

# New hydrocarbon exploration

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Last year the Argentine government announced a tax rebate program aimed at boosting the reserves, production, and refinement of crude oil

After a decade that has seen Argentina's hydrocarbons reserves dwindle, a combination of government incentives and private sector initiative is ushering in a new era of exploration. The country's main players, YPF, Pan American Energy (PAE), Shell, and Esso have all announced exploration projects over the last 18 months.

In June, British Petroleum and Bidas joint venture PAE, the country's second major oil company, revealed it will invest US\$80 million in the first phase of an offshore exploration program in the San Jorge Gulf in the south of the country that will run through 2012. The exploration area lies off the coasts of Chubut and Santa Cruz provinces. Further south, a new consortium jointly led by PAE and YPF will invest US\$100 million to conduct exploration and production work 179.5 miles off the coast of the country's Tierra del Fuego province in the Falkland Islands Basin.

YPF and PAE will each hold 33.5 per cent of the consortium. Brazil's Petrobras will take a 33 per cent stake. Last year PAE discovered new reserves at the Cerro Dragon field in the south of the country that are estimated to increase Argentina's hydrocarbons reserves from nine years to around 14 years. The reserves are equivalent to 100 million barrels of crude and have helped ease Argentina's current energy crisis. The development will see PAE invest up to US\$3 billion in the exploration and production of hydrocarbons in Argentina up until 2027. The new deposit is close to the north of Cerro Dragon, a 3,400 sq km deposit that is one of Argentina's most productive fields. Cerro Dragon produces 7 million cubic feet (mcf) of natural gas daily and more than 14,000 cubic metres of oil.

Unlike some other large oil producers, PAE had been increasing production in recent years, with oil output climbing to 219,640 barrels of oil equivalent a day in 2007 from 121,000 in 2000. Gas production at its Acambuco area, near the Bolivian border, meanwhile, has jumped to 9 million cubic metres (mcm) a day from 2 mcm a day in 2001, the company says.

At present, PAE produces about 100,000 barrels of crude oil a day and some 450 mcf of natural gas a day from proven and developed reserves of about 1 billion barrels of oil equivalent (boe). Cerro Dragon is PAE's largest asset by far, producing about 80,000 barrels of oil a day and more than 130 mcf of gas a day. PAE is active throughout Argentina, in Santa Cruz, Neuquen, Salta,

and Tierra del Fuego. It also has a presence in Bolivia and Chile. Since it was set up in 2000, PAE has invested more than US\$3.7 billion, and provides 17 per cent of the country's oil, and 14 per cent of gas output.

## Fuelling economic growth

Another 100 new oil wells have recently been drilled as the country moves to boost production. Indeed, Argentina is a victim of its own success. Economic expansion at a rate of more than 8 per cent for the five years up to 2008 has strained energy resources after years of low investment.

Analysts expect Argentina to become a net importer of oil by the end of the decade. Oil production peaked at around 45.4 mcm in 1998. Last year production totalled around 37.6 mcm, according to the Argentine Oil and Gas Institute. Argentina's proven oil reserves totalled 415 mcm by the end of 2007 while proven gas reserves were 441 bcm. In response to the decline, at the end of 2008, the Argentine government announced a tax rebate programme aimed at boosting the reserves, production, and refinement of crude oil that offers foreign companies an incentive to explore for and produce more oil.

The Petroleum Plus programme aims to boost crude output by 13 per cent over the next five years. The programme will lead companies to invest US\$8.5 billion in crude exploration and production. Under the programme, the government will compare future production and refinement levels with current levels to determine who qualifies for the rebates.

If companies increase reserves and production, they will get tax breaks on the new output: the higher the increase, the higher the rebates. These incentives are seen by most in the industry as positive because they will result in increased production in mature basins, as well as the development of some green-field projects. Nevertheless, some analysts consider that price incentives require a stable and predictable regulatory framework encourage investments in the sector. Oil companies would have liked to see higher domestic prices and the complete eradication of export taxes. The say the move falls short of directly increasing the regulated price of oil.

