



European companies set to conquer Vaca Muerta

Seven companies on the unconventional horizon of the Neuquén Basin in Argentina

EJES

Enlace por la
Justicia Energética
y Socioambiental



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justicia ambiental



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OILWATCH
LATINO AMÉRICA

Hernán Scandizzo
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Enlace por la Justicia Energética y Socioambiental (EJES) [Socio-environmental and Energy Justice Alliance] is the collaboration of Argentine organizations Observatorio Petrolero Sur (Buenos Aires, Neuquén, and Río Negro provinces) and Taller Ecologista (Santa Fe province).

Through an interdisciplinary and federal approach, our work currently focuses on the megaproject Vaca Muerta. We take into account the policies involved, and the territories and population affected in the long term. The strategic focus is on the economic, financial, energy and socio-environmental aspects. Our objective is to expose the overlooked impacts and find a fair path to energy and economic transition.

Oilwatch creation was inspired by the need to develop global strategies for the communities affected by oil activities; support their resistance processes because they didn't want to see their territories damaged; work for sustainability and defend their collective rights.

Within the activities of the network are the exchange of information on oil activities in each country, the companies' operation practices, the different resistance movements and the international campaigns against specific companies.

Oilwatch aims to increase environmental awareness at a global level unravelling the impacts of the oil activities in tropical forests and local populations by establishing a link between the destruction of biodiversity, climate change, violations to human rights and the role of the Multilateral Banks of Credit.

More information:

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Seven companies on the unconventional horizon of the Neuquén Basin in Argentina

Mauricio Macri's arrival to the presidency in December 2015 meant a new turn in the country's hydrocarbons policy. It shifted from state intervention under Cristina Fernández's second term beginning in 2012 –with the enactment of a hydrocarbons sovereignty act and the partial expropriation of YPF, until then controlled by Repsol– to an opening up to the world market. This translated into measures such as scrapping crude oil export taxes, pegging the domestic price of the crude oil barrel to the international price, suspending fuel price controls and gradually eliminating gas export barriers. **Such set of measure are in line with those adopted during the 90's in a context of state neoliberal reforms.** This is a new return to the market that has been celebrated and demanded by the upper echelons of private oil & gas companies.

These new old times were marked by the appointment of **Juan José Aranguren** –former CEO of Shell local subsidiary –as minister of Mining and Energy¹, and of **Ricardo Darré** –former managing director of exploration and production of Total in the US–as YPF's new CEO². Although neither of them currently holds those positions, their designations made many turn their eyes to the European oil companies, and ask a few questions. The first, are they coming for Vaca Muerta? Or to put it differently, are they going to drive the exploitation of the Neuquén Basin unconventional oil & gas reservoirs? This uncertainty, in turn, led to wondering if the companies were acting en bloc. Hypotheses started emerging, such as “European companies are interested in positioning themselves in this mega-reservoir because, in the context of climate crisis and criticism against fossil fuels, they posit gas as a bridge fuel toward cleaner energies.” In this report we look into these questions and hypotheses.

1. Juan José Aranguren has been a staunch critic of Néstor Kirchner and Cristina Fernández's energy policies, and became the quintessential liberal naysayer.

2. Cristina Fernández, after the partial expropriation of YPF, also appointed a former CEO as chief of the national oil company –the engineer Miguel Galuccio, from Schlumberger.

3. Vaca Muerta and Los Molles shale formations, located in the Neuquén Basin, have an estimated potential of 582 TCF of gas according to the US Energy Information Agency (EIA), who also ranks them among the largest global reservoirs. The Neuquén Basin, in the north of the Argentine Patagonia, encompasses the provinces of Neuquén, Río Negro, Mendoza, and La Pampa.

These fact sheets **trace back the courses taken by seven companies –Total, Wintershall, Shell, Equinor, Gazprom, BP, and Phoenix Global Resources– in the face of unconventional development.** We cover the surface accumulation process (acreage) on Vaca Muerta, alliances, and productive horizons. We focus on exploration and production (upstream) activities without going into the universe of service companies or those in other links of the hydrocarbons production chain. The growing trading segment⁴ –given that Vaca Muerta is considered a world class megaproject open to the market, i.e. to exports– is not covered in this report.



4. At their onset, trading companies operated as brokers between supply and demand of a particular raw material. For example, in the case of hydrocarbons, between producers and oil refining companies. They slowly expanded toward other links in the chain, such as transport, storage and even refining.

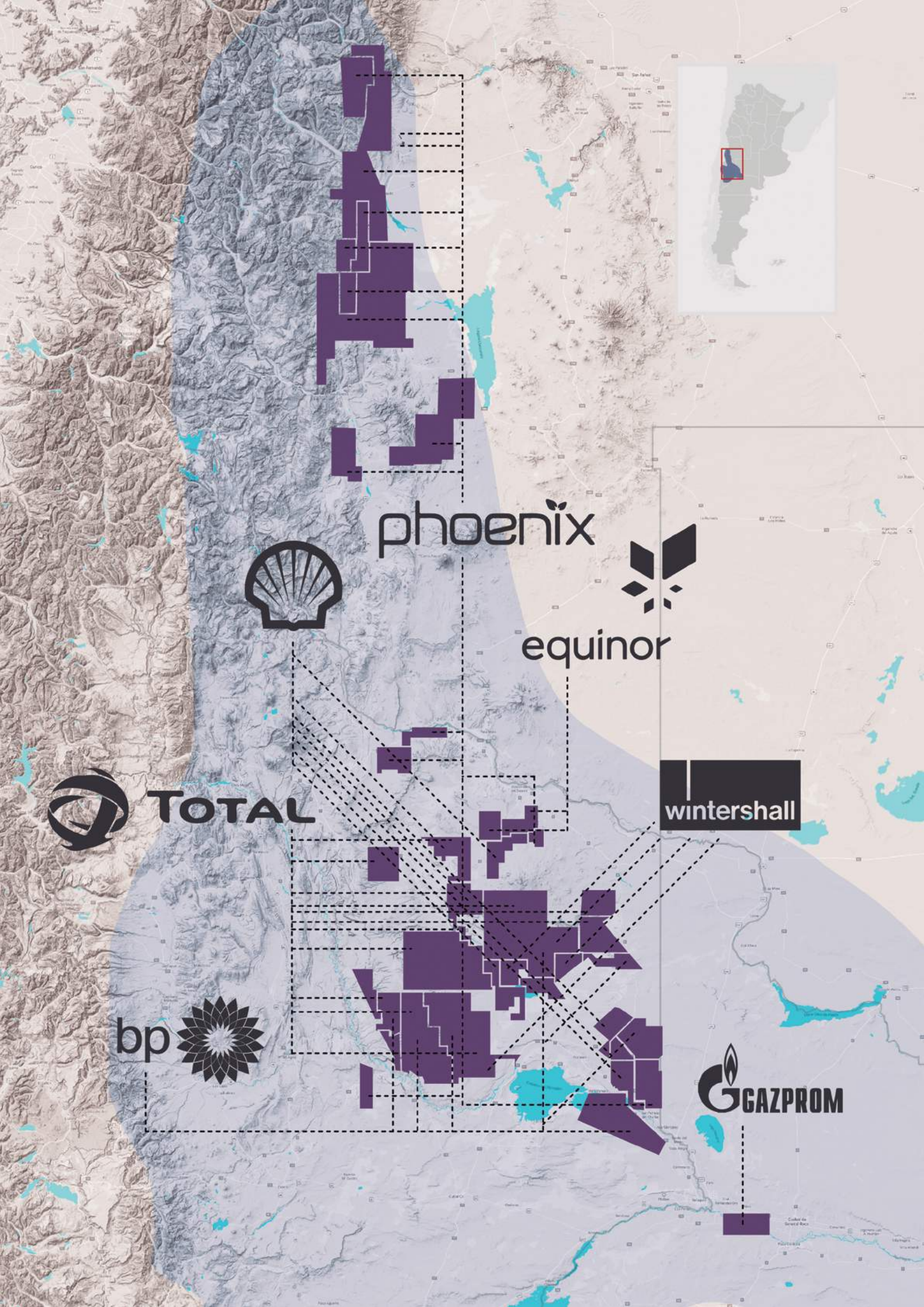
National or European?

In the first half of 2018, the largest circulation newspaper in northern Patagonia issued a report about *the owners of Vaca Muerta*. It underscored the fact that four of the ten oil companies with the largest concessions on the unconventional reservoir are foreign: Total (French), Exxon (US American), Shell (Anglo-Dutch), and Vista Oil & Gas (Mexican). It then introduced the six best positioned *national companies*: the state-run YPF, Pan American Energy LLC (PAE), Tecpetrol, Pluspetrol, Pampa Energía, and the provincial firm Gas y Petróleo de Neuquén (GyP).

This kind of grouping of companies according to their origin –which reflects a widespread common sense– deserves a few considerations. **Can we claim that PAE, for example, is an Argentine company?** Its parent company is located in the US city of Delaware, and it is controlled by Pan American Energy Group SL, registered in Spain and equally-owned by the British BP and Axion Energy Holding SL, which is also based in Spain. As for Axion Energy Holding SL, it belongs to Bridas Corporation, whose parent company is in the British Virgin Islands and belongs in equal parts to the Bulgheroni Argentine family and the Chinese oil company CNOOC. **Let us recap: 75% of PAE's stock is controlled by non-Argentine capital located in tax havens.** The same could be said about Tecpetrol –belonging to the Italian-Argentine group Techint, controlled by the Rocca family–, currently one of the firms that has benefited the most from the official subsidies granted to gas production from unconventional fields. Pluspetrol can receive the same treatment; its holders are Argentine but its partner company is located in the Netherlands (Pluspetrol Resources Corporation N.V.)

Thus it is fit to ask, **what makes a company be regarded as national?** The answer tells a lot about how the level of transnationalization of the hydrocarbon sector in the country is assessed. Likewise, what do we understand by *European company*? **Behind an enterprise with head offices in that continent there might be a chain of firms, some of them located in tax havens in other continents and having, for example, participation of Chinese capital.** The answer tells a lot about where the focus is. We believe it is important to ask these questions –even if it is not the aim of this report to answer them– in order to bring to light the complexities that certain statements conceal.

