



Ministry of Foreign Affairs

The Oil & Gas sector in Argentina

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BRIEF MARKET REPORT

The Oil & Gas sector in Argentina ¹

Prepared June 2022.

This brief report provides an overview of the oil and gas sector in Argentina, its market and recent trends.



Refinery of YPF in Mendoza, Argentina. Source: Agencia Argentina de Inversiones y Comercio Internacional

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¹ Content information provided in this document, is of general nature only. For more detailed information, events and commercial trade offers as well as commercial business contacts, please contact the Embassy in Buenos Aires, the Netherlands Business Support Office or the Dutch-Argentine Chamber of Commerce (see section on Institutions).

Why this sector?

Argentina's potential in oil and gas extraction is huge, and it has been strongly highlighted again by the crisis in the Ukraine. Dutch companies that offer services to this industry, especially those related to environmental protection may have good opportunities in this market. At the same time, Argentina's macroeconomic challenges must be considered.

Natural Endowment

Argentina is a country well-endowed with fossil fuels. According to the U.S. Energy Information Administration (EIA), worldwide Argentina ranks 2nd in non-conventional gas resources and 4th in non-conventional oil resources. And is one of the 4 countries in the world that commercially develops non-conventional resources.

Out of its large Vaca Muerta's 35,000 km² territory of non-conventional resources, only 4% is currently in a massive development phase. And Argentina's gas & oil resources in its large offshore platform are yet to be explored, of about 500,000 km².



Argentina's oil and gas basins

Regarding the proven oil reserves, those verified as being in technical and economic condition for extraction, and are used therefore for long term extraction contracts, account for 383,2 million of cubic meters, of which 265 million are in conventional formations and 118 are non-conventional. The figures of proven reserves of gas are 397.000 million of cubic meters in conventional formations and 214.000millions in those nonconventional.

Major global companies including Chevron, ConocoPhillips, ExxonMobil, Petronas, Shell, and Total are present along with many local firms. Noteworthy is Argentina's majority state-owned energy company, YPF, which holds the largest upstream sector share.

Geographical distribution of investment. At this moment, most investment in hydrocarbons takes place in the province of Neuquen, which includes the Vaca Muerta deposit, (in an area similar to the territory of Belgium) with investments worth USD3.700m in extraction and USD 90m in exploration.

In second place is the province of Chubut, that received USD 724m for production and USD 11.4m for exploration. Third place corresponds to the province of Santa Cruz with USD 34.8m in exploration and USD 382m in production. 4th in the ranking is the province of Mendoza, with USD 7.8m in exploration and USD 204m in production. The group of 5 most invested provinces is complete with the province of Rio Negro, with USD29m in exploration and USD125m in production.



The star basin is Vaca Muerta in Neuquen province. In a year the production of non-conventional crude oil increased by 50%, with 4 deposits of high yield. YPF, the large Argentine company controlled by the state, plans to increase its investment by USD 1600m in 2022.

The second largest company by its investment in Vaca Muerta in 2022 is Shell, which announced investments for USD 500m. Among its partners in the extraction Shell counts with the Norwegian company Equinor. Pan American Energy, (PAE) is another company that announced to invest large sums, of USD 500m. PAE's stock is available in the New York Exchange. It is the largest private oil & gas company in Argentina, with 21% market share in oil production and 14% in gas production. TecPetrol, part of the Techint, an Italian-Argentine holding, announced investments of USD 400 million, similar to Vista Oil and Gas, a company that operates in Mexico and Argentina.

The migration to shale oil is evident in the province: in 2021 out of a total 276 new wells dug, only 17 were for conventional oil. Technology for shale oil in Neuquen started to improve in 2018, suffered the low prices of the Covid19 pandemic in 2020, but began to recover in mid of that year, with the government authorization to export.

An 11% of Neuquén's oil production is exported from Puerto Rosales, near Bahia Blanca, in the south of Buenos Aires province, to Brazil and the USA. These exports are a blend between conventional and shale oil.

Economic Challenges

But the abundant availability of gas does not mean yet that Argentina is self-sufficient: for that a gas pipeline joining the Vaca Muerta deposit with the main consumption areas around the city of Buenos Aires would be necessary. Natural gas represents about 60 percent of Argentina's primary energy source, and although it features one of the world's largest shale gas deposits, it needs to rely on liquefied natural gas (LNG) imports to meet domestic demand. The crisis in the Ukraine adds urgency to the construction of this pipeline. Argentina imported natural gas and derivatives worth USD 4.5 bn in 2021 and the crisis in Ukraine is expected to up the costs in 2022.

