

# 3.1

## The (dis)illusion created by fossil fuels



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### SUMMARY

Promoting the development of Vaca Muerta, offshore platforms and the exploration of conventional hydrocarbons is one of the activities that were presented as a means to not only stop capital outflows in foreign currency caused by energy imports, but also to favor capital inflows in foreign currency deriving from exports. Seventy-four percent of Argentina's external debt is denominated in foreign currency and exports are seen as a tool to obtain it, with estimates showing that 20% of exports should be allocated to debt repayments in the next three years. However, fostering fossil fuel exports requires infrastructure, and increasing production to meet international demand calls for investment in foreign currency and fiscal efforts by the State.

### Introduction

Vaca Muerta, the unconventional hydrocarbon reservoir shared by Neuquén, Río Negro, Mendoza and La Pampa provinces, is presented as a solution to Argentina's economic problems. According to Agencia Argentina de Inversiones y Comercio Internacional [AAIyCI] (2019), only 4% of Vaca Muerta's surface area is under massive development.

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FARN would like to thank Charles Mott Foundation for the support.

However, it seems that Vaca Muerta may not be the only attractive when it comes to investments, since AAIyCI also presents 500,000 km<sup>2</sup> of unexplored offshore basins.

Therefore, promoting the development of Vaca Muerta, offshore platforms and the exploration of conventional hydrocarbons are some of the activities that were presented as a means to not only stop capital outflows in foreign currency caused by importing fuel<sup>1</sup>, but also to favor capital inflows in foreign currency from an alleged increase in exports.

According to the National Energy Plan (introduced by the previous administration), Vaca Muerta alone could most likely outweigh agricultural exports, with a total of USD 34 billion by 2027 (Secretaría de Gobierno de Energía [SGE], 2018). For that to happen, it would be necessary to double extraction in the next five years, so as to reach 260 million cubic meters per day (MMm<sup>3</sup>/day) to export 100 MMm<sup>3</sup>/day of gas, and 1 million barrels/day to export 500,000 barrels/day of oil (SGE, 2018). This would mean that 50% of oil extraction and 38% of gas extraction would be aimed at the international market.

Why is it so urgent to export? It is hoped that exports will create repayment capacity of the external debt, which represented 91.6% of the gross domestic product (GDP) by the third quarter of 2019 (Ministerio de Economía [ME], 2020). According to data collected by the Economic Commission for Latin America and the Caribbean [ECLAC] (2020), that ratio was 77% in Brazil, 50% in Uruguay and 34.5% in Mexico by 2018, with Argentina having the highest one in the region.

Seventy-four percent of the external debt is denominated in foreign currency (ME, 2020), which makes its repayment difficult for an economy in pesos that is also undergoing a devaluation process. Therefore, increasing exports is one of the ways of bringing much-needed dollars into the country. Estimations show that Argentina's economy would need an injection of USD 11 billion and USD 46 billion **to pay** a total of USD 43.777 billion **between 2022 and 2023, a debt equal to 20% of national exports per year** (Zeolla, 2019).

The main external debt creditor sectors are private lenders and multilateral and bilateral lending organizations (banks) with a 62.6% of the total debt (ME, 2020), which includes the International Monetary Fund (IMF).

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1. Gas imports from Bolivia (which are supposed to remain in place until 2026) and liquefied natural gas (LNG) imports by ship from Qatar or Trinidad and Tobago.



Credit: María Marta Di Paola.

More specifically, Argentina “is home to” 61% of international loans granted by the IMF (Centro de Estudios Económicos y Sociales Scalabrini Ortiz [CESO], 2019), which moved forward with the decision of granting the loan despite certain irregularities, such as the lack of a loan impact study and a repayment capacity study of the national economy that the Central Bank of the Argentine Republic was supposed to do. Additionally, in the face of the 2018 drought that had an impact on the agricultural sector (and, thus, on national exports), the IMF showed particular interest in Vaca Muerta and highlighted its role and the role of future exports from the energy sector in a potential improvement of the trade balance (IMF, 2018, p. 9).

