

SUMMARY OF THE CURRENT SITUATION OF THE ARGENTINE ENERGY SECTOR

Following the 2001 financial crisis in Argentina, measures were implemented to shield Argentine consumers from substantial increases in electricity and gas prices caused by the devalued Argentine Peso. These measures had the flow on effect of discouraging investment in the energy sector. In 2012, after becoming a net annual importer of hydrocarbons for the first time following the privatization of the industry in 1989, the Argentine government implemented substantial changes to the regulation of the industry in order to encourage investment in the sector to meet the demand. These measures together with the abundant unconventional hydrocarbon reserves are increasingly making the sector attractive to investment.

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I. INTRODUCTION

Prior to the 1990s, the Argentine energy sector (oil, gas and electricity) was run by state owned companies. In 1989, Law no. 23,696 set out the principles of the government-led industry reform, ordering the decentralization and privatization of state-owned companies that undertook commercial activities. The Federal Government launched the following measures: (i) privatization of YPF and Gas del Estado;¹ (ii) permits for exploration and concession agreements to exploit oil fields were granted to private and foreign companies;² (iii) oil companies were considered the owners of the production and could export it or sell it in the local market;³ (iv) hydrocarbons prices were not controlled;⁴ (v) export taxes and restrictions were eliminated;⁵ (vi) oil producers had the right to dispose of 70% of foreign exchange earnings from exports.⁶

The integrated state owned companies engaged in the natural gas and electricity industry were first divided into three different business units (generation, transmission and distribution) and then privatized. The natural gas production and electricity generation industries were regulated as open markets and prices were not controlled. Transport and distribution of natural gas and electricity were regulated as public services and granted to private companies through concession agreements. Public services tariffs were calculated in U.S. dollars and stated in pesos and were adjustable according to international indexes.

In 2001 Argentina suffered a major economic crisis and devaluated its currency. In order to address the crisis, the Federal Government made several changes to the regulatory framework that came into place in the 1990s to prevent the increasing of prices and tariffs and to ensure the satisfaction of the domestic market.

In 2002, all tariffs for public utilities were frozen to protect consumers and users. This included a freezing of residential and industrial electricity and gas tariffs, which in turn froze the prices of oil and electricity paid to producers. The original framework of free market prices was replaced by a system of regulated prices. As hydrocarbons production declined, exports were not only taxed, but increasingly restricted, to the extent that exports were prohibited until the domestic demand had been satisfied. The right of oil producers to dispose of their foreign exchange earnings from exports was also restricted. This ultimately amounted to a practical prohibition of exports. The strong regulation over hydrocarbons prices resulted in a significant difference between domestic and international prices of petroleum (Chart 1).

¹ Law 23,696 and Decree 1055/1989

² Decree 1055/1989 and Decree 2411/1991

³ Decree 1055/1989.

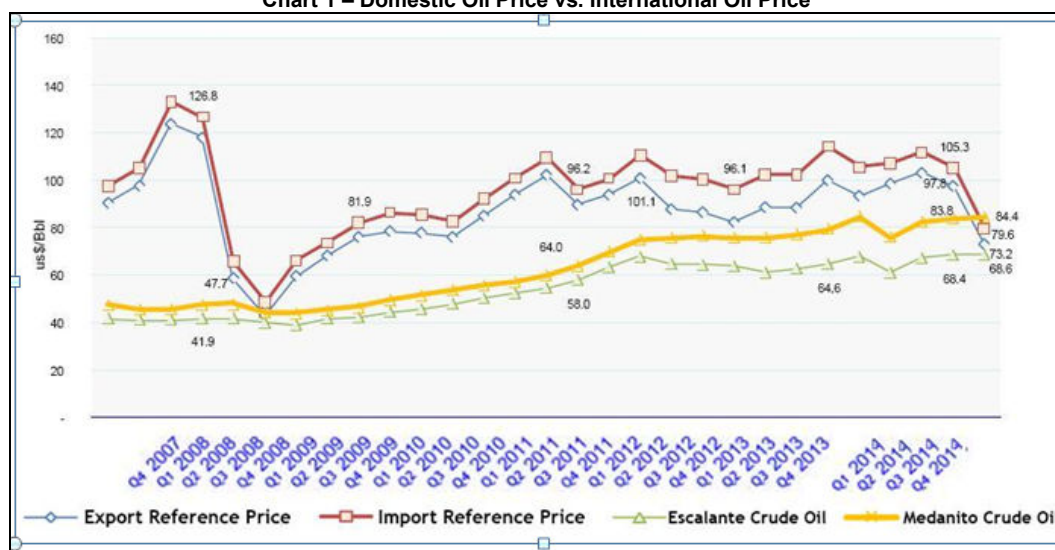
⁴ Decree 1212/1989.

⁵ Decree 1212/1989.

⁶ Decree 1589/1989.

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Chart 1 – Domestic Oil Price vs. International Oil Price⁷

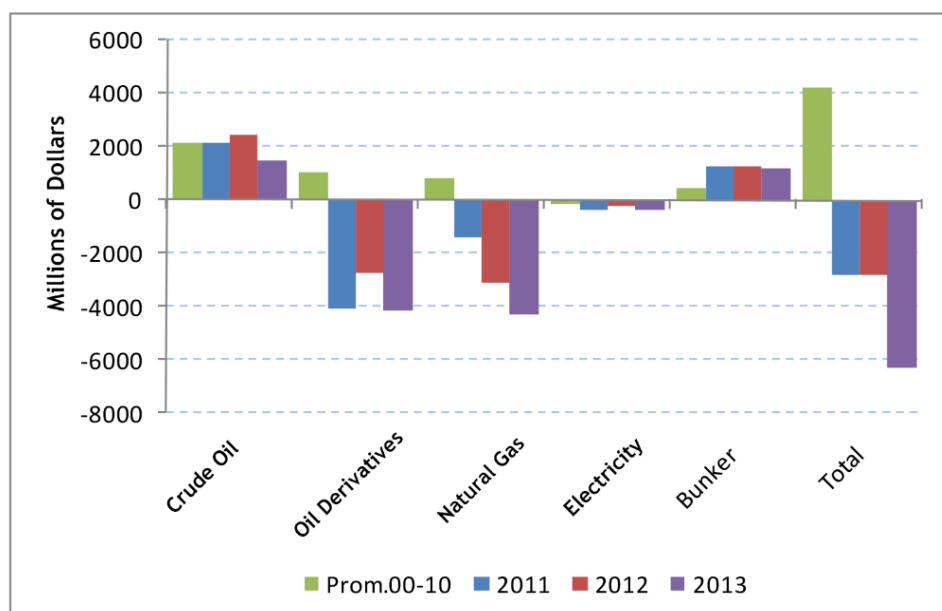


Source: Price report from Montamat & Asociados Consulting

The abovementioned measures discouraged investment in the entire energy sector and caused a decrease in production. The demand of energy continued growing each year but the supply was not enough to satisfy it so Argentina had to increase the importation of fuels.