The government launched "Plan Gas.Ar," a natural gas plan conceived to increase local production and reduce gas imports. The Plan provides a framework that ensures access to foreign exchange and government support for increased production.

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Regarding unconventional gas, in March 2022 the Secretariat of Energy pointed out that its production exceeds 38% that of 2021, and 14% that of the average for 2019, becoming today 52% of the total production of gas in the country.

A new gas pipeline. To enable the transportation of gas to the markets, Decree 465/2019 was issued in July 2019, a public tender to award the construction of a 600 miles gas pipeline to Greater Buenos Aires and to Bahia Blanca, a port on the Atlantic coast. It was expected that it would be completed in 2021. At the present time (May 2022) the government announced that construction of the pipeline would begin in July 2022. Within the Transport.Ar program it is envisioned that the new trunk gas pipeline, called Nestor Kirchner, will expand the current transport capacity by 44 million m³ per day. The state entity Energía Argentina (formerly IEASA) launched [bidding processes](#) for key components in late April 2022.

In the long run the Argentine government promotes the LNG industry as an export project. The intervention of national and foreign companies and G20 member countries is sought, to ensure a demand that justifies the huge investments needed to take advantage of the gas potential of Vaca Muerta.

The Government's initiative takes as a reference the project that YPF had been developing to build a gas liquefaction plant in the port area of Bahía Blanca, with an initial capacity of 15 to 20 million m³ (MMm³) and an estimated investment of more than USD 5,000 million.

The national government is also moving forward with the idea of building a larger LNG plant in Bahía Blanca to sell Vaca Muerta's non-conventional gas abroad. According to the latest official calculations, this megaproject will require a total investment of USD10,000m to start exporting LNG from 2026, with a sales potential that can exceed USD15,000m.



The project has already been proposed to several investors.

New law. All this is in the context of a new bill that is expected to stimulate incremental oil and gas production for domestic and international markets, promote production continuity of mature wells through secondary and tertiary recovery, which represent approximately 80% of the country's conventional hydrocarbon production, and also secure access to foreign exchange. National officials and those of the producing provinces prepared this new hydrocarbon promotion law, (Régimen de Promoción de la Industria de Hidrocarburos y de adecuaciones al Regimen Tributario), that is, by May 2022, being discussed in the Argentine Parliament.

If approved it will shield the oil and gas business from future changes in the regulations, especially in regard to the use of hard currency, and at the same time grants outstanding benefits and tax incentives for investors. The bill would provide the industry with a long-term tax/fiscal stability outlook, including at provincial and municipal levels.

On its side, the business community points to several issues that need to be solved for a more complete use of the existing oil and gas reserves: they mention the limited access to hard currency to pay for imports (as result of government's restriction in the use of dollars as the stock of hard currency in Argentina's central bank is limited), and the difference between the domestic and foreign prices that are paid for oil (the government regulates the domestic price, at a lower level than the global one, called "barril criollo", to stimulate the economy). Businesspeople also complain about the authorizations that are required for export, that currently are given only for spot transactions and are granted each month, affecting the possibility to close export deals for longer terms.

Argentina's fuel prices to the public are the lowest in the Latam region. A fuel that is sold in gas stations at USD 0.97/liter in March 2022 in Argentina, is very low priced compared with Chile (USD 1.34) or Brazil (USD 1.28).

Environment

Presently the two most discussed environmental challenges in Argentina are in regard to the Vaca Muerta basin and the proposed offshore drilling off the coast of Mar del Plata in Buenos Aires province.

Regarding the large Vaca Muerta deposit, it is a shale formation which requires a technology known as fracking. This consists of a combination of vertical and horizontal drilling together with the injection of a fluid composed of water, sand and chemical additives at a very high pressure that fractures the rock, allowing hydrocarbons to flow through the pores and emerge to the surface. Due to its environmental consequences, this type of extraction is debated in the world and is even prohibited in some countries.

The environmental risks most mentioned concern the contamination of liquids, air pollution, and those related to the treatment of residues.

Liquids contamination. The process uses high quantities of water. A report by the FARN (Foundation of Environment and Natural Resources) of 2020 notes that one well that includes the realization of the 25 stages of fracture may lead to the injection of some 30-35 million liters of water, 6000 tons of sand and about 10,000 liters of additives. To this must be added about 6 to 12 million liters of flowback, (the amount of sludge that returns to the surface of the well) approximately 250 m3 of sludge (with a built-in cocktail of additives).

