

June 2019

Fossil fuel subsidies in Argentina 2018-2019



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The analysis for 2019 only covers budget execution of the first quarter.

Summary

The Secretariat of Energy aims to double the gas and oil output in 5 years, using the Argentinian Energy Plan, improving the economy (exporting 50% of crude oil and 38% of gas) and developing the potential in renewable resources. Accordingly, the National Treasury will focus on fossil fuels, mainly on Vaca Muerta deposit.

The year 2018 had different discussions and debates regarding energy. On one hand, consumers had to pay higher utilities (they had been increased already) to face the price increase due to inflation and devaluation of the currency, but also because all subsidies were eliminated. Also, the National Energy agency had several changes in one year; it was modified from Ministry to Secretariat, and saw three ministers in a year.

Fossil fuel subsidies represented, regarding the total energy subsidies, 97% in 2018, 95% in 2017 and 99% in 2016. Also, **by 2018, the total of fossil fuel subsidies disbursed was 6.5% of the national budget.**

The amounts transferred to beneficiaries of hydrocarbon extraction (companies) totalled USD 340 million in 2018, a year-over-year drop of 76% of the funds as they were stipulated in dollars. **When calculated in pesos, the year-over-year (YOY) drop is 54% of the funds, representing 0.8% of the national budget for 2018, close to the 1% in 2017, bearing in mind the differences when calculating in dollars and in Argentinian pesos.**

The USD 340 million granted to companies in 2018, especially for gas production, represented 0.33% of the national budget², **equal to more than 5 million universal allowances per child, or the payment for a year of 35,000 primary school teachers.**

But, not only did companies in the extraction stage got funding, also distributing companies received them.

The latter got USD 258 million in 2018, which would cover 778,000 minimum pensions, or 0.05% of the public debt.

In 2019, fossil fuel subsidies in the budget project total USD 6,008 million, corresponding to the estimated budget for the Ministry of Education, Culture, Science and Technology, and doubling the amount destined by the State to the National Universities in 2018.

Subsidies are a short-term solution to structural problems, applied to solve problematic social and economic situations. This has modified the structure these last years, to encourage non-conventional gas extraction as a basic tool to develop Vaca Muerta. However, there's an obvious need to have long term policies, extending beyond the limits of a presidency.

Generally, fossil fuel subsidies are decreasing, for production as well as for consumption. But it's evident the motives behind the reductions (totally economic and related to the demands from the IMF) and the way the changes are presented do not create a positive situation to stabilize the economy nor benefit the population.

² National budget for 2018 was USD 103 billions and the estimate for 2019 was USD 111 billions.



Vaca Muerta
Añelo · Neuquén
Photography Julián Álvarez · Télam

Introduction

In 2019, energy policy is focused on self-sufficiency, and to this end, the Secretariat of Energy has a policy to explore, exploit and market hydrocarbons, as a way to increment competitiveness and economic growth, as well as social equality and job creation. As a consequence, there's a tendency to diversify energy sources and to promote lower logistic costs.

As an example, the Argentinian Energy Plan has "the aim to provide Argentinians with ample, clean and accessible energy, and to turn the country in a worldwide provider by massively and responsibly developing non-conventional resources and integrating renewable energies."

The main regional objectives include doubling gas and oil production in 5 years, improving the commercial scale and developing the potential of renewable resources. However, apparently all efforts by the National Treasury will be destined to fossil fuels.

For example, regarding investments, the importance of investments to increase gas production and to produce exportable surplus is highlighted, in order to balance the energy scale.

In this re-structuring process of the energy matrix, the YOY increase in gas production was almost 5%, while oil was 3% during the first half of 2018. Also, non-conventional gas **production** increased 30% YOY, while non-conventional oil increased 42% (Ministry of Finance, 2018a). Thus, the first four months of 2018 were the most productive since 2010 (Ministerio de Hacienda, 2018a). The question arises then about the relation between the increase in production and the subsidies granted by the companies extracting gas at Vaca Muerta.

Particularly within the budget, it's emphasised the need to "speed up the massive and

responsible development of Vaca Muerta in the provinces of Neuquén and Mendoza". To do that, it mentions the importance of continuously promoting investments and works.

On the other hand, YPF (the national oil company), celebrates on its webpage "*non-conventional resources granting a historical opportunity to Argentina to obtain **energetic self-sufficiency***"³. But the drop in the activity, with 28% in December 2018 and associated to the possible cut in the subsidies to the basin gas, it's a fact. Subsidies represent 62% of the total of the budget for Science and Technology in 2019, which set prices for gas in dollars, doubling the pricing point of Henry Hub.

It's important to mention that some information on **productivity of non-conventional hydrocarbons** became public, regarding deficiencies on production and life cycle projections in the wells⁴ in one of the main basins in the USA, Permian, model for Vaca Muerta. So, one may wonder what will happen if estimates for Argentina turn out to be different from what was expected. So far, wintertime self-sufficiency is under way.

In the revision of the message accompanying the budget, it's emphasised that 16,000 million dollars in investments are destined to transport, natural gas distribution and energy efficiency, through the Private Public Participation (PPP) system. So, in a combined effort by the Ministry of Transport and using the Norpatagónico train, linking Añelo with Bahía Blanca, Vaca Muerta is in a crucial position. There are also plans to build gas pipelines to transport new production from Neuquén to Rosario and/or Buenos Aires.

Behind Vaca Muerta is the need to generate foreign currency with a YOY increase of Argentinian exports of about 21% in 2019, based

5%

Was the **year-over-year** growth of gas production, during the first semester 2018.

62%

Is the percentage of gas subsidies, i.e. the total budget of Science and Technique in 2019

³ Available at: <https://www.ypf.com/desafiovacamuerta/paginas/index.html>

⁴ An article in the Wall Street Journal highlighted this. Available at: <https://www.wsj.com/articles/frackings-secret-problemoil-wells-arent-producing-as-much-as-forecast-11546450162>

on an improved agricultural production (once recovered from the drought in 2018), energy exports resulting from Vaca Muerta, and the acceleration of industrial production exports. Energy exports are expected to match or exceed agricultural exports in the commercial scale (Secretariat of Energy, 2018b).

International pricing has a crucial relevance for the national economy and public spending, especially regarding primary products like soy and hydrocarbons. The soy sector makes up a fourth of exports from Argentina, and hydrocarbons prices affect directly the spending on subsidies by the National Administration.

According to the International Monetary Fund (FMI, 2018a), the increase of production in Vaca Muerta is expected to improve the commercial scale by its energy exports. According to the National Energy Plan, the basin has a concrete potential able to match agricultural exports. The aim is to double the production in five years' time, reaching 260 MMm³/day and exporting 100 MMm³/day of gas, and producing 1 million barrels/day and exporting 500,000 barrels/day of oil (Ministry of Energy of the Nation, 2018). According to this, 50% of crude oil and 38% of gas will go to the international market.

Finally, the potential of Vaca Muerta to generate jobs based on the projections used by the national government, is debatable at least, as potential jobs may be reduced by half if the politics on high local content of goods used are not applied (Bertero, 2015). It's necessary to drive research, development, production and marketing of technologies and knowledge for the national technological development of Vaca Muerta and to overcome the countless problems arising from hydrocarbons mass production (Bertero, 2015).

Written history: 2018

2018 was a year with several comings and goings on energy management, especially about subsidies. Consumers suffered the increase of the price of utilities, due to inflation and devaluation of the currency, but also to the elimination of subsidies.

The National energy agency also underwent several changes. First, it was downgraded from Ministry of Energy and Mining to Secretariat of Energy of the Government, under the Ministry of Finance. The main figures there were also replaced. First of them, the replacement of Juan José Aranguren by Javier Iguacel after the meeting of Ministers of Energy during June, at the G20 in Bariloche. And six months later, in December, the latter was replaced by Gustavo Lopetegui.

Juan José Aranguren signed the Resolution 46/2017, setting a fixed price in dollars for gas extracted from Vaca Muerta, i.e., non-conventional gas. The currency devaluation (meaning the State had to make a bigger effort to cover debts in dollars) and the commitments made on reducing the energy subsidies with IMF resulted on the inability of the Government to maintain subsidies (Candelaresi, 2019).

As a result, a new method of estimating subsidies to gas companies was developed, within Resolution 46. Thus, the State will pay the amount in dollars set in the framework of the stimulus plan only for the production estimated in the investment plan presented by the companies in order to participate. So, even if production exceeds the estimated level at the beginning of the project, funds will be granted for the estimated production. No new projects will be accepted, impacting companies which had presented investment plans but were not receiving the benefits from the plan.

On the other hand, labour unions expressed concern about the modification of the scheme. They claim that the cuts on subsidies will result on no work done, and termination of employees. They also remark that any termination will put an end to the labour agreements signed so far.

