



**INTSOK Annual Report 2004**

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**Front page picture:** Northern Lights from Norway (Photo: Scanpix)

# Internationalisation activities by the Norwegian petroleum cluster



The strategy of the Norwegian Oil and Gas Industry is to grow an international business. Despite tough international competition, the Norwegian industry has achieved several break-throughs in international markets.

INTSOK has expanded its agenda again in 2004 to support the petroleum cluster in international markets – and we will continue to provide opportunities for our partners to meet key clients. The first ever US Norway Oil and Gas Industry Summit in Houston in 2005 is just one example.

We have strengthened our dialogue with Russian companies during the last twelve months – and we will continue build the relationship with Russia in 2005.

China has been launched as a new main market for the Norwegian petroleum cluster and our commitment was confirmed by the visit of the Norwegian Minister of Petroleum and Energy to China in early 2005.

West Africa has become an important market place for the Norwegian petroleum cluster, from Mauritania in the north to Angola in the south. We believe we have the potential to expand our dialogue in West Africa to ensure that the Norwegian contractors and service industry get a fair chance to bid for the opportunities in the fast expanding deepwater markets. Norwegian research institutes, training institutions and universities should be part

of our relationship building in this region. Exchange of professors and students and vocational training programs could be a new element added to our strategy for exchange of experience and transfer of knowledge.

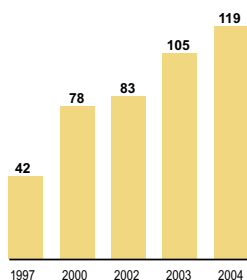
INTSOK identified a need to improve the framework for internationalisation in the “2010 study” delivered to the Minister of Petroleum and Energy – and the Top Management Forum – in February 2004. The Government has increased its support for Research and Development, one important recommendation in the study. But there is more work to be done to ensure that the Norwegian petroleum cluster can meet international competitors on a level playing field.

**Gulbrand Wangen**  
Managing Director, INTSOK

# New members and higher activity level

**INTSOK is now recognized at home and abroad as a key organisation in promoting the Norwegian petroleum cluster internationally. INTSOK's activities have expanded significantly in 2004. Fifteen companies joined as partners, bringing the total to 119 by the end of the year.**

Number of INTSOK partners



## INTSOK founders

<b>Norwegian Government</b>
Ministry of Foreign Affairs
Ministry of Petroleum Energy
Ministry of Trade and Industry
<b>Oil Companies</b>
Hydro
Statoil
<b>Professional Organisations</b>
Federation of Norwegian Manufacturing Industries
Norwegian Shipowners Association
The Norwegian Oil Industry Association

Many partners have a number of subsidiaries also working internationally. INTSOK therefore represents some 160 companies in total. The graph shows the increase in number of partners since INTSOK was founded in 1997.

## INTSOK's PRIORITY & STRENGTH

INTSOK's priority is to provide relevant market information to the partners and to communicate the capabilities of the Norwegian supply industry to key clients in overseas markets. The foundation's strength is its ability to draw upon the joint knowledge and experience among its partners. The internal network meetings have become an important venue for exchange of views and market insights among the participants. The smaller and medium-sized partners can benefit from the larger companies' experience.

The INTSOK secretariat has nine full-time employees. The organisation is based in Oslo with an office in Stavanger. INTSOK has also engaged local advisors in Angola, Brazil, Canada, Iran, Nigeria, Russia and the US. A local advisor will also be recruited in China. Their local knowledge and experience is adding significant value to the internationalisation efforts undertaken by the Norwegian petroleum cluster.

## SATISFACTION WITH SERVICES

INTSOK has done a survey of members' satisfaction with the services provided. More than 85 per cent of the partners said that they were very satisfied with the efforts made by INTSOK on behalf of the

Norwegian petroleum cluster. This is a substantial improvement from a similar survey in 2000 when 65 per cent responded positively.

## STRONG GOVERNMENT SUPPORT

The Norwegian government is actively supporting the many international initiatives, and the Ministry of Petroleum and Energy has become an integral partner in the promotion of Norwegian expertise and technology abroad. Ministers were instrumental in opening doors to key decision-makers and clients during visits to Algeria, Azerbaijan, Italy, Iran, Libya, Kazakhstan, Mexico, Nigeria, Russia and Singapore in 2004.

The Government emphasized in the 2004 White Paper on the Norwegian Oil and Gas sector that "it would actively support the internationalisation of the Norwegian oil industry, continue to develop INTSOK and Petrad, and work towards securing the Norwegian industry the same competitive terms as their international competitors". Members of Parliament (Stortinget) concluded in a similar way when they discussed the Government's White Paper in June 2004.

The Ministry has in recent years signed a number of co-operation agreements with countries of interest to the Norwegian petroleum cluster.

# Competitive technological capabilities

**Norwegian companies are involved in projects ranging from Arctic conditions in Sakhalin, North Caspian and the Barents Sea to deepwater in West-Africa, Brazil and Gulf of Mexico. The large projects tend to get the big headlines, but many good ideas developed in smaller and medium sized companies are converted into competitive products and services for the global market.**

Most of the INTSOK partners have an annual turn-over within the oil and gas sector below 10 million USD annually. Many of them supply a wide range of advanced, cost-effective and flexible quality products and services to the global market. They are innovative and quick to respond to the customers' requirements. Their international business is growing and the international contribution to turn-over is already above 50 per cent in some cases.