Since 2011 Argentina has been dealing with the loss of energy self-sufficiency. The imports of fuel and electricity has increased in the last years and has caused a negative impact on the Argentine trade balance (Chart 2).

Chart 2 – Argentine Energy Trade Balance



Source: National Institute of Statistics and Census (In Spanish "INDEC")

⁷ "Escalante Crude Oil" is a blend produced in Chubut Province while "Medanito Crude Oil" is a blend produced in Neuquén Province.

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To deal with energy crisis, the Federal Government has launched new initiatives to encourage investment in the sector, as detailed below:

- Creation of promotional schemes to increase hydrocarbon production and electricity generation by setting higher prices than the regulated ones for the new energy produced. These new prices are paid by the Federal Government with public funds.
- Execution of public works to improve the generation and transport of electricity.
- Providing more favorable tax treatment for imported machinery and equipment to be devoted to the energy sector.
- Gradually increasing prices of fuels.
- Gradually increasing electricity and gas tariffs.
- Creation of charges to be paid by users of gas and electricity for the establishment of Trust Funds for large energy investments.
- Granting of exploration permits and exploitation concessions to develop new hydrocarbons blocks or to recovery previously exploited blocks.
- Association of state owned companies with private companies to explore or exploit hydrocarbons areas, or to execute new projects for power generation.
- Promotion of renewable energy to diversify the national energy matrix that is currently strongly dependent on hydrocarbons.
- Promotion of exploration and exploitation of non-conventional hydrocarbons.

These were the first steps taken by the Argentine government that indicated a policy-shift to encourage investment in the sector in order to eliminate the hydrocarbon import deficit and become not only self-sufficient but a net hydrocarbon exporter.

II. OIL AND GAS SECTOR

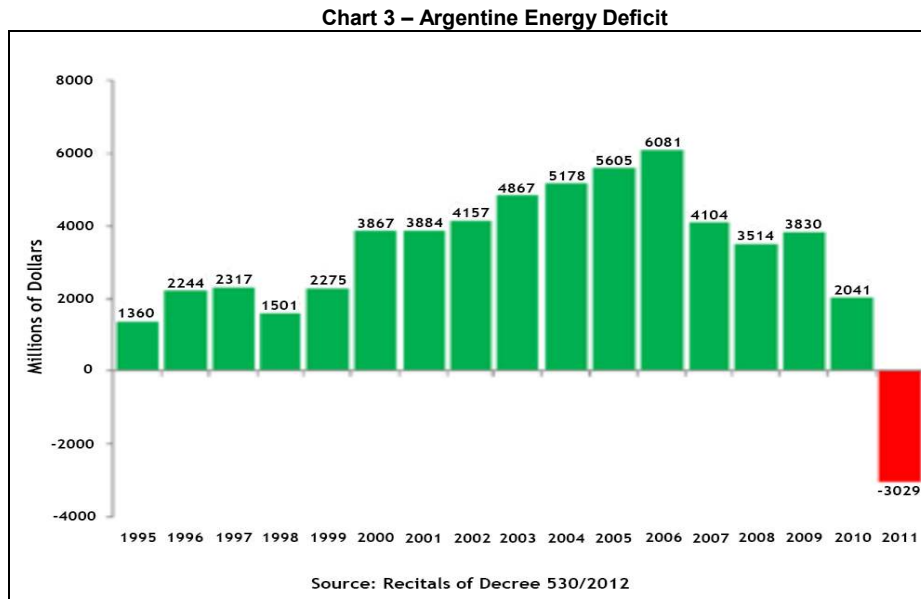
1. The expropriation of YPF

YPF is a vertically integrated Argentine energy company, engaged in the exploration, production, transportation, refining and commercialization of hydrocarbons. YPF was founded in 1922 as a state company. In 1993 YPF was privatized and purchased by Madrid-based multinational corporation, Repsol. The company took on the name of "Repsol YPF".

The relationship between the Federal Government and Repsol YPF was good until 2011, when, for the first time in 17 years, Argentina started importing oil and gas, which meant losing the ability to self-supply and a deficit of US\$3.029 billion in the sector, as shown by the running balance in chart 3.⁸

⁸ Recitals of Decree 530/2012

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As a consequence, the Argentine government claimed that the underinvestment and excessive dividends called by Repsol YPF had caused declines in output.⁹ It is important to note that, according to the Hydrocarbons Act¹⁰ and the obligations established in the permits and concession agreements granted to exploit oil and gas fields, Repsol YPF was required to make the necessary investments for the execution of the works required for the development of the entire area granted, ensuring maximum hydrocarbon production, adequate support and economic exploitation of the deposit and the observance of criteria that ensure appropriate conservation reserves and hydrocarbon self-sufficiency. According to the Government, Repsol YPF did not comply with such obligations and did not invest in exploration and this resulted in a significant reduction in oil reserves, which in turn explained the decline in production during the years that it held those rights. The production undertaken by Repsol YPF was on deposits that had already been discovered while it was government-owned.¹¹ Repsol blamed the decline in exploration and production on government regulations regarding controls on exports, and price controls on domestic oil and gas.¹²

