

Pemex, PDVSA and the Paradox of Abundance

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The signing last February of an agreement between the Italian oil company ENI and the Venezuelan company Petróleos de Venezuela S.A. (PDVSA) to invest 10,000 million dollars in the development of a large oilfield in the prolific Orinoco Belt, where the largest deposits of Venezuelan heavy crude oil are located, buried the hatchet in the dispute between the two world giants that commenced in 2006 when the government in Caracas decided to nationalise the Dación well, controlled by the Italian company.

In the end ENI accepted a compensation of 700 million dollars, a figure well below that originally claimed. However, the agreement reveals, above all, that despite the strong nationalist accent that the government of President Hugo Chávez has stamped on its energy policy, Venezuela continues to be a very attractive country for foreign investment.

This is hardly surprising: it is estimated that the Orinoco Belt has reserves of around 270,000 million barrels of crude, almost as much as the verified deposits of Saudi Arabia. However, extra heavy crude, such as the crude located in Orinoco, requires complex refineries for processing, of which there is a shortage in the world, entailing that this crude will be commercialised in restricted markets and at prices that are not automatically established.

In the joint-venture, which includes the modernisation of a refinery in the region, PDVSA will contribute 6,000 million dollars and ENI 4,000 million. This agreement will allow it to increase its verified reserves by 10 per cent, currently 7,000 million equivalent barrels. ENI hopes to begin producing 30,000 barrels a day by 2010, and increase this to 300,000 barrels by 2014. With one barrel priced at 100 dollars, getting a foot in the door in Venezuela is crucial for any significant player within the world's energy sector. In fact, Chevron, BP and the Norwegian company StatoilHydro, inter alia, continue to operate in the country despite the governmental restrictions and the increases in taxes and royalties that must be paid to the state.

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The futures market for crude show delivery prices by 2013 that exceed the figure of 80 dollars a barrel, reflecting what everyone now agrees on: the era of cheap oil has ended. The International Energy Agency (IEA) believes, for example, that world oil demand will increase to 109 million barrels per day (Mb/d) by 2030, in contrast with the 84 Mb/d of 2005, due in particular to demand from developing countries.

According to the IEA, maintaining the world's economic growth of the last 25 years will require the consumption during the next quarter of a century of 25 per cent more crude than that consumed today. The consultancy firm Cinc World Markets calculates that internal consumption could cut back exports from the OPEC and other producer countries like Russia and Mexico by 2.5 Mb/d to 2010, that is, by 3 per cent of world demand.

Venezuela has a lot to gain in this process: it is the world's fourth exporter of crude, and if we solely take into account conventional crude, it has 6.8 per cent of the world's verified reserves, or 80,000 million barrels, making it the world's sixth richest oil nation behind Saudi Arabia, Iran, Iraq, Kuwait and Abu Dhabi. If we add extra heavy crude, this figure increases to 270,000 million barrels, on a par with Saudi Arabia. Its ratio of reserves to annual production is 72.6 years (the world's third largest).

With high prices and a sufficient level of investment, Venezuela has its seat guaranteed amongst the world's major oil players. But the giant has an Achilles heel: systematic interference by the state in the development of the industry. Chávez has taken advantage of the large flow of petro-dollars to finance his growing social expenditure and foreign policy objectives, threatening the level of investment needed to maintain oil and gas production.

When he took power in February 1999, the retail price of Venezuelan crude had fallen from an average of 17 dollars per barrel in 1997 to 8.43 dollars. One of the first things his government did was restrict itself again to the production quotas of OPEC, with which Venezuela has practically failed to comply during the 1990s. Venezuela also played a key role in the recovery of the discipline and cohesion of the cartel, promoting the second summit in its history in Caracas, in September 2000, with the assistance of eight of the eleven heads of state of the member countries, and delegations from Mexico, Norway, Russia and Angola.

Venezuela is one of the founders of the OPEC, and during the second half of the 1960s it was the world's largest oil exporter. From 1965 to 1974 it produced annually an average of 3.5 Mb/d, and its production in 1970 was almost 4 Mb/d. Although the Venezuelan state had already entered the industry, the country attracted the sector's largest multinationals – the oil majors – due to its attractive investment conditions.

However, half way through the 1980s production fell to a level of 1.8 Mb/d, more than 50 per cent below its peak in 1970. In 1986 the unity of the OPEC fell apart, and the price of oil experienced its first large fall (from

almost 30 dollars per barrel to less than 15), while Venezuelan GDP per capita in real terms reached its lowest level in a generation.

