

Vaca Muerta Shale Basin Argentina

Sectors: Oil and Gas Extraction

Active

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[Project website](#)

Sector	Oil and Gas Extraction, Pipeline Transportation of Crude Oil, Pipeline Transportation of Natural Gas
Location	
Status	Planning Design Agreement Construction Operation Closure Decommission
Website	https://www.ypf.com/Vacamuertachallenge/Paginas/index.html

About Vaca Muerta Shale Basin

According to the US Energy Information Agency, Argentina has the [second-largest](#) shale gas reserves and [fourth-largest](#) shale oil reserves in the world. The country's shale gas reserves alone would account for [11.4%](#) of the world's remaining 1.5°C carbon budget if exploited to its maximum. Nearly all of these reserves are located in the [Neuquén Basin](#) in Northern Patagonia.

The Vaca Muerta Shale Basin is located in the Neuquén Basin. It has been identified as the largest shale play outside North America. The megaproject entails extraction from the area's enormous shale oil and gas reserves, as well as building associated infrastructure such as pipelines and LNG terminals. The deposit extends over [30,000 square kilometres](#) and represents [43%](#) of Argentina's total oil production and [60%](#) of its gas production.

Initially, this basin was supposed to contribute towards energy self-sufficiency, but recently, the export potential of the region has been realised and more attention is being paid towards [exports](#).

As of 14 February 2022, the administration of Argentina's President Alberto Fernández has further advanced its planned [US\\$3.5bn gas pipeline project](#).

Fernández issued a decree giving state energy company [IEASA](#) a 35-year transport concession for the central component, the Presidente Néstor Kirchner duct. The decree states that IEASA is authorized to build, maintain and operate the duct, either directly or via third parties.

The decree also establishes an administrative and financial trust, Fondesgas, with state-owned investment and foreign trade bank [BICE](#) appointed trustee. Issuance of associated debt instruments and project participation certificates will also be authorized, the decree states.

Argentina plans to tackle the overall project in two phases, with the first financed using public funds and sporting a price tag of around

US\$1.6bn.

A central purpose of the pipeline and its ancillary elements is easing a [winter dispatch bottleneck](#) at the [Vaca Muerta](#) shale play in the Neuquina basin and, in turn, supporting output growth so that costly imports can be substituted with cheaper domestic production.

Latest developments

Activity levels in Vaca Muerta keep rising

Mar 10 2022

Argentina seeks bids to build first phase of Vaca Muerta gas pipeline

Feb 24 2022

Why this profile?

The Vaca Muerta fracking megaproject poses grave risks to the world's climate as well as to indigenous communities. The [UN Economic and Social Council](#) recommends against fracking in Vaca Muerta in order to align with the Paris Agreement as well as to preserve the economic and social rights of future generations. The megaproject threatens the rights of the [Mapuche indigenous community](#), who oppose the fracking activities on their land.

What must happen

Banks should avoid financing new oil and gas extraction projects in the Vaca Muerta Shale Basin, and phase out their support for existing fossil fuel projects in the area. Banks should also demand that the companies they finance refrain, or withdraw, from involvement in Vaca Muerta. In general, banks should phase out their support for fossil fuel companies on a timeline consistent with what is necessary to meet the Paris targets.

Impacts

Social and human rights impacts

Indigenous rights Indigenous communities living on the land are heavily opposed to the fracking activities taking place. They have not been asked for, and thus have not given, their [free, prior and informed consent](#) for the activities taking place on their lands. According to The Guardian, The Mapuche's [cultural identity](#) is being denied with the purpose of refusing community legal rights. Already at this stage of development, their ancestral lands are [irreversibly damaged](#): water and air have been contaminated, plants have dried up, and new diseases have appeared.

- *Intentional fire* When Chevron started its operations in Vaca Muerta in 2013, it started fracking in the Loma Campana, an oil field of which the ownership was in dispute. In 2015, the government recognised that part of the land belongs to the Mapuche community. A [spokeswoman](#) for the Mapuche community explained how the oil companies entered the land without their permission in 2013. At that time, the indigenous community built an observation facility to keep track of the activities of oil and gas companies on their lands. A few months after building it, the facility was [burned down](#) in an intentional fire.