Aker Kvaerner is currently building two major concrete gravity-based substructures for Sakhalin Energy, operated by Shell. One is the Piitun offshore platform, the other is the Lunskoye platform. Aker Kvaerner has been able to revitalise experience and competences developed through more than 20 years of using concrete platforms on the NCS.

The two substructures are amongst the biggest structures ever built in Russia with a Russian content of about 85 per cent and a workforce of some 2000 Russians involved in their construction.

The development of the deepwater offshore fields off the coast of Angola is another example. Three Norwegian based companies, FMC Technologies, Aker Kvaerner and Vetco have secured 75-80 per cent of the subsea market based on the technologies and competences developed on the NCS.

## R&D HIGHER ON THE AGENDA

INTSOK has strengthened its focus on the R&D agenda in 2004 in close co-operation with research institutions and universities. A joint workshop was organised in Brazil together with Demo 2000 and the Pro-cap 3000 programme run by Petrobras. Norwegian and Brazilian experts explored opportunities for technology collaboration with the aim of qualifying new deepwater technologies through pilots and field trials. Norwegian research institutions are rapidly expanding their business abroad.

SINTEF, the Norwegian research institution with 1800 employees, has currently some 30 percent of its revenues from outside Norway and the international share is increasing. The institution has delivered several field development plans in Iran and is also involved in a R&D project on increased oil recovery.

SINTEF together with the Institute for Energy Technology (IFE) have developed OLGA 2000, a dynamic software tool for engineering and operation of multiphase production systems. OLGA, marketed by Scandpower, has become the market-leading simulator for transient multiphase flow in wells and pipelines used by more than 100 companies worldwide.

IFE is an internationally recognized centre of excellence in the field of internal corrosion of oil and gas pipelines as a result of a series of joint industry projects.



*Aker Kvaerner has revitalised Norwegian concrete technology to construct two concrete gravity-base structures in Sakhalin (Photo: Aker Kvaerner).*



*Subsea Technology Solutions.*

IFE's tracer technology is also widely used internationally. For instance the Institute provides tracer services on five fields in Venezuela.

Rogaland Research (RF) is recognized for its full scale Drilling and Well Centre, with testing sites, flow loops and related laboratories while the Norwegian Geotechnical Institute (NGI) has world-leading competence within geotechnics and engineering geology.

Norwegian universities in Bergen, Stavanger, Oslo and the Institute for Petroleum Technology and Applied Geophysics at the Norwegian University of Science and Technology in Trondheim (NTNU), are also expanding their international co-operation in the petroleum sector. NTNU has for example signed an agreement with National Geophysical Research Institute of India on joint 4D research. The visit by the Norwegian Minister of Petroleum and Energy, Mrs. Thorhild Widvey, to Libya resulted in an agreement for future collaboration between Sintef, NTNU and the national oil company in Libya.

#### **THE NCS LABORATORY**

The Norwegian Continental Shelf has for 30 years been a laboratory for developing new cost effective solutions and technologies. Research and development has been important in order to reduce costs, increase recovery and secure sound environmental solutions.

The major factors in building industrial competitiveness in the Norwegian oil and gas sector have been development of several world-class oil and gas fields and pioneering technological projects, world-class maritime knowledge, innovative and risk-willing firms, large R&D investments and strong quality and price competition.

The partnering between the oil companies, Norwegian as well as international, the supply and service industry, the research institutions and academia has made Norway one of the most fertile environments for technological development. Access to superb engineers and strong project teams has enabled the Norwegian oil industry to deliver on time, on quality and on cost.

# Expanding activities in key markets

**INTSOK's objective is to work with its partners to expand the business activities in the international oil and gas markets. One of the organisation's main priorities is to create settings in which its partners can meet and present their products, capabilities and services to international customers, oil companies, contractors and fabricators.**

In 2004, China was upgraded to become one of INTSOK's main markets in addition to Brazil, the Gulf of Mexico, the UK Continental Shelf (UKCS), Russia, Iran, Nigeria and Angola. Local representatives are available to partners in all the main markets and will assist INTSOK partners in gaining access to business opportunities. INTSOK has also entered into agreements with experienced advisors in Mexico and Canada.

INTSOK is monitoring developments of projects in the Caspian, North Africa, Iraq and Venezuela. Updated information is provided on 50 international projects and presented on the INTSOK web.

## **RUSSIA OF GROWING INTEREST**

Efforts aimed at the Russian market and the Russian oil and gas companies have been intensified. Norwegian companies could have a competitive advantage in the future developments in the Barents Sea, where the giant Russian Shtokman gas field could be one of the world's largest offshore development projects ever and a project that will require technology at the front edge.

An increasing number of INTSOK partners are active in the Russian oil and gas sector. The development of the Prirazlomnoye field in the Pechora Sea in the north, by the Russian operator Sevmorneftegaz, has led to contracts for companies such as Tromsø Skipsverft, Maritime Pusnes, Maritime Hydraulics, Glamox, Siemens and Autronica.

INTSOK has hosted seminars, workshops and match-making events where Russian oil specialists have been able to interact with their Norwegian counterparts. More than 230 people attended an offshore seminar in Moscow in January 2004, most of them Russian participants.

