



Vaca Muerta Megaproject

A fracking carbon bomb
in Patagonia



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.

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YPF-Chevron Loma Campana concession, Patagonia, Argentina. Credit: Martín Barzilai

The transnational megaproject is a key extractive frontier and a major carbon bomb that has a significant lock-in risk. In spite of its early stage of development by a complex network of corporations, it is already impacting on the rights of communities on various levels, both locally and across Latin America's Southern Cone region. Stakes are high—both for the companies involved and for the governments supporting this project.



1. Gas well explosion from Pluspetrol at Plottier city, Neuquén province. Credit: *La Mañana de Neuquén*. | 2. Mobilization against YPF and Chevron deal repressed by police, Neuquén city. Credit: *Diario Río Negro*. | 3. Hydrochloric acid spill from a truck in Centenario city, Neuquén province. Credit: *Matías Dabramo*. | 4. Gas well explosion in Loma Campana concession. Credit: *Diario Río Negro*. | 5. Spill of 248 thousand liters of formation water in farmland, Allen city, Río Negro province. Credit: *Martín Álvarez Mullally*.

The United States Energy Information Agency ranks Argentina's shale gas and shale oil resources in second and fourth place globally.¹ Almost all of this potential is concentrated in the Neuquén basin in Northern Patagonia (provinces of Neuquén, Río Negro, Mendoza, and La Pampa). Dubbed "Vaca Muerta" ("Dead Cow"), it has been identified as the biggest shale play outside North America and makes Argentina the third country, after the United States, and Canada, to reach commercial development.²

Since 2011, as conventional volumes have decreased and domestic consumption has risen, the country has lost self-sufficiency and been forced to import huge quantities of liquefied natural gas (LNG) and Bolivian gas. In this context, the government set the goal of drastically increasing hydrocarbons from unconventional sources. To complement the 2008 tight gas initiatives -8,000 km² with a potential of 45 trillion cubic feet of gas³- in 2011, a shale campaign was announced. The following year, the government nationalized YPF, and put it in charge of the initiative. The company had been privatized in the '90s and became a symbol of the neoliberal reforms, which led to a massive crisis and popular uprising in 2001, the year in which Argentina suffered the worst socioeconomic crisis in its history.

The goal is ambitious. There are two shale formations (Vaca Muerta and Los Molles), which together stretch over 30,000 km². Total estimated resources amount to 19.9 billion barrels of oil and 583 trillion cubic feet of gas. They represent around 50 billion tons of CO₂ that are currently locked in the ground, almost 1.5 times the annual global CO₂ emissions from the energy sector. However, since there are very few exploitation projects, there is very little overall development (2 to 4%) with just over 1,500 fracking wells. Output from unconventional reservoirs has nevertheless had a significant impact: unconventional gas accounts for 23% and oil for 8% of the total extracted.⁴ Currently, the main target is gas, whereas in the past it was oil.

Fracking: risky, dirty and banned

Developing unconventional hydrocarbon reservoirs requires a combination of technologies: hydraulic fracturing, horizontal drilling, and multi-well pads. This toolbox is usually referred to as 'fracking'. Virtually the only country where it has been implemented on a large scale is the United States, which has fracked over 50 thousand wells since 2005, resulting in numerous controversies globally due to the impacts of this practice.

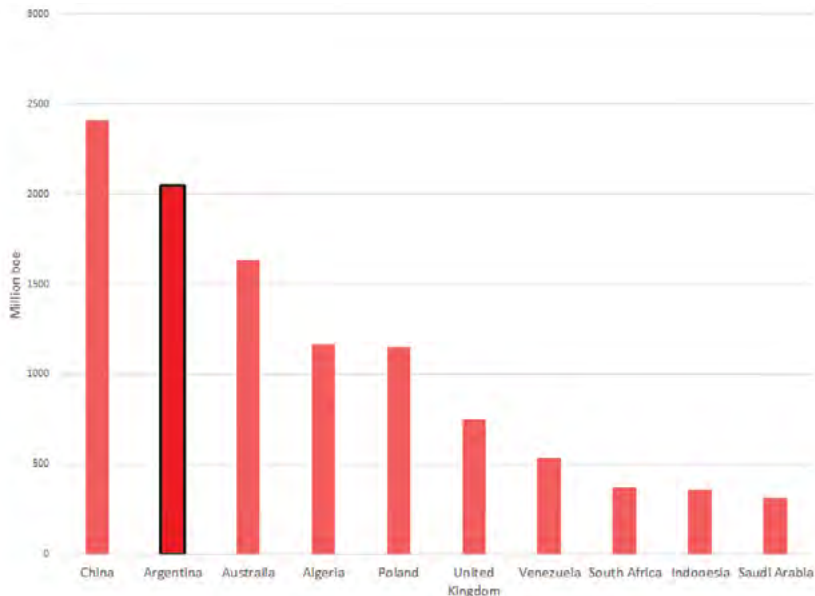
Up-to-date scientific peer-reviewed literature has concluded that fracking has inherent impacts on public health, water, soil and air.⁵ Other local harms identified include increased seismic activity as well as damage to neighboring economic activities. Climate impact has also been flagged up as a key issue to consider. Because, although gas has been regarded as a bridge fuel, scientific research, such as the study by Robert Howarth of Cornell University, has shown that unconventional sources accelerate global warming due to methane leakages.⁶ Health threats related to infrastructure have also been researched. For example, silica sand extraction and transportation has been linked to silicosis.⁷ In addition, controversies have emerged over overestimated long-term output. The US-based Post-Carbon Institute has regularly reported on the EIA's overstatement of gas extraction.⁸ Poland, one of the countries with the biggest shale potential in Europe, finally gave up extraction efforts given the lack of productive results.⁹