Therefore, to avoid a new debt crisis, Argentina needs sustained economic growth. Nevertheless, this leads to several challenges that should be considered when thinking of exports and fossil fuels as a potential solution in the national context.

The first one is inflation, since high levels weaken export capacity. So, an inflation rate of 53.8% for 2019 affects the competitiveness of the exchange rate, since there are no incentives to invest because of the difficulty in forecasting extraction costs and the inability to make long-term projections (Elizondo, 2013).

Secondly, higher growth will require a higher amount of imports and, thus, the demand of dollars will tend to grow even more: it is estimated that, for every one-percent increase in GDP, imports would tend to increase by 3.34% (D'Agostino, 2019).

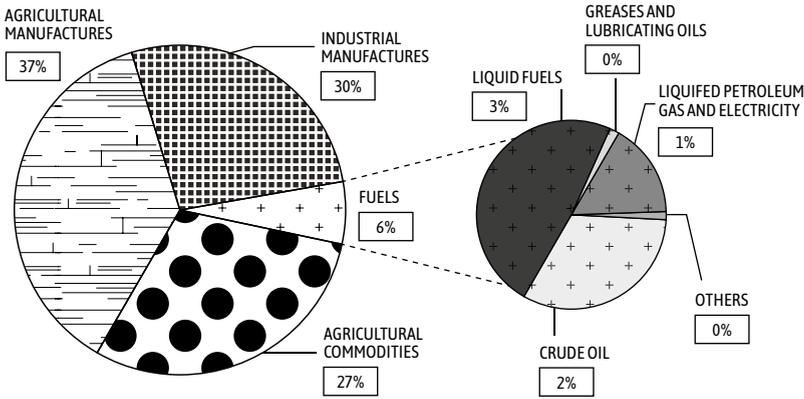
The third challenge is that growth in any economy is usually accompanied by an increase in energy demand, which may have an impact on export commitments made.

**Are fossil fuels part of the solution?**

*The need for dollars*

In 2019, **6% of national exports came from the fuel and energy sector**, which amounted to USD 4.374 billion (Instituto Nacional de Estadísticas y Censos [INDEC], 2019), still far away from the 64% represented by the agricultural sector and the USD 15 billion projected for 2023 according to the Energy Plan. **If these commercial and extraction terms remain in place, along with 2019 prices, it would be necessary to have a year-over-year growth rate of 35% to reach the target set.** Between 2018 and 2019, that rate was 4.1%.

**Graph 1: Argentine exports for 2019 (forecast based on export prices)**



Source: Compiled by author based on INDEC, 2019.

**Reaching a scenario that would mainly allow for massive gas exportation is still far away.** Nowadays, 90% of gas is sold in the domestic market and 8% of imports are fuels and energy, with these being the two tariff items that increased the most in 2019 (INDEC, 2020).

**For exports to take off, an investment mix is needed at every link of the hydrocarbon value chain,** from exploration to the development of wells, gas pipelines, oil pipelines, railway systems, gasification plants, ports and collection centers, **most of which are dollarized** and, at the moment, are directed at a market in pesos.

According to data collected by Instituto Argentino del Petróleo y Gas (IAPG), from December 2015 to mid-2019, Argentina received more than 130 oil and gas investment projects for USD 63 billion. However, only less than half of them (48%), which amount to about 36% of the overall sum, are in progress or finished (Fernández, 2019). This highlights the difficulties that the sector is facing given the economic situation in the country.

Multiple pieces of data have been published regarding the need for investment to develop hydrocarbons nationally and, particularly, in Vaca Muerta. According to AAlyCI (2019), it is necessary to invest USD 150 billion by 2030. Figures show that it would be necessary to invest between USD 15 billion and USD 20 billion annually to reach production levels deemed optimal (Szafranko, 2019).