The *oil liberalization* promoted by governments during the 1990s implied accepting greater participation by private investment with the purpose of increasing national production to 5 Mb/d in 2005, and eventually to 6 Mb/d. The liberalisation commenced in 1996 with the auctioning of exploration licences to 75 companies from 17 different countries. As a result of this model, Venezuela produced 3.5 Mb/d in 1998. The problem was that this period coincided with a rapid fall in the price of crude in world markets, with a consequent decrease in the living standards of Venezuelans, who attributed the crisis to the *neo liberalism* prevailing at the time.

In 1998 real salaries were 40 per cent lower than in 1980. Thirty per cent of the population was living in extreme poverty, in contrast with 11 per cent in 1980. In 1999 income per capita was the same as in 1960. The doors were open for the return of energy nationalism. Upon reaching power, the main objective of Chávez was to halt the privatisation process of the sector, but without blocking private investment.

The profound social polarisation produced by Chávez was immediately transferred to PDVSA, an exceptional stage for the country's battle for power. Royalties to the state for oil production were practically doubled, from a previous high of 16.6 per cent to 30 per cent. Subsequently, in 2006, a new change in the Hydrocarbon Law increased even further the applicable taxes and royalties, and forced foreign companies to accept PDVSA as the majority stakeholder in all activities within the sector.

The internal political situation was favourable to his objectives. After the general strike between December 2002 and February 2003, during which acts of sabotage occurred at PDVSA's installations, Chávez was able to take full control of the company, firing almost half the workforce, and thus causing PDVSA the loss of the bulk of its specialised human resources.

But the international situation was favourable: between 1999 and 2006, the price of oil increased from 10 dollars per barrel to 80 dollars. Although Venezuelan heavy oil is sold at a discount of various dollars with respect to the reference crude (West Texas Intermediate and Brent), that boost was enough for the economy to experience growth of 18 per cent in 2004, and more than 9 per cent in 2005, 7.5 per cent in 2006, and 8 per cent in 2007.

At the same time public expenditure skyrocketed, almost reaching in 2007 the figure of 30 per cent of GDP, in contrast with an average of 20 per cent during the 1990s. The resulting problem was that the diversion of reve-

PDVSA runs the risk of losing 25 per cent of its production each year

nues from the energy sector towards internal and external patronage policies reduced investment in industry, threatening future production levels. According to various analysts, without sustained investment PDVSA runs the risk of losing 25 per cent of its production each year.

According to official figures the country is currently producing between 2.5 and 3 Mb/d. However, independent sources such as the IEA estimate that current production levels are no more than 2 Mb/d, around 700,000 barrels per day less than the official Venezuelan quota (3.23 Mb/d) as established by OPEC, which suggests that PDVSA is not in a condition to increase production for technical reasons, and that it can only look to minimal increases (between 200,000 and 300,000 Mb/d) during the upcoming years. And this will only occur under optimal conditions.

Since 2004 PDVSA has stopped submitting annual reports to the Securities and Exchange Commission (SEC), the regulatory body of the US financial and stock markets, and solely publishes one or two pages annually with basic data. Moody's has withdrawn PDVSA's debt classifications, adding that it does not have "indications that the company is attempting to provide public or private audited financial declarations". Last year the company declared that it reinvested 5,800 million dollars, but analysts believe that this total includes expenditure on social programmes backed by the government.

According to various sources, oil revenues declined from 23,500 million dollars in 2000 to less than 19,000 million during the strike years (2002 and 2003), strongly increasing again to 26,600 million dollars in 2004, to 38,400 million in 2005, and to more than 45,000 million in 2006.

With internal consumption of 0.5 Mb/d, it is estimated, on the other hand, that the country is producing between 2 and 2.5 Mb/d, of which 1.5 Mb/d go to the United States; this implies that Venezuela is the world's eighth national oil exporter, ranked number one within the western hemisphere, and the third supplier to the US behind Canada and Saudi Arabia, according to the US Department of Energy (10 per cent of the total). These exports represented more than 60 per cent of total exports between 1993 and 2003, but today they are equivalent to almost 85 per cent of the total – almost a third of Venezuela's GDP, and more than half of the state's total revenues.

These revenues have not significantly relieved PDVSA's main problems: the combination of an increase in production costs, caused by the loss of technical capacity; and the demands from the internal and external patronage network of the government to finance numerous projects in the region, from the reconstruction of Cuban refineries to supplying subsidised oil to Nicaragua.

In November 2004 the positions of head of the Ministry of Energy and Oil and the presidency of PDVSA were merged, which accentuated presi-

dential control over the company. Furthermore, the decision to transform 32 operational agreements with foreign companies into 32 joint ventures under the control of PDVSA (60 per cent shareholding) forced it to take on the administrative, financial, operational and technical management of 32 companies. Adding up all these burdens, analysts believe that PDVSA subsidises or gives away almost a third of its production.

