

# Pre-exploration seismic data offers competitive advantages

**Better information means a higher probability of finding commercial quantities of hydrocarbons**



BARRY PARKER — NEW YORK

SEISMIC studies, conducted prior to offshore exploration, play an important role in the offshore chain.

Where better data equals more knowledge and a higher probability of finding commercial quantities of hydrocarbons, good seismic data offers competitive advantages and figures prominently in the execution of business strategies.

Two Norwegian-listed companies, TGS Nopco and Petroleum Geo-Services (PGS), have announced plans jointly to survey an area north of the Hibernia field, eastern Canada, acquiring two-dimensional data.

This effort, in advance of an upcoming call for bids by the Newfoundland and Labrador Petroleum Board, was being funded by industry customers.

Half a world away, Salamander Energy, a London-listed FTSE 250 company with a focus on southeast Asia, in revealing its pending acquisition of a block in the western Gulf of Thailand from Mitsui, revealed a seismic programme was waiting in the wings.



The 13,688 gt seismicographic research vessel *Ramform Sovereign*, owned by Petroleum Geo-Services.

Harald Valderhaug/Aker Yards

Salamander's announcement, describing its 'farm-in' of the block adjacent to existing holdings, said a "major programme of 3D seismic in the second half of 2011 will be followed by a multiple well exploration programme".

Uruguay is using seismic surveys to entice exploration of its offshore region. The pitch from a top executive at ANCAP, the national oil company, included a reminder to potential participants in a round of bidding to be held this week: "We've advanced with studies on the existence of hydrocarbons, we've covered another 6,000 sq km with seismic and other studies."

A majority of the 15 blocks to be auctioned are in deep waters and ANCAP is quick to remind bidders of Uruguay's proximity to Brazil's pre-salt region.

The business drivers for the seismic industry are closely linked to overall exploration. Like all maritime sectors, the intersection of demand for service against equipment supply is the ultimate driver of health.

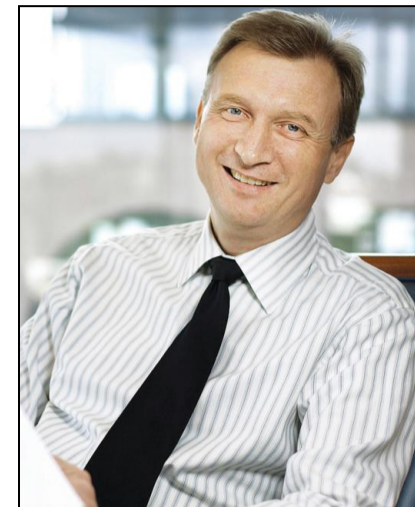
PGS chief executive Jon Erik Reinhardtsen told investors at the recent Barclays Capital Energy CEO conference: "We see a steady increase in the overall market, which has grown over the past five or six years at a rate of 10% in terms of

total square kilometres." In his presentation, he cited an expected increase this year, with the measure ratcheting up 12%-13% for 2011 over 2010 — based on continued exploration and production spending.

On the supply side, increases of 9% in 2011 and 2012 ease off, in 2013, to 4%.

Executives at Polarcus crunched the numbers slightly differently, with chief executive Rolf Ronningen telling investors at a recent conference, "15% to 20% seismic demand growth is projected" in the face of "less than 10% fleet growth".

The demand outlook varies for different regions. Mr Ronningen said:



PGS chief executive Jon Erik Reinhardtsen.

"Recent awards in Asia-Pacific are higher than current market rates."

He pointed to a normalisation of activity in the Gulf of Mexico to expectations of increased activity in Brazil and to anticipation of a strong 2012 in northwest Europe (the North Sea).

Mr Ronningen described the region as seeing "significantly higher rates than last year, with an overhang into next year".

PGS's Mr Reinhardtsen said high levels of activity have been sustained in Brazil and West Africa and the Asia Pacific region was seeing improved bid opportunities.

PGS said the high-definition 3D sector comprised about 40% of the overall market, with less cyclicity and higher margins than conventional 2D activity. ■

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Polarcus took delivery of the *Polarcus Samur* in the first quarter of 2011. Polarcus

## Vessel owners upgrade fleets to stay ahead of the game

TO STAY at the forefront in the seismic survey segment, Petroleum Geo-Services and Polarcus have been making investments in new equipment, writes Barry Parker in New York.

PGS chief executive Jon Erik Reinhardtsen said cash flow generated from operations is being ploughed back into fleet upgrades and described a conservative financial strategy.

Mr Reinhardtsen told attendees at the recent Barclays Capital Energy CEO conference: "We are now upgrading our vessels to the newest Geo-Streamer technology."

Two Generation 5 'Ramform' newbuildings will be delivered in 2013, tied to options on two vessels for 2015 delivery. A 2012 upgrade of an older vessel is planned — and an additional delivery scheduled for 2014.