On our part, we decided to focus on “iconic” companies, that is, national companies or those strongly identified with the country where their head offices are located. Such is the case of Total with France, Wintershall with Germany, Shell with the Netherlands and the UK, Equinor (former Statoil) with Norway, and Gazprom with Russia –although this country is almost a continent in itself. We also add PAE and Phoenix Global Resources (PCR) to the list. The first is partially controlled by BP. The latter has been recently created, and is linked to Argentine businessmen Daniel Vila and José Luis Manzano, although its parent company is located in the UK, and the Swiss holding Mercuria is its majority shareholder through a series of companies based in different countries.



phoenix



equinor



TOTAL

wintershall

bp



GAZPROM



Track records

The level of intervention of *European companies* in the Argentine hydrocarbon sector varies; therefore it is difficult to conceive of them as a homogenous block. For instance, PAE/BP is the main private producer in the country –in 2017 it accounted for 20.3% of crude oil and 12.3% of the gas extracted, only second to YPF (46.5% of crude oil and 36.5% gas). And Total was the second private gas producer, with 26.7%. For its part, Shell –the largest private firm in refining and marketing of fuels– is redirecting its investments towards oil production, although with a marginal participation so far. The same goes for Wintershall and PGR in oil and gas production, which accounted for less than 1%; whereas Equinor and Gazprom have not yet initiated the extraction phase.

The history of these companies is also diverse. While the Anglo-Dutch set foot in Argentina in 1910 –amid a strong influence of British capital in the country's economy–, Total Austral and Wintershall started operations towards the end of the 70's, during the last civic-military dictatorship (1976-1983), when the sector was opening up to pri-

vate capital. As for BP, its arrival dates back to the 90's, when it merged with the US American AMOCO and became PAE's majority shareholder, in the context of neoliberal State reforms. Equinor entered into the country through its presence in Vaca Muerta in 2017. The same could happen with Gazprom if its partnership agreement with YPF is finally signed. PGR was created in 2017, and is a result of the merger of different companies that have been operating in the country since the first decade of 2000.

Even if some en bloc advancements have been registered, the coming together of companies that have its head office in Europe in the same project –e.g., Total, Wintershall, and PAE, or Total and Shell– is not a common modality in the *Vaca Muerta era*. Previous experiences of that kind have been registered in conventional development in the Neuquén Basin, such as the Aguada Pichana and San Roque areas⁵ –where unconventional projects have been launched during the last years–, in blocks located in the Austral Marina basin⁶, off the coast of Tierra del Fuego, and even in the fields of the northern province of Salta⁷. These alliances reflect the synergies needed to tackle the technical complexity and high financial requirements associated with enabling production in certain blocks or carrying out exploratory campaigns in new frontiers.

Just as we can observe alliances among European firms, foreign companies also enter blocks with unconventional potential by partnering both with the provincial company GyP and with YPF. It should be noted that the hydrocarbon areas that were under the provincial ownership of Neuquén were incorporated to GyP's assets when the company was created, at the dawning of unconventional resources exploitation. This transfer of domain has enabled the temporary union of enterprises (UTE, by its Spanish acronym) made with the Neuquén company to act as direct concessions, given that they allow the associated companies to have access to blocks without a prior parliamentary approval of agreements. Such a mechanism has been questioned due to its lack of transparency.

Unconventional expansion

Since the early 2010's up to this date there has been a progressive increase in the participation of European companies in unconventional hydrocarbon exploration and production projects in the Neuquén Basin. In spite of that, YPF is at the forefront both in terms of land accumulation in Vaca Muerta and of investment amounts and number of projects in productive phase. According to a survey by the *Río Negro* newspaper, the national company concentrates 35.3% of the surface (9,605 km²), followed by GyP with

5. Both were granted to the UTE made up of Total Austral, Wintershall, PAE, and YPF.

6. Cuenca Marina Austral 1 concession is operated by Total Austral, in association with Wintershall Energía and PAE.

7. O&G Developments (Shell CAPSA) forms—with other companies—the UTE Acambuco, operated by PAE.

5.8% (1,575 km²), Total Austral with 4.8% (1,316 km²), and PAE with 4.8% (1298 km²), while Shell is in the 8th place, with 2.9% (786 km²) and Wintershall is 11th, with 2.3% (622 km²). It is worth pointing out that even if Phoenix Global Resources highlights in its investor reports that it covers approximately 7.5% of the Vaca Muerta formation, the number should be taken with caution, given that it can be obtained from presence in areas far from those of greater geological interest.

Beyond the representative nature of surface accumulation –and with the reservations mentioned above–, Vaca Muerta has a different meaning for each of the companies:

- For Shell it means **a return to the upstream segment, in which their presence was low since the 70's**. The company's interest in Vaca Muerta is made clear not only by the progressive increase in acreage on the shale formation, but also by the restructuring of its productive horizon. They sold 50% of its assets in the refining and marketing segments in order to focus on exploration and production. It is worth noting that, while the company is one of the global leaders in liquefied natural gas (LNG) –and it posits natural gas as a bridge fuel toward cleaner sources– its main developments in the Neuquén Basin target shale oil. It announced in early 2018 an increase in production, from the current 12,000 to 40,000 in 2021. While Shell's restructuring of assets is locally significant, in its international portfolio the greatest expectations regarding Latin America seem to be placed in the deepwater fields of Brazil and the Gulf of Mexico, rather than in Vaca Muerta's shale oil & gas.

- In 2017, **BP/PAE** shifted its investment focus from its main asset –Cerro Dragón field, the largest in conventional oil production in the country, located in Chubut and Santa Cruz provinces– to unconventional reservoirs in the Neuquén Basin. **Although the company began developing tight gas in 2011, its path was gradually consolidated until it became more solid in 2015**, when it entered the Aguada Cánepa area in association with CyP. In the same year it also took control of the Bandurria Centro block. Since then, it is also operating Coirón Amargo Sur Este, and after the division of Aguada Pichana –in which it already participated– it began operating the Aguada Pichana Oeste UTE, at the same time keeping a share of the Aguada Pichana Este/ Aguada de Castro UTE, controlled by Total Austral.

- **Total Austral**, with presence in the Neuquén Basin since the 90's, **began expanding in 2010 towards areas of geological interest in the Vaca Muerta field until it became the European company with the largest accumulated area on that formation, and the third in general terms**, after YPF and CyP. Total represents a paradoxical case, given that France has been one of the first countries in prohibiting the extraction of oil and gas

through fracking in its territory, and even more so if we take into account the fact that Total fracked within the Auca Mahuida Natural Protected Area. With its unconventional developments off the coast of the Austral basin, the French company consolidates itself as one of the main private gas producers in Argentina.

- **Wintershall**, present in the Neuquén Basin through different UTEs operated by Total Austral and YPF, **not only increased its acreage by gaining access to two areas in the province of Neuquén, but it also operates one of them, in association with the provincial GyP.** It also moved into the neighboring province of Mendoza in a conventional project, through a UTE with the Chilean GeoPark, and does not rule out advancing towards the Vaca Muerta formation potential. Factoring in its marginal participation in hydrocarbon production in the country and its low number of projects, its bet on un conventionals is significant.

- **Equinor** landed in Vaca Muerta in 2017, on two areas, in association with YPF and GyP, in this case as operator. The arrival of this Norwegian company to develop unconventional fields was possible after a long negotiation process. This is **part of its slow expansion into Latin America, initiated in the early 2000's.** Its main focus has been offshore blocks in Brazil –pre-salt–; Surinam–where it operates three areas–; and exploration in Nicaragua, Colombia, and Mexico. As for un conventionals, it entered Vaca Muerta with an expertise obtained through its operations in two of the main shale plays of the United States–Bakken and Marcellus formations. Although the company claims that the decision to change its name from Statoil to Equinor reflects its shift to becoming an energy company (not only an oil company) and advancing in the search for clean and renewable sources–in the face of climate change–,in Latin America it focuses in projects that expand the fossil extractive frontier toward extreme energies.

- Negotiations for **Gazprom's** arrival in the Neuquén Basin–by partnering with YPF–were initiated in 2015, during the Cristina Fernández administration. By the time this report was completed, signing of the agreement was still pending. **The Russian company showed interest for the Estación Fernández Oro area (Río Negro), which is currently one of the most important in the country in terms of tight gas production.**

- **Phoenix Global Resources** was created in 2017 as a result of the fusion of Andes Energía and Petrolera El Trébol, controlled by the Swiss company Mercuria. Both firms had a marginal share in the production of hydrocarbons. In the local hydrocarbon sector, the track record of the Vila-Manzano

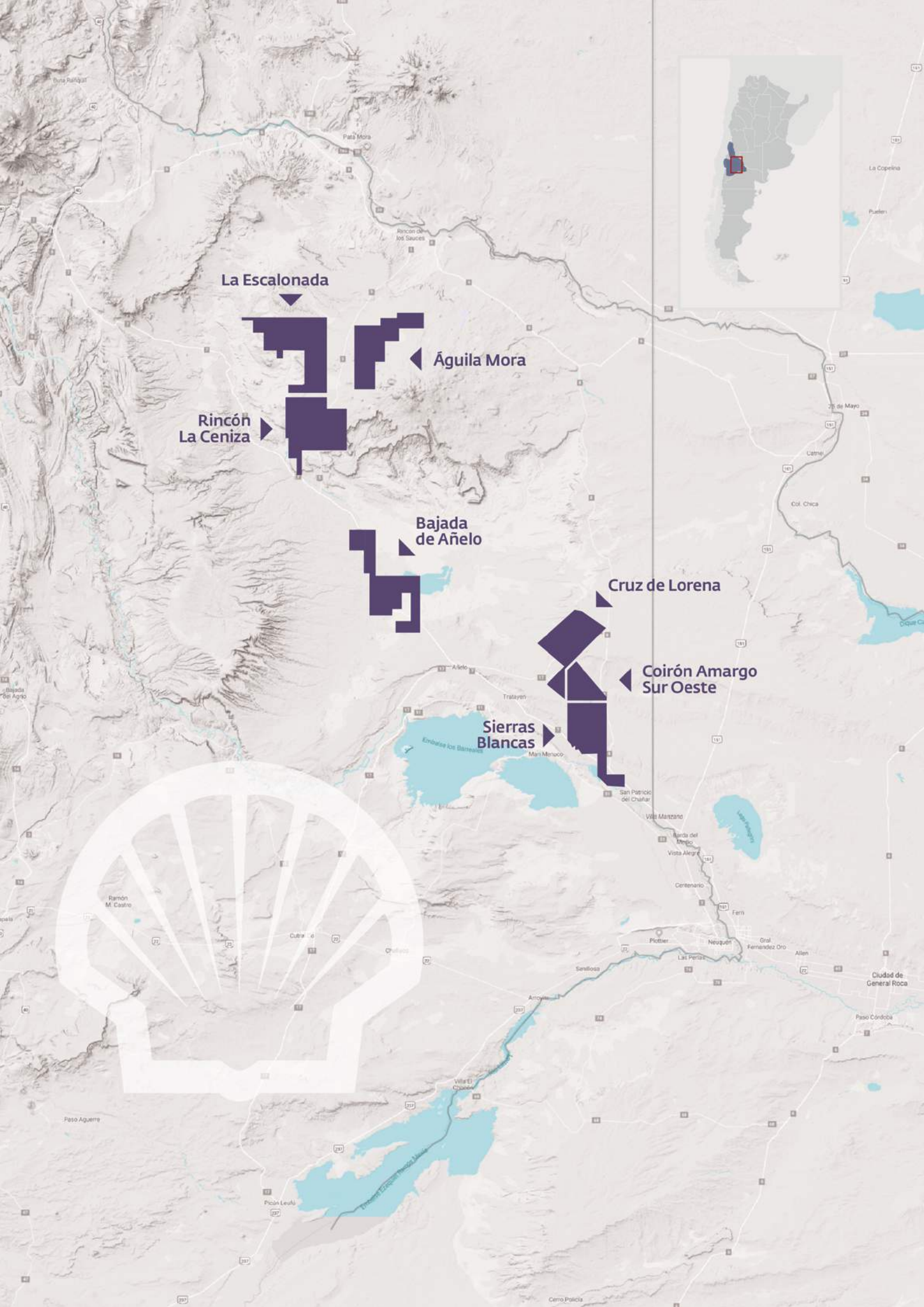
group was marked by “real estate activity”, that is, the acquiring of areas of little interest to leverage their value and then sell them. Mercuria’s decision to expand **its activities in the country is simultaneous with the landing of the Dutch firm Trafigura⁸**, another world leader in oil and coal marketing. **The fact that both companies anchored in Argentina is of special relevance in a context of elimination of export regulations by the federal Government** and demands of the corporate sector arguing that an effective massive development of unconventional reservoirs requires securing a market for the volumes extracted.