Among the voices of numerous victims in the United States, these arguments have raised worldwide awareness about the costs and benefits of the technique. The population and decision makers have also been exposed to scientific evidence, like the *Compendium of Scientific, Medical and Media Findings Demonstrating Risks and Harms of Fracking*. The result of these actions has been a global wave of awareness and resistance to unconventional fossil fuel developments and expansion. Currently, three countries (France, Bulgaria, and Ireland), two States in the U.S. (New York, Maryland), and numerous municipalities across Latin America (Mexico, Colombia, Brazil, and Uruguay) have enacted moratoriums or banned the technique.

As a strategy to reduce costs, the scale of operations in Vaca Muerta is growing rapidly. Having reached the size of a transnational megaproject, the current and proposed infrastructure is expanding throughout Latin America's Southern Cone. Aside from extraction, its value chain encompasses more than ten waste dumps and oil landfills, three sand extraction mines, plus its cleaning facilities and associated logistics; national and international pipelines, LNG plants on the Atlantic and Pacific oceans, a 700 km train line for goods transportation, expansion of petrochemicals and refineries as well as new roads and highways, among other assets involved. The result is an increasing web of nodes, in which the actors complement each other and compete among themselves in a complex network (see the image below on p. 8).

Vaca Muerta is presented as a test case for the Global South, and especially for the Latin American region, where several governments are proposing new unconventional projects.¹⁰ In Mexico and Colombia it is often used as an example to promote the benefits of the unconventional fossil fuel paradigm and pave the way for industry-friendly reforms. For example, in 2015 Colombian congressmen visited Neuquén at the invitation of their Argentine peers and YPF to “see the project for themselves”.¹¹ The group was discussing a joint statement with European representatives to encourage shale investment in both continents.¹²

Figure 1. Top Countries (outside of North America) by Potential Oil and Gas Production from Shale Plays Over the Next 20 Years (2018-2037)



-8- Source: Oil Change International (using data from Rystad Energy UCube, December 2017)¹³

Extracting for exports and heavy industry

The Neuquén basin is an old extractive region, which supplies over half of the country’s gas. With revenues declining due to the exhaustion of conventional sources, Neuquén has been pushing strongly to reactivate its main economic activity. In national terms, gas accounts for half of Argentina’s energy matrix, with the rest being made up of oil (around 40%) and small outputs of hydro and nuclear power. Coal and renewables account for less than 3%. ‘Cleaning up’ the energy matrix by reducing oil dependence and increasing gas use is also mentioned among the government’s narratives.

By reducing current imports first, the government's long-term goal is to shift the region towards gas exportation through continental pipelines and projected LNG facilities in Uruguay, Chile, and Argentina.¹⁴ According to government scenarios, with a steady investment trend, seasonal exports will be possible by 2025.¹⁵

A second goal, besides domestic gas supply, is to supply gas-intensive industries. For instance, Dow Chemical has been a key player, and the US petrochemical company is suggesting that it would considerably expand its plastics plant in the city of Bahía Blanca if Vaca Muerta were to move forward at full potential. In this regard, cheap gas would be essential. Other industrial players keen on expanding gas extraction include the steel tycoon Paolo Rocca, who stated that Vaca Muerta was comparable to the GMO soybean and agribusiness revolution.¹⁶

Push by state-owned and international corporations

Constitutionally speaking, hydrocarbons are owned by the provinces, which have jurisdiction over license bidding as well as environmental and production-related monitoring. The Federal State is responsible for drafting minimum standard policies on all the aspects involved, including foreign trade. Although it has undergone several reforms, the hydrocarbon legislation dates back to 1967, during the dictatorship era in Argentina.