Table 1: Featured events between 2018 and 2019

2018	EVENTS
JANUARY	Increase of fuel value.
FEBRUARY	Increase of public transport and electricity consumer rates.
MARCH	-
APRIL	Increase of electricity and gas consumer rates (32% average) to cover supplying costs and to reduce subsidies.
MAY	Start of the IMF negotiation to face the economic crisis.
	Stand By agreement with the IMF, proposing the reduction of fiscal deficit by cutting energy subsidies worth 0.3 % of gross domestic product (GDP) in three years.
	Price stability agreement to market liquid fuels to consumers. National Government agrees to compensate companies if the prices can't be increased to the projected level.
JUNE	Meeting in Bariloche of Ministers of Energy within the G20. They sign a communication emphasising the key role of natural gas in the energy transition towards a low-emission energy system. Argentina and Canada agree on a joint revision of their subsidy schemes for fossil fuels.
	Juan José Aranguren, Minister of Energy, is replaced by Javier Iguacel.

2018	EVENTS
JULY	Creation of Vaca Muerta Roundtable, made up of provincial representatives, national ministers (Energy, Finance, Work, and Interior), mayors, companies and labour unions, to promote this deposit.
AUGUST	Increase of electricity and fuel prices (24.4% average). Increase in the price of public transport.
SEPTEMBER	First exports of electricity are authorized to Brazil and of gas to Chile.
	Application of 12% exporting rights to hydrocarbons and its derivatives, until 2020.
	The Ministry of Energy is downgraded to Secretariat of Energy, under the Ministry of Finance.
OCTOBER	First meeting of Vaca Muerta Roundtable, with 6 subgroups (upstream and midstream; logistics, rail and road infrastructure; value chain, providers' development, technology and imports management; intensive gas use to improve economy: transport, industry, oil and other LNGs; productivity, security, training, housing, health and other work, social and environmental issues).
	Exports to Chile are effective.
	Second and third meetings of Vaca Muerta Roundtable. More relevant problems/challenges were identified: partial fulfilment of the productivity addendum, abundance of gas requiring new markets (exports to Chile and Brazil); lack of transport and housing infrastructure, Norpatagónico train, inadequate treatment of waste, problems with indigenous communities.
NOVEMBER	The regasification vessel Exemplar leaves Bahía Blanca.
	Gas distribution companies are authorized to charge consumers with an extra, payable in 24 instalments, to cover the devaluation of the currency. Faced with the population opposition, the Government makes a new announcement: the State will take care of half of the compensation, and the companies will cover the other half.
	Meeting of the High Command of G20. The President agrees on a deal with the American President to finance a gas pipeline linking Vaca Muerta with San Nicolás (Santa Fe) for 350 million dollars, through Overseas Private Investment Corporation (OPIC). Putin also offered financial support to build railroads to Vaca Muerta.
DECEMBER	Fourth meeting of Vaca Muerta Roundtable: modification of three regulations to authorize venting of gas separators in emergencies, less distance between oil tanks, and construction style of gas pipelines. The paperwork to obtain environmental permits was simplified: global, not by well.
	A new increase in rates is announced for 2019.
	The Secretary of Energy sends his resignation, and is replaced by Gustavo Lopetegui.
2019	A revision of the subsidy scheme for Vaca Muerta is announced. Companies state they will review their investments and will stop drilling due to the lack of economic incentives.
JANUARY	Gas exporting authorizations to Brazil granted to Wintershall first and Pan American Energy later for Vaca Muerta gas.
FEBRUARY	Increase of price of public transport, gas and electricity (26%).
	The liquefaction vessel for gas arrives to Bahía Blanca, allowing the country to export LNG. YPF will convert gas to liquid state for exporting

Source: FARN

The G20 members failed to set a date for the elimination of fossil fuel subsidies, to be in line with the Paris Agreement.

A key event for Argentina in 2018 was its presidency of G20. On 1st December, as a conclusion, the Buenos Aires Declaration was presented, resulting from extensive negotiations of the forum members. Once again, there was no date set for the elimination of subsidies to fossil fuels, no explicit reference to an energy transition aligned with the Paris Agreement and the end of hydrocarbons as energy source.

The Declaration mentions the critical role energy transition will have in economic growth and reduction of GHG emissions. However, the sustainability of the matrix and the source of the product are not taken into account. For example, in the case of Argentina, gas is obtained by non-conventional technologies (Vaca Muerta), with environmental and social resulting impacts. Some issues regarding subsidies to fossil fuels were also absent in the Declaration.

The subsidies to fossil fuels are mentioned in the Declaration of Bariloche signed by the Ministers of Energy; but the narrative remains the same of the last 10 years, recommending to reduce subsidies considered inefficient, but without specifying which are those. Also, this Declaration positions gas as a key product (as coal replacement) to achieve a clean transition, promoting Vaca Muerta deposit to have a prominent role in the provision of such a product.

“

**The declaration of
Ministers of Energy of
Bariloche repeats the
same commitment
of the last 10 years,
without specific date
nor definition.**

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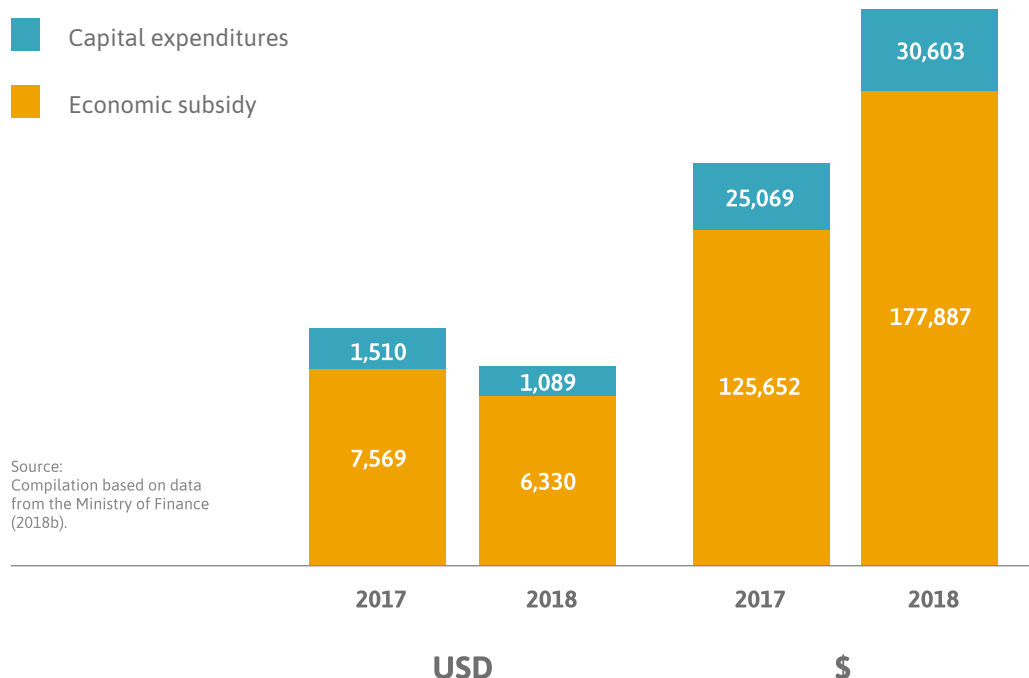
Evolution of subsidies in 2018

To start analysing the expenditure of the State regarding fossil fuels, it's critical to mention an event in the exchange policy of the country.

Between May and August 2018, there was a devaluation of the Argentine peso compared to the U.S. dollar (money used to present data in this document) of more of 100%. It meant a leap in value from ARS 20 to almost ARS 40. This may mean a reduction in the amounts in dollars. The efforts of the State to face commitments assumed in dollars, but paid in Argentine pesos, has meant an increase by setting the measurement in the national currency.⁵

The data from economic subsidies and capital expenses for energy are presented as a sample (Ministry of Finance, 2018b). When comparing the total and doing the analysis in Argentinian pesos, in 2018 the National State spent 38% more in energy, mostly on fossil energy related matters. If the analysis is done in U.S. dollars, there was a decrease of 18%, due to the devaluation of the national currency, as shown in Chart 1.

Chart 1: evolution of subsidies and capital expenses in U.S. dollars and ARS



⁵ For conversion of amounts in ARS, the data from the Banco Central de la República Argentina was used, presented as reference exchange rate, Communication "A" 3500 (wholesale), available at <http://www.bcra.gob.ar/Pdfs/PublicacionesEstadisticas/com3500.xls>. The values are ARS 37.50 for 2019 (January of this year); ARS 28.10 for 2018; ARS 16.60 for 2017 and ARS 14.80 for 2016 (the annual average is taken into account the last three years).