Meanwhile PGS's competitor Polarcus has contracted two newbuildings, *Polarcus Amani* and *Polarcus Adira*, both classed Ice IA-super with an Ulstein X-Bow and with capacity to tow 12-14 streamers, at an aggregate contract price equating to \$168m.

Polarcus took delivery of *Polarcus*

*Selma* a month ago, following the delivery of a sistership, *Polarcus Samur*, in the first quarter 2011.

Both vessels, part of a series, were built at Drydocks World, Polarcus' largest shareholder, with a 9.15% stake and representation on the Polarcus board.

Polarcus has taken a strategic decision to focus on activities in the Arctic, with capital expenditures of \$178.7m in the first half of 2011 and with a \$410m debt facility in the works.

*Polarcus Selma*, as an Arctic-ready eight streamer 3D seismic vessel of the Ulstein SX133 design, will enter into a five-year bareboat charter to Sovcomflot at \$69,500 per day, in what chief executive Rolf Ronningen described as "the first step towards a larger strategic business alliance to serve the emergent Russian seismic market".

Another top Polarcus executive said the deal offered "unparalleled access to the Russian market and most significantly to possibly the world's last and largest oil frontier, the Arctic".

*Polarcus Selma* can tow eight streamers of 6,000 m length each, or six streamers of 8,000 m length.

PGS is looking to the Barents Sea and North Sea for improved demand for its GeoStreamer technology, where streamers are fitted with two independent sensing systems for acquiring data.

PGS is fitting its entire fleet with GeoStreamer technology, which it says offers higher resolution and better resolution than conventional streamers.

CGG Veritas, which is listed on Euronext and the NYSE, is also seeing a roll-out of new data acquisition technology.

Its focus has been on a control system (Sercel Nautilus) to handle its Sentinel solid streamers and BroadSeis, a data-gathering system using broadband in contrast to single frequencies.

Shell has just completed a high-profile 3D project offshore Gabon, using CGG Veritas *Symphony*.

During the first half of 2011, CGG Veritas capital expenditure totalled \$157.1m, plus an outlay of \$89.4m for multi-client work. It currently has a 19-vessel fleet. ■

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## Cost-sharing mechanism buoys profits for owners facing budget pressure

AS EXPLORATION moves to deeper waters and to previously unexplored regions, multi-client work — in effect a cost-sharing mechanism — becomes a very sensible business approach for exploration companies with budgets under pressure, writes Barry Parker in New York.

This contrasts with the contract model, in which data is available only to the customer hiring the seismic contractor.

In the economic trough, Petroleum Geo-Services (PGS) has put together a multi-client offering, launched a year ago.

In this scenario, risk begets reward; surveying speculatively is matched by the quid pro quo of being able to license the data to multiple parties.

According to PGS, work in the Gulf of Mexico is likely to fuel a further growth in multi-client activity, with 2012 volumes exceeding those of 2011.

Its Crystal III, a body of survey data available for licence (the multi-client model), is positioned for the upcoming western Gulf of Mexico lease sale, to be held in December. Its database covers roughly 300 open blocks within the region.

Polarcus' three-dimensional Catcher multi-client project in the UK North Sea east of Aberdeen is being conducted jointly with consultancy GeoPartners, likely with *Polarcus Nadia*, in advance of the UK's 27th Seaward Licensing Round, expected in the first quarter of 2012.

Polarcus expects Catcher and its satellites to be the biggest oil discovery on the UK continental shelf for more than 10 years.

The partners are running a second three-dimensional multi-client project, Bjarmeland Platform, in a Barents Sea block that had shown evidence of hydrocarbons during drilling in the 1980s.

The Norwegian Petroleum Directorate has continued to shift its leasing focus towards the Barents Sea.

Additional two-dimensional multi-

## CGG Veritas leads sector

ANTICIPATED market share in 2013 shows CGG Veritas out in front, with 23% share by vessels owned and 24% by the streamers which trail the vessels, according to competitor Polarcus.

Polarcus statistics rank PGS in second position, with 21% by vessels owned and 22% by streamers, with third place shared by Fugro and Polarcus, both with 12% in each of the measures.

Polarcus chief executive Rolf Ronningen said, historically, in peak times, PGS "has been able to harvest more than a 50% earnings before tax and interest (EBIT) margin" from the seismic sector — one of four in the PGS portfolio.

PGS jettisoned its onshore business several years ago in a \$210m sale to the Houston-based GeoKinetics, with PGS retaining a minority stake. ■

client work off the Canadian coast, in advance of a bid round expected for early next year, will be done by the iced-class *Sanco Spirit*, fitted with PGS proprietary Geo-Streamer technology.

Multi-client strategies appear to be effective in boosting owners' sales leads.

Petroleum Geo-Services president and chief executive Jon Erik Reinhardtsen said its sales leads totalled some \$1bn at any point in time.

Active tenders are typically half of that amount — and slightly less in the second quarter, a time of seasonally low bidding activity. ■

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