The flowback, also called "return water", returns to the wellhead (amounting 20 to 40% of the total injected) as a liquid residue composed of water and toxic substances.

In this regard, there are three major concerns in environmental terms linked to the flowback:

- The first refers to its composition, since many of the additives used by the industry are toxic for aquatic life and human health. The industry argues that they only constitute between 0.2 and the 0.5% of the total volume injected and that most of them are for home use.

- The second concern is about the management of surface effluents, because it requires a logistic that includes its capture at the exit of the well, the installation of protection elements to prevent its escape, its transfer, and the treatment to make it inert or reduce its dangerousness and its final disposal, as established by the present regulations.
- The third issue is the permanence in the subsoil of the liquid residue or effluent after the fracture, which is usually a majority percentage of the fracture fluid injected. Its environmental impacts can originate in the possible migration to the surface, being able to reach the aquifers, or to generate induced seismicity.

Air pollution. Regarding the impact on greenhouse gas (GHG) emissions from the extraction of unconventional hydrocarbons from Vaca Muerta, according to a report by the national University of the Center of the Province of Buenos Aires for Greenpeace Argentina, that considered different scenarios, national CO₂ emissions would increase greatly.

In addition, the blasting of soils together with substances released into the atmosphere by the extraction of hydrocarbons also affect the air quality, impacting those populations that live in the vicinity of wells or crude oil treatment facilities and refineries. These populations may become more likely to develop respiratory conditions and diseases linked to the absorption of toxic substances.

Residues. There are several oil wastes that deserve special attention, either because of their volume or the danger they represent. Drilling produces two types of waste that are usually generated at the same time: drilling cuttings (the pieces of rock that come to the surface along with the mud when a well is being drilled) and drilling sludge, which in turn can be subdivided in water-based sludge and oil-based sludge; the latter require more complex treatments because of their dangerousness.

Over a decade of activities, has been estimated that the more than 2000 wells drilled in Vaca Muerta used about 400,000 m³ of drilling mud and generated about 1,000,000 m³ of cuttings. In December 2020 the Argentine Association of Environmental Lawyers denounced those large amounts of untreated waste were left out in the open, which would affect the environment and the health of the population.

Seismic. Other complaint has been about the increase in seismic movement deemed to be produced by the fracking. The conclusions from a study conducted by the National University of San Juan with eleven seismographs, do not rule out the possibility that earthquakes are induced by hydraulic fracturing.

Offshore Drilling

Argentina has extracted offshore fossil fuels since decades, and 18% of the country's gas is extracted offshore. The current offshore exploration concessions in Argentina's Northern Basin (see map below) correspond to Round No. 1 of an international bidding process to develop oil and gas production in deep water under the jurisdiction of the national government.