But not all economic subsidies for energy are only for fossil fuels, as expenses spent on large hydroelectric plants are also taken into account. It's necessary therefore, to break down the economic subsidies. Subsidies to energy related to fossil fuel were 97% in 2018, 95% in 2017 and 99% in 2016, according to data on Table 2.

By 2018, the total of fossil fuel subsidies disbursed was 6.5% of the budget.

Table 2: Energy economic subsidies in detail.

Institutions	In million ARS			In million USD		
	2016	2017	2018	2016	2017	2018
Compañía Administradora del Mercado Mayorista Eléctrico (CAMMESA)	144,846	74,280	102,514	9,787	4,475	3,648
Integración Energética Argentina S.A. (IEASA)	13,496	12,093	42,730	912	728	1,521
Yacim. Carbonif. Río Turbio (YCRT)	3,490	3,877	2,665	236	234	95
Fondo Fiduc. GLP - Garrafa Social	4,811	3,469	7,898	325	209	281
Plan Gas y otros	40,673	25,842	16,810	2,748	1,557	598
TOTAL	207,316	119,561	172,617	14,008	7,202	6,143

Source: FARN compilation based on answers to requests of information disclosure.

As mentioned in the first document on this topic presented by FARN in 2018, CAMMESA uses subsidies to face differences between the seasonal prices paid by distributing companies and the actual costs to produce energy, amount transferred to the Electricity Wholesale Market (Mercado Mayorista Eléctrico, MEM) through the Stabilizing Fund. The State buys gas through CAMMESA to use in the thermal plants at a price set by administrative resolution⁶.

On the other hand, IEASA (formerly ENARSA)⁷ is subsidised by the State to fill the difference between the import price and the selling price to the domestic market.

YCRT, state company of exploration and exploitation of mineral coal in Río Turbio, province of Santa Cruz, gets State funds to cover operational expenses.

The National Treasury transfers money to trust funds: like the Fund for Residential LPG Consumption Subsidies (Law 26.020), for the HOGAR Programme, destined to guarantee access to LPG on the part of low-income consumers.

It's important to emphasise that regarding Gas Cylinder Programme, in 2016 98% of the transfers were destined to householders, whereas in 2017, 94% of the funds were

⁶ Established by Resolution 26/2018 of the Ministry of Energy. Available at: <https://negociacion.megsa.com.ar/usuario/visualizacion/bajarDocumentoNormativaGral.aspx?esNormativa=true&id=144>

⁷ Created by the Decree 882/2017 on the take-over merger of Energía Argentina S.A. (ENARSA) and Emprendimientos Energéticos Binacionales S.A. (EBISA).

destined to producers. Clearly, the fund went from funding consumers to funding producers. In 2017, it was even more marked, as per each USD 1 destined to consumers, companies got USD 6. There are no detailed data for 2018.

As indicated by IMF (2018b), gas subsidies to consumers have been eliminated, while subsidies to production under Plan Gas (securing a fixed price in dollars higher than the market price for gas produced by new investments in Vaca Muerta basin) will be gradually eliminated by 2021.

Plan Gas, currently effective by Resolution 46/17⁸ by the (then) Minister of Energy and

Mining, seeks to drive investments on natural gas **production** from non-conventional deposits. This regulation was designed mainly for Vaca Muerta's development, and to attract private investors to reactivate the gas production. The plan contemplates a differential price of USD 7.5/MMBTU in 2018, decreasing annually (USD 0.5 less each year) until USD 6/MMBTU in 2021, acknowledged by the State. But there are payments to distributing companies included as well. Below, beneficiaries of the plan presented in detail.

Table 3: Beneficiaries of programmes for gas and oil extraction between 2016 and 2018.

Beneficiary	USD million			Total
	2016	2017	2018	
Administración del Interior S.A.	0.00	0.04	0.00	0.04
Alianza Petrolera Argentina S.A.	0.00	0.32	0.00	0.32
Apco Oil and Gas International INC - Sucursal Argentina	7.76	15.34	0.00	23.10
Capex S.A.	15.92	0.53	9.54	25.99
Colhue Huapi S.A.	0.11	1.07	0.00	1.18
Compañía de Hidrocarburo No Convencional S.R.L.	48.62	20.07	0.00	68.69
Compañía General de Combustibles S.A.	32.00	37.65	60.47	130.13
Compañía Mega Sociedad Anónima	21.45	13.05	9.20	43.69
Conipa S.A.	0.00	0.75	0.00	0.75
Compañías Asociadas Petroleras S.A.	4.78	0.00	0.00	4.78
Crown Point Energía S.A.	0.06	3.45	0.00	3.51
Enap Sipetrol Argentina S.A.	9.00	3.49	0.00	12.49
Ingeniería Alpa S.A.	0.87	0.00	0.00	0.87
Madalena Energy Argentina S.R.L.	0.65	0.00	0.00	0.65
Medanito S.A.	1.34	0.00	0.00	1.34
New American Oil S.A.	0.00	0.02	0.00	0.02
O & G Developments LTD S.A.	0.00	0.99	0.00	0.99
Pampa Energía S.A.	0.00	35.30	31.20	66.51
Pan American Energy LLC -Sucursal Argentina	1,021.71	166.76	9.54	1,198.02
Pan American Sur S.A.	12.20	0.00	0.00	12.20
PBBPolisur S.R.L.	0.00	34.01	60.20	94.21

Continuación en la siguiente página

⁸ Resolution 46/2017 of MINEM. Available at:
Disponible en: <http://servicios.infoleg.gob.ar/infolegInternet/anexos/270000-274999/272266/norma.htm>

Beneficiary	USD million			Total
	2016	2017	2018	
Petrobrás Argentina S.A.	44.19	0.00	17.77	61.96
Petrolera El Trebol S.A.	0.22	1.48	0.00	1.70
Petrolera Pampa S.A.	87.49	40.67	0.00	128.16
Petroquímica Comodoro Rivadavia S.A.	0.00	12.99	0.00	12.99
PlusPetrol S.A.	16.91	16.80	1.05	34.76
President petroleum S.A.	0.13	0.00	0.00	0.13
Quintana E&P Argentina S.A.	0.05	0.00	0.00	0.05
Refinería del Norte S.A.	0.00	50.45	0.00	50.45
San Jorge Petroleum S.A.	0.95	0.24	0.00	1.19
Shell Compañía argentina de Petrleo S.A.	0.00	0.99	0.00	0.99
Sinopec Argentina Exploration and Production INC	8.09	5.86	0.00	13.96
Tecpetrol S.A.	8.14	1.10	103.76	113.00
Total Austral S.A. - Sucursal Argentina	158.57	136.42	14.22	309.21
Transportadora Gas del Sur S.A.	8.24	8.86	5.82	22.92
Vista Oil & Gas Argentina S.A. (*)	14.66	9.10	0.92	24.67
Wintershall Energía S.A.	106.42	88.81	7.45	202.68
YPF S.A.	1,259.28	515.78	9.08	1,784.14
YSUR Energía Argentina S.R.L.	25.95	19.40	0.00	45.35
Desarrollos Petroleros y Ganaderos S.A.	0.00	0.21	0.00	0.21
Interenergy Argentina S.A.	0.01	0.00	0.00	0.01
Metro Holding S.A.	0.60	0.40	0.00	1.00
TOTAL	2,916.36	1,242.43	340.24	4,499.03

(*) Data from 2016 corresponds to Petrolera Entre Lomas S.A.

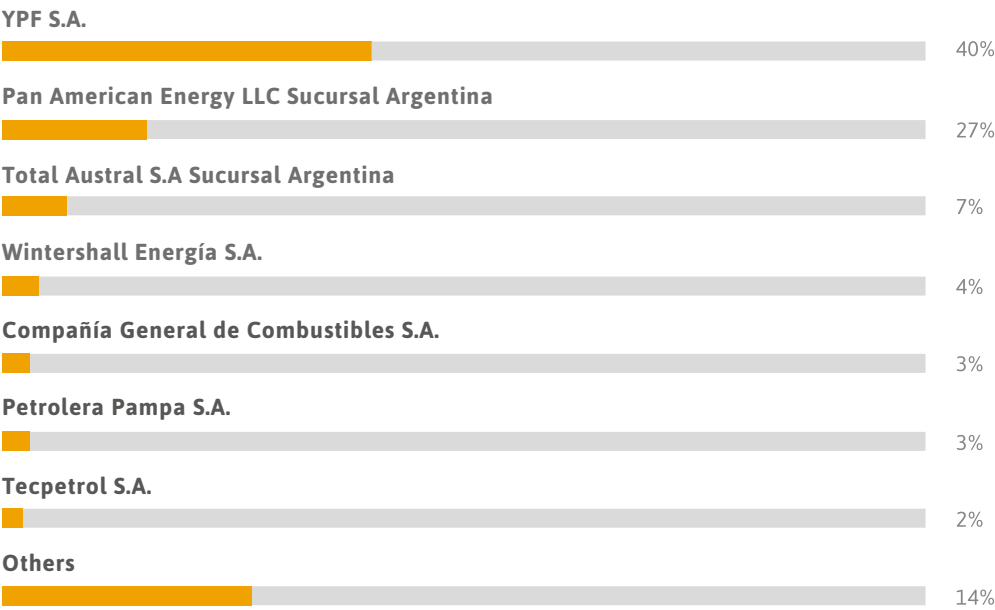
Source: Compilation based on data from the Ministry of Finance, 2019.