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8. Trafigura, through Puma Energy, is present in crude oil storage and marketing segments, and in refining and selling of fuels through its own network of service stations.



La Escalonada

Águila Mora

Rincón
La Ceniza

Bajada
de Añelo

Cruz de Lorena

Coirón Amargo
Sur Oeste

Sierras
Blancas





Shell Compañía Argentina de Petróleos S. A. (Shell CAPSA)

Shell Petroleum N. V. owns 99.99% of the share capital. The company, founded under Dutch regulations is owned 100% by Royal Dutch Shell plc.

Starting operations in the country

The company started operating in Argentina in 1914, with its subsidiary Anglo Mexican Petroleum Products Co., to market fuel oil and bitumen products from Mexico. In 1917, it acquired Diadema for exploration and production of hydrocarbons in Comodoro Rivadavia; it was the most developed basin in the country. In 1922, Shell Argentina Oil Company Statutes were approved and Compañía Diadema Argentina S. A. de Petróleo subsidiary was created to develop the field by the same name.

It is the European oil company with the longest period of activity in the country. It has been diversifying its investments for over a century in every link of the production chain: exploration and production, transport, refining, and marketing. In 1977, Diadema was sold and the following years its upstream activities were focused on on-shore and offshore exploratory risk activities (Río Gallegos, Magallanes, San Jorge, and Colorado Marina). In 1998, it joined UTE Acambuco to exploit the field by the same name, located in the province of Salta and operated by Pan American Energy. It holds shares in the aforementioned UTE through its subsidiary O&G Developments Ltd. S. A. (O & G), created in 1998 to engage in exploration and production.

O&G's share capital is owned by Shell CAPSA (45.61%), B. V. Dordtsche Petroleum Maatschappij (50.84%) and Energina Compañía Argentina de Petróleo S. A. (3.55%). Dordtsche Petroleum Maatschappij and Energina CAPSA belong entirely to Shell Petroleum N. V.

Setting foot in Vaca Muerta. Progress in the number of areas

In 2011, Shell CAPSA ventured into unconventional fields in the country. Since then it joined different UTEs to position itself in various blocks, most of which currently operates. In seven years, there were significant changes in these UTEs, which bring to light the sector's dynamism. During that period the company expanded into more blocks and increased its share in the associations.



Águila Mora: In 2010, Águila Mora was controlled by the UTE made up of Cañuelas Gas S. A. (90%), and GyP (10%). The following year, the Argentine company Medanito S. A.'s share was at 22.5% and it operated the block, while O&G's was at 67.5%, and the company from Neuquén kept the same percentage. In 2016, O&G increased its share to 85%, while Medanito retained only 5%. In 2018, O&G Developments holds a 90% share in the UTE (operator), and GyP 10%. The 170 km² block is in exploration stage.

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Sierras Blancas and Cruz de Lorena: In 2015, the provincial government of Neuquén granted concessions for unconventional exploitation in Sierras Blancas and Cruz de Lorena blocks for 35 years. The development stage includes drilling 550 horizontal wells.

Sierras Blancas: In 2011, O&G bought 65% of the rights and obligations from Medanito S. A., and Sierras Blancas UTE's operation with Gas y Petróleo del Neuquén S. A. Three years later, Medanito S. A. transferred an additional 20% to the Shell subsidiary, so its share changed to 85%. O&G acquired Medanito S. A.'s share –its current participation in the UTE is at 90%, whereas GyP's at 10%. There is a pilot underway in the 168 km² block where three horizontal wells were drilled towards the Vaca Muerta formation.

Cruz de Lorena: In 2010, the UTE Cruz de Lorena was made up of Raiser S. A., an Argentine company involved in the financial sector but without much experience in hydrocarbons. It operated the UTE with 80%, and GyP held the remaining 20%. In 2012, O&G and Shell CAPSA bought Raiser in equal number of shares, and by 2015 the Anglo-Dutch company's subsidiary increased its share again. The UTE was finally made up of Shell CAPSA, with 50%; O&G with 40%, and GyP with 10%. Three horizontal wells and one vertical well were drilled in Vaca Muerta. In addition, an oil and gas treatment plant with a capacity reaching 10,000 barrels/day was built, jointly financed by the UTEs Cruz de Lorena and Sierras Blancas to serve the production of both areas. There is a drilling pilot underway in the 159 km² block.

La Escalonada and Rincón La Ceniza: In 2012, the French Total Austral's share in the UTE was 85% (as operator) and GyP had the remaining 15%. In 2014, Shell and O&G acquired Total Austral's participation percentages in both blocks. Total Austral kept 42.5%, Shell CAPSA 21.25%, O&G 21.25% and GyP 15%. In 2016, the company sold 5% of its rights, leaving the current share at: Total Austral 45%, Shell CAPSA 22.5%, O&G 22.5% and GyP 10%. There is a drilling pilot underway on these blocks, totaling an area of 463 km², that target Vaca Muerta.

Coirón Amargo Sur Oeste: In 2016, Coirón Amargo block –with participation of GyP, the Canadian Madalena Austral, the Argentine Roch S. A. and APCO (subsidiary of the Argentine Pluspetrol)– was split into three: Coirón Amargo Sur Este (CASE), Coirón Amargo Norte (CAN) and Coirón Amargo Sur Oeste (CASO). O&G and APCO held a 45% share, and GyP a 10% share in the Coiron Amargo Sur Oeste block. O&G was in charge of operation. In April 2018, the Mexican oil company Vista Oil & Gas acquired APCO's assets and became the country's fifth largest oil producer. The company entered into the joint venture keeping the same percentage of shares. The 294 km² block targeting Vaca Muerta is in exploration stage.

Bajada de Añelo: In 2011, the UTE operating the block was made up of YPF 70%, GyP 15% and Rovella Energía S. A. 15%, an Argentine construction company. In 2014, YPF and its subsidiary YSur acquired GyP and Rovella Energía S. A.'s rights and split the share 85/15 respectively. In 2017, O&G –currently operating the block– joined with 50% of the share; YPF holds 35%, and its subsidiary YSur, 15%. Shell joined the drilling pilot underway in this 204 km² block, involving 150 wells targeting Vaca Muerta.

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Has the company's attitude changed with the new Government?

During the Presidency of Néstor Kirchner (2003-2007) and Cristina Fernández de Kirchner (2007-2011 and 2011-2015) the then CEO of Shell CAPSA, Juan José Aranguren, became known for being a liberal critic of the Government's energy policy. When businessman Mauricio Macri took office, he appointed Aranguren as Minister of Energy and Mining, and other former oil industry executives would also hold high positions in the Ministry. On June 15, 2018, Aranguren was replaced by Javier Iguacel, who in 2015 stepped down as a Pluspetrol VP to begin his political career at Cambiemos.

It was not a change in the company's attitude, but rather the energy policy adopted and decisions such as the import of diesel and gas –favoring Royal Dutch Shell plc holding companies– that raised serious doubts about the interests that Aranguren represented in his official capacity and also led to legal complaints, among them, for having taken office while being a shareholder of Royal Dutch Shell plc. Liberal policies were implemented by the Energy Ministry: energy rates coupled with market fluctuations, dollarization of energy prices, labor flexibilization and precariousness, and the opening-up of hydrocarbon exports, among others.



A change in the allocation of investments

In 1931, less than two decades after entering the country, Shell's local subsidiary became an integrated company, with exploration and extraction activities in Comodoro Rivadavia, a refinery based in Dock Sud (province of Buenos Aires), a lubricants plant in Barracas (Buenos Aires City), transport networks, storage plants, and an extensive network of service stations. Over the years, the company underwent periods of strong and weak presence in different segments, although it continued making major investments in oil refinery, marketing of fuels and lubricants, and transportation. In April 2018, Shell CAPSA sold those segments' assets to the Brazilian company Raizen, owned by Cosan Group and Shell. Even though as Royal Dutch Shell plc the company is still present in all the stages of the production chain, after these changes the local subsidiary is focusing on exploration and exploitation. And although globally it is one of the main LNG trading companies and posits natural gas as a bridge fuel toward cleaner sources, its main developments in the Neuquén Basin target shale oil. It announced in early 2018 an increase in production, from the current 12,000 to 40,000 in 2021. And it does not rule out moving toward offshore fields, being the company's expertise.

Social conflicts

Local populations engaging mainly in livestock and fruit and vegetable growing, as well as peasant families and Mapuche communities living in rural areas far from city centers, are among the most affected by the transformation process. It impacts their

economy and relation to the territory, and increases migration to urban centers in search for better livelihoods.

Peasant families struck by the company's activities have negotiated financial or other kinds of benefits, such as the drilling of water wells and the extension of the electric grid to secluded homes, among others.

