

[Key Facts]

- Ten wells have been sunk in the Santos Basin, and all have struck oil.
- Of Petrobras' \$34.9 billion annual investment, 90% will be domestic this year.

Big potential

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As anticipation mounts about Brazil's potential oil reserves, Petrobras is staying resolutely calm. As executive manager, investor relations Theodore M Helms explains to World Expro, until production starts, nobody can talk with certainty about what they have.

The excitement is almost palpable that Brazil is on the threshold of finding big oil. One government regulator has even claimed likely reserves of 100 billion boe. Some ten wells have been sunk in the pre-salt Santos basin 300km offshore and all have struck, the latest being ExxonMobil's January find in block BM-S-22 in the area known as Azulaio.

Petrobras executive manager, investor relations Theodore M Helms reports that Petrobras has announced recoverable reserves of between 5 and 8 billion barrels in the Tupi field, in which it has a 65% stake, and between 3 and 4 billion in the Iara field.

'That is all we have said about the Santos basin,' says Helms. However he goes on to hint at the potential. 'The Santos basin of which Tupi and Iara are part is 15,000km². That is the size of Kuwait and twice the acreage of the Campos basin where we have drilled – between producing, injections and exploration – close to a thousand wells. In Santos we have drilled about ten wells and tested four, versus a thousand wells in an area half the size. So we're optimistic but it is still very early and there are many areas of the entire pre-salt that we have never drilled, underneath where we are conventionally producing in the Campos basin.' Campos currently produces 1.6 million bpd, more than 85% of Petrobras' production.

Tupi and Iara have already doubled Brazil's recoverable reserves. However the technical and logistical challenges of the new fields are daunting. The reservoirs can be up to 5,000m below the seabed. Helms points out that the Santos pre-salt is thick at 2,000m, is in 2,200m of water and is as far out again as the Campos basin.

It makes more sense, he says, to focus on Espirito Santo basin, which is the largest oil deposit to be discovered in the western hemisphere in 30 years. 'In Espirito Santo we drilled two wells kilometres apart and we were saying: "Wow! We think this is a big

reservoir," so we've announced 1.5 to 2 billion barrels. And we've started producing from this, which is not something that we've done in the Santos basin.' Helms adds that unlike Santos, the pre-salt in Espirito Santo is only a few hundred metres deep, is 80km from shore and lies in 1,200m of water. Petrobras has more rigs available to drill there and is close to existing infrastructure, which makes it far more economically and technically attractive to exploit this basin first.

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Helms insists that Petrobras' exploration and production (E&P) team will maintain its conservative approach to the new finds, which will inspire confidence in their projections. 'If they say these are the recoverable reserves then, until proved otherwise, these are the recoverable reserves,' he says. 'You can have positive as well as negative surprises. You have to do an extended well test and you have to have a pilot. Only by a year after the pilot will you have a better idea of whether you have been accurate. But we have people who have spent a lifetime understanding basins off the coast of Brazil.'

UBS has projected an investment of up to \$600 billion for Brazil's three offshore basins, which Helms says may sound high, but is more reasonable when spread over 20 years between three basins. Estimates of lifting costs vary widely. For Tupi, Deloitte has given \$10 a boe against \$50 from another analyst, who points to the complexity of subsea installation, horizontal drilling, corrosion-resistant risers, gas separators, injection wells, support vessels and FPSOs.

Oil price volatility has complicated Petrobras' plans and contributed to the delay in producing the company's 2009-13 strategic plan. This outlines a switch to E&P in Brazil. Some 90% of the \$34.9 billion annual investment will now be domestic and in the next five years \$28 billion will be directed to developing pre-salt.

Oil price volatility has complicated Petrobras' plans and has contributed to the delay in producing the company's 2009-13 strategic plan, which CEO José Sergio Gabrielli has indicated could now be stretched to 2020. Last June, before the credit crunch, when oil was marching towards \$200 and Brazil looked capable of funding its offshore development by itself, Gabrielli embraced the idea of new, more restrictive commercial rules for foreign partners. He likened outside participation in offshore E&P to 'buying a winning lottery ticket'. In the present economic climate, according to one analyst, the state-controlled (it's thought 65% of stock is held by investors) Petrobras is now looking to foreign E&P partners for cash and physical resources. 'The issue of claiming more of Brazil's oil wealth for itself has not gone away,' comments an analyst source, 'but with oil price uncertainty and complex pre-salt geology, now is perhaps not the time to try to drive a harder bargain with outside partners.'