Based on answers to information access requests to the Secretariat of Energy and the Ministry of Finance, the amounts transferred to beneficiaries of hydrocarbon extraction (gas specially in 2018) totalled USD 340 million, a year-over-year drop of 76% of the funds as they were stipulated in dollars. **When calculated in pesos, the YOY drop is 54% of the funds, emphasising again differences between estimations in dollars and in Argentinian peso,**

representing 0.8% of the national budget for 2018, close to the 1% in 2017.

Analysing the oil extracting companies (first years) and gas extracting companies (last years) during the period 2016-2018, out of the 42, the first 10 received 91% of the funds. YPF S.A. is first with 40%, then Pan American with 27% and Total with 7%.

Chart 2: Extracting companies from hydrocarbon industry most benefited by subsidies, between 2016 and 2018.

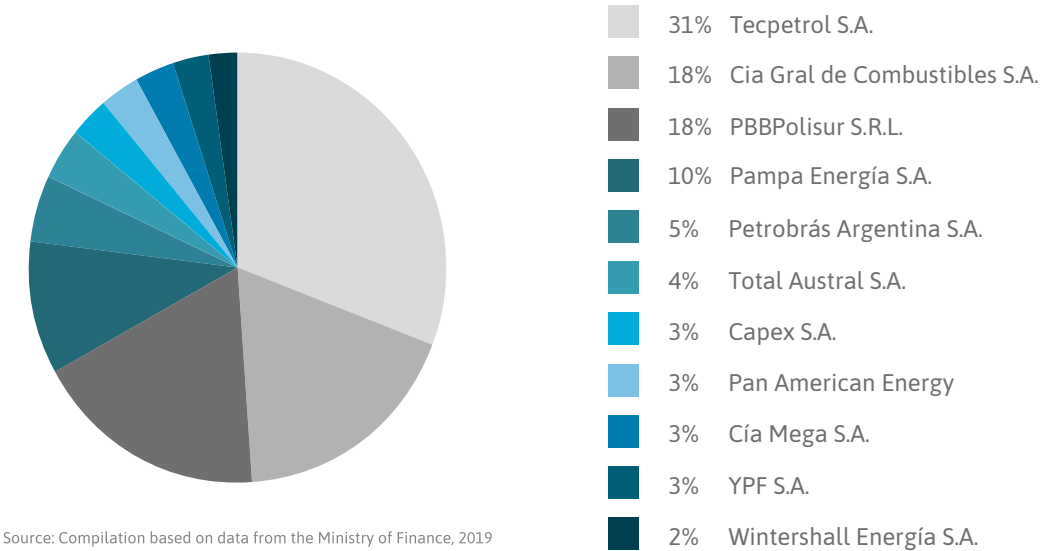


Source: Compilation based on data from the Ministry of Finance, 2019.

However, an analysis of the companies granted funds in 2018 related to Plan Gas, and specially Vaca Muerta, shows the total amount was USD 340 million, distributed among 14 hydrocarbon companies. The first 4 received 75% of the funds: Tecpetrol in first place with 30%, Compañía

General de Combustibles and PBBPolisur S.R.L in second place with 18% each, then Pampa Energía S.A. with 9%, Petrobrás with 5% and Total Austral S.A. got 4% of the funds in 2018, while Pan American and YPF S.A. got 3% each.

Chart 3: Subsidies granted to gas companies in 2018.



Source: Compilation based on data from the Ministry of Finance, 2019

The total of funds granted to companies dedicated to gas production during 2018 was USD 340 million, representing 0.33% of the national budget. That is equal to more than 5 million universal allowances per child, or the payment for a year of 35,000 primary school teachers⁹.

For example, the funds granted to Tecpetrol in 2018 were enough to build 150 kindergartens, to cover the whole of the budget for the University of San Juan or the National University of the Northeast, or to pay 258,000 minimum salaries.

The incentives received within Resolution 46E/2017 are 34% of the revenues from gas of the company and 87% of payable accounts (Tecpetrol, 2018). Also, subsidies received during the analysed period (2016-2018) will cover 27% of the investments to be done up till 2021 in Fortín de Piedra deposit, estimated in USD 402.35 million.

YPF S.A. is the company with more funds granted in the last 3 years (2016, 2017, and 2018) from the State, in order to drive

hydrocarbon exploitation. However, when FARN made a request to access public information regarding the use of the funds, the company did not answer, using as an excuse the Law on Public Information Access (Ley de Acceso a la Información Pública) 27.275, which exempts anonymous societies governed by the public offer from answering¹⁰.

The reduction of subsidies to YPF S.A. in 2018 is part of a production deconcentrating process mentioned by Kofman and López Crespo (2018), in a moment when Tecpetrol appears as the main figure, with a higher yield than YPF.

But, not only did companies in the extraction stage got funding, also distributing companies received them: between 2017 and 2018, they got a total of USD 439 million¹¹. The benefited companies include Metrogas with 26% of the total funding, Naturgy Bay S.A. with 22% and Camuzzi de Gas Pampeana with 17%, with a total of 66% of the funds.

Table 4: Distributing companies benefited by subsidies.

Beneficiary	USD million		
	2017	2018	Total
Camuzzi de Gas Pampeana S.A.	34.37	42.33	76.71
Camuzzi Gas del Sur S.A.	26.39	7.50	33.88
Distribuidora de Gas Cuyana S.A.	0.00	30.72	30.72
Distribuidora de Gas del Centro S.A.	0.00	19.13	19.13
Edesur S.A.	9.52	0.00	9.52
Metrogas S.A.	45.73	69.14	114.88
Empresa Distribuidora del Norte S.A. (EDENOR)	7.39	0.00	7.39
Gas NEA S.A.	3.10	1.02	4.12
GASNOR S.A.	8.31	10.11	18.43
Litoral Gas S.A.	10.66	16.49	27.14
REDENGAS S.A.	0.00	0.58	0.58
Naturgy Bay S.A.	35.81	60.96	96.77
TOTAL	181.28	257.98	439.26

Source: Compilation based on data from the Ministry of Finance, 2019.

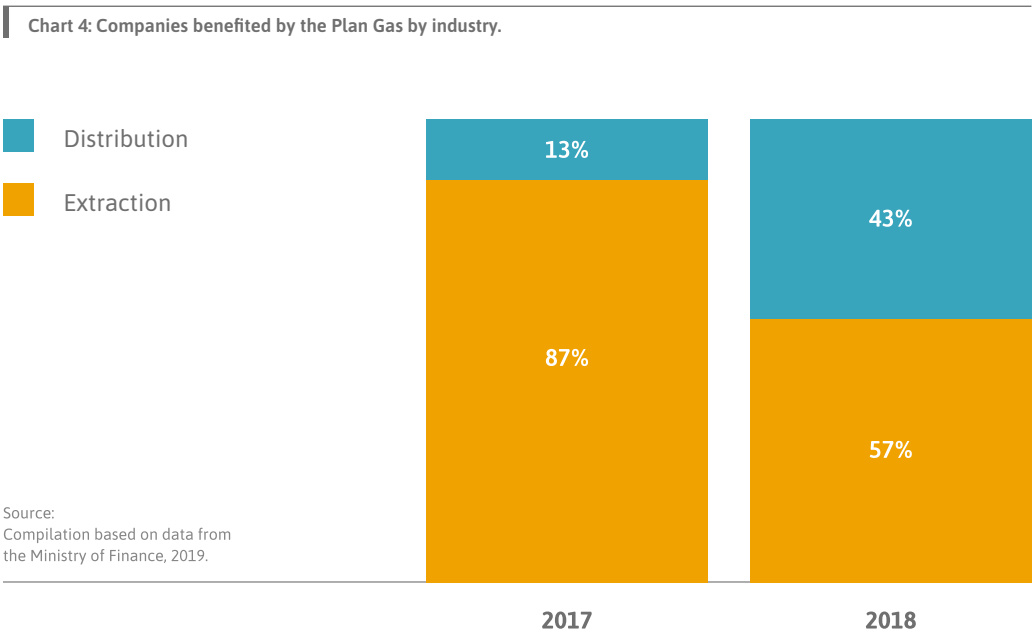
⁹ Estimations based on the website: <https://chequeado.com/labalanza/#/>

¹⁰ Answer available at: https://drive.google.com/open?id=0BzX_2exh49HLVldOWUMzRjRYR1g2NFdvQ1ZMOFlxUUNjZVRJ (Last visit: 23/02/2019).