INTSOK has also hosted visits to Stavanger by Russian oil managers and specialists, such as the visit from the Lukoil drilling companies, where they were introduced to Norwegian companies and technologies. Norwegian companies also visited Lukoil in Volgograd to get insights into Lukoil's plans for the Korchagin field.

The development of the giant Kashagan field in the North Caspian has led to increased interest among INTSOK partners for business opportunities in Kazakhstan. The Norwegian Prime Minister, Mr. Kjell-Magne Bondevik visited Astana in May 2004 and the Kazakh Minister of Energy and Mines, Mr. Vladimir Shkolnik, attended the ONS event in Stavanger in August.

The Italian oil company ENI is operator for the project, one of the largest offshore projects in the world, which ENI has presented to INTSOK partners on a number of occasions in Milan, London and Stavanger.

## **MEETING THE CLIENTS**

INTSOK organised business missions to Houston, Aberdeen, London, Paris, Milan, Mexico, China and Australia in 2004. The



*The Norwegian Prime Minister, Kjell Magne Bondevik, and the Kazakh Minister of Energy, Vladimir Shkolnik (right), met both in Kazakhstan and Norway in 2004 as the links between the two countries were strengthened.*

## China – a new prime market

The emergence of China as a new prime market for INTSOK is a result of the expanding offshore market in the country and China's ambition to increase domestic oil and gas production.

The country has increased imports of oil by 400 per cent in just four years, making the country the second largest importer and consumer of oil after the USA. The Chinese oil companies

have ambitious plans for expanding offshore production, especially in the Bohai Bai and in deep water offshore East China and in the South China Sea.

Chinese oil companies are also accessing many of the international markets of interest to the Norwegian petroleum cluster. More than 300 people from the Chinese oil industry met the Norwegian companies in the first business mission to China, and

themes like Norwegian deepwater technology and enhanced oil recovery experience have been of special interest to the Chinese oil community.

One example of the new business relations is the agreement between Atlantis Deepwater Technology Holding and China Oilfield Services Ltd. The two companies have signed a Letter Of Intent for use of Atlantis deepwater technology in the upcoming China deepwater programme.

missions were well attended by INTSOK partners and well received by the oil companies and contractors they met.

The "Houston Week" has become a tradition and is now one of the most important events in the INTSOK calendar. The theme for the 2004 conference was "Gas – the fuel of the Century", with a special focus on LNG. The conference attracted a high quality audience. The event was organised for the sixth time and major customers like ExxonMobil, ChevronTexaco, Shell and Marathon took active part in the workshops.

The activities enabled partners to present their companies, products and services to clients and potential clients.

### THE UK-NORWAY SHARE FAIR

The "The UK-Norway Share Fair" initiative was launched in 2003. The two events in 2004 – jointly organised with Trade Partners UK – showed that the Share Fair has been welcomed by the industry and it has grown in importance as a meeting place on both sides of the North Sea. The UK represents some 25 per cent of the total international revenues for Norwegian

based suppliers, and around half of these companies consider the UK to be their most important market.

The cross-border co-operation has been strengthened significantly in recent years and the new treaty will further stimulate developments in the border corridor. A mentor programme for small and medium-sized companies in the UK and Norway also began in 2004 and is another reflection of the willingness to share experience across borders.

### GOOD RELATIONSHIPS ARE CRUCIAL

The Norwegian oil and gas industry depends on good relations, with national governments and the national oil companies – who are key clients. The Norwegian experience is of interest to many countries. Many governments – and national oil companies – would like to learn from the way we developed an advanced and competitive industry, but we are up against tough competitors from countries, offering more credits, export guarantees, market support – and political support. Building relations with ministries and national oil companies is becoming increasingly important as the market op-



*ONS attracted delegations from several of INTSOK's markets and provided an opportunity for exchange of experience and strengthening of relationships.*



opportunities expand in West-Africa, Latin America, Middle East, China, Russia and the Caspian.

The Iran-Norwegian relationship is a good example of how the dialogue between governments is providing an excellent basis for INTSOK partners to build business links to the Iranian national oil company and the Iranian oil industry. The Iranian Deputy Oil Minister, Mr. Nejad Hosseinian, has involved himself directly in the dialogue with the Norwegian oil industry.

In Nigeria the MoU, which was signed in 2000, has led to development of closer ties between the key players in both countries. The visits to Nigeria by the Norwegian Minister of Energy, Mr. Einar Steensnæs, and to Stavanger by the Presidential advisor on oil, Dr. Edmund M. Daukoru, provided opportunities to strengthen the relationships. An agree-

ment on institutional co-operation between the Department of Petroleum Resources (DPR) and the Norwegian Petroleum Directorate was signed in 2004.

Venezuela has looked closely at the Norwegian experience in building a private oil and gas sector. A joint seminar was held with Camera Petrolera and PDVSA in Stavanger in October. The representatives from Venezuela expressed a clear wish for more Norwegian companies to engage in the development of the petroleum sector in Venezuela.

More than 50 people from 30 Norwegian companies joined the business mission to Mexico. "Mexican offshore challenges and relevant experience from the NCS" was the key theme during the event. Mexico has ambitious plans for new investments in the offshore sector and Norwegian experience is relevant for the forthcoming developments.