Helms explains: 'When it was set in 1997, the concession system had a couple of fundamental assumptions to it. One is that oil is an under-explored but high-risk frontier. Secondly, as a function of that, what Brazil would ideally do over time is conduct an annual bid round that would be enough to find oil, so that on a long-term basis, the country could maintain its self-sufficiency in oil, maybe with a slight cushion for exports.' But the scenario has since changed.

'What we are saying now is that in the pre-salt, we've drilled 20 times and found oil 20 times. Given that some people say a great success rate is 30%, when you get 100% you say: "OK, this is a different set of risks we have here." So what's changed is not only quantity but also price, because in 1997 when they created this concession system, people thought oil would be at \$18 forever.'

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The administration of President Luiz Inácio Lula da Silva was expected to announce the study of a government committee on changes to the legislation on offshore concessions to foreign oil companies last December. But the tenth auction round went ahead that month for 130 onshore oil and gas exploration concessions only, with offshore blocks being held back until the decision on legal changes has been made. While declining to speculate on the outcome, Helms says legislators have made it clear that existing concessions will continue to operate under the present rules. 'Back in 2000 and 2001 when the offshore concessions were originally awarded, the government designed a process whereby they would learn what they had before they offered it to others,' he explains. 'There were originally four big blocks where we were supposed to shoot seismic for three years. We then had to deliver that seismic to the regulatory agent and give back half the block. We get to keep the other half and then drill it.'

'The data we get from that drilling, we have to give to the regulatory agent as well. So that's where we are now. They are in the process of deciding what they're going to do now it is certain that

[What about the workers?]

Petrobras' unionised workforce presents an unusual challenge in the oil industry. Deeply opposed to the granting of foreign concessions, workers occupied some company premises in protest during last December's tenth auction round. But after quiet relations since widespread strikes in 2001, the unions have recently been at odds with Petrobras.

Last summer the Sindipetro union called a five-day strike on all 42 of the Campos production rigs. It demanded that its members be paid for travel to and from the platforms. The rival United Oil Workers' Federation has meanwhile been pressing for a higher worker share of Petrobras profits and protesting high payouts to shareholders. The unions are also concerned about safety. In 2007 there were ten fatal accidents offshore.

the oil is there. There are still other risks. So how they're going to deal with those is an open question.'

Petrobras, which like other national oil companies (NOCs) has spread itself internationally, is now bringing home oil workers and equipment by scaling back some of its 26 overseas operations to concentrate on developing its own resources principally, Gabrielli said last August in the Santos Basin. Most of Petrobras' overseas projects are in the Americas, though it has operations in Iran, Asia and Africa, including Nigeria and Angola.

Explains Helms: 'We're looking at the Gulf of Mexico where we've been most active and where we have a project called Cascade and Chinook in the Walker Ridge area, where I think they're talking first oil in 2010. There we had two drilling rigs on order; one to do development work for Cascade and Chinook, and another to explore several other options we have there with our acreage. We've said we'll take one of those rigs and bring it back to Brazil.'

He plays down the significance of the decision. 'I think there is a shift to some extent but when you look at the actual number of geologists and geophysicists abroad, relative to work in Brazil, it's still a relatively small number. So I think it's a de-emphasis on some of our international activities, given what we think of the pre-salt and its opportunities, but given that there weren't that many overseas operations to begin with, this is not a tectonic shift.'

Petrobras has 35 rigs contracted for offshore Brazil, says Helms. 'There's an inherent efficiency in having all of your activity in a relatively concentrated area. We have signed for a number of offshore deepwater rigs because we know we'll need them for exploration, development or maintenance. One of the things that make Petrobras exceptional is that as we learn about structures and order new units, we can move units to other areas. Indeed it happens on a regular basis as we learn more and continually re-evaluate our portfolio.'

Helms also floats the possibility that project activity 'virtually dropping off a cliff' in the Gulf of Mexico may create opportunities for offshore Brazil.

'Where do these rigs go?' he asks. 'I think this is an open question. What will happen to the price of oil? What will happen to costs? Clearly they will go down. By how much, how fast and for how long is unknown.' ●

[Theodore Helms]

Helms has a long and varied career in finance and investor relations in Latin America, Caribbean and Andean regions. He joined Petrobras in 1999, where he has been involved in a wide range of finance related activities to support the company's growth, including working with the ratings agencies.