In the unconventional race, the main actor is the oil and gas company YPF, which has been leading most of the projects alone or in joint ventures. With 51% of the stocks under state-control, the rest are listed on the Buenos Aires and New York Stock Exchanges. Current shareholders are Lazard, Goldman Sachs, Morgan Stanley, among other mutual funds and investors. Of a much lesser relevance CyP, a similar company based in the province of Neuquén, is much less important. Despite

the fact that it is 100% state-owned, it plans to be listed on the Buenos Aires Stock Exchange in the near future. Not only do YPF and GyP share a similar ownership structure, they also provide an entry point for private investors. In this sense, as block holders, they have sold and/or signed agreements with different companies over the last five years.

Although it is still at an early stage of development, almost every oil major is present in the region, due to its potential. Currently, the main exploitation project is the one signed by YPF and Chevron in 2013 (see text-box). Along the same lines, other ventures include one with Dow Petrochemical, Petronas, and Schlumberger. In these cases, the companies act as funding and technological partners. GyP has signed contracts with or sold blocks to Shell, Pan American Energy (PAE)¹⁷, Wintershall, and ExxonMobil. Another key player is Total, which is leading several projects on its own. Finally, Latin American and Argentine transnational companies, such as Petrobras, Pluspetrol, and Tecpetrol, have also invested in the activity.

-10- International involvement is crucial for funding (estimated at tens of billions of dollars), capacity building and governance of such megaprojects. Therefore, in addition to Big Oil and Gas companies, the actors involved include the U.S. government, through the Department of State's Unconventional Gas Technical Engagement Program, and the U.S.-Argentina Binational Energy Working Group.¹⁸ Also participating are multilateral investment banks, e.g. the World Bank and the Inter-American Development Bank, which has funded massive urban planning projects in the "shale capital" Añelo city to serve the hydrocarbon industry.¹⁹ To these we must add financial institutions like Citibank, ICBC, and Deutsche Bank, among others. The latter are holders of private and corporate debt (like that of YPF and the Argentine company Pampa Energía). Public debt is also being issued to fund infrastructure.



Reducing space: lack of accountability, wealth and power concentration

Corporations looking to invest have been pushing for better and safe conditions as part of their demands. One major step in this regard has been the modification of the regulatory framework. Since 2013, a special economic regime has been set up to enable tax breaks and other incentives. Created in the midst of the YPF-Chevron deal as an executive decree, it was finally introduced in the reform of the hydrocarbon law in 2014. The main advantages for companies are the extension of unconventional fossil licenses (from 25 to 35 years, allowing for indefinite 10-year extensions), the removal of license caps for each holder (previously restricted to five), fixed provincial royalties of 12%, and reduced capital and machinery import taxes, among others.²⁰

Moreover, through different programs designed by the national executive branch of, economic incentives and transfers²¹ have been increasing, and will be kept in place in the medium term. Currently, Vaca Muerta's gas price is higher (US\$ 7.5 per million BTU) than its conventional counterpart (US\$ 2.5 per million BTU), and it will remain so at least until 2021. Since 2016, the main source for these resources has switched from being the State to consumers, as gasoline prices and energy bills have risen by up to 1000%. Our research claims that, overall, economic transfers towards the industry added up to more than US\$ 21.5 billion between 2008 and mid-2016.²² In comparison, the portion of that sum transferred by the State (US\$ 13.5 billion) is 74% of what was spent in the same period by the Health Ministry. For the companies, the impact is huge. By 2015, the economic transfers represented 48% of their annual turnover.

Also, as part of its attempts to secure favorable conditions, the government has struck a deal that not only includes the aforementioned points, but also tailor-made labor reforms for Vaca Muerta.²³ In this regard, workers' wages have been almost cut in half, as certain benefits were removed (e.g. transportation and on-site breaks are deducted from the day's pay, and night shifts are permitted). A significant amount of decision-making power has also been taken away from the workers' union and transferred to the companies. New pressure is building up to also reform workers' conditions in the logistics sector.

As wealth becomes concentrated, so do power and decision-making processes. With regard to the public administration, the province of Neuquén has been governed by the same party for over fifty years. On the corporate side, companies have managed to secure a strong hold over politics through several mechanisms. These include allegedly corrupt agreements with state-controlled companies and service companies linked to political elites.²⁴ For instance, Neuquén's former Minister of En-



500 metres away from Neuquén city, oil pits, not covered, contaminating soil and air. Comarsa oil landfill. Credit: Fabián Ceballos.

ergy, Guillermo Coco, resigned in 2014, because, among other reasons, a lawsuit had been filed against over unaccounted monetary contributions to a Foundation owned by the state-controlled GyP. These kinds of agreements were part of the

clauses in contracts signed with ExxonMobil, Wintershall, and several other private companies.²⁵ Conflicts of interest have become more common with the new national administration that came to office in late 2015. Among a striking number of Energy cabinet members from corporations, the former CEO of Shell Argentina stands out as the new Minister of Energy. Most of the policies implemented since then have benefited companies and concentrated decision-making in the hands of a few.