¹¹ There's no data for 2016, as no answer was sent to the requests of information made to the Secretariat of Energy and Ministry of Finance.

It is crucial to indicate the importance of the distributing companies in this analysis. In 2017, they represented 13% of the total funds granted

as subsidies by the State to hydrocarbon companies, while in 2018 it was 43%.



The distributing companies got USD 258 million in 2018, which would cover 778,000 minimum pensions, or 0.05% of the public debt.

“

14 fossil fuel companies received funds related to Vaca Muerta through the “plan gas”, they account for 340m USD.

”

Subsidies and royalties

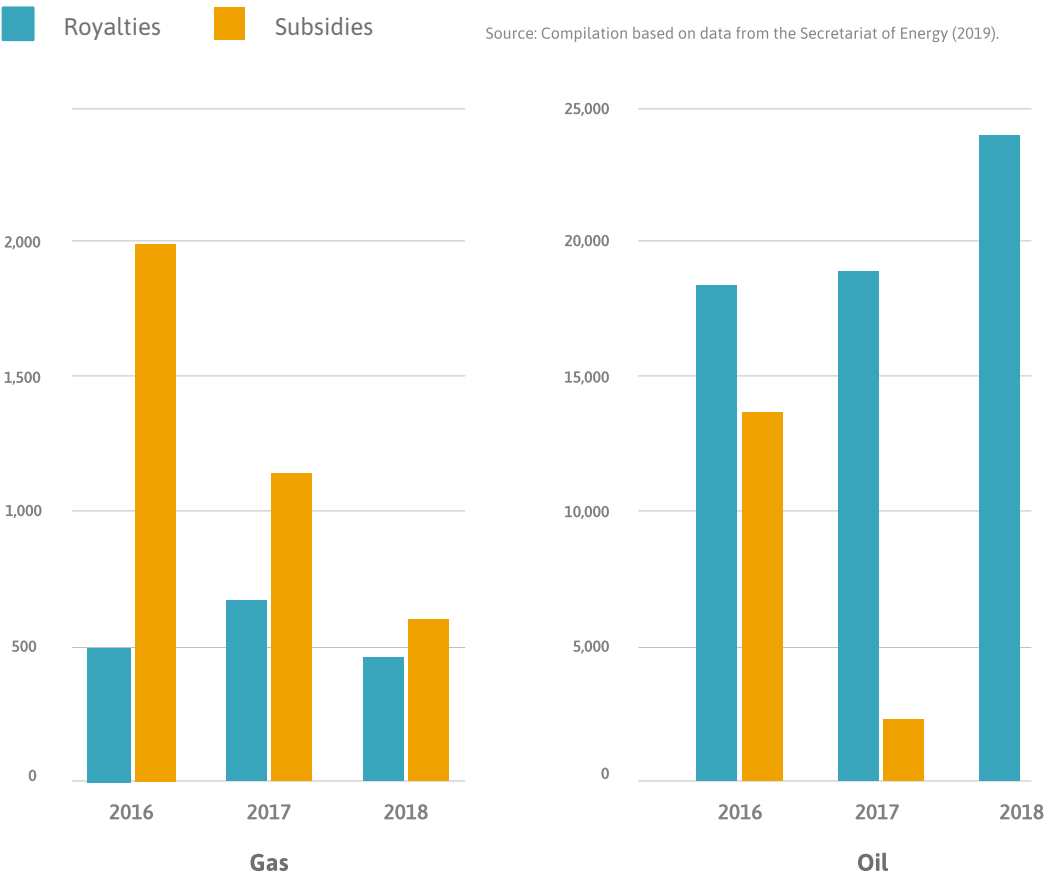
Analysing royalties paid by oil and gas extracting companies between 2016 and 2017 and comparing them with the subsidies received during the same period show two different patterns by product.

In the case of oil, companies paid higher amounts on royalties than the funds received with the subsidies. In this case, for each USD 1 paid on royalties, the companies received

USD 0.74 and USD 0.12 for subsidies in 2016 and 2017, respectively. The subsidy for oil production was not continued during 2018.

In the case of gas, the trend is inverse: for each USD 1 paid to the State on royalty, this one paid USD 3.5, USD 1.7, and USD 1.3 as subsidies in 2016, 2017, and 2018, respectively. So, **in the case of gas, the State paid higher subsidies than royalties received.**

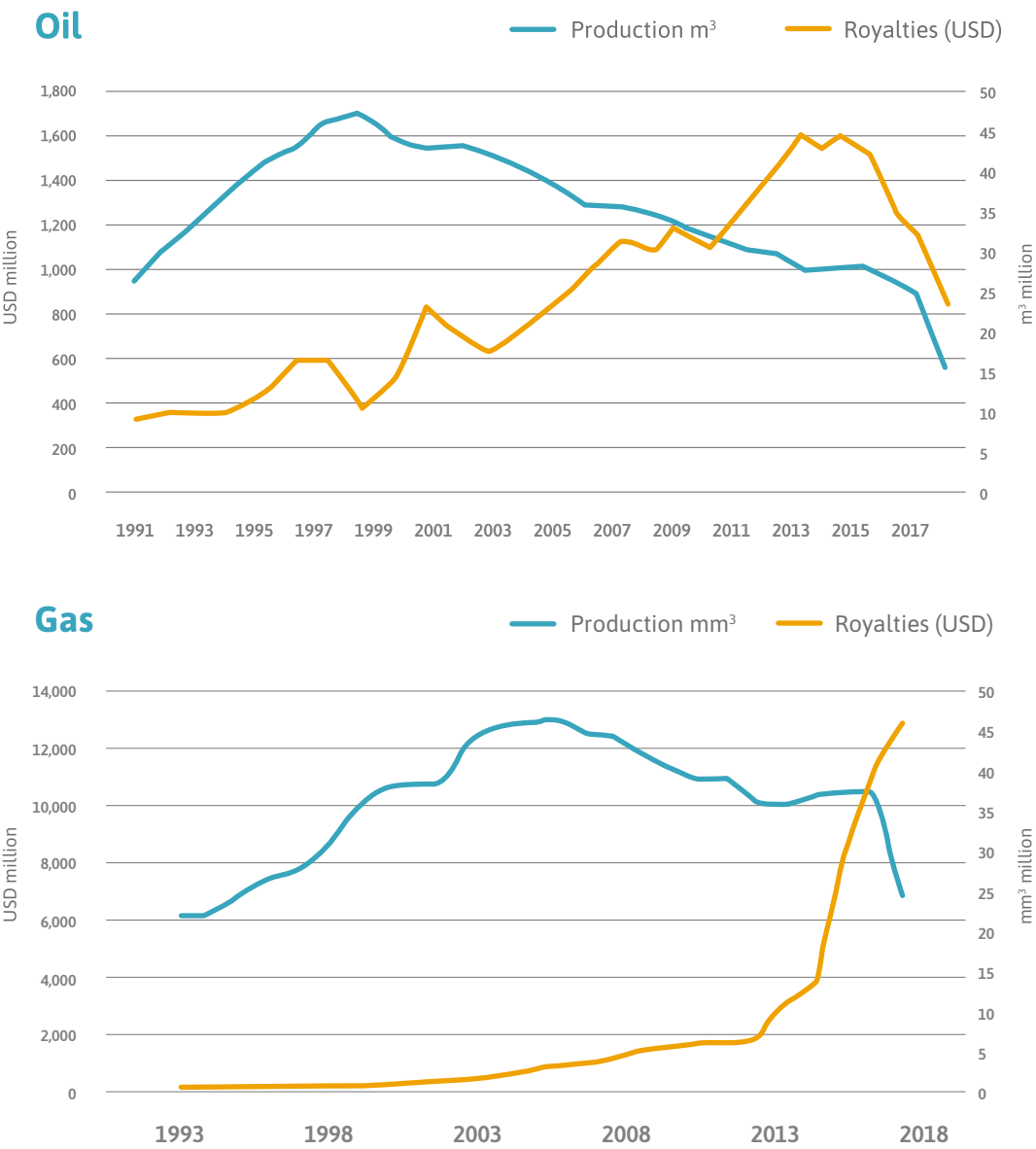
Chart 5: Royalties received and subsidies paid by the State to the hydrocarbon industry in 2016, 2017, and 2018 (in USA million dollars).