Public health In 2018, the Mapuche filed a [lawsuit](#) against ExxonMobil, Total and Pan American Energy, accusing the companies of dumping toxic waste [too close](#) to the town of Añelo, indigenous lands and the region's principal river. The toxic waste is not being treated according to laws and therefore threatens human health. It contains high levels of hazardous elements that [pose risks](#) to reproduction and inhalation.

Workers safety In March 2019, a strike was called after the [death](#) of a worker in one accident and another that caused [three injuries](#) in Vaca Muerta.

Local disruptions

- *Prices* The food and housing [prices](#) in the Vaca Muerta region are tied to oil and gas workers' salaries, even though they only make up a minority of the population.
- *Urban growth* A so-called '[gold-rush](#)' effect caused urban growth and unmanaged migration into the Vaca Muerta region. The population of Añelo city grew from 2,500 to more than 6,000 people in less than three years. Families with little resources end up on the outskirts of towns.

- *Trafficking* Due to unmanaged migration to the region, [trafficking of women and drugs](#) has increased. A report found that [67%](#) of the women being trafficked are found in oil towns.

Local groups working on Vaca Muerta

- Observatorio Petroleo Sur ([OPSUR](#))
- Enlace por la Justicia Energética y Socioambiental ([EJES](#))
- [Taller Ecologista](#)
- Oilwatch [LatinoAmerica](#)
- Fundación Ambiente y Recursos Naturales ([FARN](#))
- [Periodistas por el Planeta](#)
- Asociación Argentina de Abogados Ambientalistas ([AAdeAA](#))
- [EcoLeaks](#)

Environmental and climate impacts

Climate change In order to align with the Paris Agreement and avoid climate disaster, oil and gas production needs to be phased out as soon as possible. The carbon emissions from existing oil and gas operations would already push the world [beyond](#) 1.5°C warming - thereby making it impossible to meet the demands of the Paris Agreement. The Argentinean gas reserves alone could already eat up 11.4% of the world's remaining budget required to keep global temperature rise to below 1.5°. If the Vaca Muerta megaproject would receive the investments and support needed for expansion, the cumulative emissions are expected to [quadruple by 2050](#) - exceeding 8 gigatonnes of carbon dioxide in total. In order to make exports viable, extraction operations from Vaca Muerta would need to be doubled in the next five years, which would mean that the reserve is responsible for an export of more than [500,000 barrels](#) of oil every day. This extraction would have environmental repercussions in the form of increased carbon dioxide emissions from the reserve and excessive emissions from transporting operations required to move the surplus barrels of oil.

Pollution Hydraulic fracturing, or fracking, is the technology being used to develop unconventional hydrocarbon reservoirs. Scientific research shows that the employment of fracking [negatively impacts](#) public health, water, soil and air. The technique makes use of several dangerous chemicals that are released during the process causing pollution. In the Vaca Muerta Shale Basin, fracking has caused [leaks](#) causing both air and water pollution.

Methane leaks It was found that methane leaks often occur during operations in Vaca Muerta. This potent greenhouse gas heats the planet [86 times more intensely](#) than CO2 over a period of 20 years.

Oil spills Oil spills often occur in Vaca Muerta. Reportedly, an average of [three oil spills per day](#) took place between January 2018 and October 2018. In November 2018, Argentinean authorities suspended the license of the YPF/Schlumberger partnership that was operating at a shale well in the Vaca Muerta. The [suspension](#) followed a major well blow-out that contaminated 85 hectares of land with oil and drilling mud.

Governance

Bank policies

The following bank investment policies apply to this project:

Goldman Sachs

Human Rights Statement

Aug 3 2011 | Goldman Sachs

Environmental policy framework

Feb 11 2020 | Goldman Sachs

Morgan Stanley

Coal and oil & gas policy statements

Mar 15 2019 | Morgan Stanley

Statement on human rights

Aug 8 2019 | Morgan Stanley

Environmental and social policy statement

Dec 31 2020 | Morgan Stanley

ING

Stance on human rights

Date listed represents date as accessed on website

Dec 19 2019 | ING

Stance on extractives industry

Date listed represents date as accessed on website

Dec 19 2019 | ING

Stance on climate

Date listed represents date as accessed on website

Feb 15 2021 | ING

Environmental and social risk framework

Jun 30 2021 | ING

Energy policy

Mar 23 2022 | ING

Oil & gas industry policy

Mar 23 2022 | ING

HSBC

Energy policy

Apr 23 2020 | HSBC

Introduction to HSBC's Sustainability Risk Policies

Feb 10 2021 | HSBC

Citi

Statement on human rights

Nov 22 2018 | Citi

Environmental and Social Policy Framework

Mar 1 2022 | Citi

Industrial and Commercial Bank of China (ICBC)