Another instrument that clearly strengthens the power of these companies is that of Public-Private Partnerships in proposed infrastructure projects. The mechanism is encouraged by the G20 and Multilateral Development Banks, and has been criticized for its unfair allocation of risk and reward, which benefits investors to the detriment of the public interest. The most advanced of these projects so far is the railway connecting the city of Bahía Blanca with Añelo.²⁶

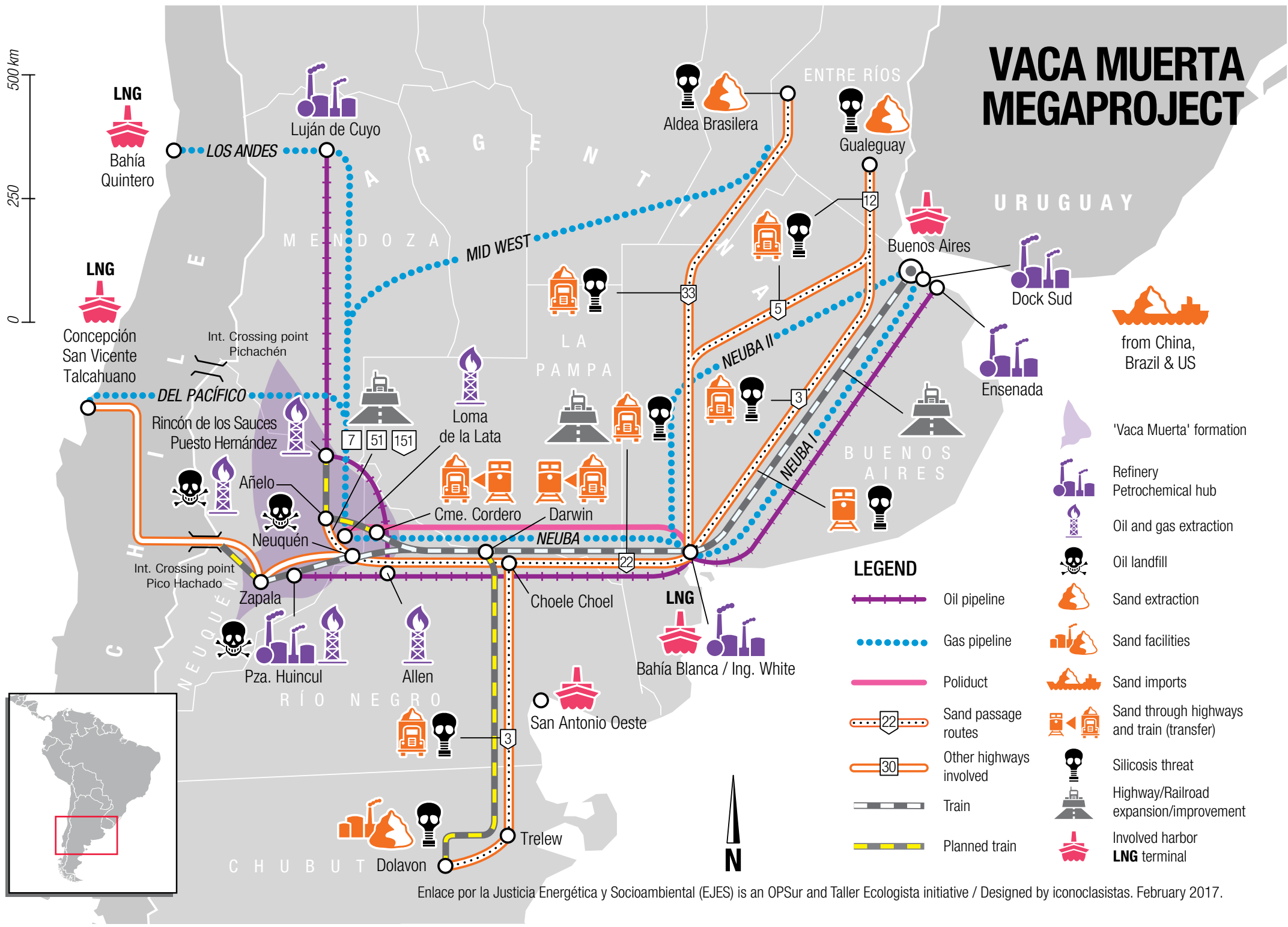
Finally, to secure money outflows, financial frameworks have been established. In a context where access to information is extremely difficult, some companies operate with weak subsidiaries, which have been especially created for this purpose. In addition to YPF-Chevron's network of shell companies (see text-box below), Shell also operates under the same procedure. Since there is no complete and up-to-date access to contracts, the full scale and reach of all the companies involved in extraction is unknown.