On April 16, 2012, the Argentine National Executive Branch presented a bill for the hydrocarbon sovereignty of Argentina and the nationalization of YPF to the National Legislature. The decline in hydrocarbon reserves during the management of Repsol YPF was the main reason given for expropriation, having regard to the fact that since the acquisition by Repsol, oil reserves fell by 54% and gas reserves by 97%.¹³ The Bill was based on the position that Repsol had made insufficient investment in hydrocarbon exploration and insufficient production, which made Argentina in 2011 – for the first time since the company was privatized in the 1990s – a net hydrocarbon importer.¹⁴

Due to the decreasing productivity and the lack of investment in exploration and production showed by YPF coupled with the severe energy deficit of Argentina, the Legislative Power enacted Law No. 26,741 (“YPF Expropriation Act”) declaring:

- The achievement of self-sufficiency in hydrocarbons to be of the national public interest, as well as the exploration, exploitation, processing, transportation and commercialization of hydrocarbons, to ensure economic development, social equity, job creation, increased

⁹ Recitals of Decree 530/2012.

¹⁰ Law no. 17,319

¹¹ Parliamentary debate on YPF Expropriation, and recitals of Decree 530/2012.

¹² Parliamentary debate on YPF Expropriation, and recitals of Decree 530/2012.

¹³ Recitals of Decree 530/2012.

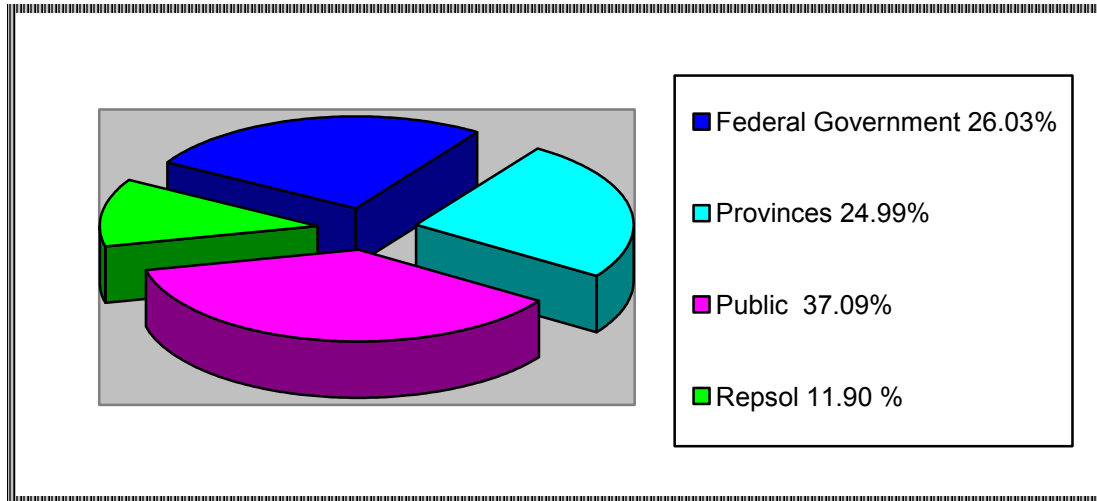
¹⁴ Recitals of Decree 530/2012 and Parliamentary Debate on YPF Expropriation.

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competitiveness of the various economic and equitable and sustainable growth of the provinces and regions,

- Subject to expropriation 51% of the shares of Repsol YPF and Repsol YPF Gas, owned by the Spanish Group Repsol. Of that total 51%, the shares were divided between the Federal State (51%) and the hydrocarbon producing provinces (49%). At present, the shareholders of YPF are shown in chart 4.

Chart 4 – YPF's Shareholders



Repsol received no compensation for the expropriation and submitted the matter to the World Bank ICISD for arbitration. In February 2014, the Argentine government and Repsol signed a compensation agreement putting an end to the dispute. The agreement, which was ratified by the National Legislature through Law No. 26,932, sets compensation for the Spanish oil firm at US\$5 billion in dollar-denominated government bonds with maturity terms running between 2017 and 2033, and with annual interest rates of between 7% and 8.75%.

Since the expropriation YPF has shown notable business growth. In fact, after a decade of decline, YPF has achieved 8.7% production increases in 2014 compared to 2013 (Chart 6).

In February 2014, YPF acquired Apache's Argentine hydrocarbons block for an amount of US\$800 million, and become the main gas producer in the country. YPF is also the principal oil company engaged in the exploration and exploitation of unconventional hydrocarbons of the country and has signed many contracts with international oil companies to develop those resources.

2. Hydrocarbon Production

The strong regulation of hydrocarbon prices and export restrictions have discouraged investment in exploration and exploitation, as a consequence there has been a decline in the production of hydrocarbons.

The sector shows decades of lack of investment in drilling activities. In 2014 the annual oil production contracted by 0.5%, with negative variations in all provinces and basins except from Neuquen, Chubut and La Pampa (Chart 5).

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Chart 5 – Hydrocarbons Production per Province (thousand of m3)

Province	2014	2013	Var. %
NEUQUÉN	18,791	18,114	3.7%
ESTADO NACIONAL	4,727	4,947	-4.4%
SANTA CRUZ	3,774	3,931	-4.0%
CHUBUT	3,417	3,370	1.4%
TIERRA DEL FUEGO	3,399	3,500	-2.9%
SALTA	2,862	3,228	-11.4%
MENDOZA	2,348	2,482	-5.4%
RIO NEGRO	1,654	1,662	-0.5%
LA PAMPA	480	442	8.6%
FORMOSA	27	27	-0.4%
Others	0	0	-
TOTAL	41,484	41,708	-0.5%

Source: Instituto Argentino de Petróleo y Gas (IAPG)

While the sector is marked by this decline, some oil companies have improved their production, including YPF which currently owns 40.60% of the market share, followed by Pan American Energy with 18.34% (Chart 6). Generally, the best opportunities for small companies are linked to partnerships with YPF or federal or provincial state owned companies

Chart 6 – Total Hydrocarbon Production per Company (thousands m3)