Nevertheless, the Petroleum Plus programme is being seen as an improvement in the operating environment for energy investors. Meanwhile the government is hoping that the oil tax revenues forfeited through the Petroleum Plus programme will be offset by a reduction

◀ in the amount it has to pay out in subsidies on imported fuel. Reducing the cost of subsidies has become an increasingly important driver behind energy policy as the government tries to improve its fiscal position ahead of next year's heavy debt service. However the assumption that the impact on the budget will be minimal rests on the expectation that crude oil and refined product production will rise sufficiently to allow for a substantial fall in imports. It is not clear whether this will in fact happen. A more significant reduction in the subsidy bill in the short-term could come from lower commodity prices, although they would also contribute to a further drop in fiscal revenues from oil production.

#### Gas to the rescue?

In March last year, the Argentine government launched Gas Plus, which authorises higher prices for gas obtained through new or untapped, hard-to-reach gas reserves. The plan provides an exemption from the current price and supply accords that ongoing gas projects are subject to.

Industry analysts says that Argentine government-set price controls have put the brakes on much-needed domestic gas exploration and production investment. The Gas Plus benefits apply to new discoveries and to tight gas fields, where gas that it harder to reach has so far been left unexploited. But the incentive programme is only open to producers enrolled in current government accords for gas supplies and prices who continue to meet supply levels spelled out in those accords.

Argentina has a long history as a gas producer, consumer and, since the late 1990s, exporter. The discovery of the Loma de la Lata gasfield, in Neuquén province, in 1977, began the displacement of oil as Argentina's most abundant primary energy source. Today, natural gas meets 50 per cent of the country's primary energy demand, mainly as a fuel for power generation. Gas demand began to grow and spread across the country during the last three decades of the 20th century as government policies sought to substitute oil and liquid fuels with natural gas, to reduce oil imports and improve energy self sufficiency.

Argentina has around 16.1 trillion cubic feet (tcf) of proven natural gas reserves, the third-largest amount in South America. In contrast to oil, natural gas production has steadily increased over the last decade; in 2004, Argentina produced 1.6 tcf of natural gas, 9 per cent up on 2003, and more than double the level of 1994. In line with this increase in production, Argentina's natural gas consumption has also risen significantly in the past decade and is now the country's dominant fuel source, accounting for more than 60 per cent of primary energy consumption. The Repsol YPF SA is Argentina's top gas producer, accounting for about 30 per cent of all production, followed by Total SA with about 24 per

cent, and PAE with about 14 per cent. The remaining gas is produced by several smaller producers.

Argentina's natural gas reserves have been falling since 2003 and annual production has stood at around 51 bcm for several years. No large new discovery has been made in recent years. But this picture – largely the result of the country's economic crisis – is misleading. Argentina's gas industry has not reached its geological peak and, with the right kinds of reforms in place to attract investors, the outlook could soon change. Argentina has an agreement with Bolivia to import up to 230 mcf per day, depending on demand and availability.

#### Future hopes

Analysts say that investors want consistent prices that would allow the country to develop probable reserves in producing fields and to intensify exploration to discover new reserves in traditional and unexplored basins. A transition period as the country adopts a more pragmatic and investor-friendly approach must lead to a free-market price system that recognises the true costs of the gas-supply chain. Furthermore, regulatory systems that hinder oil and gas development must be gradually phased out.

To stimulate upstream development, say many in the industry, Argentina must build a reliable institutional framework that provides stable, long-term price signals. Guaranteeing tax stability is crucial to gaining investor confidence. They say that wellhead prices should be increased and regulated during a transitional period, taking into account an average between domestic prices and the cost of Bolivian imports. Overall, industry analysts have welcomed the new emphasis on exploration, and say that if the investment process is rebuilt as well, then Argentina is well-placed not only to overcome its current shortages by re-establishing the output levels of a decade ago that have powered its recent economic expansion. ■

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Oil exploration, Chubut, Argentina

