# Country Report: Venezuela and Petróleos de Venezuela S.A. (PDVSA)

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Associate Professor at IESA Business School in Venezuela since 2005, Carlos Molina was previously Assistant Professor at the Pontificia Universidad Católica de Chile and the University of Texas at San Antonio. Carlos earned his Ph.D. in Finance (2002) from the University of Texas at Austin, MBA (1994) from IESA, and BS in Civil Engineering from the Universidad Católica Andrés Bello (1990) in Caracas.

As a country, Venezuela has one of the largest oil reserves in the world; new discoveries, like the Orinoco oil belt fields, may mean it will someday ascend to the #1 spot. Like most countries with large oil reserves, Venezuela's oil assets are managed by a state-owned company. This energy brief focuses on the recent history of oil production and investment within Venezuela, as well as its opportunities and challenges.

# **History and Founding of PDVSA**

Before 1976, oil exploration companies, such as Creole, Shell, and others, were dedicated to the exploration, production, and refinement of oil in Venezuela, while the State limited itself to receiving

taxes and royalties for those activities. However, after the increases in oil prices from \$4 to \$12 a barrel in the early 1970s, the Venezuelan government decided to nationalize the oil industry, and Petróleos de Venezuela S.A. (PDVSA) was born as a vertically-oriented merger of foreign oil companies with operations in Venezuela at that time. After the nationalization, PDVSA privately undertook all oil activities in Venezuela until 1992.

In 1992, 1993, and 1997, hoping to expand oil production through foreign investment, PDVSA auctioned the rights to thirty-three oil fields, entering in agreements with several of the world's top oil companies during a time now called the "Apertura Petrolera" (the oil opening). These agreements amounted to 0.5 million barrels per day (mbpd) of oil production

in 2002 and assigned proven reserves of 5.4 billion barrels. The Apertura was part of a capacity expansion plan that sought to turn Venezuela into one of the world's largest oil producers outside the Middle East; according to the plan, by 2010 Venezuela should have been producing 8 mbpd.

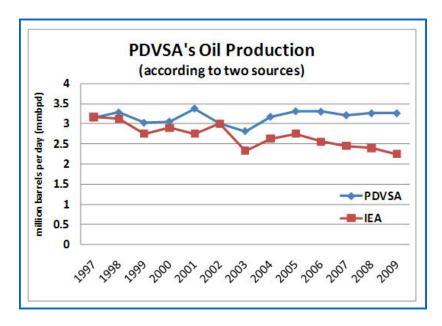
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With the election of Hugo Chavez as president in December 1998, these plans were overturned, new operating agreements were stopped, and new actions against ongoing agreements were taken, including the re-nationalization of the Apertura agreements. Today, PDVSA is producing somewhere around 2.5 mbpd, and is again looking for investment to exploit one of the largest, if not the largest, oil reserves in the world.

## PDVSA's Current Oil Production Capacity and Proven Reserves

PDVSA's oil and gas reserves are located only in Venezuela. According to <a href="Petroleum Intelligence">Petroleum Intelligence</a> <a href="Weekly">Weekly</a> (Dec 2008), PDVSA is the world fourth largest firm in the oil business, being the fifth in proven oil and gas reserves, fifth in refinery capacity, seventh in oil production, and eighth in sales. In 2008, PDVSA had assets of \$131.8 billion and income of \$126.4 billion. Proven oil reserves in December 2008 were 172.3 billion barrels, including 130 billion barrels of extra heavy oil, according to PDVSA. During this same time, PDVSA reports oil production of 3.4 mbpd and an average cost of production of \$7.10 per barrel. PDVSA's installed refinery capacity is 3.04 million barrels, distributed as 1.3 million barrels in Venezuela, 1.09 million barrels in the U.S., 384 billion barrels in the Caribbean, and 259 million barrels in Europe.



PDVSA vs. IAE production figures: although the trends between the two sources are similar, the difference increases after 2003, reaching almost 1 mbpd in 2009.