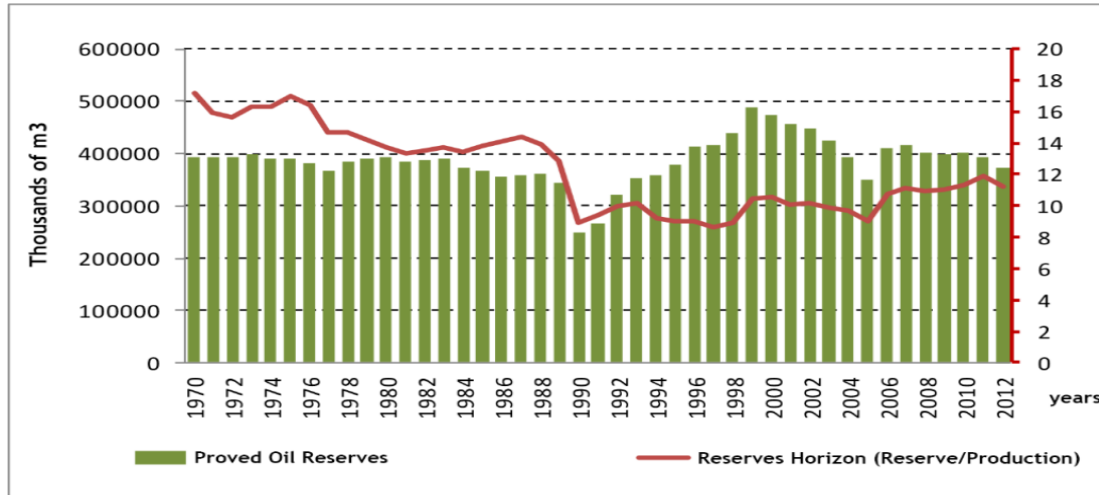
Company	2014	2013	Var. %	Q4	Q4	Var. %	%
				2014	2013		
YPF S.A.	12,983	11,944	8.7%	3,399	3,132	8.5%	40.60%
Pan American Energy	5,863	5,712	2.6%	1,513	1,457	3.9%	18.34%
Piusepetrol S.A.	2,232	2,343	-4.7%	543	595	-8.8%	6.98%
Sinopec Argentina	1,855	2,139	-13.3%	454	532	-14.6%	5.80%
Petrobras Energía S.A.	1,445	2,119	-31.8%	328	497	-34.0%	4.52%
Tecpetrol S.A.	1,171	1,227	-4.5%	288	303	-4.7%	3.66%
Chevron San Jorge	1,161	1,469	-21.0%	271	361	-25.0%	3.63%
Total Austral S. A.	878	951	-7.6%	209	237	-11.5%	2.75%
Petrolera Entre Lomas	742	784	-5.3%	186	190	-2.5%	2.32%
Compañías Asociadas	700	674	3.8%	179	170	5.3%	2.19%
YSUR	595	661	-10.0%	148	164	-9.7%	1.86%
Enap-Sipetrol	570	575	-0.8%	136	145	-6.4%	1.78%
Petroquímica C. Rivadavia	399	413	-3.3%	111	106	5.2%	1.25%
Roch S.A.	206	203	1.6%	49	49	-1.2%	0.65%
Chañares Herrados S.A.	167	191	-12.6%	41	44	-7.7%	0.52%
Medanito	123	141	-13.4%	29	39	-26.7%	0.38%
Petrolera El Trébol	109	103	5.9%	29	25	18.3%	0.34%
Gran Tierra Energy	93	91	2.5%	22	23	-2.0%	0.29%
Petróleos Sudamericanos	86	92	-6.6%	22	22	-2.1%	0.27%
Central Internacional	79	80	-0.8%	20	20	0.6%	0.25%
Américas Petrogas	72	148	-51.7%	14	32	-54.3%	0.22%
Oilstone Energía	71	75	-6.1%	18	19	-2.0%	0.22%
Petrolífera Petroleum Ltd	53	71	-25.6%	14	15	-8.1%	0.17%
Others	326	255	27.7%	87	66	31.5%	1.02%
TOTAL	31,978	32,460	-1.5%	8,110	8,241	-1.6%	100.00%

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3. Oil and Gas Reserves

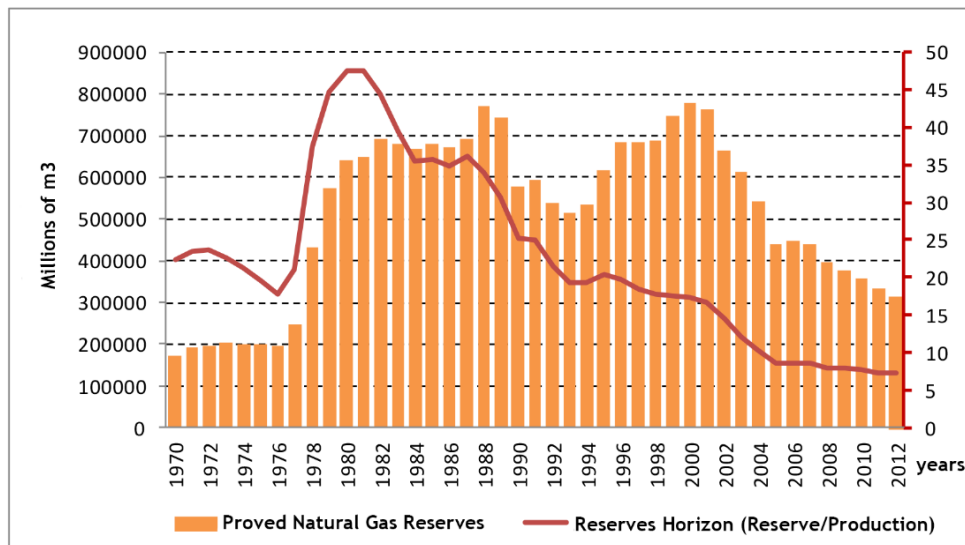
The last report published by the Federal Secretariat of Energy in 2013 shows a continuous decline in oil and gas reserves in Argentine basins (charts 7 and 8).