The following chart shows a comparison of production and royalties published by the Secretariat of Energy (2019). This data shows the importance subsidies had to keep

production high, and the resulting income from royalties. Production shows the highest drop after subsidies were reduced.

Chart 6: Production and royalties of gas/oil in Argentina¹²



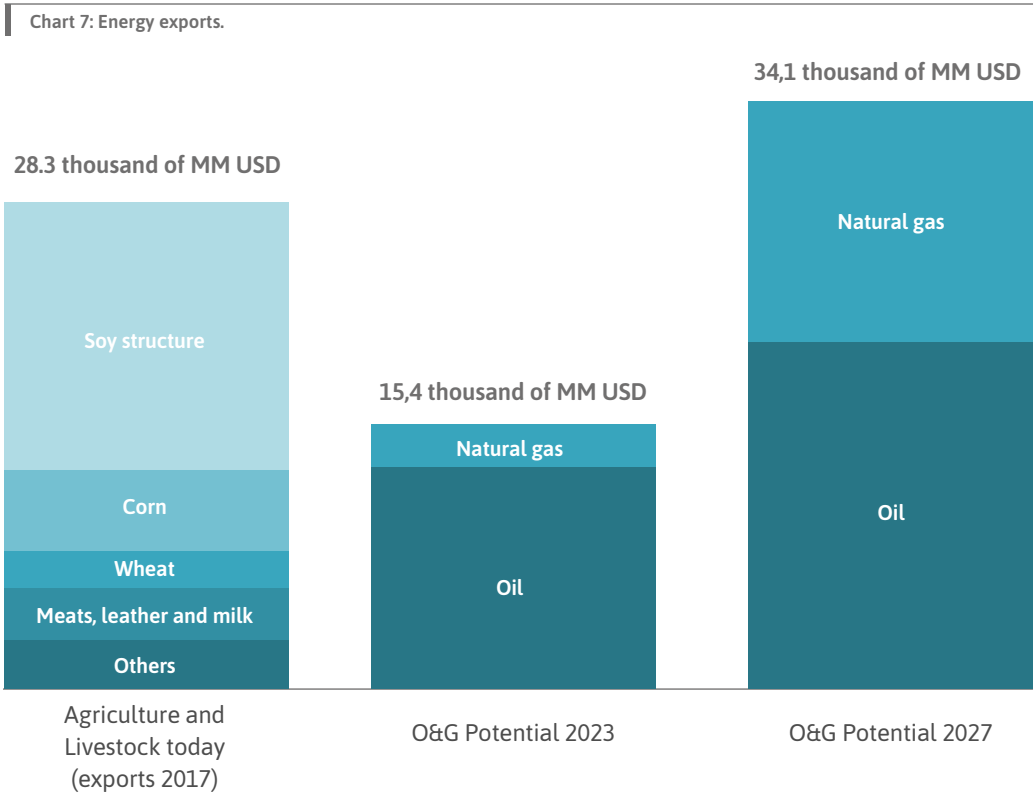
Source: Compilation based on data from the Secretariat of Energy (2019a)

¹² Although non-conventional gas extraction has increased (by 33.5%), natural gas production remains low.

Subsidies and exports

As mentioned before in this document, the development of Vaca Muerta, according to the Government, aims to get energy self-sufficiency and an improvement of the commercial scale. According to IMF (2018a), Vaca Muerta is an option to offset the reduced agricultural exports due to the drought from 2018.

The National Energy Plan (Secretariat of Energy, 2018) establishes that, by 2023, Vaca Muerta will contribute with USD 15,000 million in annual net exports, by marketing domestically 50% of oil barrels and 40% of gas, with potential to exceed the agricultural industry, the current star in the national commercial scale (Chart 7).



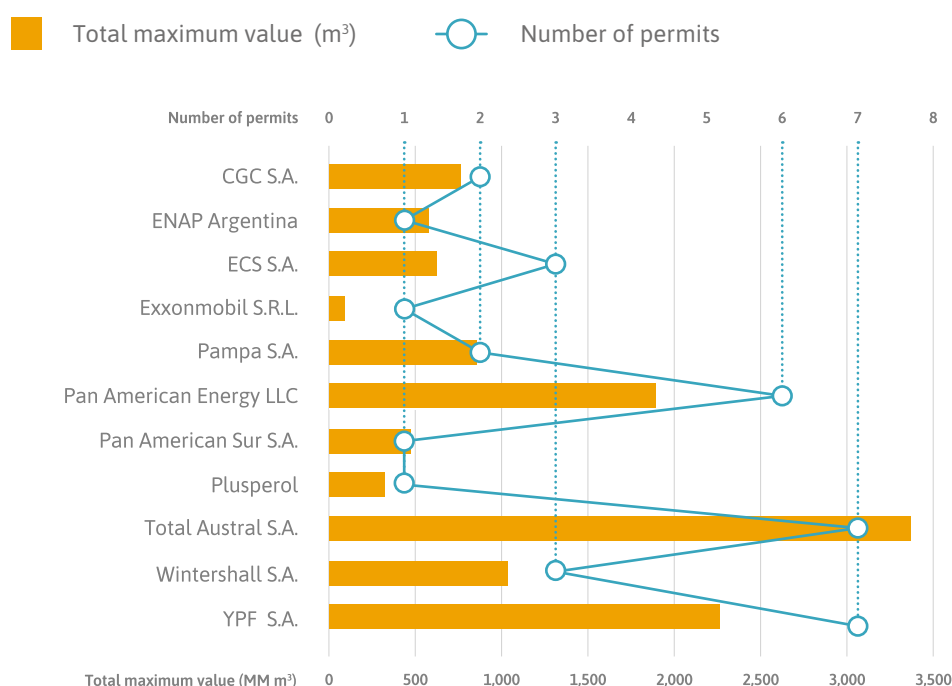
Source: Secretariat of Energy, 2018.

In August 2018, gas export was authorized by Resolution 104/2018 by the then Ministry of Energy and Mining.

export were granted to 11 companies, with a maximum volume of 61% in the hands of **Pan American Energy LLC**, Total Austral and YPF S.A.

According to data from the Secretariat of Energy, until February 2019, 34 permits to

Chart 8: Maximum volumes and number of permits to export per company.



Source: Compilation based on data from the Secretariat of Energy, 2019.

Authorizations are placed as follows: 8 in Austral Basin, 1 in the province of Chubut, 1 in the San Jorge Gulf, 22 in the Neuquina Basin y 2 that can be assigned to Neuquina or Austral Basin.

The majority of exports comes from conventional deposits, with 57% of total maximum volume, while the remaining 43% will be from non-conventional deposits.

Regarding recipients, Chile will have 87% of

the maximum authorized volume, Uruguay 11% and Brazil 2%.

Exporting prices vary per deposit and, in many cases, per season (summer/winter). In short, values range from 3.12 USD/MMBTU and 9.20 USD/MMBTU, according to the source deposit, the destination of the export and the company involved. The following table offers detailed information:

Table 5: Prices of exported gas.

	Price per	Minimum (USD/MMBTU)	Maximum (USD/MMBTU)
Deposit	Austral Basin	3.12	5.12
	Neuquina Basin	3.81	4.47
	San Jorge Gulf	5.22	9.20
	Province of Chubut	3.61	7.02
Kind of deposit	Conventional	3.12	9.20
	Non- conventional	3.86	4.47

Source: Compilation based on data from the Secretariat of Energy (2019b)

38% of export authorizations set a price that is lower than the one paid by residential users. This indicates that exports are cheaper than national consumers bills.

It's important to emphasise that the subsidy received by the companies under the "Incentive Programme to Investments on Natural Gas Production Development from Non-Conventional Deposits", by Resolution 46E/2017, is USD 7/MMBTU, exceeding the price agreed (USD 4.47/MMBTU) in the exporting agreement of a non-conventional deposit by USD 2.5/MMBTU.

According to Bertero (2019), in October 2018 the gas price for residential consumers of Metrogas¹³ was set at USD 3.97/MMBTU, a value that will remain fixed until April 2019. This **would show that 13 out of 34 exporting authorizations (38%) set a price below that paid by residential consumers**, with amounts from USD 3.12/MMBTU to USD 3.94/MMBTU in summer. This shows some exports are below what national consumers pay.

These exports are the result of the incentives from Resolution 46E/2017, whose main objective is promoting gas production to satisfy the local supply of energy. So, it may be questioned if the population of Argentina isn't subsidising the earnings of gas exporting companies (Dellatorre, 2018), a fact shown in the prices.