*Iran's Deputy Oil Minister Nejad Hosseinian (left) talking to Statoil's Ole Johan Lydersen and the Norwegian Ambassador to Tehran, Ole Kristian Holthe.*

## ONS 2004 – a resounding success

ONS 2004 was a record show with more than 33000 visitors. The event organised in Stavanger every second year is the most important meeting place in the oil and gas sector in Europe. ONS attracts high-level visitors and exhibitors from all corners of the world.

INTSOK and its partners invited some 170 clients from Algeria, Angola, Nigeria, Iran, Kazakhstan, Russia, Brazil, Mexico and Venezuela to Stavanger to meet Norwegian companies and get first-hand insights into the

latest technologies developed by Norwegian companies. The members of the delegations got a good understanding of the capabilities and experience of the Norwegian petroleum industry.

INTSOK's International Oil and Gas Business Day was included in the programme. The event was opened by the Norwegian Minister for Petroleum and Energy, Mrs. Thorhild Widvey. The key note addresses were delivered by Mr. Helge Lund, President and CEO of Statoil, and Mr. Tore Torvund, Executive Vice President of Hydro.



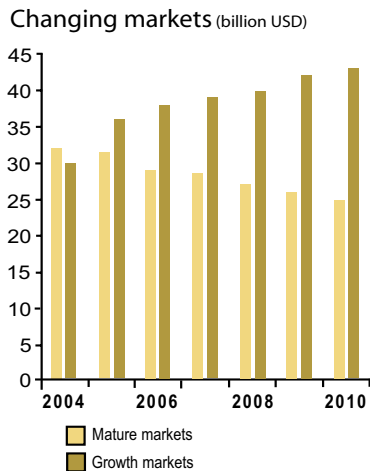
*Thorhild Widvey, Norwegian Minister for Petroleum and Energy.*



*Venezuela's Deputy Oil Minister Luis Vierma (right) talking to INTSOK's Willy Olsen.*

# A growing international market

2004 was a particularly eventful year with oil prices at historic high levels. The growth in demand stretched the world's oil infrastructure to unexpected extremes.



The result of the demand growth is a need for sustained high levels of investment in infrastructure and new oil and gas production. Partly in response to this heightened price, the industry has begun to increase its spending on exploration and production.

## MEDIUM TERM OUTLOOK

The International Energy Agency suggests in its medium-term outlook that by 2015 world oil demand will have risen by over 15 million barrels per day from the current mark of 82 million barrels per day. The IEA's view is that there will be three principal exporting regions – the Persian Gulf states led by Saudi Arabia, Iran and Iraq; West-Africa and Russia. Between them those three regions will provide almost 80 per cent of daily oil exports by 2015. The IEA's forecasts match the consensus of views across the industry.

In addition, international gas demand will grow even faster and LNG trade will increase substantially in the years to come.

INTSOK's market focus reflects very much the trend described by IEA, and by the annual markets assessment made by Douglas-Westwood.

The annual review of the global offshore market developed for INTSOK expects to see increasing levels of expenditure in the offshore oil and gas throughout the period 2005-2008.

The Norwegian oil industry is however faced with a situation where its main markets, the Norwegian Continental Shelf, the UKCS and the Gulf of Mexico – the more mature markets – will gradually decline in the next decade. The UKCS is the most mature and investment levels are expected to decline substantially even though the oil price may bring forward projects previously seen as uneconomic.

## GROWTH MARKETS

The graph to the left shows a scenario for market developments to 2010 in billion US dollars. The growth markets represented in the figure are the investments planned in Nigeria, Angola, Russia, the Caspian, Iran, Brazil, Venezuela and Mexico.

International markets represented close to 40 per cent of total turnover in the Norwegian supply and service industry in 2003, according to the latest study review by the Norwegian Institute for Research in Economics and Business Administration (SNF) on behalf of the Ministry of Petroleum and Energy.

# International achievements

**The Norwegian suppliers and service companies have demonstrated their competitiveness in international markets in recent years and have succeeded in winning a number of major international contracts. Many of these contracts are a result of an excellent track record from projects on the NCS.**

One of the major successes last year was the Aker Kvaerner contract for fabrication, outfitting and testing of seven barges for oil production in the giant Kashagan oilfield in the north Caspian Sea, offshore Kazakhstan.

Another success was the contract that was signed between Bergesen d.y. Offshore Group and the Australian oil company Woodside for the operation of "Berge Helene" as a FPSO on the Chinguetti Field, offshore Mauritania. Some 60-70 per cent of the project budget will be spent in Norway. A large number of Norwegian companies are involved in the project, which is the first development in Mauritania in West Africa, in 750 meters of water depth. Among the Norwegian companies involved are Vetco, APL, Framo Engineering, FMC Technologies, ABB and Smedvig.

## MARKETS' SHARE OF TURNOVER

The UKCS and the Gulf of Mexico are still the most important market places for the Norwegian service- and supply industry, but an increasing share of the sales is to markets in Southeast Asia and Australia, West Africa and Latin America, according to the study by SNF.