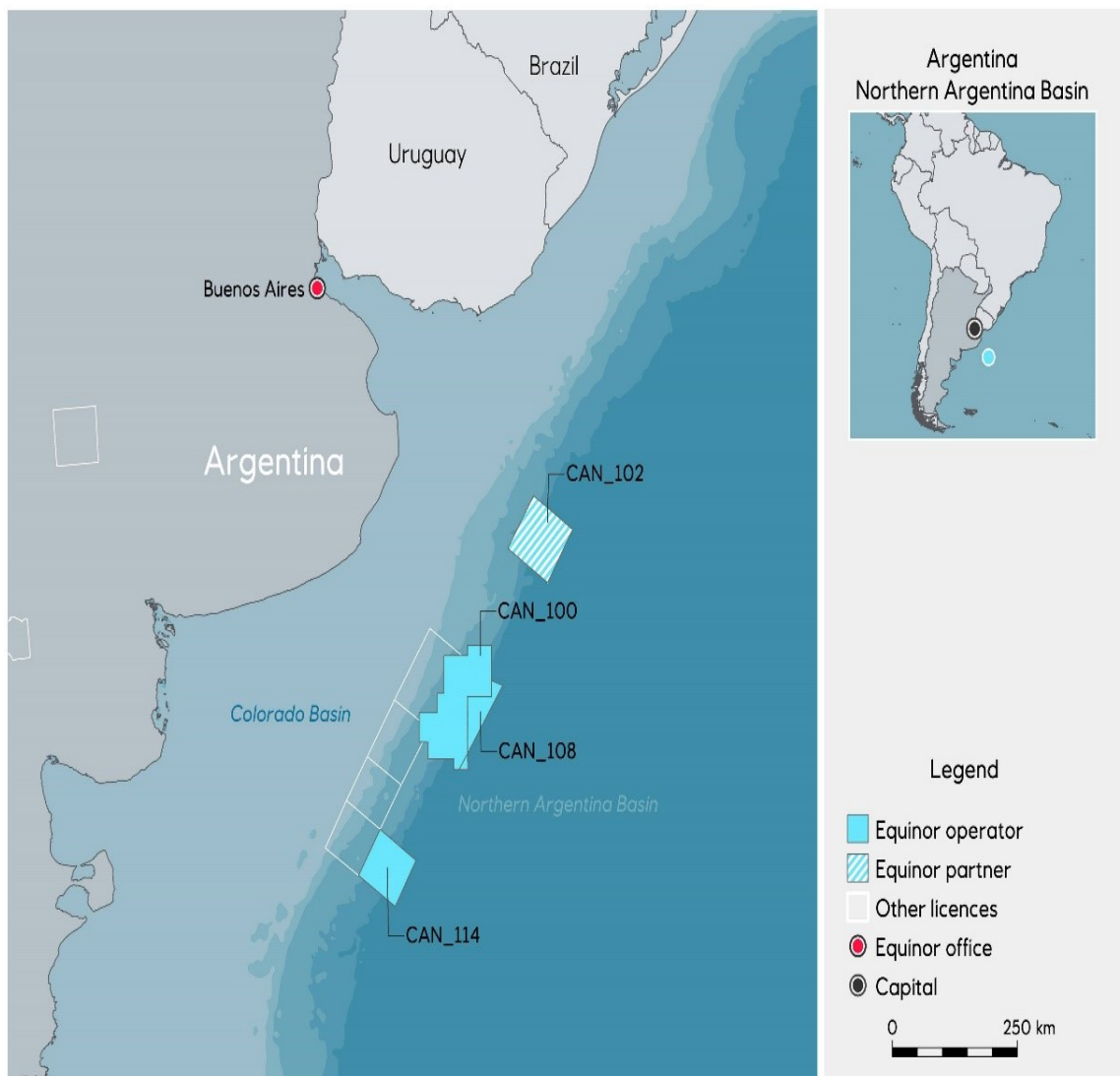
They include a new initiative to allow extraction 300 km off the coast of Mar del Plata city in Buenos Aires province that has sparked several critics by environmental groups. The exploration project has been presented by the state-controlled company YPF, jointly with Shell and the Norwegian company Equinor.

Among the companies that were awarded exploration areas are, besides YPF and Equinor, the following: Tecpetrol, Pluspetrol, Total Austral, BP Exploration, Shell, Qatar Petroleum, ExxonMobil, Wintershall, Tullow Oil, Mitsui and Eni. According to industry data, the development of this offshore block alone can generate public revenue (royalties plus taxes) of USD32.9 billion.

This year 2022 is expected that the first exploration drilling well in the Northern Argentina Basin will be completed, aimed to confirm the presence of oil or gas on the seabed and to assess if it is economically viable to develop it.

Protests have been led by several environmental NGOs and by the mayor of Mar del Plata. A federal judge ordered the exploration to be suspended.

On their side, Argentine authorities in regards to environmental impact and possible adverse effects on tourism and fishing activities, particularly in the Northern Argentina Basin (the one nearest to the city of Mar del Plata), estimate that such impacts would be minimal considering the distances from the coast and the kind of marine currents.



Argentina's Northern Basin.