Guidelines on environmental information disclosure for financial institutions

Jul 22 2021 | People's Bank of China

Credit policies for domestic industries: mining, energy, oil & gas, transportation, biodiversity and agriculture

Page 12 of 2021 interim ESG report

Sep 17 2021 | ICBC

Deutsche Bank

Position on Shale Gas

Jun 9 2016 | Deutsche Bank

Human Rights Statement

Mar 24 2016 | Deutsche Bank

Environmental and Social Policy Framework

Jul 27 2020 | Deutsche Bank

Credit Suisse

Statement on human rights

Mar 5 2019 | Credit Suisse

Summary of sector policies and guidelines

Nov 4 2021 | Credit Suisse

Sustainable investing policy

Mar 10 2021 | Credit Suisse

Applicable norms and standards

The National Law of Hazardous Waste (Argentina)

The Paris Agreement

Brief history

Due to economic crises, Argentina lost energy self-sufficiency and was forced to [import](#) large quantities of LNG and Bolivian gas. In order to solve the country's energy and economic issues, the government set a goal in 2011 to drastically increase the country's oil and gas output. The government [nationalised](#) the energy company YPF and put the company in charge of achieving this goal.

YPF and other Argentinean companies had been operating in the Vaca Muerta region for decades already when in 2013, an [agreement](#) between YPF and Chevron opened up the area to the global oil and gas industry. Besides Chevron, oil and gas giants such as Shell, Total and ExxonMobil now also started operations in Vaca Muerta. This development caused a significant [increase](#) in the number of extraction sites in Vaca Muerta, which also led to several disputes between companies and local communities (see: [issues](#)).

The international energy companies operating in the area mostly work in partnerships with YPF. As of March 2019, most projects were still in [pilot phase](#). This can be attributed to the fact that the government has been unable to meet its promise to subsidise global oil and gas companies. The government will require substantial investments from foreign companies in order to be able to succeed in accelerating development in Vaca Muerta.

The developments in Vaca Muerta have been the target of protests by unions, environmentalists and indigenous groups. In September 2019, the Argentinean Ministry of Security announced that Vaca Muerta will be placed under the jurisdiction of the [military police](#).

Updates

Activity levels in Vaca Muerta keep rising

Mar 10 2022

[Enverus](#), a global energy data analytics and SaaS technology company, anticipates [activity levels](#) within the Vaca Muerta field to keep climbing. YPF (Yacimientos Petrolíferos Fiscales) planned to spend \$1.5 billion in 2021, PAE (Pan American Energy) is investing ~\$150 million in infrastructure through mid-2023 and Royal Dutch Shell intends to spend \$1 billion to drill 100 wells through 2022.

Argentina seeks bids to build first phase of Vaca Muerta gas pipeline

Feb 24 2022

The Argentinan government has launched tenders to acquire 656km of pipes for the construction of the project's first stage, which is estimated to cost \$1.6bn. The first stage of the construction work is planned to be completed in [approximately 18 months](#). It is expected to add 24 million cubic meters more per day of gas into the country's network, by the winter of 2023.

The project will see the construction of a 1,430km-long pipeline from the Vaca Muerta reserves to Uruguiana, Brazil. From there, another 600km-long pipeline is planned to be built to the city of Porto Alegre, to connect to the gas distribution network of southern Brazil.

ConocoPhillips ceases interests in Vaca Muerta Shale Basin

Sep 20 2021

ConocoPhillips has sold its Argentine interests to Vista Oil & Gas, a local oil producer.

The local oil producer acquired [50% stake in 2 oil concessions](#) in the Vaca Muerta field and [100% of the capital stock](#) in ConocoPhillips Argentina. The concessions – granted by the regional government of Neuquén – expire in 2050.

[Miguel Galuccio](#), chairman and CEO of Vista, said: “This is a unique opportunity to strengthen our position as one of the leading producers in Vaca Muerta. We are not only adding core assets to our existing portfolio, further enhancing our growth potential and shareholder value, but will also contribute our know how in efficient developments, as well as safe and sustainable operations.”