However, so far these figures are far from reality: the annual average was USD 3.18 billion in Vaca Muerta (USD 19.085 billion between 2013 and 2018), with projected amounts of around USD 5 billion for upcoming years (Szafranko, 2019). **Here, the question raised is how to solve a crisis that needs dollars with a “solution” that requires even more dollars.**

**Table 1: Investments needed for hydrocarbons in Argentina**

Exploration and production (upstream)	Speeding up the development of Vaca Muerta (35,000 km <sup>2</sup> in Neuquén Basin) - 23,460 wells	USD 5 – 10 billion a year
	Developing offshore oil and gas basins through a yearly tender in 2018 and 2019	7 basins, 500 km <sup>2</sup> overall
Infrastructure	North-Patagonia Train that connects Añelo (Neuquén) with Bahía Blanca (Buenos Aires)	USD 1.285 billion
	Expanding gas transportation capacity from Vaca Muerta	USD 1.5 – 1.8 billion
	Additional transportation capacity for liquid hydrocarbons	USD 1.3 billion
	Storage and processing infrastructure	USD 0.5 – 1 billion
LNG export terminals <sup>2</sup>	Building natural gas liquefaction facilities (7 million tonnes/year)	USD 3 – 5 billion per plant; USD 20 billion overall

Source: Compiled by author based on data by SGE, 2018; AAIyCI, 2019.

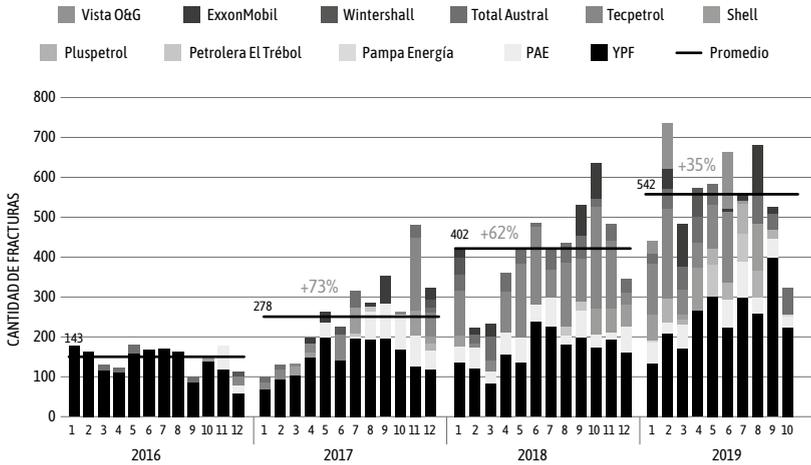
### **Sensitivity towards the economic context**

Fossil fuel extraction is highly dependent on the national and international economic situation, due to international prices, mainly in the case of oil. For instance, between 2014 and 2016, there was a decrease in investment and extraction levels in our country due to a drop in oil barrel prices.

2. This option is put forward as a means for exporting not only through national ports but also transoceanic ones, but it requires additional investments, such as investment in a liquefaction plant and more loading and transportation infrastructure. These investments entail intensive financing of projects and require maximizing efficiency and competitiveness in operations (Fernández, 2019).

Another example took place in 2019, when the previous administration decided to freeze the exchange rate and the price of gasoline, gas-oil and fuel-oil<sup>3</sup> for 90 days, which led to an oil barrel price of around 43 USD/barrel (USD 15 less than the international price) (Aringoli, 2019). Consequently, there was a 50% drop in extraction, the number of fractures was reduced (see Graph 2), 600 workers were fired and 1,200 were suspended, even though the break-even point ranges from USD 35-40 per barrel (Aringoli, 2019).

**Graph 2: Number of fractures by company**



Source: Secretaría de Gobierno de Energía, 2019.

Gas extraction also suffered when the Government Secretariat of Energy announced a change in subsidies set up by Order No. 46/17<sup>4</sup>. This decision led many companies to voice their concern:

- Tecpetrol announced that it would cease to receive USD 202 million and, for this reason, it would stick to keeping extraction at projected levels only. The company also took legal actions against the State and withdrew from the advance purchase of cargo space that was announced to finance the investment in the North-Patagonia Train, which resulted in a new failure to finance that project.