Fracking tower beside fruit plantations. Allen, Río Negro, Argentina. Credit: Jorge Ariza.

VACA MUERTA MEGAPROJECT

500 km
250
0



from China, Brazil & US

'Vaca Muerta' formation

Refinery
Petrochemical hub

Oil and gas extraction

Oil landfill

Sand extraction

Sand facilities

Sand imports

Sand through highways and train (transfer)

Silicosis threat

Highway/Railroad expansion/improvement

Involved harbor
LNG terminal

LEGEND

Oil pipeline

Gas pipeline

Poliduct

Sand passage routes

Other highways involved

Train

Planned train



YPF-Chevron agreement: leading case in the unconventional race

After partly nationalizing YPF in 2013 to reduce energy imports, the government sought aggressively to make new investment agreements that could spur hydrocarbon extraction. At that time, the only company willing to strike a deal was Chevron. The company had been undergoing a lawsuit in the country since 2012. The affected people of Ecuador had filed a complaint that successfully achieved an embargo on the company's subsidiary. The measure was a way to pay up the US\$ 9.5 billion fine for polluting the Amazon. After being pressured by the national government through public statements and the Attorney general, the Supreme Court of Justice finally dismissed the case in June 2013.

Only days later, in July 2013, a Hydrocarbon Exploitation Investment Promotion Regime and tax breaks for equipment imports were established by decree as part of Chevron's demands.²⁷ On the following day, YPF and Chevron signed a US\$ 16 billion agreement to exploit the soon-to-be created Loma Campana concession. The area was being set up in the territory of the Mapuche indigenous community Campo Maripe.

Since the agreement did not abide by existing regulations at that time, an exception had to be ratified by Neuquén's parliament. This had to be done without fully knowing what was signed. Even the provincial Minister of Energy stated that he did not know all the points addressed. YPF argued that these actions were under private, rather than public law.

Five thousand people mobilized to the parliament that day. The main complaints were the violation of national sovereignty, the potential environmental degradation and the breach of indigenous law. For several hours, the protest was heavily repressed by the police. A number of people were injured, a teacher was shot at in the chest, and Mapuche houses were burnt down. Even though a judicial process was initiated, nobody was held responsible.²⁸

At that same time, a lawsuit was filed by a national senator demanding access to the contract. After several years, in November 2015, the Supreme Court of Justice ratified YPF's obligation to disclose the document. Even though the company did not fully share all the documentation, available information showed that a complex network of offshore companies was set up to secure money outflow and protect Chevron from future litigation (by Ecuadorians or other parties). Two former YPF executives created a limited company based in Buenos Aires, which was connected through commercial agreements with YPF companies in Delaware ('YPF Shale Oil Investments I & II'). These had a commitment with a Chevron company set up in the Bermuda Islands. The agreement is regulated by New York law, and arbitration falls under the International Chamber of Commerce.²⁹

There are currently almost 500 fracking wells in the Mapuche territory, one of the most fracked sites outside North America. Throughout this long conflict, Campo Maripe has been denied territorial rights and a land title, even though it was recently recognized by the province as an indigenous community. They have blocked operations numerous times and regularly denounce the contamination of their territory.

Overall, the project has set the framework in which the unconventional race is playing out: violence and concealment under a state of exception. Violence, because almost every project has been imposed, rather than agreed as the result of consensus. And state of exception, because the legal framework has been adapted to fit the actual practices. One example of this is the fact that the details of the aforementioned decrees were contrary to the general framework of the federal Hydrocarbon Law. This issue was resolved a year later by reforming the law.

At whose expense? Socio-environmental degradation, human rights violations, and climate impact

Vaca Muerta's early development is currently infringing on a range of individual and collective human rights. Regulation and policy enforcement is scarce. Only one environmental decree in Neuquén acknowledges the radical change of paradigm. Even though it should be public, accessing information has been a challenge.