On the other hand, if the prices are compared with values from importing, the latter range from USD 5.572 and USD 8.133/MMBTU, according to data presented by IEASA and shown in detail in the following table:

¹³ Metrogas is a private company operating in Argentina. It distributes natural gas, and has 2.4 million clients, 61% of them in the Autonomous City of Buenos Aires.

Table 6: Values from gas imports

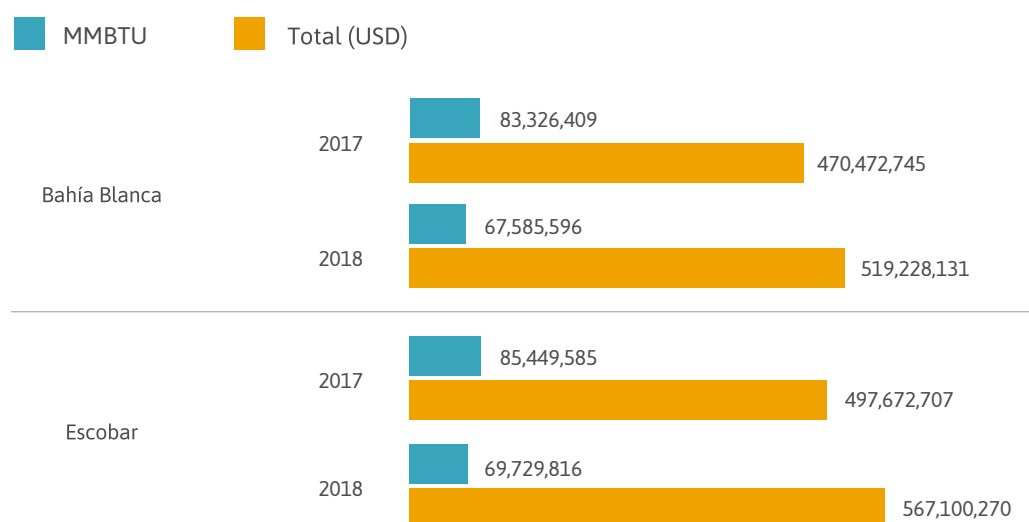
Product	Source	Mooring	Period	USD/MMBTU
Gas ¹⁴	Bolivia	N/A	January - March	5.572
			April - June	6.077
			July - September	6.615
			October - December	7.170
LNG ¹⁵	United States, Nigeria, Trinidad and Tobago, Equatorial Guinea, Qatar, Norway and Belgium	Escobar	April - September	8.133
		Bahia Blanca	April - September	7.683

Source: Compilation based on IEASA data

This means **most of gas exports have a price lower than the imports from gas. the imported gas from Bolivia in 2018 had a lower price than the subsidies from the State to the non-conventional gas companies, with a price of USD 7.5/MMBTU by Resolution 46E/2017.**

Regarding imports, even though volumes were reduced in 19% between 2017 and 2018, the increase of the paid price resulted in a cost 13% higher for the State.

Chart 9: Comparison between volumes and cost of imports.



Source: Compilation based on IEASA data

¹⁴ Available at: <http://www.enarsa.com.ar/?p=3392> (last visit: 24/02/2018).¹⁵ Available at: <http://www.enarsa.com.ar/?p=3042> (last visit: 26/02/2019).

Subsidies and Vaca Muerta

2018 started as a year full of opportunities for non-conventional gas production in Vaca Muerta. The Government and the oil companies relied on the potential of this deposit for long term economic growth and energy self-sufficiency.

The modification of the subsidy scheme, meaning only the “Incentive Programme to Investments on Natural Gas Production Development from Non-Conventional Deposits”, by Resolution 46E/2017 remains, aimed to cover the cost difference between conventional and non-conventional gas exploitation, growing with the companies during their learning curve and resulting in a subsidy for gas production and the industry, as quoted by Arceo (2016) in Kofman and López Crespo (2018). The authors claim that this new programme was conceived to promote companies with low or no investment in the industry.

Thus, the then Ministry of Energy and Mining, led by Juan José Aranguren, announced that by 2021, the country would be 100% energy self-sufficient, except for winter months. In this scenario, Argentina would re-negotiate the agreement on gas imports with Bolivia (20% of the gas supply comes from there), and would agree gas exports to Chile during summertime.

Another fact indicative of the trust placed on Vaca Muerta was the parting of the regasification vessel Exemplar from Bahía Blanca in October 2018. The cost of converting liquefied natural gas (LNG) was USD 150,000/day, and the Government felt confident this process was no longer needed. But this measure, taken by the then Secretary of Energy, Javier Iguacel, was questioned by the Minister of Finance, Nicolás Dujovne and by the next Secretary of Energy, Gustavo Lopetegui, who argued that the vessel is necessary in winter, when gas demand increases and the production from Vaca Muerta can't fulfil the domestic demand (Spaltro, 2019).

In the context of the negotiations with the IMF and devaluation, the pressure on the budget for the incentive programme for non-conventional gas resulted in a new methodology for estimating the production to pay the subsidy, already mentioned here. At the beginning, the incentive programme would cost about USD 1,300 million, but after the change in methodology, it would be USD 700 million (Terrile, 2019).

The result is several companies, within the framework of the incentive programme, express their concerns to the National Commission of Value:

- Tecpetrol¹⁶ indicates the changes in the economic compensation (based only on production projections) would mean USD 202 million less for them, which would force them to maintain production at the projected levels only.
- YPF¹⁷ indicated that the modification in the plan estimation will have a negative impact on the net result valued in USD 60 million.
- Pampa Energía¹⁸ is not part of the Plan Gas, but had asked to be included in three projects authorized by the provincial application agency. Faced with no administrative answer and no notice of rejection, the company will review the legal options available.

Given the possibility of changes in the payments of subsidies, the benefited companies said they will review their investments and may cease drilling works due to lack of economic incentives.

Between 2016 and 2018, the companies currently extracting gas and oil in Vaca Muerta received a total of USD 3,668 million. When comparing amounts received with pilot planned investments, in some cases subsidies cover

3,668

million USD is the amount that companies received in subsidies, between 2016 and 2018.

¹⁶ Available at: <https://www.bolsar.com/Downloads.aspx?Id=332056>

¹⁷ Available at: <https://www.bolsar.com/Downloads.aspx?Id=332072>

¹⁸ Available at: <https://www.bolsar.com/Downloads.aspx?Id=332071>

more than 50% of such investments (except for Exxon, as according to data from the Secretariat of Energy, did not receive any subsidy). Pan American owns the larger

percentage, 86% of investments covered by subsidies, then Wintershall has 83%, YPF S.A. has 65%, and finally, Tecpetrol with 51%.

Table 7: Subsidies received and pilot investments in companies operating in Vaca Muerta.