Chart 7 – Evolution of Oil Proved Reserves (thousands of m3)



Source: Secretary of Energy

Chart 8 – Evolution of Proved Natural Gas Reserves (million m3)



Source: Secretary of Energy

4. Unconventional Hydrocarbons

The US Energy Information Administration records Argentina as having the third largest shale gas reserves in the world, behind the United States and China, with 774 trillion cubic feet ("Tcf") of technically recoverable shale gas resources.¹⁵

Regarding development of unconventional hydrocarbons, it is noted that in 2011 YPF announced the discovery of a large formation of commercially promising tight gas and shale gas near the

¹⁵ <http://www.eia.gov/countries/cab.cfm?fips=AR>

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Loma La Lata field in Neuquén, which for decades has been a leading source of conventional production. The deposit, named Vaca Muerta, is believed to contain 4.5 Tcf of unconventional reserves. In August 2012, YPF announced another big discovery, similar to Vaca Muerta, in the basin of the San Jorge Gulf, shared by the provinces of Chubut and Santa Cruz.

Vaca Muerta is the largest area of unconventional hydrocarbons in Argentina. It covers a land mass of 30,000 km², of which YPF has an interest in over 12,000 km². Capital flows to develop this area have increased by 160% in 2013. By the end of 2014 it is expected to receive about US\$6 billion – a record for the country.

There are several companies interested in exploiting Vaca Muerta. The main players are YPF and Chevron who in 2012 entered into an agreement for the implementation of a pilot project. This project was implemented until March 2014, and involved an initial outlay of US\$1.24 billion (fully funded by Chevron) for the development of 20 km² and the drilling of 161 wells. The positive results obtained led to the conclusion of a new agreement to invest jointly and equally the amount of US\$15 billion in the next 30 years. The new agreement includes the development of an entire area of 395 km² and the drilling of approximately 1500 wells to reach a production of more than 50 billion barrels of oil and 3 billion m³ of associated gas per day, making it the main productive block of Argentina. By 2014 the two companies plan to drill an additional 170 wells, with a total investment of more than US\$1.6 billion in drilling, completion and construction of production facilities (Chart 9).¹⁶

For the development of Vaca Muerta, YPF has signed agreements with Pluspetrol and Petronas, the national oil company of Malaysia. Also, YPF is negotiating with several companies interested in participating in the exploration and exploitation of the area, such as the American ConocoPhillips, Anadarko Petroleum, Southwestern Energy (one of the most advanced oil company in shale gas development in the U.S.), British Petroleum, the Italian Eni, and the Chinese CNOOC.¹⁷

Shell is also conducting exploration and development activities in Vaca Muerta. After successfully drilling five exploratory wells, the company acquired an interest in two other blocks of the basin that were owned by Total. Shell committed investments for an amount of US\$770 million between 2014 and 2016.

The Province of Neuquén, through its state-owned company named Gas y Petróleo de Neuquén S.A., is working on the tender of eleven areas of conventional and unconventional exploration in Vaca Muerta.¹⁸ Several oil companies have shown interest in partnering with the provincial company to explore and exploit the area. Among these companies are Shell, ITG Investment Research (Canada), Tudor, Pickering Holt Co (US), Carlson Capital (U.S.), Anadarko Petroleum Corp. (US), ExxonMobil, Argenta Energy (Argentina, Canada and Colombia), EOG Resources (US), Ingenieria SIMA Engineering (Argentina), Pan American Energy, and Chevron. According to the schedule, the opening of bids will be made by the end of May 2014.

There are also other areas of unconventional hydrocarbons that are currently being explored. In April 2014, YPF and Chevron announced that entered into an agreement to explore an area of 200 km² named “Nambuena”, located in the Province of Neuquén. The agreement includes the drilling of 9 wells (7 vertical and 2 horizontal). The estimated investment for the exploratory project is about US\$140 million that will be contributed entirely by Chevron. This phase, during which YPF will also be the operator, will be completed in an estimated four-year term, although times may be accelerated in accordance with the results

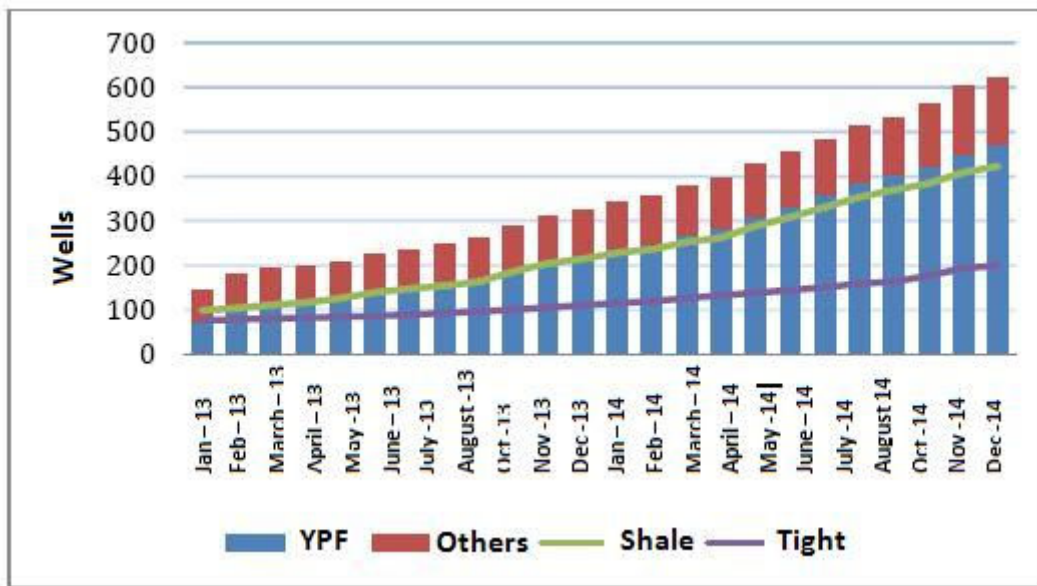
¹⁶ “Chevron invertirá US\$ 7500 millones para extraer shale oil en Vaca Muerta”. El Inversor Online newspaper. 04/10/2014.

¹⁷ “Efecto Repsol: petroleras internacionales retoman contacto con YPF interesadas en Vaca Muerta”. El Inversor online newspaper. 11/29/2013.