Fracking has spread to previously undeveloped regions, where territorial conflicts arise from new wells, but also infrastructure. In working-class neighborhoods in the city of Neuquén, new wells are being drilled, and at the same time, the nearby Comarsa oil landfill is increasing in size. The smell of burning and of the company's garbage deposits hangs in the air, floating over precarious wooden houses with no gas lines. Numerous indigenous communities have seen their territories being licensed for new developments, as in the case of Campo Maripe with YPF-Chevron. No international legal framework has been observed, such as the International Labour Organization Convention 169, which in Argentina has Constitutional status. Among other things, the Convention states that Indigenous people should be consulted before introducing policies that affect them. Moreover, in disruptive cases such as extractive industries, consent should also be informed. Neither of those mechanisms has been set in place. Fracking wells and compressor stations have been expanding in Allen city, the so-called 'national pear capital'. Agricultural fields are being abandoned for good. Protected areas have also been affected, since Total drilled a fracking well on the Auca Mahuida Provincial Reserve. On top of all this, as the megaproject expands, Central Patagonia and the Litoral region have also suffered the impacts of sand extraction. For example, projected sand mines

come into direct confrontation with agriculture in the town of Dolavon, Chubut province.³⁰

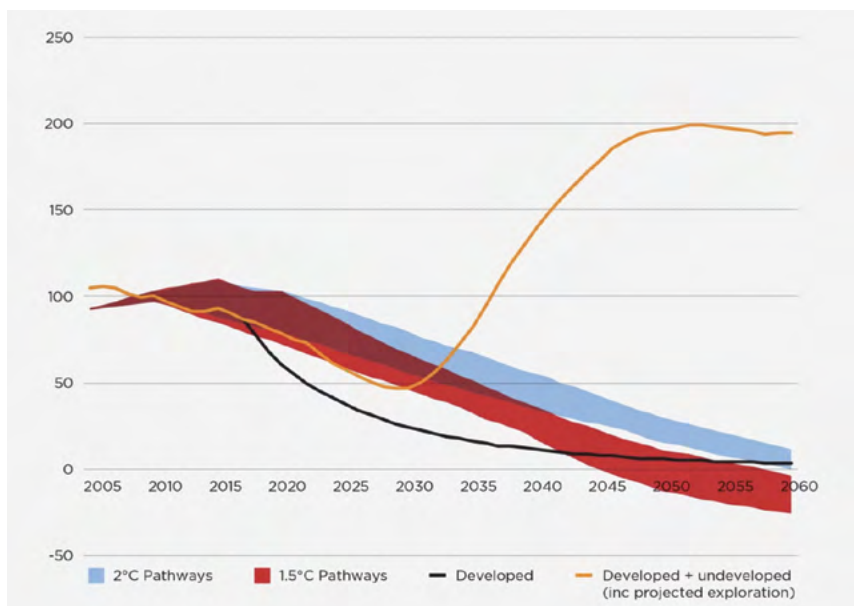
Fracking is an experimental technique so various accidents have been recorded: Total and YPF have lost radioactive pills, wells have gone up in flames due to gas leaks, truck accidents have caused spills, pipelines have broken, and five workers lost their lives, among other incidents.³¹ Nevertheless, the synergistic and health impacts and the detailed scope of degradation are currently unknown. The same applies to climate impacts, where no sound research is being carried out.

Social impacts are also exacerbated. Housing and food prices are tied to privileged oil and gas workers' salaries, even though they make up a minority of the population. A 'gold-rush' effect has caused chaotic urban growth and unmanaged migration to the region, where families with scarce resources pile up on the outskirts of towns. Añelo city has grown from 2,500 to more than 6,000 people in less than three years. In addition, a concentration of well-paid men has also been linked to increased trafficking of women and drugs. A report by the official body Centro de Asistencia a la Víctima has established that 67% of the women being trafficked were found in oil towns.³²

Opposition to these projects has encountered numerous problems. The government has responded to mass mobilizations with overt repression, as occurred in the city of Neuquén in 2013. Confidentiality agreements have been signed between YPF and local neighbors. An internal inquiry was opened into technical workers from the Auca Mahuida Provincial Reserve, the same situation witnessed by researchers from the federal agency dedicated to supporting agriculture. The reason was that they had raised concerns about the activity in protected areas and food-producing regions. Municipal bans on fracking are being challenged by provincial governments, stating that the protective measures are unconstitutional. On top of

all that, massive public pro-fracking campaigns paid for by companies and the government are under way. One examples of this is YPF’s public campaign the “Myths and Truths about Fracking”.³³ Another is the initiative organized by the Neuquén government to print and hand-out ten thousand copies of the Oil and Gas Institute report defending fracking.

Figure 2. Rates of change in emissions from Argentinian oil & gas fields relative to a global Paris-compliant emissions trajectory (Base year 2010 = 100%).



Source: Oil Change International (using data from Joeri Rogelj et al.; Rystad Energy UCube, October 2017).³⁴



Conventional and tight gas extraction in working-class neighborhood Valentina Norte, outskirts of Neuquén city. Credit: Vaca Bonsai.

A huge (but fragile) problem: mobilizations against Vaca Muerta

Vaca Muerta is a complex, multidimensional and global issue. It seems unstoppable—enormous resource potential, a high level of interest on the part of numerous oil and gas companies, strong political support and little room for alternative discussions, all riddled with undemocratic and corrupt practices.

