship. The visit was also used to emphasize the Norwegian petroleum cluster's strong deepwater technology position and experience. The theme for a Pemex – INTSOK seminar during the official visit was "National Content and Technology Cooperation." Another workshop addressed the development of deepwater gas fields with long tie-back solutions to shore.

Several leading Pemex officials involved in their deepwater team visited Norway to meet with key INTSOK partners as a follow up. They gained insight into the Norwegian experience of developing offshore fields with subsea equipment linked to an onshore terminal, which was the "subsea to beach solution" used in the Snøhvit and Ormen Lange gas developments.

Several Norwegian suppliers are well established in the market. BW Offshore has won the contract to operate the FPSO producing the Ku-Maloob-Zaap field. The field has become the leading producing field in the country, delivering around 800,000 barrels per day.



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Regional Director,  
Mexico, Nigeria, Malaysia and Indonesia



**Sergio Rivas Farias**  
INTSOK Oil and Gas Advisor, Mexico



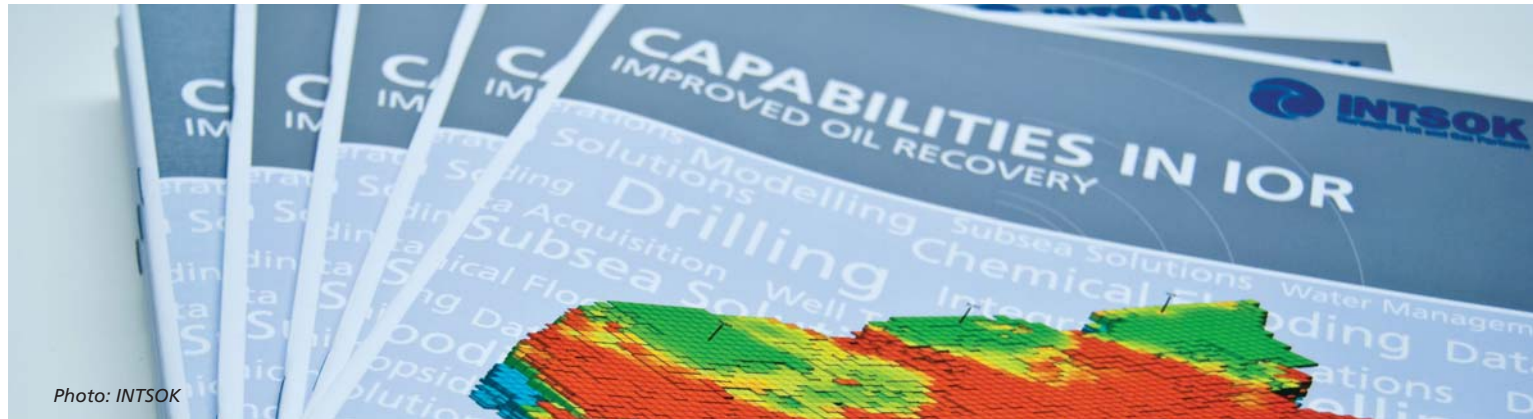


Photo: INTSOK

## HIGHLIGHTING PARTNER CAPABILITIES – INCREASED FOCUS ON IOR

*The Norwegian petroleum cluster is expanding into global markets with advanced and cost effective technologies, delivering front edge reservoir and seismic technologies, drilling equipment, subsea technology, floating production, offshore supply services, multiphase flow solutions, technologies for cleaner production and new ways to improve oil recovery.*

The Norwegian Government has high ambitions for a high level of oil recovery on the NCS, with a target of 55%. Most of the oil in a typical field remains in the ground after cessation. Many countries and companies have launched initiatives to recover more of the resources in the ground.

INTSOK partners supply equipment and services within all technical disciplines related to improved oil recovery (IOR). Many have developed unique technologies. Improved oil recovery is defined by INTSOK as “all measures that can increase or accelerate the oil recovery of a field”.

The IOR catalogue describes INTSOK partners’ capabilities in a range of areas which can add to improved oil recovery. Close to 50 partners are represented in the catalogue, offering technologies, capabilities and competences that can add substantial value far beyond the fields on the Norwegian Continental Shelf.

The IOR catalogue can be downloaded at <http://www.intsok.com/>.

Strict regulations have forced the industry to develop operational practices which reduce the environmental impact of the activities. INTSOK is now developing a new catalogue to present the industry’s capabilities within the cleaner production segment.

The Norwegian petroleum industry has long worked to reduce its carbon emissions, and a number of measures have been implemented. Motivated in part by the carbon tax introduced in 1991, emissions per unit produced on the NCS have been cut by 9% from 1990-2006.

Norway’s petroleum sector is the most carbon-efficient in the world. Greenhouse gas emissions vary widely around the globe. The average for various regions ranges from nine to 39 kilograms per barrel of oil equivalent. Norway emerges very well from such a comparison, with an average of about nine kilograms.

The cleaning of produced water has also been a priority on the NCS. Today, the average concentration of oil is 2.5 ppm, far below the government regulation of 30 ppm.

The Government has also required the dramatic reductions of emissions of dangerous chemicals. The oil industry has been able to deliver a 99% drop in the use of dangerous chemicals during the last decade as a result of the Government’s “no hazardous emission” policy. The industry is facing special environmental regulations in areas of special interest to the fishing industry. The oil and the fishing industries have been able to operate in the same areas throughout 40 years without any major incidents. Norway has also developed an advanced contingency system to reduce the impact of any oil spill. The risks of environmental damage are greater from the shipping activities along the Norwegian coastline than it is from the petroleum activities offshore.



Photo: G.Cardinal/Wikimedia

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Greater Stavanger Economic Development  
Grenland Group ASA  
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## PROMOTING NORWEGIAN OIL AND GAS CAPABILITIES IN INTERNATIONAL MARKETS

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