¹⁸ “Neuquén quiere una participación de hasta un 50% en nuevos proyectos petroleros”. El Inversor Online newspaper. 04/29/2014.

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Chart 9 – Drilling projects

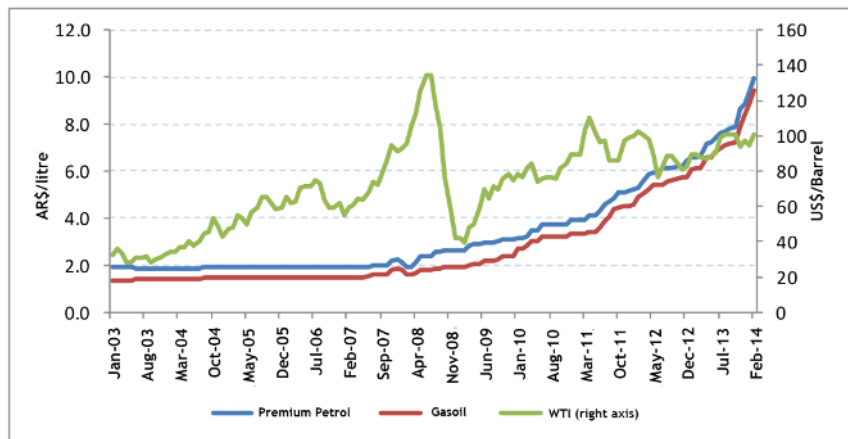


5. Fuel Refining

Argentina has twelve operating refineries throughout the country to process its crude oil production. The leading companies in the sector are YPF, Shell, Axion Energy and Petrobras.

Although fuel prices are strongly regulated, the profitability of the sector has grown on the basis of price increases authorized by the Federal Government in recent years (Chart 10).

Chart 10 – Evolution of Fuel Prices



Source: Price Report from Montamat Asociados Consulting

Argentina registers a growing demand for petrol and gasoil. In turn, increased demand of fuel oil has been caused by thermal power plants for electricity generation. We emphasize that, as domestic production is not enough to fully satisfy the demand, Argentina must import fuel (Chart 11) at relatively high prices, which are then passed on to consumers at highly subsidized prices from the Federal Government.

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Chart 11 – Exports and Imports of fuel (MM US\$)

	2013	2012	Var. Abs.	Var. %
Exports				
Crude Oil	1,729	2,608	-879	-33.7%
Biodiesel	1,227	1,778	-551	-31.0%
Petroleum gases and other gaseous hydrocarbons	713	809	-96	-11.9%
Fuel	2,620	3,107	-487	-15.7%
Imports				
Regular and Premium Fuels	11,415	9,267	2,148	23.2%

Source: National Institute of Statistics and Census (INDEC)

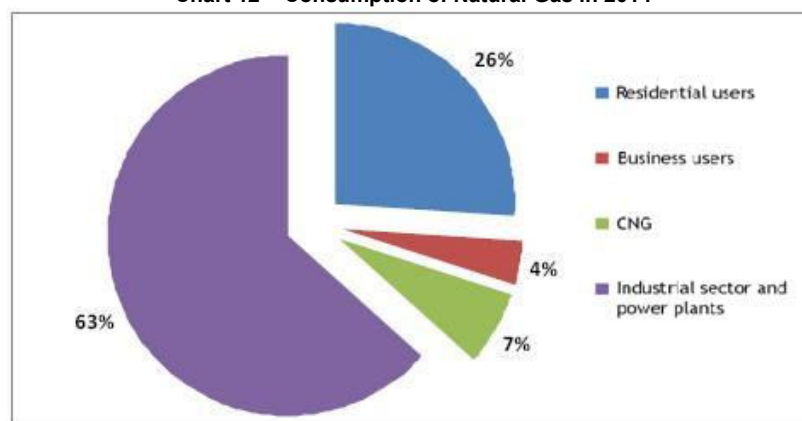
Due to the shortage of domestic crude oil, during 2013 local refineries could not operate at one hundred percent of their processing capacities and registered an idle capacity of approximately 8,000 m3/day. Therefore, the Federal Government approved a program which shall apply until February 2015, for imports of light crude oil to be refined in Argentina, in order to optimize the use of local refining facilities and reduce fuel imports.

According to this program, refiners that have spare capacity must file an import request with the Secretariat of Energy. If the request is accepted, the state company Enarsa will be instructed by the Secretariat of Energy to import the volumes of light crude demanded, and expenses that it demands will be paid with public funds. The final net reference price paid by refiners for imported crude oil will be set by the Secretariat of Energy.

6. Increase of Natural Gas Import

In 2014, Argentina registered a demand for natural gas of 116,996 thousand m3/day, which were primarily consumed by electric power generating plants, local industries and residential users (chart 12).

Chart 12 – Consumption of Natural Gas in 2014



The demand is increasing year after year and, in the absence of local production to meet demand fully, Argentina now must rely on imports of natural gas from Bolivia and the purchase of liquefied natural gas (LNG) (Chart 13).

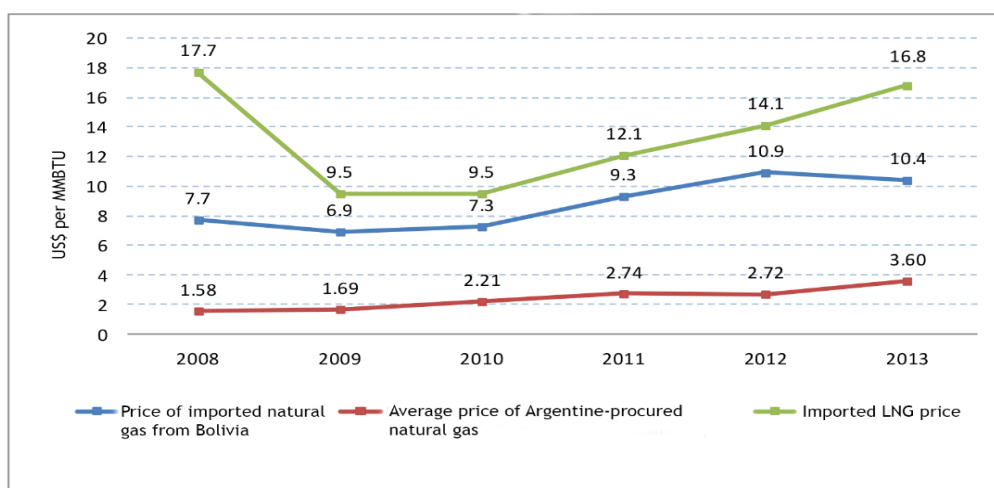
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Chart 13 – Domestic and Imported Gas (thousands of m3)