These numbers, which were provided by PDVSA, contrast with those reported by international sources such as the International Energy Agency (IEA) and OPEC. Venezuela has lobbied OPEC to accept the official PDVSA number for oil production but OPEC has refused and kept its estimate close to the IAE's. According to the IEA, Venezuela's oil production has been decreasing since 2002 when it was 3 mbpd, to 2.25 mbpd recently.

According to the IAE, Venezuela's oil production never recovered after the Venezuelan Work Stoppage of 2003, when PDVSA interrupted its activities as part of the national work stoppage protest of Chavez's socialist agenda. The stoppage resulted in losses of about \$1 billion dollars for PDVSA and employment termination for approximately 18,000 employees out of PDVSA's 45,000 total employees. Particularly since the employees fired were those at the top and middle levels of the organization, including those with top management and engineering capabilities, it seems highly unlikely in the short term that PDVSA has been able to replace the expertise they once had.

PDVSA says it exported 2.9 mbpd of oil and other refined products in 2008 but private analysts argue

that these figures are too high. If one accepts IAE's reported oil production for Venezuela of 2.4 mbpd, Venezuela cannot be exporting 2.9 mbpd. Internal consumption is estimated by analysts to be 0.7 mbpd or above, which leaves only 1.7 mbpd for exporting. In addition, Venezuela does not receive cash for portions of its exports, since part of this oil is sold at a discount. Mr. Chavez set up such financing agreements with allies such as Argentina, Cuba, China, and other Caribbean countries, totaling a compromise that amount up to 0.48 mbpd. According to these numbers, PDVSA exports approximately 1.7 mbpd and receives cash payment for only 1.3 mbpd.

U.S. Energy Information Administration (EIA) and U.S. Department of Energy estimates show that PDVSA's exports to the U.S. have decreased from 1.8 mbpd in 1997 to only 0.98 mbpd in 2009, even though PDVSA reports 1.4 mbpd of its exports going to the U.S. in 2008. PDVSA owns 100% of CITGO, an U.S. company with 0.75 mbpd of oil refinery capacity that processes Venezuelan oil and distributes, transports and sells gasoline, diesel, lubricants, petrochemicals and other refined products across the U.S and also owns a gasoline distribution network. Current PDVSA exports to the U.S. go almost exclusively to CITGO, which owns or partially owns refineries adapted to the Venezuelan heavy oil. If PDVSA did not place this oil at CITGO, it would have to sell it at a deep discount in other markets. PDVSA receives cash payments from its oil exports only from the ones that go to the U.S. The rest is comprised of the favorable government agreements mentioned above.

# Nationalization of the Apertura Operating Service Agreements and Current Situation

In 2005 a new Organic Hydrocarbons Law was enacted in Venezuela, ordering the end of the Apertura operating service agreements and their transition to new partnerships, termed "empresas mixtas" (joint companies), in which PDVSA needed to have at least 51% ownership. In April 2007, the previous Apertura strategic alliances of Petrozuata, Ameriven, Cerro Negro and Sincor (which included the participation of Conoco Phillips, Exxon-Mobil, Chevron-Texaco, Total, Statoil, and BP) were ordered to be converted into empresas mixtas. By June 2007, all these companies, except for Conoco Phillips and Exxon-Mobil, made agreements with Chavez's government that allowed them to remain in Venezuela for future projects and signed agreements with PDVSA for the transition. Conoco Phillips and Exxon Mobil's legal battle in international arbitration courts continues.

### PDVSA's Strategic Plan and Recent Auctions

PDVSA's strategic plan, as outlined by its 2008 financial report, includes:

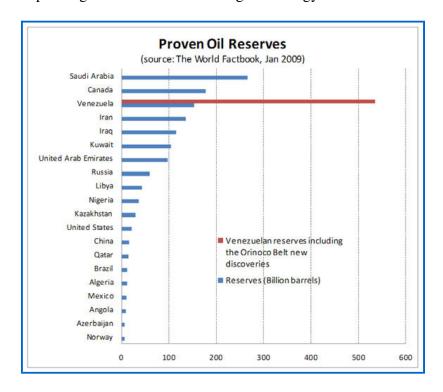
- a) Increasing oil production to 4.94 mbpd by 2013, and to 6.5 mbpd by 2021,
- b) Exporting 3.8 mbpd of oil by 2013,
- c) Increasing installed oil refinery capacity to 3.6 mbpd by 2013 and to 4.1 mbd by 2021, and
- d) Increasing natural gas production to 12.57 million cubic feet daily (mmpcd) by 2013, converting Venezuela into a natural gas exporter.