Norwegian companies have during the last year consolidated their market positions in many of the most exciting oil and gas provinces in the world. Aker Kvaerner's major fabrication contracts in

Sakhalin have also resulted in contracts for a number of other Norwegian companies. York Novenco won its biggest contract ever in the Shell-operated projects in Sakhalin, consisting of design and manufacture of approximately 30 very large containerized Air Handling Units, in stainless steel.

## THE SUBSEA INDUSTRY

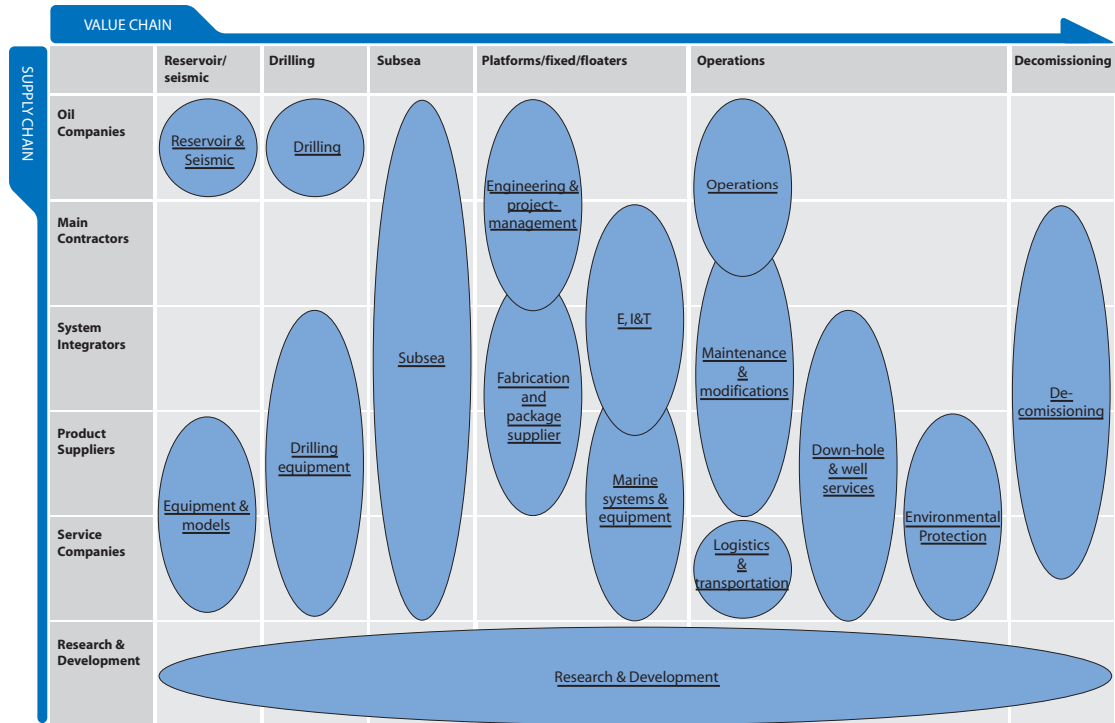
The Norwegian subsea cluster continues to win major contracts in West Africa, Gulf of Mexico and Australia. The sub-sea industry has a leading position internationally with close to 80 per cent market share. The skills, experience and technology are constantly expanding due to complex projects like Snøhvit in the Barents Sea, Ormen Lange in the Norwegian Sea and deepwater projects in Gulf of Mexico, Angola and Nigeria.

FMC Technologies is expanding its sub-sea manufacturing and service capabilities in Angola. The company has signed contracts with Total to supply subsea systems and technical services related to installation and start-up of the Rosa project offshore Angola. FMC Technologies has also been chosen to supply subsea systems and related services for the BP-operated Greater Plutonio Project in Block 18, offshore Angola.

Other Norwegian companies are involved as subcontractors to the subsea developments in Angola. CorrOcean will for



*The Berge Helene has been converted to a FPSO and will be used on the Chinguetti field, offshore Mauritania (Photo: Bergesen d.y.).*



**Cluster Map – A gateway to the Norwegian Oil and Gas Industry:**

Norway has developed world-class clusters in the petroleum sector. This cluster map illustrates the strengths and capabilities of the industry along the value chain and supply chain. An interactive cluster map can be found at [www.intsok.com](http://www.intsok.com).

example install systems to monitor corrosion in the subsea flowlines on the Plutonio project. CorrOcean has expended considerable effort over the last two years to re-design and qualify its systems for deepwater applications to 3000 meters.

Aker Kvaerner is also winning contracts in the subsea sector. The company has launched a new supply-chain model in the subsea sector which has enabled the company to deliver subsea systems with a shorter lead-time and at more competitive pricing than previously possible. They were chosen by Dominion Exploration & Production, Inc. to provide the production control system and steel tube umbilical for its Triton/Gold finger tieback project in the Gulf of Mexico. Aker Kvaerner is also delivering subsea equipment to Amerada

Hess for a subsea tieback development in the same region.

Another example of the technological subsea solutions developed in the Norwegian petroleum cluster is provided by Framo Engineering AS who has been awarded the contract to supply the world's first subsea Multiport Selector Manifold for the Kerr-McGee Gryphon field in the UK sector of the North Sea.