In Bajada de Añelo, the government of Neuquén approved the construction of an oil pipeline connecting the abovementioned block to a treatment plant located in the Loma Campana block. The impact on the Mapuche community Campo Maripe, who has never been consulted, caused conflict and the parties reached a financial settlement agreement. The arrangement was set as an example by the Neuquén authorities. YPF's activities in the block had been paralyzed shortly before. In this case, the company requested the intervention of the national border patrol (Gendarmerie) to guarantee the continuity of the works.

It is also worth mentioning that the company performs extractive activities around Auca Mahuida Natural Protected Area, in the Águila Mora block, and has a share in Rincón La Ceniza, operated by Total Austral, in a similar situation. This area was created in 1996 with the aim of preserving the diversity of the Patagonian steppe species that have disappeared or are very rare to find in other places of the provincial territory. There are also several archaeological sites with petroglyphs and cave paintings, and the Auca Mahuida hill has great historical and spiritual value for the Mapuche People.



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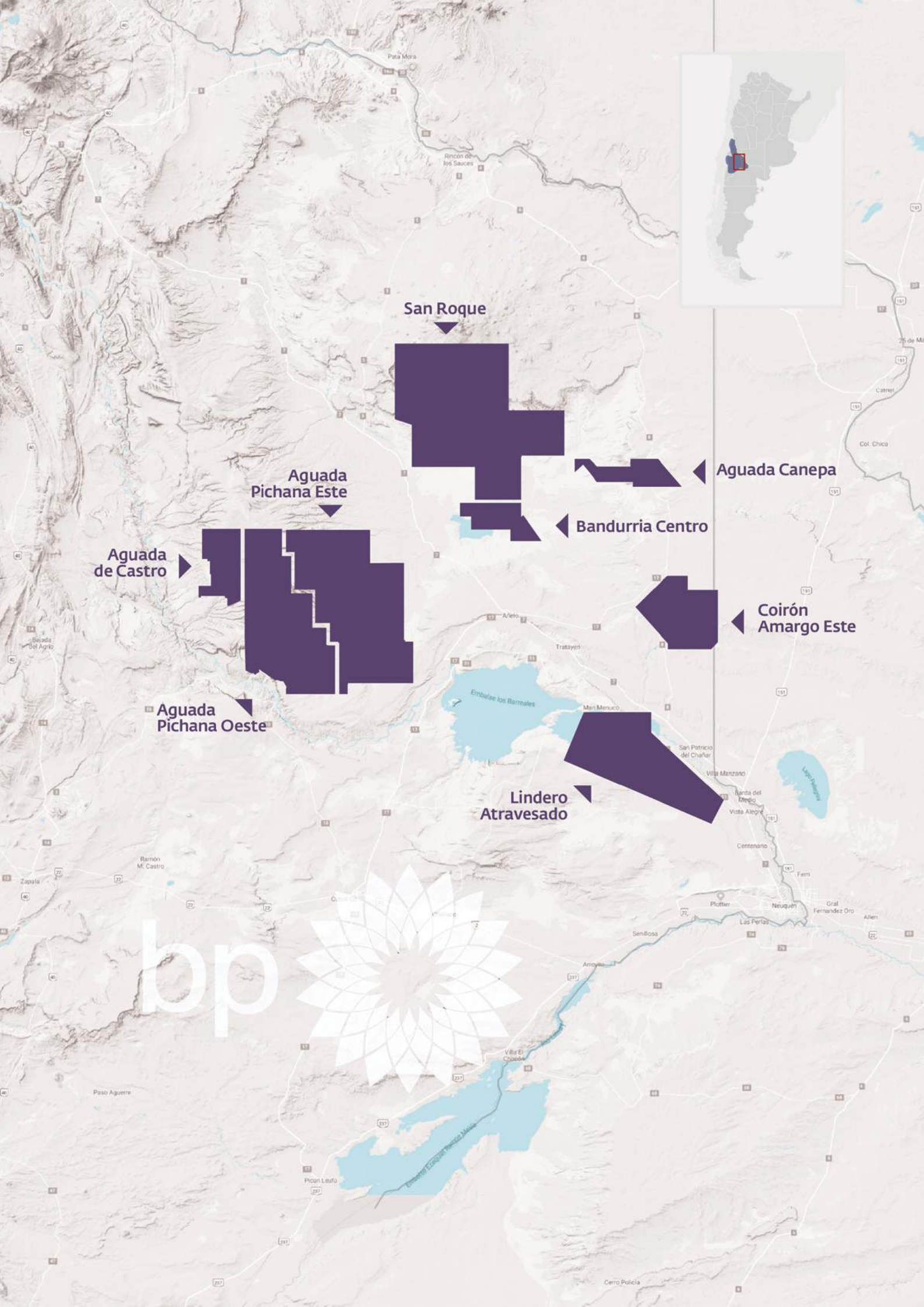
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San Roque

Aguada
Pichana Este

Aguada Canepa

Bandurria Centro

Aguada
de Castro

Aguada
Pichana Oeste

Coirón
Amargo Este

Lindero
Atravesado

bp





Pan American Energy Group (PAEG) / BP

Pan American Energy Group (PAEG), the largest privately-owned integrated oil & gas company operating in Argentina, is owned equally by BP Argentina Exploration Company, a subsidiary of the US-based BP plc, and Bidas Corporation, registered in the British Virgin Islands and equally-owned by the Bulgheroni family and China National Offshore Oil Corporation Limited (CNOOC Limited).

Starting operations in the country

In September 2017, Pan American Energy LLC, owned 60% by BP Argentina Exploration Co. and 40% by Bidas Corporation, and Axion Energy Holding S.L., owned by Bidas Corporation, merged creating PAEG. In March 2018, PAE LLC Argentina, and Axion Energy Argentina reached a final agreement by means of which the company controlled by Bidas Corporation transferred Axion's goodwill associated with crude oil refining process, and byproducts storage, marketing & distribution, as well as all assets and liabilities.

The merger is recent, but the firm has a long track record in the country thanks to its integrating companies. Pan American Energy LLC was formed in 1997 by Bidas⁹ (belonging to the Bulgheroni family and established in 1948) and the American Amoco¹⁰ (which started operations in the country in 1958). The parent company was based in Delaware, USA, and the stock split 40/60, respectively. The following year, Amoco merged with British Petroleum, which took ownership of the shares. Years later, the British company changed its name to BP. In 2010, a joint venture was formed by Bidas and CNOOC Limited resulting in Bidas Corp.

Being the largest private hydrocarbon producer in Argentina, Pan American Energy's current share in oil and gas production is at 18%/19% and 17% respectively. In 2012, Axion bought ExxonMobil assets (ESSO) in Argentina, Paraguay, and Uruguay. In Argentina, it controls over 500 service stations, together with the fourth largest refinery in the country, based in the town of Campana (Buenos Aires), where they announced investments that would expand the production capacity of diesel and gasoline by 60%.

9. The company started as an importer and provider of strategic oil services.

10. American Oil Company (Amoco) was owned by Standard Oil Company of Indiana.

Setting foot in Vaca Muerta. Progress in the number of areas

The company ventured into the development of unconventional deposits in the province of Neuquén in 2011, with a focus on Cuyo's tight sands gas potential (Lajas and Punta Rosada formations), in the Lindero Atravesado block, which the company has been operating first as Bidas (since 1980), and then as PAE (since 1998). It also plans to exploit the Vaca Muerta shale formation from the Bandurria Centro block.

Aguada Canepa: PAE began operating in 2015, and it currently holds a 90% share in the UTE (Temporary Union of Enterprises); the rest is owned by GyP. The goal in the 112 km² block is the gas of the Lajas tight sands formation. The project is in exploration stage.

Aguada Pichana Este / Aguada Pichana Oeste, and Aguada de Castro: PAE, Total, Wintershall and YPF S. A., which made up the UTE in charge of Aguada Pichana, agreed to split the area into two unconventional blocks, as mentioned under the National Hydrocarbons Law (Law N° 27,007) enacted in November 2014, by means of which the unconventional exploitation of hydrocarbons was incorporated into legislation. With the support of the government of Neuquén, the blocks of Aguada Pichana Este (APE) and Aguada Pichana Oeste (APO) were created. The latter merged, in turn, with Aguada de Castro (ACA). When splitting, Aguada Pichana was the fourth major block in Argentina in gas production. By the first half of 2016, it had contributed 10% of Neuquén's tight gas. A pilot shale gas project was launched in 2013 in the Vaca Muerta formation, which began operating in 2015.

Aguada Pichana Oeste and Aguada de Castro: These unconventional blocks operated by PAE cover 605 km² and 163 km² respectively. PAE currently holds a 45% share in the UTE; YPF 30%; and Total 25%. They plan to drill 30 horizontal wells until 2021.

Aguada Pichana Este: This UTE consists of Total Austral –the operator– holding a 40% share, YPF and Wintershall with 22.50% each, and PAE, with the remaining 15%. The plan for this 761 km² block is to drill 48 horizontal wells, besides the 12 already drilled, until 2021.

Coirón Amargo Sur Este: Coirón Amargo's division into three unconventional blocks was approved in 2016, resulting in Coirón Amargo Sur Este (CASE), Coirón Amargo Norte (CAN), and Coirón Amargo Sur Oeste (CASO). In that context, PAE arrived into the area. GyP S. A.'s current share in Coirón Amargo is 10%; Madalena Austral S.A. holds 35%; Roch S.A. 10%, and APCO Oil & Gas International Inc 45%. The latter was acquired in 2017 by Vista Oil & Gas, a Mexico-based company managed by former YPF's CEO, Miguel Galuccio. In March 2017, a pilot project was launched to explore Vaca Muerta's shale oil reservoirs, and Cuyo Group's tight gas (Lajas and Punta Rosada) in CASE. PAE operates this 141 km²-block. PAE's current share is 55%, Madalena's 35%, and GyP's 10%.

Bandurria Centro: UTE Bandurria –consisting of YPF (54.55%, operator), Winterhall (27.27%) and PAE (18.18%)– was granted the concession in 2002. In 2015 the area split into three to develop unconventional resources: Norte (North), Centro (Center), and Sur (South). PAE is the sole operator in Bandurria Centro, with 130 km². In 2016, the company launched a pilot to drill 16 wells in Vaca Muerta’s unconventional shale reservoirs, and Cuyo’s tight sands.

Lindero Atravesado: The 509 km² block is operated by PAE, which controls 62.5%, and the remaining 37.5% is in the hands of YPF. In the first half of 2016, Lindero Atravesado accounted for 13% of Neuquén’s tight gas production, according to the estimates by the province’s Undersecretary of Energy. In 2011, PAE launched a project for the development of unconventional reservoirs involving drilling 104 wells, in the Lajas-Punta Rosada tight and Vaca Muerta shale oil. The company has been active in the area under Bidas since 1974. The gas production grew sevenfold since the beginning of the unconventional campaign.