This strategic plan requires investments of about \$120 billion, an amount that will require significant foreign investment.

### The Orinoco Oil Belt and the Future of Venezuela's Oil Development

At a time when many oil reserves are approaching their midpoint, the Orinoco belt is still underdeveloped, particularly given its potential.

Recent reports by the U.S. Geological Survey assign Venezuela's Orinoco oil belt up to 513 billion barrels of technically-recoverable heavy oil, which would be one of the world's largest recoverable oil accumulations. The new 513 billion amount more than doubles original estimates and proven reserves of 130 billion barrels and eclipses both Canada's 178 billion barrels (also composed almost entirely of heavy oil) and Saudi Arabia's 264 billion barrels, which were thought to be the highest in the world. The recovery factor for these Venezuelan reserves has been estimated to be between 25% and 70%, depending on the available drilling technology.



More recently, in an attempt to attract new foreign investment to exploit the Orinoco oil belt reserves, PDVSA opened the rights for auction in the form of partnerships in which PDVSA needs to have at least 60% of ownership (higher than the 51% technically required by law).

At first glance, the conditions proposed did not look particularly attractive to investors. Though PDVSA was required to own at least 60% of the partnership, the foreign company was expected to fund 100% of the investment in return for their 40% stake. Further concern stemmed from the 50% tax rate, 33% royalties, and international arbitration clauses in contracts being dropped by PDVSA.

Repeated delays in the auction of the Carabobo blocks reflected investor concerns about political risk, onerous financing costs and the profitability of the projects. Legal security remains the top concern, given that tax rates have been increased four times since 2004 for oil projects and that Venezuelan government has taken over more than 150 companies since 2009, including 70 oil service companies. PDVSA has also been negligent at paying dividends to partners in joint ventures. The unstable political climate in Venezuela and the unpredictability of Mr. Chavez's socialist revolution also create risk and concern.

However, analysts argue that the Orinoco belt is too large to pass up, particularly given its lack of geological or exploration risk (since reserves have already been found), and its huge potential—it might

be the last project of its size left in the world. Additionally, production costs are estimated to be lower than in other places where heavy oil is extracted, despite the high start-up costs for complex and expensive refineries known as upgraders (necessary to process the tar-like "extra-heavy" oil found in the Orinoco).

The auction was eventually opened for three blocks of the Orinoco's belt, called the Carabobo blocks 1,2, and 3. Chinese, Malaysian, Russian, Indian and Brazilian state oil companies competed alongside oil majors such as Shell, British Petroleum, Chevron-Texaco, Total, Eni and Statoil for access to the blocks, which could require collective investment of between \$30 and \$50 billion in three projects potentially producing up to 1.3 mbpd.

On February 2010, the results of the first auction on the Carabobo projects were announced, with two of the three blocks awarded. Carabobo 1, with production expected to be 0.48 mbpd, was given to a consortium including Repsol from Spain, the Malaysian state company Petronas, the Indian state company Oil and Natural Gas Corporation, and the Indian private companies Oil Indian Limited and Oil Indian Corporation. Carabobo 3, with production expected to be between 0.40 and 0.48 mbpd, was awarded to a consortium that included Chevron Texaco, Mitsubishi and Inpex from Japan, and Suelopetrol from Venezuela. Carabobo 2, the other project in auction, was reserved for PDVSA itself.

This auction output shows a mixed result. On the one hand, some of the big names in oil showed interest, despite the risk, and two out of the three projects in auction were awarded. On the other hand, one of the projects was reserved for PDVSA, an indication of no interest on that particular project.

The question that remains is if Venezuela will be able to substantially develop its energy potential to meet its own strategic goals. What is quite certain is the success of these partnerships will play a pivotal role in determining its oil production future in the foreseeable future.