Source: Equinor

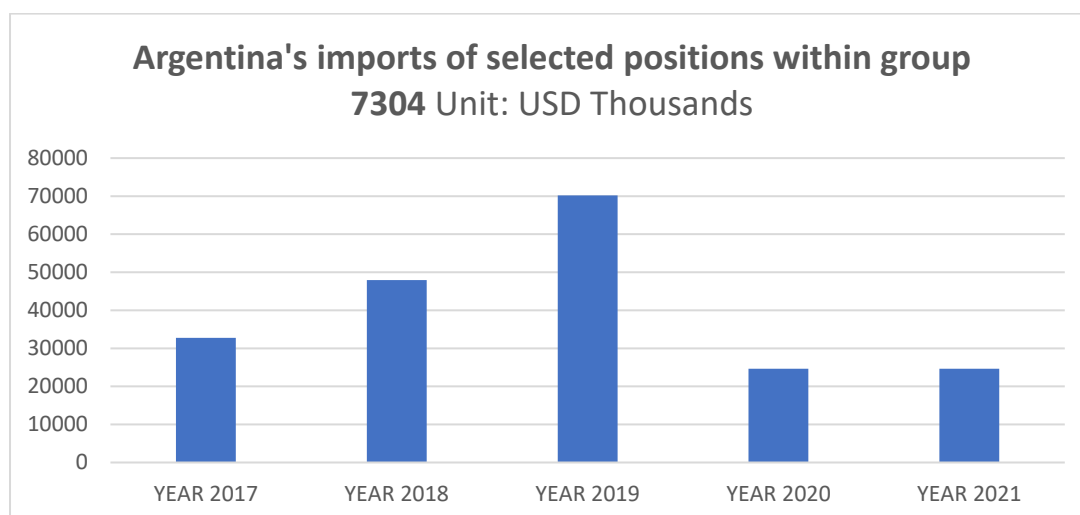
Import of Oil Equipment

In order to give a view of the quantities and evolution of Argentine imports of oil and gas-related equipment the following graph list the total of imports of positions 730411; 730419; 730423; 730424; and 730429.

They correspond to seamless line pipes, drill pipes, and casing and tubing made of iron or steel that are used in the oil and gas sector.

Absolute values, in thousands of USD:

year 2017	year 2018	year 2019	year 2020	year 2021
32.763	47.949	70.197	24.644	24.656



Local Institutions

- **Secretariat of Energy:** <https://www.argentina.gob.ar/energia> The section of the National Ministry of Economy that deals with the energy sector.
- **Energía Argentina** <https://www.energia-argentina.com.ar/> (formerly ENARSA and IEASA) A state company whose goal is to consolidate the position in the natural gas market, for the commercialization, operation, and maintenance of trunk gas pipelines. Also, to promote the generation of electricity, to execute public works in energy matters, and to promote renewable energy sources.
- **Argentine Institute of Petroleum & Gas: IAPG.** https://www.iapg.org.ar/web_iapg/ An nonprofit civil association that gathers the main energy firms operating in the country. It generates, plans and develops studies and analyzes of all activities related to the hydrocarbon industries. The website includes a section on recommended practices. https://www.iapg.org.ar/web_iapg/sectores/practicas/practicas.htm

Institutions related with The Netherlands and the EU

- **Netherlands Business Support Office in Córdoba**, a foreign trade office of the Dutch government implemented by the Netherlands Enterprise Agency (RvO.nl) located in the important region of Córdoba in the center of the country. T+54 9 3584 383 175
Website link: [NBSO Córdoba](#)
- **Embassy of the Netherlands in Argentina**
Economic Section T: +54 11 4338 0090 , Website www.paisesbajosytu.nl
Linkedin: [EmbajadadelReinodelosPaísesBajos en Buenos Aires](#)
- **Argentine-Dutch Chamber of Commerce** The chamber that gathers most Dutch businesses in Argentina. Website <https://ccah.org.ar/> Email info@ccah.org.ar
- **European Enterprise Network (EEN) in Argentina**
The EEN is a network funded by the EU to support SMEs and research centers in the EU and emerging economies including Argentina. Website:
<https://een.ec.europa.eu/about/branches/argentina>
- **EU - Latin America Mineral Development Network Platform MDNP** . The Platform is part of an EU- funded project for co-operation on responsible and sustainable mining.

Events

- **Argentina Oil & Gas Expo**: AOG <https://www.aogexpo.com.ar> . The largest energy fair in Argentina, its 2022 edition took place in the month of March in Buenos Aires.
- **2nd Argentina Energy Summit**. <https://www.argentina-summit.com/> . Organized by Argentina's Trade and Investment Promotion Agency, aims to bring together existing and future operators in the oil & gas and energy industries in Argentina and Latin America. It will provide updates on the E&P (exploration, development, and production) the development of a vast LNG market, future gas infrastructure projects, offshore and onshore activities, EOR (enhanced oil recovery) and reduction of production costs in Vaca Muerta, and other important hydrocarbon and energy projects throughout the country.
Dates & location: August 23 and 24, 2022. Buenos Aires, Hilton Hotel

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