Sovereign debt: \$45 billion in 23rd agreement between Argentina and IMF

Feb 26 2021

The International Monetary Fund approved a new loan program for Argentina, gaining the country more time to pay the [\\$45 billion it owes](#). The [agreement](#) includes a series of fiscal and monetary targets that should help stabilize the economy and widen access to international financing.

The deal [must be approved by Congress](#), but, if ratified, debt repayments will begin again and full repayment is scheduled for 2034.

Argentina plans to develop Vaca Muerta as one of the pillars of the administration's energy policy, [reducing the need to import gas](#). But to generate both gas flow and cash flows from Vaca Muerta would require a lot of investment. The area is remote and, while existing infrastructure is suitable for some expansion in oil production, it is not suitable for the area's real asset: natural gas.

Redeployment of rigs underway at Vaca Muerta

Sep 2 2020

YPF planned the [redeployment](#) of 46 oil rigs at the basin from October 2020 to February 2021. This is being done to revive the oil and natural gas output after seeing a plunge in production due to the COVID-19 pandemic.

Fracking activity resumes in Vaca Muerta

Sep 2 2020

A decline was seen in fracking activities in the basin due to the COVID-19 pandemic, but things have been picking up since August 2020. The number of frack stages rose from 44 in July to 98 in August, with the number [constantly increasing](#) every month. This development is led by Shell and Vista Oil & Gas.

Financiers

Banks finance the operations in Vaca Muerta in different ways. Banks mostly finance the companies that are active within the region, either through corporate lending or through equity investments. Some banks have also provided finance to companies for specific projects in Vaca Muerta. See below for more details.

Banks

Citi United States [profile](#)

Details ▼

Debt – corporate loan

Citi has financed YPF and Pampa Energía via corporate debt

source: Vaca Muerta Megaproject (2017)

[link](#)

Debt – corporate loan

USD 300 million

Citi co-financed a USD 300 million credit line for Vista Oil & Gas for its 400-well drilling programme in Vaca Muerta

source: Financial Times (2018)

[link](#)

Credit Suisse Group Switzerland [profile](#)

Details ▼

Debt – corporate loan

USD 300 million

Credit Suisse co-financed a USD 300 million credit line for Vista Oil & Gas for its 400-well drilling programme

source: Financial Times (2018)

[link](#)

Deutsche Bank Germany [profile](#)

Details ▼

Debt – corporate loan

Deutsche Bank has financed YPF and Pampa Energía via corporate debt

source: Vaca Muerta megaproject (2017)

[link](#)

Goldman Sachs United States [profile](#)

Details ▼

Equity – share owner/manager

Current shareholder of YPF

source: Vaca Muerta Megaproject (dated 2017)

[link](#)

HSBC United Kingdom [profile](#)

Details ▼

Equity – share owner/manager

Current shareholder of YPF

source: CNN Business

[link](#)

ING Netherlands [profile](#)

Details ▼

Equity – share owner/manager

Current shareholder of YPF

source: CNN Business

[link](#)

Industrial and Commercial Bank of China (ICBC) China [profile](#)

Details ▼

Debt – corporate loan

ICBC has financed YPF and Pampa Energía via corporate debt

source: Vaca Muerta Megaproject (2017)

[link](#)

Morgan Stanley United States [profile](#)

Details ▼

Debt – corporate loan

USD 300 million

Morgan Stanley co-financed a USD 300 million credit line for Vista Oil & Gas for its 400-well drilling programme

source: Financial Times (2018)

[link](#)

Equity – share owner/manager

Current shareholder of YPF

source: Vaca Muerta Megaproject (dated 2017)

[link](#)

Multilateral development banks

Interamerican Development Bank (IDB)

Details ▼

Uncategorised

The Interamerican Development Bank has funded massive urban planning projects in Añelo city to serve the hydrocarbon industry

source: Vaca Muerta Megaproject (2017)

[link](#)

World Bank (IBRD, IDA)

Details ▼

Uncategorised

The World Bank has funded massive urban planning projects in Añelo city to serve the hydrocarbon industry

source: Vaca Muerta Megaproject (2017)

[link](#)

Related companies

More than [25](#) oil and gas companies are active in Vaca Muerta. The Argentinean energy company YPF is the [main actor](#) in the region. The company is involved in most of the projects, either alone or in joint ventures. Together they are extracting 30% of Argentina's annual oil and 45% of the country's annual gas production in Vaca Muerta. With more than 1,000 drilling sites, the companies are destroying the environment, poisoning the people and fueling the climate crisis.