Year	Domestic production	LNG	Bolivia	% of domestic natural gas production	% of imports
2011	98,762	11,273	7,464	84.1%	15.9%
2012	92,977	12,422	12,477	78.9%	21.1%
2013	87,160	16,639	15,604	73.0%	27.0%
2014	90,116	16,172	16,494	73.4%	26.6%

The wellhead price of natural gas is heavily regulated and is much lower than the international price (Chart 14), which discourages investment and generates strong criticism from the entire energy sector.

Chart 14 – Prices of Domestic Gas and Imported Gas



Source: Price Report from Montamat Asociados Consulting

In order to encourage local production, in 2014 the Federal Government created a promotional regime which provides that those companies that increase their production from 2012, will receive a premium price for their surplus production to be paid by the Federal Government with public funds. This measure aims to reduce the state's natural gas imports from Bolivia.

III. ELECTRICITY SECTOR

1. Current situation of the sector

The main characteristics of Argentine electricity are: (i) increasing demand (chart 15), (ii) frozen prices and tariffs, (iii) high state subsidies for fuel purchased for electricity generation, (iv) energy matrix highly dependent on hydrocarbons fuels.

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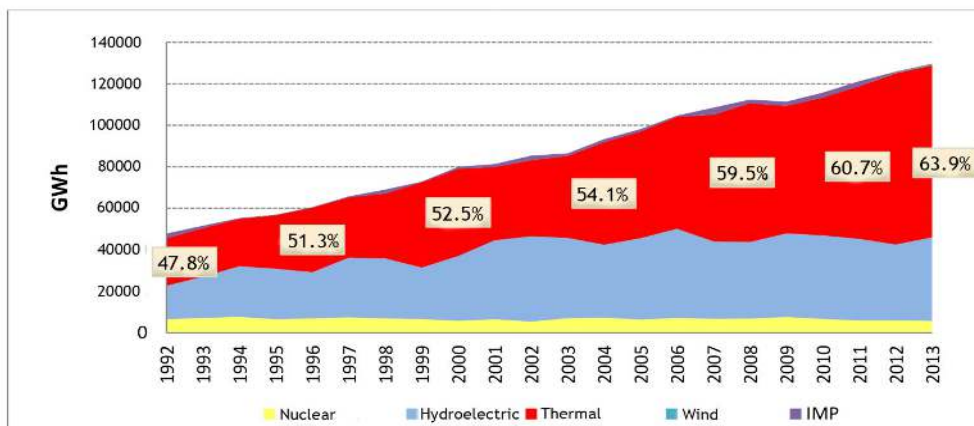
Chart 15 – Net Electricity Production to Supply the Demand



Before the economic crisis of 2001, the price of electricity was set according to marginal costs. Afterwards, prices began to be tightly regulated to avoid the transference to residential consumers of costs fixed in dollars. Since then, the price of electricity paid by residential consumers has been frozen at AR\$120 MW/h (AR\$ 9.13 = US\$1). At present, that price is not enough to cover costs of fuels, operation and maintenance (currently around AR\$387.52 MW/h), and the Federal Government is subsidizing the sector.

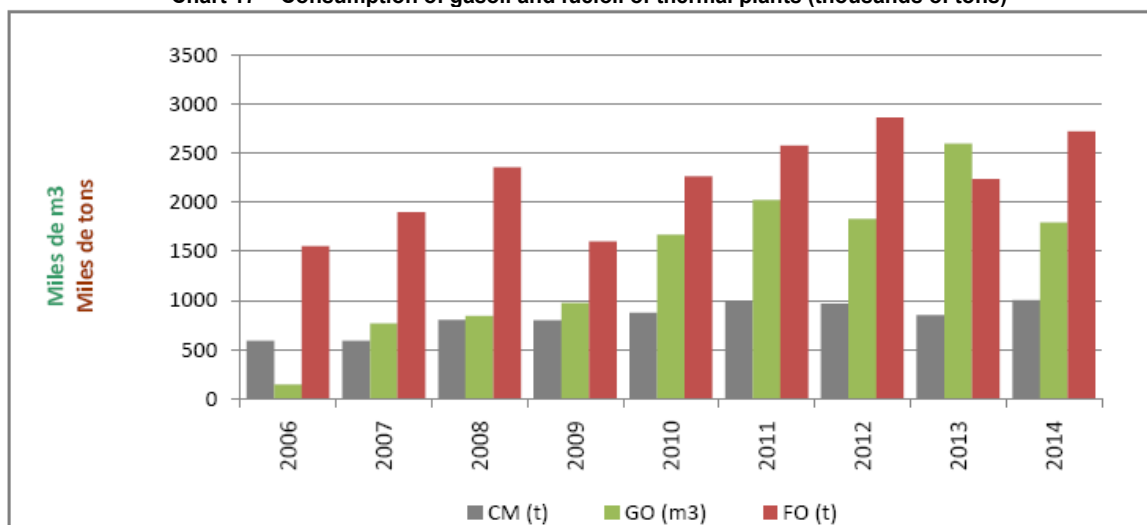
Given the lack of investment in the generation sector, to meet the ever increasing demand, the Federal Government has resorted to short-term solutions and installed numerous thermal plants near points of peak demand (Chart 16). However, the installation of these power plants caused an increase in fuels demand that currently must be satisfied with imported fuels due to the decline of local production (Chart 17). The high import expenses are paid by the Federal Government with public funds, only a small percentage of these costs are actually transferred to residential users. In 2014 the energy deficit was US\$7 billion.