In 2006 PDVSA paid the state 35,000 million dollars in taxes, royalties and direct support to social programmes – that is, 35 per cent of its gross revenues. Annually Chávez has discretionary control over 14,000 million dollars through the National Development Fund (Fondo de Desarrollo Nacional, or Fonden), which the president controls outside the budget. In July 2007 the web page on the Internet pertaining to Fonden outlined 130 projects, infrastructures, development aid and health programmes, but also included the acquisition of helicopters, submarines and assault rifles.

Previously, if the president wanted to increase public expenditure he had to wait for PDVSA to pay its taxes and then wait for Congress to authorise the corresponding budget allocation. Now all that Chávez has to do to receive the funds is pick up the phone and call the president of PDVSA.

During the last five years expansive fiscal policies have increased public expenditure by 137 per cent, and real liquidity by 218 per cent, which has resulted in an accumulated inflation of 25 per cent during the first few months of 2008, double the region's average, all of which has created a budget deficit in the middle of an oil boom not seen since the 1970s.

Since 2003 the money supply in circulation has multiplied by six. Attempts to dry up this liquidity, such as through the issuance of state debt bonds for a value of 9,000 million dollars, have been unsuccessful, in that they were aimed more against the effects rather than at the causes of the inflation. The 50 per cent increase in GDP per capita between 2003 and 2007 is basically due to the increase in the price of crude: for each percentage point increase in GDP, poverty is reduced by 1 per cent. However, parallel to this, inequalities have increased from 0.34 to 0.44 between 2000 and 2005, according to the Gini scale. This is due in part to the consumption subsidies resulting from oil revenues, particularly in relation to imported goods such as whisky and luxury automobiles. Imports have increased three-fold since 2002.

A gallon of petrol costs today 6.3 cents of a dollar at the non-official exchange rate, which has resulted in a massive increase in internal

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consumption to 650,000 barrels per day. At this rate Venezuela will soon need to import petrol. All this is due to the paradox of abundance: oil not only creates employment, it also destroys it. By increasing the exchange rate, oil exports distort the rest of the economy: why bother developing an export industry if oil revenues make the remaining exports much less competitive?

Oil concentrates the country's wealth within the state, which creates a deformed economic culture: given that the state does not need to collect taxes, its authorities become independent of the demands of civil society. The state becomes what Octavio Paz called the *philanthropic ogre*: the great buyer, the great supplier, the great contractor...

The bottlenecks in the model are evident. Despite Venezuela's attempts to diversify its markets to reduce its dependency on the United States, PDVSA continues to operate with Exxon a refinery in New Orleans, especially built to refine heavy Venezuelan crude. The exploitation of heavy crude is difficult, requires greater long term investment, has lower profitability and, in particular, relies upon special refineries in the areas of exploitation and in the countries to which it is destined. In view of the fact that the United States possesses the few existing specialised refineries, if Venezuela were to cut supply it would be causing itself the same or greater damage than what it would inflict on the United States.

PDVSA's plan for the period 2005-2010 involves an annual state investment of 6,300 million dollars, and an additional private investment of 2,500 million. Recent announcements from Petrobras talk of annual investments of the order of 12,000 million dollars from now until 2010, equivalent to increasing PDVSA's current levels three-fold.

Evanán Romero, an oil consultant based in Houston who was deputy minister for energy in Venezuela, maintains that "all signs indicate that PDVSA is approaching a strong economic crisis". According to Romero, PDVSA increased its debt from 2,000 million dollars in 1998 to the current level of 17,000 million, and is also experiencing difficulties in obtaining liquidity, having had to sell oil on the futures market to cover its growing operational costs.

Pemex

Mexico, together with Venezuela, holds the bulk of Latin America's oil reserves. Mexico has 1.4 per cent of the world's oil reserves, but it exploits them intensively: it produces 5 per cent of the world's crude supply. In turn, with 6.8 per cent of the world's reserves, Venezuela contributes 3.9 per cent to the world's production. Given that Mexico's internal consumption is high, its exports of crude barely amount to half that exported by Venezuela, representing 9.3 per cent of the country's total exports between 1993 and 2003.

Mexico's problems are that this rhythm of exploitation is not sustainable. Mexico is a net exporter of crude, but its growing imports of refined products has meant that the surplus in its general oil account is being reduced. In 2007 crude production decreased 5.3 per cent to an average of 3,083 Mb/d. Pemex exported crude with a value of 37,900 million dollars, but during the first 11 months of 2007 it imported fuels and refined products with a value of 12,200 million. The bulk of those imports were petrol and diesel. In January 2008, imports of refined products increased 29 per cent, while crude exports have fallen 9 per cent year by year.