**THE DRILLING CLUSTER**

The drilling cluster is increasingly exploring business opportunities internationally as a response to the decreasing market on the NCS. Smedvig has moved into the ultra deep league of dual drilling. Operating two of the world's most advanced new generation drilling vessels for deep water

# The LNG market

The LNG market is fast growing and Norwegian companies, shipping companies, technology companies and engineering companies are well positioned for the growth in LNG investments and trade. The costs in the LNG-chain have come down significantly over the last decade and the trend continues, leading to high growth for the LNG industry.

The Norwegian expertise in the LNG sector was the key theme for a business mission to Australia and a seminar in Singapore

organised during the official visit of King Harald V to Singapore last year. Kongsberg Maritime is among the many Norwegian companies targeting the LNG market. The company has supplied automation and steering systems to a total of 59 LNG carriers.

The first offshore concrete LNG terminals in the world are also under way. Aker Kvaerner was awarded the contract to conduct detailed design and planning activities for a project in the North Adriatic Sea.

Offshore LNG receiving terminals can also become a market for other technologies developed on the NCS. The Submerged Turret Loading Buoy System, which is well

proven for Offshore Loading of Crude Oil, is now developed for regas LNG by APL. Remora Technology, with the financial support of ConocoPhillips, has developed the unique HiLoad LNG Regasification Terminal as an innovative and environmentally friendly solution to effectively connect to and import LNG as natural gas from any LNG carrier.

Aker Kvaerner, Linde and Statoil entered a three-year LNG Technology Alliance with the objective to develop cost-effective technology and solutions for the offshore production, storage and offloading of liquefied natural gas (LNG), thus enabling the exploitation of larger gas fields in remote areas.

represents a leap into the new world of deepwater exploration and production drilling.

The drillship West Navigator and the semi-submersible West Venture are designed to operate in water depth of 2500 and 2000 meters respectively. West Navigator has been drilling in water depths up to 1920 meters in a harsh environment and is currently involved in the extensive drilling programme implemented by Woodside on the Chinguetti field.

Norwegian-based companies also continue to have a major share of the international drilling equipment market. Maritime Hydraulics has become the leading supplier of drilling packages and modules for the large BP-operated projects in Azerbaijan, delivering to three platforms, whilst Nymo is responsible for the drilling module for the Shah Deniz gas development project in Azerbaijan.

## THE GROWING MMO MARKET

The market for maintenance, modifications and operations (MMO) is growing

fast. Over the 2005-2008 period MMO will form the largest principal INTSOK market segment, valued at a total of approximately USD 102 billion. It is also a long-term sustainable market, but requires local knowledge and presence.

Vetco is well-positioned in a number of the growing markets globally and has entered into various contracts with national oil companies and international oil companies in Brazil, West-Africa, Australia, Egypt, Iran and Kazakhstan. Norwegian competitiveness is rooted in the effective implementation models and the systems and philosophies developed through long-term contracts on the NCS.

Aker Kvaerner group launched its ambitious plan to extend the operational life of four North Sea oil fields in 2004. The UK Health and Safety Executive accepted Aker Kvaerner Operations as Duty Holder of the Amerada Hess/Talisman-owned platform and the company took on the management responsibility for the installation's day-to-day operations.



*Norwegian-based companies also continue to have a major share of the international drilling equipment market (Photo: Maritime Hydraulics).*

## NICHE TECHNOLOGIES

A large number of small and medium-sized Norwegian companies with niche products and technologies are breaking into international markets.

ClampOn has won a contract to supply non-intrusive Ultrasonic Subsea Sensors to the new BritSat project in the UK and will supply deepwater particle monitors for the Atlantis project in the Gulf of Mexico. Another illustration is Epcon Offshore who has seen its international break-through in 2004 with its new produced water treatment system.

The company has been successful in a number of markets, including Brazil where the equipment will be used on the Garoupa platform.

Another example, Plugging Specialists International – PSI – is a Norwegian company specializing in remote-controlled pipeline isolation systems. It is a service company where the performance of pipeline isolation operations is the core activity. The PSI SmartPlug is the first field-proven Remote Controlled (tether-less) Pipeline Isolation system in the world.

Rapp Bomek in Bodø, Northern Norway, has also built a strong market position, especially in West-Africa, and is now entering Brazil. The company has delivered some 700 fireproof doors to floating production platforms offshore Angola and Nigeria from its location in the far north.

Reslink is another specialist technology company growing its international business substantially. Some 70 per cent of the company's turnover is currently in international markets. Shell is using Reslink's sand screens in Western Nigeria.

Norwegian companies have won a substantial share of the contracts awarded for the BP-operated Clair project on the UKCS. Aker Verdøl is delivering the jacket and piles whilst the living quarters and

utility building contract was awarded to Leirvik Module Technology A/S.

## OIL COMPANIES EXPANDING

The two Norwegian oil companies, Statoil and Hydro, are expanding their international activities substantially. Both companies have diversified opportunities in profitable growth portfolios in Angola where they are participating in several key projects. Both Hydro and Statoil are looking to Russia for future growth and have signed co-operation agreements with Gazprom for the development of the giant Shtokman field in the Barents Sea.

Statoil's international E&P operations are an important platform for the group's growth ambitions in the years ahead. The company sanctioned development of the large Aghbami field in Nigeria in 2004. In Azerbaijan, Statoil is involved in the development of the Azeri-Chirag-Guneshli fields, the Shah Deniz gas projects and the export pipelines for oil and gas from Azerbaijan. In Iran the development of the Statoil-operated South Pars field's phases VI-VIII is well underway.