3. Through Executive Order No. 566/19 issued on the grounds of urgency, the exchange rate was established at USD 1 = ARS 45.19 and the Brent reference price at USD 59 per barrel.

4. Order No. 46/17 by the (former) Ministry of Energy sets a price for gas extracted from unconventional fields: 7.5 USD/million British thermal units [MMBTU] in 2018, 7 USD/MMBTU in 2019, 6.5 USD/MMBTU in 2020 and, finally, 6 USD/MMBTU in 2021.

- YPF established that it would impact negatively on the bottom line by USD 60 million in that fiscal year.

Between 2016 and 2018, the companies that are now extracting oil and gas in Vaca Muerta obtained more than USD 3.668 billion in subsidies overall. When comparing amounts received with planned pilot investments, subsidies covered more than 50% of investments in some cases. For example, Pan American covered 86% of its investments with subsidies, followed by Wintershall with 83%, YPF S.A. with 65% and, finally, Tecpetrol with 51%.

Therefore, it seems that, **without incentives given by the State, which represent at least 0.4% of the national budget, extraction would be far from feasible and competitive at world-wide level.**

## The road (not) to follow

To meet the objectives set to position Argentina as a hub of energy supplies world-wide, it is necessary to attract investments in a context where capital costs are so high that business becomes unattractive for international stakeholders, given the risk posed by investing in our country (Fernández, 2019). To attract investments, long-term policies that promote investment are needed, as well as policies that provide stability in this context.

The crux of the matter is therefore the political decision of creating economic incentives necessary to spur investments in specific sectors, while ignoring social and environmental externalities, as well as the impact on our national economy.

As a reply, the new administration, just a month after taking office, is drafting a new bill on hydrocarbons that may be brought to Congress in special sessions in February 2020, which includes not only Vaca Muerta, but also conventional hydrocarbons, offshore production, and secondary and tertiary recovery, shielding the legal and investment framework and easing foreign exchange restrictions. The purpose of this new legislation would be to spur investment in fossil fuels to develop a chain that would enable an increase in exports.

## Final words

The question that arises after this quick analysis is: who is benefited by this promotion of fossil fuel extraction? It is important to remember Argentina's stance and commitments made at international level, not only when it comes to climate issues, but also regarding issues related to environmental advocacy, such as observing the right to prior consultation of indigenous communities.

Environmental commitments, both at national and international level, show there is a risk of future investments in fossil fuel infrastructure becoming stranded assets, i.e. assets that are not written down nor produce economic return as a result of changes connected to a transition into a low-carbon economy.

Environmental impacts of fossil fuel operations (apart from impacts on climate) are widely spread and known, such as air pollution caused by the release of volatile organic compounds, water and soil pollution (mainly due to spills), poor management of highly toxic waste, excessive water use in hydraulic fracturing, earthquakes increasing in frequency, lack of information on chemical cocktails used with this technique, and the list goes on and on.

Basing economic growth on fossil fuel extraction would deepen our dependency on commodities, which would force us to remain competitive internationally with a high dependency on prices set by foreign markets.

Promoting fossil fuels would trigger a flood of cheap oil and gas for several decades, thus threatening the transition to cleaner sources of energy that deal with the climate crisis and, at the same time, risking the health of neighboring communities.

What would the results of companies interested in developing Vaca Muerta or conventional fields be if there was no government support or policies? What would happen if energy prices absorbed social and environmental costs, thus appropriately reflecting in its pricing systems the externalities of its extraction? How will those much-needed dollars for fossil fuel extraction arrive in Argentina? Why is the focus on fossil fuels and why are renewable sources neglected as a first key step towards energy transition?

It is here where it becomes evident that the transition towards a more equitable and inclusive energy is a political decision.

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