On March 18, 2007, on the 69th anniversary of the nationalisation of the oil industry by the government of Lázaro Cárdenas, President Felipe Calderón announced that at the current exploitation rate the oil reserves would last less than 10 years. The rapid reduction in reserves (which the government estimates at around 18,900 million barrels, although the BP Statistical Review of World Energy calculates 16,000 million, as against 28,400 million in 1999) and decreasing production have serious implications for a state that obtains almost 40 per cent of its revenues from oil.

Since 2004 the country's average oil production has been around 3 Mb/d, 12 per cent more than in 2000. If these oil revenues fall the government will need to increase taxes within the sector, and more probably, within the overall economy. Many Mexican analysts maintain that fiscal reform must be parallel to a reform in energy policy, encouraging foreign investment within the sector and in this way delaying the decline in oil revenues.

However, Calderón has reiterated that the industry will continue to be a state monopoly. Current legislation already allows the state-run company *Petróleos Mexicanos* (Pemex) – which has a monopoly in the exploitation, refinement and distribution of hydrocarbons – to sign agreements with sub-contractors, provided they are paid in cash. But this is not sufficient. Even though it annually invests around 10,000 million dollars in exploration and exploitation, almost double that spent during the last two decades, according to its president, Jesús Reyes Heróles, Pemex solely replaces around 40 per cent of the oil it produces each year with new discoveries.

Almost two thirds of the company's production stem from one sole well, the gigantic Cantarell, which represents 30 per cent of Mexican production, but which is already declining, and will continue to decline at a rhythm of 10 per cent each year. New deposits that could be exploited are at great depth below the subsoil of the Gulf of Mexico, representing a considerable finan-

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cial and technological challenge for the country, with investments that could rise to 20,000 million dollars annually.

One of the greatest problems is that successive governments have used Pemex as a bank to finance their own state patronage system. Currently 58 per cent of public expenditure in Mexico is used to pay the salaries and pensions of state employees. A large part of this money comes from Pemex, which during the last few years has paid on average 40,000 million dollars a year in taxes and profit transfers to the state.

All this structure would collapse without oil money. Cantarell is producing 870,000 Mb/d, well below its peak of 2 Mb/d in December 2003. Without new discoveries national production will not exceed 2.1 Mb/d by 2016, which, in view of the fact that the country is a net importer of refined products, will cause a commercial deficit in hydrocarbons.

Calderón has said that Pemex should guarantee its oil supplies for future generations, for which it needs to invest more in exploration, production, refinement and the production of petrochemical products: "It makes no sense for the oil to be ours if we cannot exploit it (...) The modernisation of Mexico depends on the modernisation of Pemex".

The sector's challenges are numerous. Pemex has an excessive bureaucracy of 160,000 employees, a problem whose solution is difficult due to the power of the oil trade union, whose leaders – in their majority members of the party now in the opposition, the Partido Revolucionario Institucional (PRI) – helped for decades to divert money from the state-run company to election campaigns. The current debt of Pemex stands at 100,000 million dollars, a debt that no party wants the state to assume.

Calderón's fiscal reform policy to increase tax revenues, today barely 11 per cent of GDP, seeks to alleviate the burden facing Pemex so that it can invest in exploration. Pemex has lost money in five of the last six years. In 2006 it obtained 3,900 million dollars in profits, with sales of 97,000 million, but had to hand over to the government 54,000 million dollars in taxes and royalties.

If the situation is not remedied, Mexico, currently the world's sixth crude producer (and not a member of the OPEC), could find itself having to import oil by 2017. In contrast, Brazil has gone from being a net importer of oil during the 1970s to becoming self-sufficient today, in part due to the technology developed by Petrobras in the exploration of off-shore deposits at depths that the largest multinationals within the sector had not attempted to explore: at 2,000 metres below sea level, in similar conditions to those within the Gulf of Mexico, where 60 per cent of Mexico's crude reserves are located.

To finance this effort, in 2000 the Brazilian Government made a public offering at the New York Stock Exchange of Petrobras shares, with which it raised 4,100 million dollars, while maintaining 56 per cent of the company's

voting shares. Since then Petrobras shares have increased their value by four.

Whilst Brazil has opened up to private investment a sector as strategic as that of energy, Mexico has yet to overcome its old protectionist reflexes. Confident that the only thing that it needed to do was to “administer its abundance”, as declared once by one of its presidents, Mexico did not bother to make plans for a future of scarcity.