But the venture has shown great intrinsic fragility and its real potential has been overhyped. High costs, lack of infrastructure, and a complex international scenario of low oil prices and rising climate change awareness are reducing the scope and slowing down the pace. The interconnected dependence of the value chain is of no help either. For instance, one of the main issues is sand transportation costs and little can be done until a train becomes operational. The key point is that the project needs to reach a bigger scale, a massive one that goes beyond extraction itself. There seems to be no middle ground for the companies involved.

It should be noted that the scope and speed have also been reduced by networks of local and sub-national grassroots resistance. Currently, the province of Entre Ríos (adjacent to Uruguay) and more than fifty local towns have enacted bans on fracking at the national level. Some of them are far away from Vaca Muerta, but others are in proved reservoirs in the Neuquén basin, and place limits on fracking expansion. One such case is the agricultural town of Vista Alegre, where YPF has high hopes for gas extraction. Campo Maripe has for months blocked the new YPF and Chevron wells. In Neuquén, residents and local organizations have also pushed for oil landfills to be banished from cities. That struggle succeeded in getting new regulations introduced, which set boundaries to protect cities and agricultural areas. In Río Negro, a new landfill spanning 300 hectares is being resisted by local population. Total stated that no further drilling would take place in the Auca Mahuida Protected Area.

These outcomes are the result of numerous actors working together. Fracking has received criticism, and calls for caution have been issued by the Nobel Peace Prize laureate Adolfo Pérez Esquivel; the Catholic Bishop of Neuquén; the chamber of small farmers of Río Negro; provincial and national unions (physicians, teachers, public workers, energy workers); and some political parties with representatives in local towns, provinces and the national State, among others. Local grassroots resistance has emerged in numerous cities in Patagonia. Together with the Mapuche Confederation, they have been one of the key actors in the basin.

Lastly, given the aggressive expansion of fracking, mobilization and networks have grown to share and enrich global resistance. An example of this is the Alianza Latinoamericana frente al Fracking (Latin American Alliance against Fracking), which brings together more than twenty civil society organizations from across the region.



Platform Against Fracking of Neuquén mobilizing against Comarsa oil landfill (2015).

We, EJES, as civil society organizations, recommend:

To foreign countries concerning the activities of multinationals:

- Adopt binding legislation that imposes legal responsibilities on companies, including the activities of their foreign subsidiaries. This legislative framework should include a due diligence obligation prescribing that companies have to identify, prevent and mitigate their adverse human rights impacts.

- Put in place requirements for financial and extra-financial reporting, on a country-by-country basis, to ensure that multinationals stop taking advantage of the regulatory, tax and legal havens that facilitate their appropriation of natural resources.

- Guarantee that no public funding will be given to companies and projects that violate human rights, workers' rights or the environment, and make independent human rights and environmental impact assessments compulsory prior to the approval and/or funding of projects, as well as ensuring a follow-up process, which includes sanctions in the event of damage or breach of standards, after projects have started.

To Argentine authorities concerning the extractive industries:

- Call for a moratorium in all new infrastructure and oil and gas projects until full and informed risk assessments can be made. This process should open and unrestricted, conducted by an independent multidisciplinary body and funded by the government.

- On top of this, special and urgent consideration to critic regions where fracking has already produced several damages: cities, indigenous territories, protected areas, watersheds, farming regions.

- Recognizing the high carbon-intensity involved in the megaproject, guarantee full access to all available information on oil and gas projects. Introduce mechanisms to enable local, national or international legal action, where necessary. Open and transparent audit of contracts and public funding involved, which should be halted until full assessment can be made.
- Respect community rights and the central role of communities in decision-making regarding the natural resources of their territories. Obtain full, prior and informed consent before granting any oil and/ or gas license in indigenous territories.

To Argentine authorities and population concerning energy sovereignty and post-extractivism:

- Regain decision capacity of leading strategic energy policy through a national public company, which should include in their decision process local populations, consumers and workers.
- Deconcentrate the hydrocarbon private sector by setting limits to property and/or extraction.
- Raise the environmental and human rights protection in regions of oil and gas extraction.
- Adopt and implement binding policies that can lead to a managed phase-out and decline of fossil fuel industry, which includes switching to renewable energy as main source.
- Promote an efficient and rational production and consumption of energy, particularly in transport and industry.
- Understanding that energy is a right, promote and guarantee universal access to it.