San Roque: Together Total Austral (operator with a share of 24.71%), YPF S. A. (34.11%), Wintershall Energía (24.71%) and PAE (16.47%) formed UTE San Roque in 1994. The concession expired in 2017, but in 2008 the government of Neuquén granted an extension of concessions until 2027. This 1,040 km² block is the fifth largest in gas production in Argentina. Delineation wells –to gather information about reservoir size and characteristics– were drilled to target both tight and shale.

Has the company's attitude changed with the new Government?

Since 2011, PAE showed interest in the development of Lindero Atravesado unconventional fields and increased its share in other shale and tight projects, without significantly affecting the investments directed to Cerro Dragón development. However, since 2017, the resources allocated to the Neuquén Basin increased at the expense of Golfo San Jorge's, in line with the government's policy to subsidize new gas projects in the Neuquén Basin.

Meanwhile, PAEG's creation, as the press put it, would be a way to face the contingencies in a low oil price scenario worldwide.

A change in the allocation of investments?

PAE has been operating the Cerro Dragón deposit since 1958, in the Golfo San Jorge Basin. This is the main crude oil producer in the country clustering PAE investments historically, putting the Neuquén and Noroeste basins in second place. However, in recent years, the company started to increase the percentage for unconventional resources development in the Neuquén Basin, pushing its flagship project into the background. "In the reservoirs of Chubut, Pan American Energy got the lowest figures of the decade. Its investments decreased by 15%, from 801 million dollars in 2008 to 678 million today. PAE's level of investments reached its peak in 2015, with 1.137 billion dollars, and fell 40% in two years" (García, M., 2017).

Social conflicts

Lindero Atravesado takes up a portion of Vista Alegre's public lands, unanimously declared by the municipal council as a fracking-free zone on December 13, 2016. However, the government of Neuquén lodged an appeal with the provincial High Court and the ruling was suspended in May 2017, and finally declared unconstitutional on December 22. Nevertheless, the Asamblea Vista Alegre Libre de Fracking continues encouraging neighborhood mobilization.

The company has not been challenged directly, but PAE has a share in San Roque area, operated by Total Austral, next to the Auca Mahuida Natural Protected Area. This area was created in 1996 with the aim of preserving the diversity of the Patagonian steppe species that have disappeared or are very rare to find in other places of the

provincial territory. There are also several archaeological sites with petroglyphs and cave paintings, and the Auca Mahuida hill has great historical and spiritual value for the Mapuche People.

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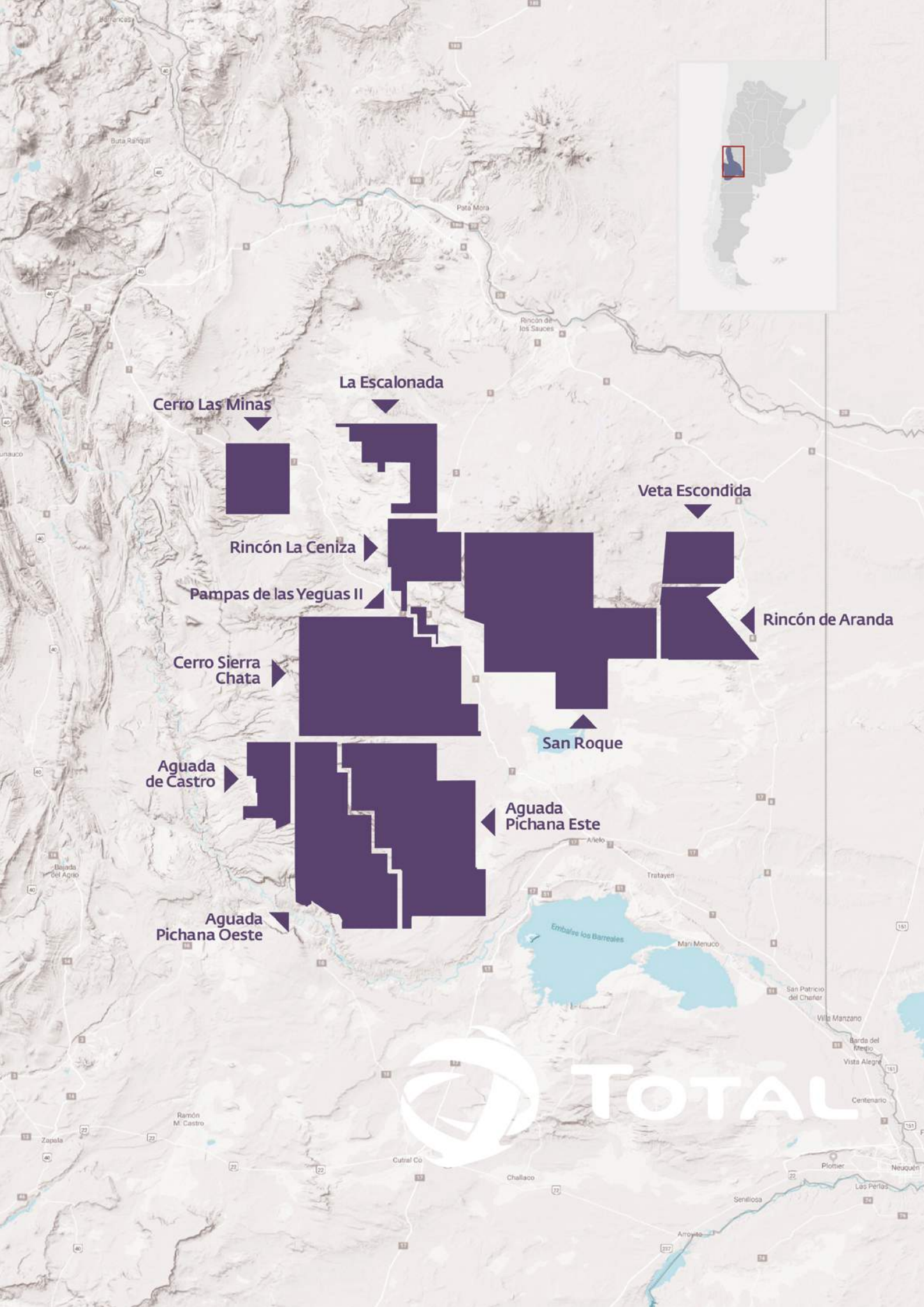
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Cerro Las Minas

La Escalonada

Veta Escondida

Rincón La Ceniza

Pampas de las Yeguas II

Rincón de Aranda

Cerro Sierra
Chata

San Roque

Aguada
de Castro

Aguada
Pichana Este

Aguada
Pichana Oeste

Embalse los Barreales



TOTAL



Total Austral S.A.

Total Austral was founded in 1972, is based in France and operates as a subsidiary of Total. Total is the fifth-largest international oil and gas operator. With a presence in over 130 countries, its activities cover every stage of the oil and gas production chain. It was created in 1924 as Compagnie française des pétroles CFP, with private and State participation. In 1985 the company renamed itself Total CFP, and later changed to Total S. A. in 1991. In 1999, it acquired Petrofina of Belgium, and turned into Total Fina. Later, it bought Elf Aquitaine, and became TotalFinaElf in 2000. By 2003, it was simply Total.

Starting operations in the country

The company entered the country in 1978, during the last civil-military dictatorship (1976-1983). It engaged in oil and gas offshore exploration in the Austral Marina Basin, off the coast of the southern province of Tierra del Fuego. In 1989, the first offshore exploitation was initiated in the Hidra field. In 1994, it entered the Neuquén Basin with operations in San Roque and Aguada Pichana; and in 1996, it started developing Aguada Pichana area. By then, Total was already the second largest gas producer in the country, and two years later, the San Roque project was underway.

In 1997, the company entered the marketing segment under Total Gas Marketing Cono Sur, to supply gas to residential and industrial markets, electricity companies and the land transportation sector. It operates in the LPG market under the brand TotalGaz, and in the lubricant and phytosanitary market under the brands Total and ELF.

Total is the second largest gas producer in Argentina, accounting for about 27% of total output. The Group has been present in the country for nearly 40 years. Its key feature is exploring new frontiers of extractivism: offshore operations, shale and tight reservoirs. In Tierra del Fuego, it operates the offshore fields Ara-Cañadón Alfa, Hidra, Kaus, Carina, Aries and Vega Pléyade, which account for 51% of the company's hydrocarbon production. Since 2016, the offshore gas field Vega Pléyade is the largest gas producer nationwide, which the company exploits together with PAEG and Wintershall. In the Neuquén Basin, it has participation in eleven blocks, totaling 5,300 km² which represents almost 6% of the province of Neuquén. Gas accounts for 90% of the company's production.

Setting foot in Vaca Muerta. Progress in the number of areas

The company operates in the Neuquén Basin since 1994. It landed initially in the San Roque and Aguada Pichana areas, associated with YPF S. A., Pan American Energy, and Wintershall. In 2008, they drilled a dozen multi-fractured horizontal wells in tight sands reservoirs in the Aguada Pichana area and, three years later, exploratory wells in the Vaca Muerta formation. The concession term of the block ran until 2017, but in 2009, the province of Neuquén granted an extension for 10 years (until 2027, provincial Decree No. 235). Social, political and union organizations opposed this measure arguing –among other reasons– it violated articles of the Provincial Constitution, such as No. 95, under which “energy sources are sole property of the province and may not be transferred or granted in exploitation to persons, entities or companies that are not national, provincial, municipal competent fiscal agencies, and/or State cooperative consortiums.”

At the beginning of 2010 the company bought shares in La Escalonada and Rincón Ceniza blocks. In January 2011, it acquired part of Aguada de Castro, Pampa Las Yeguas II, Cerro Las Minas, and Cerro Partido areas (the latter was returned in 2017). By 2015, it had drilled 12 wells targeting shale in Vaca Muerta, Aguada Pichana, and Rincón de La Ceniza. Currently, it operates in six areas: Aguada Pichana Este NC, San Roque, Rincón La Ceniza, La Escalonada, Pampa de las Yeguas II NC, and Cerro Las Minas NC. Also, it has a share in five others: Aguada Pichana Oeste NC, Aguada de Castro NC, Rincón de Arana, Veta Escondida, and Sierra Chata.

It entered Cerro Las Minas, Rincón La Ceniza, La Escalonada, and Pampa de las Yeguas II blocks due to agreements with the provincial company Gas y Petróleo del Neuquén (GyP), resulting in a direct adjudication of concessions circumventing the Legislative Branch.