Statoil has also acquired an interest in the In Salah and In Amenas gas projects in Algeria. In Venezuela, the company has begun exploring the Plataforma Deltana licence. Future exploration will also take place in the Gulf of Mexico, the Middle East and the Caspian region.

Hydro is preparing to explore in the Safi Basin, off the coast of Morocco and has bought into an exploration license in the Majunga basin offshore Madagascar. Hydro has been engaged in Libya for several years and is producing onshore fields in Murzuq and Mabruk. Hydro also started a new drilling operation in 2004 on the Anaran field in Iran. Hydro has been awarded the operatorship for the Telemark field in the Gulf of Mexico to explore and develop the field at 1300 meters of water depth.



*Statoil is involved in the construction of the large export pipeline for crude oil from Baku in the Caspian to Ceyhan in the Mediterranean. The BTC pipeline will be able to transport more than one billion barrels of crude oil daily to world markets and will be operational in 2005. (Photo: Statoil)*



*The developments of the deep-water offshore potential in Angola are providing an increasing number of jobs for Angolans. (Photo: Hydro)*

# Training initiatives in key markets

**Transforming the oil and gas wealth into economic growth, reducing poverty and corruption is a challenge in several of INTSOK's markets. Many governments are looking for ways to maximise the benefits from the oil and gas activities. They are not only looking for oil revenues, but want to create employment and build a competent and capable local industry.**

In West-Africa, Latin America, the Middle East and the former Soviet Union foreign companies are asked to meet ever-more-stringent targets for local content and legislation is put in place to ensure that the host countries secure their share of the value creation.

The Norwegian experience in developing a strong petroleum cluster is attracting interest. INTSOK has led training projects that have been welcomed by the governments, national oil companies and the oil industry in several countries. Through workshops and seminars INTSOK is developing relations and contributing to the transfer of knowledge, technology and experience to the oil sector in co-operating countries. INTSOK works closely with Petrad, the Norwegian institution established to support training initiatives internationally. The organisation runs programmes that cover the key elements of petroleum sector management from policy formulation, through exploration, development and production to abandonment and clean-up.

Many INTSOK partners have also initiated major training programmes for local staff as part of their business activities in West-Africa, Iran and the Caspian.

One successful project, "Train the Trainers", aimed at subsea technology and installation, was finalised in 2004. FMC Technologies, Vetco, Aker Kvaerner, INTSOK and NORAD have sponsored

a major subsea training course for the National Petroleum Institute in Angola. Teachers from the Institute took an extensive training course in Norway before they began teaching Angolan students. The first 30 students graduated in 2004 and found jobs in the Norwegian companies. This is an excellent result for a project that was initiated only in June 2002.

In Nigeria, INTSOK has developed a project with the objective of enhancing the fabrication capabilities of the local oil and gas industry. More than 50 companies have been screened and almost a dozen Nigerian companies may be invited to participate. The project has been funded by NORAD and the Norwegian Ministry of Petroleum in the initial project phase. Several INTSOK partners, like Nymo, NLI Alfred Andersen and DNV, have been involved in the project together with Nigerian counterparts. The project will include a module-based training and consultancy-support programme covering elements such as: Quality Management, Health, Safety, Environment and Fabrication Methodologies.

Training has also been a key component in developing relationships with Kazakhstan. The Norwegian Ministry of Foreign Affairs has financed a pre-study of the vocational education system. INTSOK is working closely with Rogaland Training & Education Centre, Petrad and the University in Stavanger to move the vocational education project forward.



*Rogaland Training and Education Centre is involved in training programmes in Kazakhstan. Two of the representatives from Kazakhstan are seen together with INTSOK's Odd Instefjord (left) and Ole Imsland from Rogaland Training Centre (right).*

# Outlook

**The Norwegian petroleum industry is now making huge efforts to expand its international business activities to take advantage of the international market opportunities and solving the challenges that come with increased international competition.**



*King Harald V of Norway spoke at the first US–Norway Oil and Gas Summit in Houston in February 2005 and was presented a real Texan hat by the Mayor of Houston, Bill White (Photo: Scanpix)*

The development and deployment of new technologies will play a critical role in ensuring access to affordable and abundant energy in the future. The technologically advanced Norwegian oil and gas industry should therefore be well-placed to increase its international business in the years to come.

The industry is now increasingly focusing on the challenges in the Arctic region. The challenges in the Arctic will be high on the agenda in the international oil industry for decades to come and INTSOK therefore made Oil and Gas Developments in Arctic and Cold Regions the theme for the first-ever US-Norway Oil and Gas Industry Summit in Houston March 2, 2005. The Norwegian petroleum cluster is actively involved in finding technological solutions that will enable the industry to exploit these resources in a profitable, safe and environmentally sound manner.

Norwegian competence is in demand, not only for goods and services, but also for sophisticated petroleum administration and management skills and the other strengths of the Norwegian petroleum community.

In the 2010 study presented to the Minister of Petroleum and Energy in 2004, the INTSOK's Board recommended improvements that would strengthen the competitiveness of the Norwegian petroleum cluster and enable the Norwegian companies to enjoy the same support as companies from other countries.