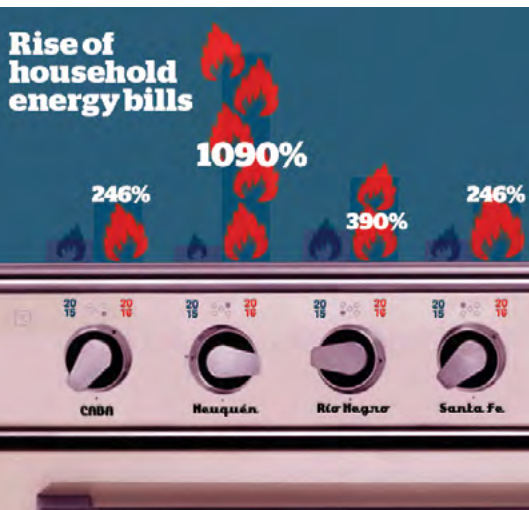
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15. http://www.energia.gob.ar/contenidos/archivos/Reorganizacion/planeamiento/publicaciones/escenarios_energeticos_2025.pdf
16. https://www.clarin.com/economia/economia/vaca-muerta-estrategia-desarrollo-industrial_o_BJauUHBTx.html
17. Holding owned by BP (60%) and Bridas Corp (40%). Divided into equal parts between the Argentine family Bulgheroni and China National Offshore Oil Corporation.
18. <https://obamawhitehouse.archives.gov/the-press-office/2016/03/23/fact-sheet-united-states-%E2%80%93-argentina-relationship-o>
19. https://dl.dropboxusercontent.com/u/13114503/A%3C%3B1elo%20Plan%20de%20Accion_Web.pdf

20. <http://www.opsur.org.ar/blog/2014/09/29/loteo-con-beneficios/>
21. We understand ‘economic transfers’ as the result of pressure exerted over the relative price structure. The goal is to generate a direct benefit on a particular activity. This includes indirect policies (such as a devaluation) and direct subsidies of the State, in addition to “non-internalized costs”, such as environmental liabilities.
22. <http://www.ejes.org.ar/InformeTransferencias.pdf>
[las-cuatro-empresas-offshore-detras-de-y-pf-chevron/](http://www.ejes.org.ar/InformeTransferencias.pdf)
23. <https://drive.google.com/file/d/oB52a4EzUrNVCUmJ2bGVPQVJYTVU/view>
24. <http://www.opsur.org.ar/blog/wp-content/uploads/2016/11/Libro-Vaca-muerta-WEB.pdf>
25. http://www.rionegro.com.ar/region/acusaran-a-coco-por-delitos-contr-la-administracion-publica-FBRN_7824450
26. https://www.minfinanzas.gob.ar/uppp/english/e_transp_com_tec.php
27. National decrees 927/13 and 929/13
28. <http://www.opsur.org.ar/blog/2013/09/03/anti-fracking-mobilization-suppressed-and-indigenous-houses-burnt-due-to-resistance-over-chevron-y-pf-agreement/>
29. <http://www.opsur.org.ar/blog/2016/03/15/las-cuatro-empresas-offshore-detras-de-y-pf-chevron/>
30. For more information on these issues, see the Ejes report “Informe de Externalidades. Megaproyecto Vaca Muerta”. Available at: <http://www.ejes.org.ar/InformeExternalidades.pdf>
31. <http://www.ejes.org.ar/boletines/img/Ejes-Accidentes-incidentespetrolero-senlacuencaNeuquina.pdf>
32. <http://www.laizquierdadiario.com.ve/Trata-de-personas-la-ruta-del-petroleo-19024>
33. <http://www.y-pf.com/EnergiaYPF/Paginas/mitos-y-verdades.html>
34. <http://priceofoil.org/2017/12/27/upcoming-g20-summit-in-buenos-aires-and-argentinas-energy-future/>. Emissions pathways are adapted from Joeri Rogelj et al., “Energy system transformations for limiting end-of-century warming to below 1.5°C,” *Nature Climate Change*, Vol.5, June 2015, p. 520. The study shows a range of scenarios for emissions pathways that would lead to achieving the likely chance of 2°C or medium chance of 1.5°C outcomes.



Extractivism along
patriarchy deepens the
violence



Pictures part of Ejes' news bulletin.
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International summit in 2017 at Vista Alegre, Neuquén province. The meeting gathered social movements, unions, NGO's, researchers, indigenous movements, grassroots organizations and political parties from Latin America, North America and Europe. Credit: Martín Álvarez Mullally.

Vaca Muerta is a leading case for the next generation of fossil fuels. Big Oil and Gas companies are keen to turn it into a success story –which is why we collectively need to put a stop to this if we are serious about restricting oil and gas supply globally, protecting territories and fighting climate change. It is our view that “Killing the Dead Cow”–and thus preventing a further expansion of the fossil fuel industry that would be a door-opener for further projects in the Global South– is necessary to build up pressure for an honest dialogue about “managed decline” and fair transition. The collective success of movements in an emblematic case like this would increase leverage for such a conversation.