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Areas:

Aguada Pichana Este / Aguada Pichana Oeste, and Aguada de Castro: In 1994, Total Austral (27.3%), Wintershall Energía (27.3%), PAE (18.2%) and YPF (27.3%) formed an UTE for the Aguada Pichana area, operated by the French company. In March 2017, they signed a Memorandum of Understanding for their division: Aguada Pichana Este NC (APE), covering 761 km²; and Aguada Pichana Oeste NC (APO), of 605 km². Also, they completed the merge of Aguada de Castro NC (ACA) with the new APO. At that moment, Aguada Pichana was the fourth-largest gas producer in Argentina. In the first half of 2016, it accounted for 10% of Neuquén's tight gas. In 2011, the first wells in shale formations were drilled and, in 2013, a shale gas pilot on Vaca Muerta was launched, which started production in 2015.

The 163 km² Aguada de Castro block was managed since 2011 by the UTE made up of Total Austral (42.5%), the operator; YPF S.A. (42.5%); Rovella Energía S.A. (5%); and GyP (10%). In 2013, Rovella Energía S.A. sold its share in equal parts to Total Austral and YPF S.A.

Aguada Pichana Este: Total Austral, the operator, holds a 40% share in the block; YPF and Wintershall 22.50% each, and PAE 15%. They plan to drill 48 horizontal wells until 2021, on top of the 12 already drilled in Vaca Muerta and Mulichinco. The first phase of the Vaca Muerta shale gas development at industrial-scale production was launched in this block.

Aguada Pichana Oeste - Aguada de Castro: This block is operated by PAE, with 45%, YPF 30% and Total 25%; and they plan to drill 30 horizontal wells in the Vaca Muerta formation until 2021.



San Roque: In 1994, Total Austral (operator, with 24.71%), YPF (34.11%), Winter-shall Energía (24.71%), and PAE (16.47%) formed the San Roque UTE. The concession expired in 2017, but in 2008 the Government of Neuquén granted an extension until 2027. This 1,040 km² block is the fifth-largest in terms of gas production in Argentina. In 2011, delineation shale wells were drilled targeting shale. There is also interest in the potential in tight sands in Mulichinco. In 2017, they launched a shale oil pilot.

La Escalonada and Rincón La Ceniza: It entered the area in 2010 with the UTE formed by Total Austral, the operator (with 85%), and GyP (with 15%). In 2014, Shell and O&G acquired some of Total Austral's shares in both blocks. Total Austral kept 42.5%, while Shell CAPSA and O&G acquired 21.25% each, and GyP 15%. In 2016, the Neuquén company sold 5% of its shares, so Total Austral currently holds a 45% share in the area, Shell CAPSA and O&G a 22.5%, and GyP 10%. There is a production pilot underway on these blocks, totaling an area of 463 km², and targeting the Vaca Muerta formation. The company's gas treatment plant, Loma de las Yeguas (in San Roque), receives production from shale wells in Rincón las Cenizas, where gas, condensates, and water are separated.

Pampa de las Yeguas II: Total Austral, operating the 116 km² block, entered the UTE in 2011, holding 42.5% of the shares, a similar percentage to that of YPF S.A.; while GyP held 10%, and Rovella Energía S.A., the remaining 5%. Later, Rovella Energía sold its share to Total Austral and YPF S.A. in equal parts. In 2016, YPF S.A. signed an agreement with Gas y Petróleo del Neuquén (GyP), and the Neuquén province to re-structure exploration and development permits for a group of blocks, subject to the terms of the National Hydrocarbons Law. The aim was to extend the deadlines to be able to develop projects in strategic areas in the Vaca Muerta formation; Pampa Las Yeguas II was one of those blocks. The company plans to drill 20 new shale gas wells.

Cerros Las Minas: Total Austral entered the 208 km² block in 2011 and YPF operated the area. Its shareholder structure was G&P 10%, Rovella Energía S.A. 10%, Total 40%, and YPF 40%. In 2013, YPF and Total Austral acquired Rovella Energía's share, in equal parts, therefore controlling each of them a 45% of the UTE. In 2016, YPF signed an agreement with Gas y Petróleo del Neuquén (GyP) and the Neuquén province to re-structure the exploration and development permits for a group of blocks, subject to the terms of the National Hydrocarbons Law. This aimed to redefine the area surface for a more 'efficient' intervention –dividing them in some cases– and to extend the deadlines for development in strategic areas with unconventional potential in Vaca Muerta; Cerro Las Minas was one of those blocks. In March 2018, YPF announced the launch of a drilling pilot.

Rincón de Aranda: This 239.4 km² block is operated by Pampa Energía S.A., one of the five largest unconventional gas producers in the province. This Argentine capital

energy company controls 55% of the UTE and the remaining 45% is owned by Total Austral, with presence in the area since 1993. In 2013, thanks to a discovery in the previous year, Petrobras Argentina –acquired by Pampa Energía– announced the discovery of oil in the Vaca Muerta formation.

Sierra Chata: This de 865 km² block is operated by Pampa Energía (formerly Petrobras Argentina), which holds a 45.5% share; Total Austral owns 3.5%, and Exxon Mobil 51%. In 2015, Petrobras Argentina drilled four development wells targeting tight gas in Punta Rosada and Mulichinco. In 2016, it contributed 3% of the tight gas production in the province. In July 2018, the UTE was granted an unconventional concession in the area by the government of Neuquén, and a pilot will be launched for the development of fifteen wells targeting Vaca Muerta, and nine targeting Mulichinco.

Veta Escondida: Pampa Energía currently holds a 55% share in the UTE and operates the 165 km² block, whereas Total Austral holds the remaining 45%. In April 2012, the government of Neuquén issued provincial Decree No. 563 declaring the expiration of exploitation concessions. The government’s decision was challenged by the concessionaires. Even though talks between parties made some progress, a final agreement had not been reached by the time this report was being completed.



Has the company's attitude changed with the new Government?

There have not been significant changes in terms of the company's forecast during the new Government, except for the division in two of Aguada Pichana, and the annexation of Aguada Castro to one of the aforementioned divisions.

Social conflicts

The company is questioned about developing unconventional projects both inside and on the boundaries of the Auca Mahuida Natural Protected Area (in Pampa de las Yeguas II, Rincón La Ceniza, and San Roque blocks). The sticking point was the unconventional drilling in the PLY.x-1 well (Pampa de las Yeguas II) within the protected area. This area was created in 1996, by provincial Decree No. 1446, with the aim of preserving the diversity of the Patagonian steppe species that have disappeared or are very rare to find in other places of the provincial territory. There are also several archaeological sites with petroglyphs and cave paintings, and the Auca Mahuida hill has great historical and spiritual value for the Mapuche People.

Although the technical team of the Natural Protected Areas Directorate of the province of Neuquén recommended, in 2012, not to allow drilling of unconventional wells in Auca Mahuida, the Agency's director paved the way for the Total Austral project. This issue was called into question during the Total Austral shareholders meeting, in Paris, in 2014. They objected to the implementation of fracking –banned in the company's home country– beyond their borders, and even inside a protected natural area.

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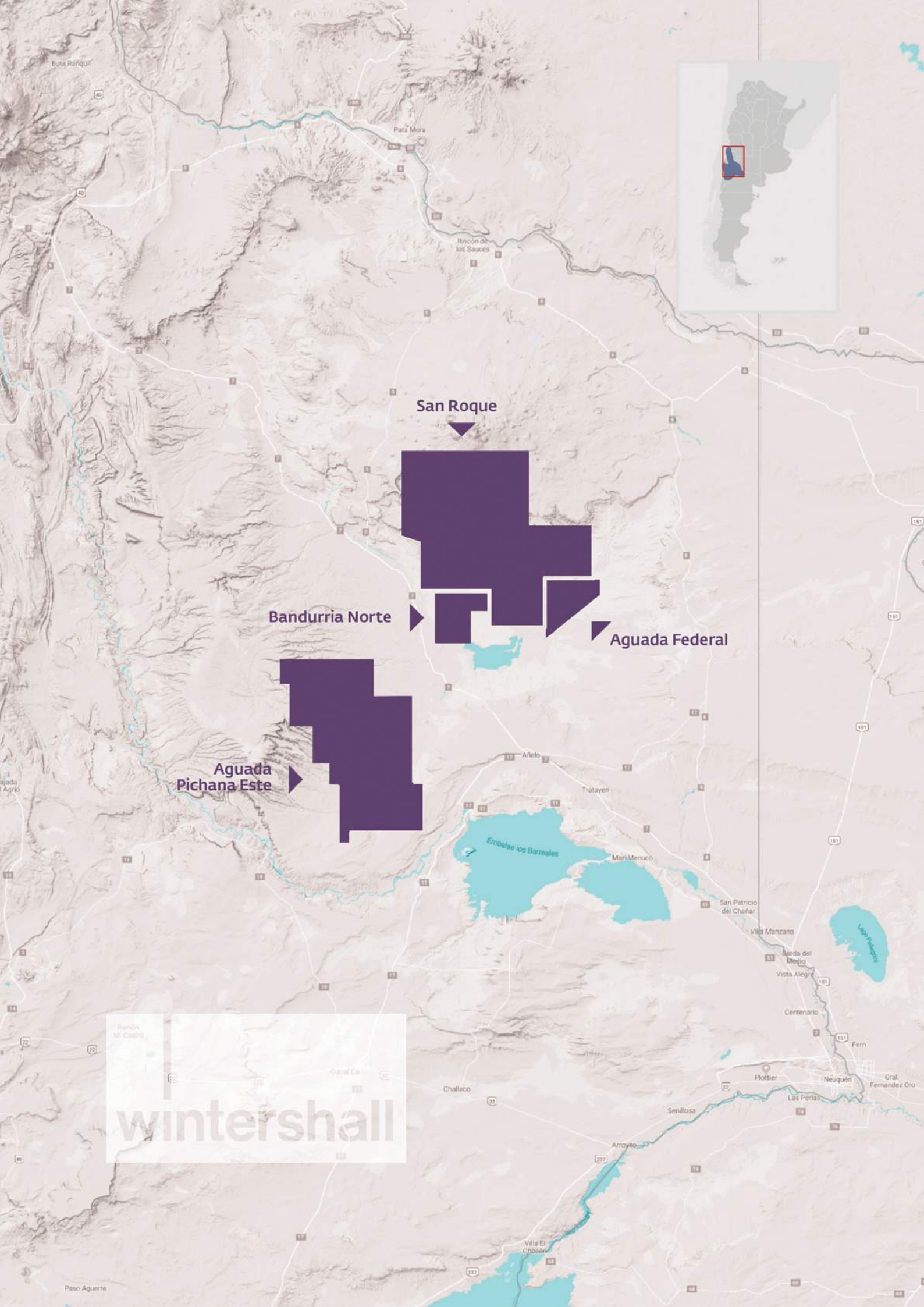
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Wintershall Holding GmbH

Wintershall was founded in 1894 to produce potash in Kamen, Germany. Crude oil production was added to the company's line of work in 1930, and natural gas production in 1951. In 1969, Wintershall was taken over by BASF group, the world's largest chemical company. In 1990 the German company became increasingly involved with the Russian Gazprom, with which it built a business alliance. The development of offshore blocks in the North Sea catapulted Wintershall as one of the main producers and suppliers of gas in the European Union.