Chart 16 – Evolution of Power Generation according to type of source



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Chart 17 – Consumption of gasoil and fueloil of thermal plants (thousands of tons)



2. Renewable Energy

To reduce dependence on liquid fuels, in 2006 Argentina issued the National Law No. 26,190, which established the *"National promotion scheme for the use of renewable energy sources for the production of electricity."* This program known as "GENREN" was created to attract investment, diversify the Argentine energy matrix and to achieve 8% of electricity production from renewable sources by 2016.

The state energy company Enarsa is responsible to call for tenders for the construction, operation and maintenance of this type of power generation. Awarded companies enter into an electricity supply agreement for a term of 15 years, and with promotional prices that are paid with public funds.

Under the scheme GENREN Enarsa was awarded projects for a total of 895 MW, distributed according to the following detail:

- 754 MW of wind power, with an average price of US\$571.6/MWh.
- 110.4 MW of biofuels thermal generation, with an average price of US\$126.9/MWh.
- 10.6 MW of small hydroelectric plants, with an average price of US\$287.6/MWh.
- 20 MW of solar power, with an average price of US\$162.4/MWh.

Argentina has favorable natural conditions for the development of renewable energies. The GENREN program was the first step in that direction and now the provincial governments, and even some municipal governments, are being encouraged to develop new projects. Such is the case of the province of San Juan which for the past years has been strongly encouraging solar energy, and has projects and long-term research and has the intention of manufacturing solar panels in situ.

Wind power has perhaps the largest potential in the country, mainly in the Patagonian area where favorable winds for the development of this industry can be found. In fact there are medium and large local companies that manufacture wind turbines with local components. One of them is IMPSA, based in Mendoza, which has four projects for a total of 155 MW located in Patagonia. Parks are expected to be running by the end of 2014.

Also, the multinational company Isolux Corsán is running a project of 200 MW wind farm called Loma Blanca, in the province of Chubut, with 100 wind turbines.

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3. Large Hydroelectric Projects

Regarding major long term energy projects, the construction of two large hydroelectric plants in the Province of Santa Cruz, respectively called “Nestor Kirchner” and “Jorge Cepernic”, with a total capacity of 1700 MW is also noteworthy. The tender for this joint project was awarded in 2013 to a joint venture formed by the Argentine company Electroingeniería and China Gezhouba. This project comes after the Federal Government investment of US\$750 million to build 2,000 kilometers of electricity transmission lines to deliver the energy to the main urban centers.

In 2013, the construction of the hydroelectric complex “Los Blancos” was awarded to the Argentine company Cartellone and the Brazilian OAS. This project consists of two hydroelectric dams settled on the river Tunuyán in the province of Mendoza, which will have a total installed capacity of 485 MW. The execution of the entire project will require an investment of US\$585 million, and 65% will be financed by the Argentine Federal Government.

The currently ongoing bidding process is for the construction of the dam “Chihuido I” over the Neuquén river, for a total capacity of 637 MW. The works are valued at US\$1.57 billion and it will take approximately five years to be constructed. There are three consortiums interested in participating in the tender: (i) the joint venture formed by Electroingeniería and China Gezhouba; (ii) the local company CPC along with the Chinese company Sinohydro; and (iii) the joint venture formed by the Argentine companies Rovella Carranza and Helport, and the Russian companies Inter Rao and Power Machine.

Among other hydroelectric projects under consideration are the following:

- (i) Garabí/Panambí Project: A binational dam to be built over the Uruguay River, between Argentina and Brazil. The estimated total cost is US\$4.2 billion, with an installed capacity of 2000 MW. Production would be split equally between Argentina and Brazil. They are currently running studies for the implementation of the project and the drafting of bid documents.
- (ii) Corpus Christi Project: A binational dam to be installed on the Parana River between Argentina and Paraguay, with an installed capacity of 3450 MW. The project is under feasibility study process. The estimated investment could reach US\$10 billion with a 10-year construction period.
- (iii) “More Yacyretá” Project consists of extending the Yaciretá Dam, which is a bi-national hydroelectric plant built on the Parana River, which divides Argentina from Paraguay. Yacyretá currently supplies 22% of Argentina’s electricity and involves 60% of the country’s hydroelectric energy.

At present Yaciretá has 3100 MW installed capacity, and the “More Yacyretá” project aims to add about 480 MW. The project has an investment cost estimated at US\$1.1 billion, to be financed from the profits generated by the dam itself.

“More Yacyretá” also includes the construction of a new hydroelectric plant in the current landfill arm of the Parana river called “Anacua” with 270 MW of installed capacity.

4. Nuclear Energy

Argentina has three nuclear reactors that in 2013 supplied 4.4% of the electricity consumed nationwide.

The Atucha I Nuclear Power Plant, with 335 MW installed capacity, became operational in 1974, and was the first one in Latin America. Then in 1984 the Embalse Nuclear Power Plant with 600 MW. Atucha II has 745 MW and became operational in 2014. The nuclear plants are managed by the state-owned company Nucleoeléctrica Argentina S.A. (NASA).

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The planning and implementation of nuclear energy projects are handled by the National Atomic Energy Commission (in Spanish, CNEA). Its two major projects are: (i) to extend of the operational life of Embalse for another 25 years, and increase its capacity by 7%; (ii) construction of a fourth nuclear power plant with an installed capacity of 800 MW and estimated cost of US\$ 6 million.

The CNEA is also working on a prototype for a medium power nuclear reactor called CAREM25, to be installed in the Province of Buenos Aires. It will have a capacity of 25 MW and will be the first nuclear power station entirely designed and built in the country. According to CNEA this type of reactor has a great future for the electricity supply in remote areas of large urban centers or in manufacturing centers with high energy consumption. At least 70% of CAREM components and related services are to be provided by qualified Argentine companies under international quality standards supervised by the CNEA.

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If you have any question or comment regarding the foregoing, do not hesitate to contact us by calling at (54-11) 4326-7386, via fax to (54-11) 4326-7396 or via e-mail addressed to godoy@berettagodoy.com.