In 2006 Pemex and Petrobras signed a broad cooperation agreement, but the Mexican company needs more than technical assistance. For Pemex to be able to import the technology that Petrobras employs to explore submarine deposits, both companies would need to form a joint-venture, which in turn would only be viable if the Brazilian company obtains a share of the oil found – something that is prohibited by Mexico’s Constitution.

Petrobras’ success is not only technological. Due to its hybrid model of private management and state ownership, it has been able to free itself from excessive political and trade union intervention, and can invest in innovation, R&D and training its employees. All of this is currently not possible for Pemex. Finding oil in deep submarine deposits is very expensive. Whilst Petrobras exploits 44 off-shore deposits, Pemex solely exploits eight.

With regards to investment, Pemex doubles PDVSA’s efforts, but as occurs with its Venezuelan counterpart, it is far from increasing its production levels due to legal restrictions, which diminish the unquestionable attractiveness of Mexico for foreign investment within this sector.

The most moderate wing of the left-wing opposition PRD party is prepared to dilute Pemex’s monopoly over exploration and production in the deep water of the Gulf of Mexico, and to allow private companies to participate in refinement, oil pipeline networks and storage. But neither the ruling PAN, the PRD nor the PRI contemplate sharing agreements in production and exploration, nor that foreign companies be able to include in their balances as oil reserves any oil found as a result of these agreements.

Constitutional changes in Mexico must be approved by two thirds of its Congress, and subsequently by a majority of the 32 state congresses. Legislation dating back to 1958 stipulates that Pemex may involve partners in the development of oil deposits, but cannot pay them through a share in the oil discovered. This legislation should change if foreign companies are to be attracted towards developing Pemex deposits.

Calderón: ‘The modernisation of Mexico depends on the modernisation of Pemex’

Legal experts are not sure whether the constitution needs to be amended so as to allow foreign energy companies to participate in joint ventures with Pemex. According to Article 27 of the Constitution, it seems that Pemex cannot offer risk-sharing concessions or contracts. With all probability the Supreme Court will need to define what type of agreement is constitutional.

According to Javier Estrada, president of the energy consultancy firm *Analítica y Energética*, a new institutional accord must also be established because the debt incurred by the state-run monopoly is excessive, and will inevitably affect public finances.

Mexico imports 40 per cent of its needs, and the type of products obtained from its refineries – such as petrol and diesel – are not suited to satisfying internal market demand. In fact, it should immediately proceed to modernise its six refineries, and build at least one more, with a capacity of around 300,000 Mb/d.

All these efforts demand annual investments of at least 20,000 million dollars. On the other hand, these projects imply risk, and no oil company in the world wants to assume these risks on its own. Thus it is normal in many oil countries for a company to take the lead, and other companies to participate in a economic or technological fund to assist in financing the development.

Pemex could decide in which areas it has an interest in sharing the risks, and in which other areas it can trust in private capital. It would decide where and how to administer the funds obtained from the federal government, and with which companies to form an alliance or co-invest in exploration and production (upstream), or in refinement, petrochemical processing and commercialisation (downstream).

The benefits have to be sufficient for companies to continue investing in the sector. If these benefits are very high, the country would be transferring a part of its oil revenues to a private company. However, at the same time private investment would increase the size of the profits to be shared, thus increasing Mexico's oil revenues.

Under adequate conditions Pemex would enjoy greater budgetary and management autonomy, and a risk diversification policy that would multiply its operational capacity through strategic alliances for specific projects.

Estrada cites Brazil as an example for having developed a specialised company that searches in continuously deeper waters. Having reached this point, Brazil considered the quantity and quality of the potential risks for the national company, and decided to allow private companies to cover these margins so as to not affect the industry. Consequently, it carried out the necessary legislative changes and reorganised the sector.

The starting point was allowing Petrobras to choose which field it wanted to exploit, while the rest were put out to tender. At the same time,

and to provide legal assurances for the process, a national oil agency was founded: that is, a regulatory body to organise the liberalisation strategy. As a result, Brazil at present not only has a specialised oil company within a very profitable niche market, but also complements this with other oil industries and a growing number of national suppliers.

Petrobras has discovered gigantic fields, allowing it to look to a future as an exporter. It currently sells 90 per cent of its refined products within the internal market, but considering that it will extend its refinement capacity by 40 per cent between the period 2010-14, it will be able to export relatively soon.

Mexico is in a position in which it could simultaneously open, with different levels of liberalisation, all areas of Pemex's value chain. This will be a decision that will be made by the legislative authorities. The good news is that President Calderón has promised to advance in all these areas, so that at the end of his six-year term of office, in 2012, the company should be in a condition to look at the future with confidence.