Starting operations in the country

Wintershall Energía started operating in 1978, during the last civil-military dictatorship (1976-1983), under the trade name Deminex, the shareholders of which were Veba Oil, RWE-DEA, and Wintershall, which held 18.5% of shares. In 1998, Wintershall acquired Deminex assets, and Wintershall Energía S.A. was set up. Today, the company is the fourth largest gas producer in the country contributing almost 8% of the total.

It started oil production in the offshore blocks in Cuenca Marina Austral-1, off the coast of Tierra del Fuego. In 1981, Deminex launched its first drilling project and in 1989, oil production started in the Hidra field. The Carina and Aries fields started production in 2005, and the Vega Pléyade field, in 2016. Currently, around 20% of the gas produced in Argentina comes from the CAM-1 area. There, other partners are Total Austral and Pan American Sur, a subsidiary of Pan American Energy.

In addition, in 1994 the company entered the Neuquén Basin with shares in the UTEs San Roque and Aguada Pichana, made up of Pan American Energy, Total Austral, and YPF. Forty years after entering the country, Wintershall now has a foot in 15 fields across Tierra del Fuego, Neuquén, and Mendoza.

Setting foot in Vaca Muerta. Progress in the number of areas

Wintershall operates the blocks Aguada Federal and Bandurria Norte and holds shares in Aguada Pichana Este NC and San Roque, both operated by Total Austral. The company entered the Neuquén Basin in 1994 in association with Total, YPF, and PAE in the UTEs Aguada Pichana and San Roque. In 2014, the company and the provincial GYP signed an agreement and Wintershall took over operatorship of the Aguada Federal block. In 2015, it started operating Bandurria Norte. The company has also been

present in the south of Mendoza since 2013, in the CN-V block. In 2015, Wintershall completed the sale of a 50% share to GeoPark (a Chile-based company), and in 2017, they announced a new oil discovery. They underscored the potential of the Vaca Muerta formation, but the start date for unconventional projects has not been announced yet.

Areas

Aguada Pichana Este: In 1994, Total Austral (27.3%), Wintershall Energía (27.3%), PAE (18.2%) and YPF (27.3%) formed an UTE for the Aguada Pichana area, operated by the French company. In March 2017, they signed a Memorandum of Understanding for its division: Aguada Pichana Este NC (APE) covering 761 km², and Aguada Pichana Oeste NC (APO) covering 605 km². They also completed the merger of Aguada de Castro NC (ACA) with the new APO area. At that moment, Aguada Pichana was the fourth-largest gas producer in Argentina. In the first half of 2016, it represented 10% of Neuquén's tight gas (Mulichinco formation). By 2011, it had drilled the first wells in Vaca Muerta and in 2013 a shale gas pilot was launched, which started production in 2015.

Total Austral's current share in the block is 40% (operator), YPF's and Wintershall's is 22.50% each, and PAE's is 15%. They plan to drill 48 horizontal wells, in addition to the 12 already drilled in Vaca Muerta and Mulichinco. In this block, the first phase of Vaca Muerta's shale gas development was launched on an industrial scale.



San Roque: In 1994, Total Austral (operator) with 24.71%; YPF with 34.11%; Wintershall Energía with 24.71%; and PAE with 16.47% formed the San Roque UTE. The concession expired in 2017, but in 2008 the government of Neuquén granted an extension until 2027. This 1,040 km² block is the fifth-largest in terms of gas production in Argentina. In 2011, delineation wells were drilled targeting shale. There is also interest in the potential of the tight sands formation in Mulichinco. In 2017 they launched a shale oil pilot.

Aguada Federal: In 2012, CyP drilled the first exploratory well targeting Vaca Muerta, in the area formerly known as Aguada del Chañar. The following year, by decree of the government of Neuquén, the block split into Aguada Federal –formerly Aguada del Chañar Occidental– covering 97 km², and Aguada Cánepa, which stretches over 112 km². At that time, CyP and Wintershall entered negotiations to form the UTE and finally signed the agreement in 2014. The German company entered the block as operator with a share of 50%. After the drilling of their first well, Wintershall increased its working interest in 2015 to 90% and launched a pilot consisting of six wells.

Bandurria Norte: UTE Bandurria, made up of YPF (54.55%, operator), Wintershall (27.27%) and PAE (18.18%), was granted the concession of the area in 2002. In 2015 the area was split into three blocks in order to develop unconventional resources: Norte (North), Centro (Center) and Sur (South). The German company is the operator and the only concessionaire in the 107 km² area. In 2017, the company launched a pilot to drill three horizontal wells in the Vaca Muerta formation.

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A change in the allocation of investments

Although the company's presence in the Marina Austral Basin is still strong, it will not miss out on the chance to develop unconventional resources in the Neuquén Basin.

Social conflicts

There is no visible conflict in the areas operated by the company. In the Aguada Federal area, the impact the company's activities have on peasant families led to claims for payment of oil easements.



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Bajo del Toro

Bajo del Toro Este

equinor



Equinor

Founded in 1972 by the Norwegian state, who controls 67% of the shares. It is based in Stavanger, and specializes in offshore exploration and exploitation projects, having first operated in the North Sea. Currently, Equinor is present in more than 30 countries around Europe, America, Asia, Oceania, and Africa. The company allocates 15% of investments to renewable energy, while still pumping an 85% into oil and gas.

In May 2018, the company changed its name to Equinor, the official version being that after Statoil decided to become a “big energy company” in 2017 and move forward in the search for alternatives to fossil fuels it was only natural to drop the word ‘oil’ from its name. However, Greenpeace Norway accused Statoil of rebranding itself as Equinor to give a greener image, since the company’s exploratory campaigns in the Arctic Sea and in the Great Bay of Australia have been widely questioned.

Starting operations in the country

The company entered Argentina in 2017 and focused on unconventional hydrocarbons development.

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Setting foot in Vaca Muerta. Progress in the number of areas

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In August 2017, the company signed an agreement with the national company, YPF S.A. to explore Bajo del Toro NC block. In November of the same year, it entered Bajo del Toro Este after Gyp's Fifth Licensing Round, in a directly adjudicated concession circumventing the Legislative Branch. The company's arrival to develop unconventional resources is the result of a long negotiation process. And it is part of its gradual expansion into Latin America, which began at the start of the millennium and focuses on offshore blocks in the Brazilian pre-salt, in Surinam –where it operates three areas–, in addition to exploratory campaigns in Nicaragua, Colombia, and Mexico. As for unconventional development, it established itself in Vaca Muerta having operated two of the main shale plays in the US– the Bakken and Marcellus formations.

Bajo del Toro Este: Equinor operates the area with a 90% share in the UTE, whereas GyP holds 10%. The exploration permit covers 133 km², and two exploratory wells are projected for 2018.

Bajo del Toro NC: YPF entered Bajo del Toro in 2011, when it owned 46.80% of the UTE made up of the Dutch company EOG Resources Argentina Limited (43.20%) and GyP (10%). In August 2016, YPF S.A. bought EOG Resources Netherlands' assets in Argentina, so its share in the UTE turned to 90%. Two months later, a division into two of the 290 km² was agreed by Argentina's YPF and GyP, resulting in Bajo del Toro NC (157 km²), and Bajo del Toro Este (133 km²). YPF took control of Bajo del Toro NC where three wells targeting Vaca Muerta had already been drilled.

In January 2018, Equinor signed a final agreement after holding talks for months with YPF S.A. The Norwegian company's share in the UTE will be of 50% and YPF will take operatorship. The work plan is to be accomplished in two stages –the first consists of the horizontal drilling of two wells in Vaca Muerta; the second involves drilling six horizontal wells.

A change in the allocation of investments

Globally, the company decided to expand its line of work due to the urgent need for a transition to a non-fossil fuel source of energy in the face of climate change. However, in Argentina it participates in the expansion of the extractive frontier by exploiting shale reservoirs through the controversial technique known as hydraulic fracturing or *fracking*.

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**Estación
Fernández Oro**





Gazprom International

In 1998, Gazprom OAO, Zarubezhneft RBO, and Stroytransgaz OAO established Zarubezhneftegaz ZAO in Russia to operate abroad. In 2008, Gazprom bought out its partners' shares and renamed its now wholly-owned subsidiary as Gazprom Zarubezhneftegaz ZAO, which since then operates in Central and Southeast Asia, India, and Venezuela. That same year Gazprom EP International B. V. was registered in the Netherlands. In 2011, the assets of Gazprom EP International B. V. and Gazprom Zarubezhneftegaz were merged. It is a state-owned enterprise, although technically private, and operates in Uzbekistan, Tajikistan, Kyrgyzstan, Vietnam, Libya, Algeria, Nigeria, Venezuela, Bolivia, Argentina, Paraguay, Bangladesh, India, Dominican Republic, Germany, the Netherlands, and in the North Sea.

Starting operations in the country

Talks have been held with Gazprom since 2008, when YPF was controlled by the Spanish Repsol. They continued during 2012, when the Argentine State began controlling YPF and were completed in April 2015 when they both signed a Memorandum of Cooperation. No agreement was reached even though it was pushed by Presidents Vladimir Putin and Cristina Fernández de Kirchner. In September that year, YPF and Gazprom signed a new agreement, which put into evidence the Russian interest on the area where YSur, subsidiary of YPF, produces tight gas.

In January 2018, talks regarding Estación Fernandez Oro gas block, the star gas field in the province of Río Negro, were resumed. Gazprom wants to hold a 50% share, and promises investments of 500 million dollars. Currently, the field has 130 active wells, produces 2.5 MMm³/d –half of the total extracted in the province– and 20% out of the total of unconventional gas extracted by YPF, the main company in the sector.

By the time this report was being completed, the stock transfer had not been signed and the operator had not been appointed.

Has the company's attitude changed with the new Government?

Negotiations for Gazprom International to land in the Vaca Muerta formation began during Cristina Fernández de Kirchner's term and continued when Mauricio Macri took office. The reasons hampering negotiations seem to be related to the oil market ups and downs rather than to the political juncture in Argentina.