The Board proposed improvements in the financial sector, more support for technology developments aimed at international markets and strengthened market support. Some progress has been made, especially in the financing of research and development. The ability and willingness to apply new technologies will continue to be a driving force in further development of the Norwegian petroleum cluster.

More should however be done to provide the Norwegian petroleum community with the same conditions as the competitors enjoy. INTSOK will work closely with Innovation Norway, relevant ministries and research institutions to ensure that the companies can access competitive terms as they expand internationally.

INTSOK will continue to focus its attention on markets where the Norwegian oil and gas industry has a competitive edge and will intensify marketing efforts towards the large oil companies and contractors as well as the national oil companies.



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AC Marine  
Air Products AS  
Aker Kværner ASA  
Alustar  
Amitec AS  
Anzett AS  
APL AS  
Atlantis Deepwater Technology  
Autronica Fire and Security AS,  
Div. Oil and Gas  
B.A. Wahl Invest AS  
Barlindhaug Consult AS  
Blom Maritime AS  
Bredero Shaw Norway AS  
ClampOn AS  
CorrOcean ASA  
Det Norske Veritas (DNV)  
Draka Norsk Kabel AS  
Drilling Support Systems AS  
dsc Engineering  
Easy Well Solutions  
Eide Marine Tech AS  
Eksportfinans ASA  
Electromagnetic Geoservices (EMGS)  
Envira Ltd  
Epcon Offshore AS  
Fabcon Management AS  
Fire Protection Engineering AS  
Fjord Engineering AS  
FMC Technologies AS  
FMC Kongsberg Metering AS  
FORCE Technology Norway AS  
Framo Engineering AS  
Frank Mohn Flatøy AS  
Fugro Oceanor  
GANN Mekaniske AS  
Glamox International  
Grenland Offshore  
GS-Hydro Norge AS  
Hartmark Consulting AS  
Helifuel AS  
Hitec Framnæs AS  
Holta & Haaland AS  
Hydro Oil & Energy  
IKM Testing AS  
Institute for Energy Technology (IFE)  
Imenco Engineering AS

Ipres Norway AS  
ITC AS  
JM Consult AS  
Kaefer IKM AS  
Kongsberg Maritime AS  
Leif Höegh & Co  
Leirvik Module Technology AS  
LMG Marin  
Management & Finance AS  
Marine Forecasting Centre  
Marintek  
Minox Technology AS  
MPU Enterprise AS  
Multiconsult AS  
Nexans Norway  
NLI Alfred Andersen AS  
Norconsult International AS  
NORSAFE AS  
Norsea AS  
Norse Cutting & Abandonment AS  
(NCA)  
Norwegian Geotechnical Institute (NGI)  
Nutec Crisis Management AS  
AS Nymo  
Odfjell Well Services AS  
Offshore & Marine ASA  
ONS (Offshore Northern Seas)  
Peder Halvorsen Industrier AS  
Petrolink AS  
Plugging Specialists International AS  
(PSI)  
Production Technology Integrated AS  
(PTI)  
Proserv Group  
Pro-Vision  
R&M Industrier  
Rapp Bomek AS  
Read Group AS  
Reinertsen Engineering AS  
Remora Technology  
ResLab, Reservoir Laboratories AS  
Reslink AS  
Rogaland Research  
Rogaland Training and Education  
Center  
Safetec Nordic AS  
Safran Software Solutions AS

Sandvik GRAM as  
Scandpower Petroleum Technology AS  
Scandpower Risk Management  
Scan Mudring AS  
ScanRope Subsea Cables AS  
Schindler Stahl Heiser AS  
SeaFlex AS  
SeaMeatric International AS  
SICOM AS  
Siemens AS, Oil and Gas  
Simon Møkster Shipping AS  
SINTEF Petroleumsforskning AS  
Stavanger-partner.com  
Statoil ASA  
Stolt Offshore AS  
Storvik & Co  
Sørco AS  
Technor ASA  
The Bridge Group AS  
AS Trans Construction  
Tranberg AS  
Trelleborg Viking  
Tromsø Skipsverft AS  
Uniteam International AS  
Upstream Management  
Valiant Industries AS  
Vetco  
Wilh. Wilhelmsen ASA  
YORK Novenco AS

# INTSOK board of directors



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Vice Chairman



Board Member



Board Member



Board Member



Board Member



Board Member



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Board Member



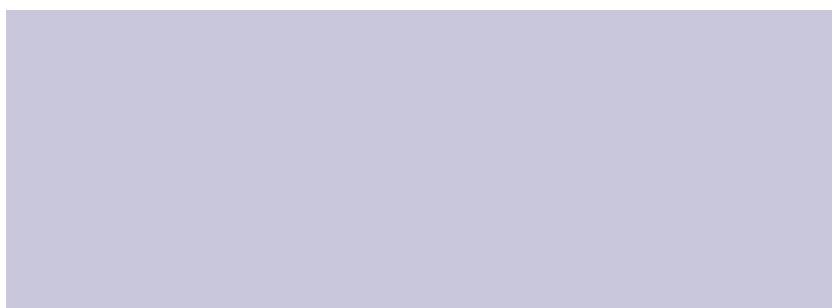
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Board Member



Board Member



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