Social conflicts

Even though Gazprom did not enter the Estación Fernández Oro area, Ysur's massive tight gas production since 2014 –formerly by Apache Corporation– triggered a series of conflicts that are still current. In 2013, popular mobilization won a ban on fracking for Allen's town public lands. However, the provincial government appealed to the High Court of Río Negro, which declared it unconstitutional. In 2017, a ban on fracking was approved in the neighboring city of Fernández Oro, but it ended up the same. This meant a setback for local mobilizations, although they continued trying to ban fracking in other areas of the Upper Río Negro Valley, such as Gral. Roca and Cipolletti, and even in the Middle Valley, where bans were approved in all of its municipalities.



The advance of the extractive frontier over fruit production lands changed the rural landscape: explosions, spills and disturbing noises are part of the daily life of the families living next to wells that have been drilled near their homes in Allen¹¹. In turn, oil and gas facilities have become the scene in which civil servants, small scale producers and affected neighbors demonstrate against these extractive activities by occupying wells and cutting off access to facilities such as the local gas production and classification plant.

11. For a timeline of accidents and incidents in Allen, see EYES (n/d) "Accidentes en la era del fracking en Allen".

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Vega Grande ▶

Rio Atuel ▶

▲ La Paloma

▲ Mina Cerro
del Alquitrán

▶ Cerro Mollar Norte

▶ Puesto
Rojas

▶ Cerro Mollar Oeste

▶ La Brea

▶ Malargüe

▶ Manzano
Oeste

phoenix

▼ Corralera Noreste

▲ Corralera Sur

■ ◀ La Tropicilla I

▼ Aguada de
Castro Oeste I

▶ Santo
Domingo I

▼ Aguada de
Castro Oeste II

▼ Mata Mora



Phoenix Global Resources plc

Andes Energía plc, controlled by Argentine businessmen, but based in the UK, merged with Petrolera El Trébol S.A (PETSA), resulting in the formation of Phoenix Global Resources plc.

Trefoil Holdings B.V. Group, Netherlands-based, owns 99.99% of PETSA through a number of subsidiary companies in different countries: Trefoil Limited (Bermuda Islands), Trefoil GmbH (Austria), Trefoil Switzerland S.A. (Switzerland), San Enrique Petrolera B.V. (Netherlands), and Upstream Latino America S.L. (Spain). Trefoil Holdings B.V. Group is owned by Upstream Capital and Mercuria EAM, belonging, in turn, to Mercuria EC (Cyprus-based), which is owned by Mercuria EGH (based in Switzerland). Mercuria EG held 8% of Andes Energía before the merge. Now, it owns 75.38% of Phoenix Global Resources plc shares (PGR); the remaining 24.62% is owned by Andes Energía's shareholders.

Resulting from the merger, Andes Energia plc and its subsidiaries are combined into PGR: MSO Andes Energía Argentina S.A. (services), Andes Oil S.A., Andes Oil and Gas S.A., Grecoil and Co. S.A., Patagonia Oil & Gas S.A., Andes Hidricarburos Investments S.A. Argentina, Kilwer S.A., Ketsal S.A., and CHPPC Andes S.R.L.

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Starting operations in the country

Andes Energía was established in the United Kingdom in 2007, when the British firm Ragusa Capital acquired 50% of Sodem. The latter holds 51% of Empresa Distribuidora de Electricidad de Mendoza (EDEMESA); 100% of Integra Oil and 100% of Andes Oil. Even though it was based outside Argentina, the company was managed by Mendoza entrepreneurs Daniel Vila, the owner of multimedia Grupo América, and José Luis Manzano, a former congressman of the Justicialista Party (from 1983 through 1989), and Minister of Interior Affairs from 1989 through 1992 during Carlos Menem's term. In 2017, the Swiss company Mercuria, through its subsidiary Trefoil Holdings B. V. Group, merged with Andes Energía (renamed Phoenix Global Resources plc) through a capital increase process.

These companies do not have a strong background in oil and gas production. Through Andes Energía and subsidiaries, the Vila-Manzano Group was awarded exploration concessions in different provinces, such as Mendoza, Chubut, and Neuquén, which then negotiated –by selling or creating UTEs– with companies having the technical and financial capacity to develop the areas. The media portrays Andes Energía

and its subsidiaries as a real-estate company, since it acquired undervalued oil assets and then boosted them for sale or renegotiation. Mercuria is one of the leading commodity trading companies in the world (coal and oil).

Setting foot in Vaca Muerta. Progress in the number of areas

Phoenix Global Resources highlighted in its investors report that it covers approximately 7.5% of the Vaca Muerta formation. The acreage (accumulation of surface) is presented as a revealing data. However, its value is relative, given that the number can be drawn from presence in areas far from those of greater geological interest or of difficult access, due to the lack of logistics, thus demanding larger investments for development. According to PGR, its strategy is to control and consolidate, then evaluate and explore, and finally move towards a complete development.

As of 2007, the company bolstered its position in Corralera and Mata Mora blocks in Neuquén, through Kilwer and Ketsal. The company's share in these blocks varied over the years. In 2017, the provincial government launched the "Plan Exploratorio Neuquén" (Neuquén Exploration Plan) through GYP. In this framework, Petrolera El Trébol S.A. bid for seven areas totaling 1,132 km², but the Neuquén company objected it considering that land concentration in the hands of a company in the same geographical area was not advisable. They also questioned the bidder's financial situation to verify they could invest in exploration and exploitation accordingly. Eventually, the company was granted the concession of Aguada de Castro Oeste I and II, La Tropilla I and Santo Domingo I, totaling 360.45 km², less than a third of the extension initially sought by the subsidiary.

Petrolera El Trébol entered the oil and gas sector in 2001, when it acquired a share of the Chañares Herrados and Puesto Pozo Cercado areas in the province of Mendoza. In 2006, it acquired new areas, among them, Puesto Rojas. In 2016, PETSA merged with two other local companies controlled by Mercuria, Glacco Compañía Petrolera (acquired in 2009), and San Enrique Petrolera S.A. It also extended its presence to the Austral and San Jorge basins. In addition to shale development and exploitation in the Neuquén basin, the company's investor statements include unconventional exploration in the San Jorge and Cuyo basins, although no time frames are mentioned.

Mendoza

Puesto Rojas – Cerro Mollar: This 190 km² block is 100% owned by Petrolera El Trébol S.A. since 2006. In 2007 the company drilled towards the Vaca Muerta formation from four existing conventional wells. They also employed directional drilling reaching the Agrio (tight) formation. According to the company's investor reports, the successful drilling extends the unconventional potential approximately 145 km north of the area of interest. The company took as a point of reference the well drilled in 2012 by YPF in the Payún Oeste block, which was the northernmost part of the Neuquén Basin for unconventional purposes. 70% of PETSA's planned investments in these blocks are intended for further drilling towards the Vaca Muerta and Agrio formations. In the second half of 2018, PETSA plans to drill and complete its first horizontal well in Puesto Rojas.

El Manzano Oeste: Phoenix Global Resources has 100% share of the license for exploitation of conventional hydrocarbons. However, when it comes to unconventional reservoirs, the company holds a 40% share in a joint venture with YPF. In 2014, Las Varillas x-1 well was drilled with the aim of evaluating the unconventional potential of the Vaca Muerta formation.

In the investors presentation by PCR in June 2018, it is underscored that the company is also present in Vaca Muerta through its areas: La Paloma, Vega Grande, Mina Cerro del Alquitrán, and La Brea, which are operated by Grecoil; Río Atuel, Cerro Mollar Norte and Cerro Mollar Oeste, a concession that was granted to Petrolera El Trébol; and Malargüe, where Kilwer S.A. holds shares.

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Neuquén

Mata Mora – Corralera Noreste and Corralera Sur: In 2007, the Neuquén province-controlled oil company Hidrocarburos de Neuquén (Hidenesa) formed a joint venture with Ketsal and Kilwer- subsidiaries of Integra Oil & Gas –to operate Mata Mora (223,71 km²) and Corralera (336,94 km²). The Neuquén company's share was 10%, Ketsal's 18% and Kilwer's 72%. CyP was created in 2009 and was transferred the areas controlled by Hidenesa. In 2012, YPF joined the UTE, acquired 63% of the share and took operatorship in the area, while Ketsal maintained 5.4%, Kilwer, 21.6% and CyP did not make any changes. In 2013, the existence of hydrocarbons was verified at the exploitation stage. According to information given by PCR to its shareholders, the pilot wells drilled by YPF to the Vaca Muerta formation revealed large unconventional potential. However, in 2017, YPF decided to relinquish its share in both blocks and, in 2018, Phoenix agreed with the Province of Neuquén to increase its share (held through Integra Oil & Gas) from 27% to 90%. The Corralera area was split in three. The company kept Corralera Sur and Corralera Noreste; it committed to drilling a well in the first during 2018, and another one in the second block during 2019 or 2020. It returned the Corralera Noroeste block. In addition, it plans to drill two horizontal wells in Mata Mora at some point during 2018.

La Tropilla I: In this 48.65 km² area, the company committed to the reprocessing of existing seismic data in the 2018/19 timeframe and, based on the results of the seismic interpretation, potentially drill an exploratory well in 2020. According to the province reports, the area has great potential for hydrocarbons in Vaca Muerta and Los Molles shale formations.

Aguada de Castro Oeste I and II, and Santo Domingo I: Aguada de Castro Oeste I and II cover 199,9 km², while Santo Domingo I covers 111,9 km². The company plans to carry out geochemical and seismic work and to drill an exploratory well on Aguada de Castro Oeste I, potentially in 2019/2020. Province reports stated there was high potential for unconventional development in Mulichinco tight sands and Vaca Muerta shale in Aguada de Castro, before this area was split.

Has the company's attitude changed with the new Government?

By the time PCR was created, in 2017, the Cambiemos alliance had already taken office. In a presentation to its shareholders, the company considered Argentina as one of the most attractive emerging markets, given that the political climate in the country has improved and the new Government focuses on creating a supportive regulatory environment to encourage the growth of the unconventional oil and gas industry.

A change in the allocation of investments?

It is not possible to register changes, as this is a newly formed company. However, Andes Energía and Mercuria's merger shows the company's interest in positioning itself on the Neuquén basin, mainly to tap its unconventional potential.

Social conflicts

In 2012, YPF drilled a well towards the Vaca Muerta formation in the Manzano Amargo Oeste area, in Mendoza. But the tests carried out by Petrolera El Trébol in Puesto Rojas, together with the approval of an environmental regulatory framework that gives green light to massive fracking in the province, led to anti-fracking mobilizations. The struggle of the people of Mendoza to protect clean water is a long-standing one, and has a close antecedent in the organization of socio-environmental assemblies against open-pit mining in that territory.



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