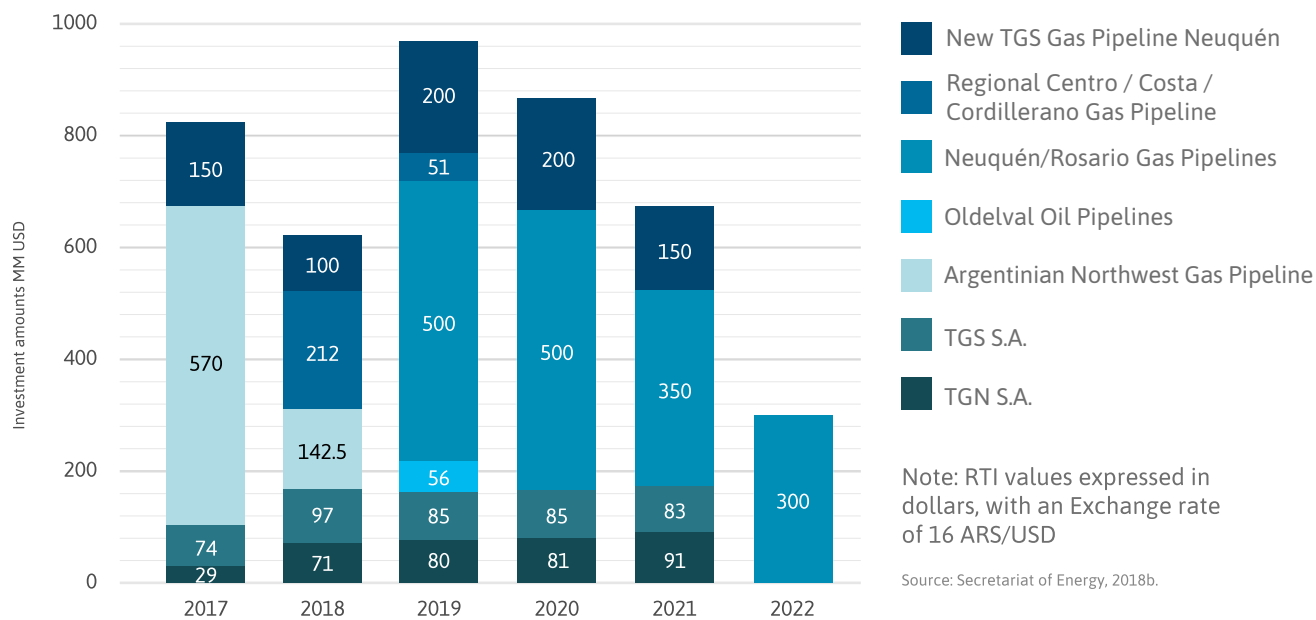
Operating companies	Subsidies received in 2016-2018 (USD million)	Total of pilot investments (USD million)	Product	Area
Capex S.A.	25.99	126.00	Tight/shale gas	Agua del Cajón
ExxonMobil Exploration Argentina S.R.L.	n/a	522.00		
		193.00	Shale gas	Los Toldos Sur 1
		329.00	Shale oil	Bajo del Choique - La Invernada Pampa de las Yeguas I
O&G Developments LTD S.A.	0.99	699.00	Shale oil	Bajada de Añelo · Cruz de Lorena · Sierras Blancas
Pan American Energy LLC	1,198.02	1,394.00		
		200.00	Shale gas	Aguada de Castro · Aguada Pichana Oeste
		304.00	Shale oil	Bandurria Centro
		890.00	Tight gas	Lindero Atravesado
Pluspetrol S.A.	34.76	160.00	Tight/shale gas	Centenario
Tecpetrol S.A.	113.00	221.00		
		200.00	Shale gas	Fortín de Piedra
		21.00	Tight gas	Punta Senillosa
Total Austral S.A.	309.21	1,144.00	Shale gas	Aguada Pichana Este · La Escalonada Rincón la Ceniza
Wintershall Energía S.A.	202.68	244.00		
		162.00	Shale gas	Aguada Federal
		82.00	Shale oil	Bandurria Norte
YPF S.A.	1,784.14	2,732.00		
		308.00	Shale gas	El Orejano La Ribera I y II
		1,928.00	Shale oil	Bandurria Sur · La Amarga Chica Loma Campana
		346.00	Tight gas	Río Neuquén
		150.00	Tight/shale gas	Rincón del Mangrullo

Source: Compilation based on data from the Sub-secretary of Energy, Mining and Hydrocarbons from the province of Neuquén.

Another key fact when analysing Vaca Muerta is the associated infrastructure. In this case, the State looked for investors to take care of works

fundamental to reduce costs of transport, either of supplies or of extracted products from the deposit.

Chart 10: Investments on transport of natural gas.



Investments of South Gas Transport (TGS) to carry 60 MMm3/d; Neuquén-Rosario Gas Pipeline, to carry 35 MMm3/d; and Oldelval Oil Pipeline are all private. Works on Argentinian Northeast Gas Pipeline (11 MMm3/d), Regional Centro II Gas Pipeline, Costa and Cordillerano Gas Pipelines are taken care of by public agencies.

The works on North Gas Transport (TGN) and TGS are to maintain and improve gas pipelines and compressing plants; in the case of TGS, it also includes a 125 km gas pipeline. Oldelval gas pipeline corresponds to transport capacity of oil.

Another relevant work is the Norpatagónico train, meant to be realized with Private Public Participation (PPP) covering the USD 570 million.

However, in 2019 this kind of financing had to be stopped due to the increasing country risk, resulting in a delay in the deadlines and new bid allowed on April 2019 to take care of the works. This train will transport sand from Bahía Blanca to Añelo, reducing the transport costs by half (Ministry of Transport, 2018).

“

When comparing amounts received with pilot investments planned, it is clear that, in some cases, the subsidies cover more than 50%. For example, in the case of Pan American, 86% of its investments are covered by subsidies.

Carbon tax, another benefit for gas

Tax on carbon dioxide, main greenhouse gas produced by burning fossil fuels, was included in the Argentinian tax system in December 2017. This was achieved by the passing of a new tax law, aiming to discourage production and consumption of fossil fuels adding to global warming.

This tax aims to simplify the taxes on fuel production and create predictability to the load on producing companies¹⁹. It will be a fixed sum per fuel kind, with the possibility of increasing up to 25% and decreasing it up to 10%. Amounts will vary according to the following table:

Table 8: Amounts of tax on carbon dioxide.

Concept ¹	Previous Project Fixed amount (in ARS)	Current Project Fixed amount (in ARS)	Unit of measurement	Use of collection
Natural Gas	0.854	n/a	Cubic meter of 9.300 kcal/m ³	National Treasury (10.4%); FONAVI (15.7%); provinces (10.40%); Unique System of Social Security (28.69%); Hydric Infrastructure Trust (4.31%); Transport Infrastructure Trust (28.58%); Public Transport Compensation (2.55%).
Mineral Coal	1.073	0.429	kilogram	
Liquefied Natural Gas	1.175	n/a	kilogram	
Oil Liquefied Gas	1.307	n/a	kilogram	
Petroleum Coke	1.393	0.557	kilogram	
Jet Fuel	1.124	n/a	Litre	
Fuel Oil	1.297	0.519	Litre	
Unleaded petrol; raw	1.03	0.412	Litre	Temporary Distribution Regime between Nation and the provinces (75%); and programmes and measures from the National Executive Power destined to promote renewable energies and energy efficiency, as well as other programmes about reduction of GHG emissions (25%).
Natural petrol	1.03	0.412	Litre	
Solvent	1.03	0.412	Litre	
Turpentine	1.03	0.412	Litre	
Gasoil	1.182	0.473	Litre	
Diésel oil	1.182	0.473	Litre	

¹ In biodiesel, bioetanol and biogas, the tax will be covered with the payment of the levy on petrol, gasoil, dieseloil, gas or any other levied component. Pure biofuels are not within scope.

Source: Compilation based on data from the tax reform bill

¹⁹ For a detailed analysis, we recommend Eintoss, A. (2017). Analysis of the tax reform on fuel taxes. Revista Nuevos Papeles. Available at: <http://www.nuevospapeles.com/nota/7141-un-analisis-a-la-reforma-tributaria-en-el-impuesto-a-los-combustibles>

A carbon tax was included in the Argentine tax scheme on December 2017. However, the gas is not subject to the tax.

It's fundamental to point out that the tax approved was different from the original version, due to pressures from the gas producing industry. These pressures resulted in two important points in the final approved tax.

First, the tax value will be updated quarterly according to variations of the Consumer Price Index (CPI), and the tax is estimated on a base price of 10 USD/tnCO₂eq(per ton of carbon dioxide equivalent). However, the original tax bill established a carbon price of 25 USD/tnCO₂eq.

Secondly, gas has been eliminated from the tax payment, benefiting mainly the biggest exploration projects in our country, characterized by fracking. The product is not even within the law exceptions, meaning it's not taxable, and reverting this situation would imply more complex processes than if it had been excepted.

As gas is not part of the carbon tax, it can't be estimated as a tax expenditure, so this tax deferral of gas is not reflected in the estimations of differential tax treatments.

During the first quarter of 2018, the carbon dioxide tax has collected USD 60 million from oil and USD 44 million from gasoil (Ministry of Finance, 2018c).

Argentine Hydrocarbon Fund (FAH)

The then Ministry of Economy and Public Finance, by Resolution 130/2013, established the “Argentine Hydrocarbon Fund”, to constitute an Administration Trust to apply assigned funds for loans and/or capital contributions and/or acquisition of any funding instrument to execute or finance hydrocarbon exploration, exploitation, industrialization or marketing related to hydrocarbon companies with state shares and/or economic and political rights, for an amount of up to USD 2,000 million, or its equivalent in other currencies.

In the past, under the Fund, money was sent to YPF S.A. as the sole beneficiary, according to art. 71 of the Budget Law 26.784. However, as the Fund did not receive funds from the State in 2016, 2017, and 2018, the company did not receive transfers either.

On the other hand, the FAH endorsed Treasury bills to finance the Fund between 2016 and 2018, but not to buy fossil fuels from CAMMESA. The endorsed letters, according to the details sent by Trusts Nation Fideicomisos as answer to the request to access public information, are as follows:

Table 9: Letters of the Treasury to finance the fund.

Date of subscription	Deadline	Subscribed value (USD)
06/24/2016	06/23/2017	36,906,839
11/07/2016	01/30/2017	20,205,000
12/28/2016	06/23/2017	4,685,888
08/16/2017	04/24/2018	80.102.765
12/28/2017	04/24/2018	11,409,383 ²⁰
05/24/2018	05/24/2019	77,848,876

Source: Nación Fideicomisos, 2018.

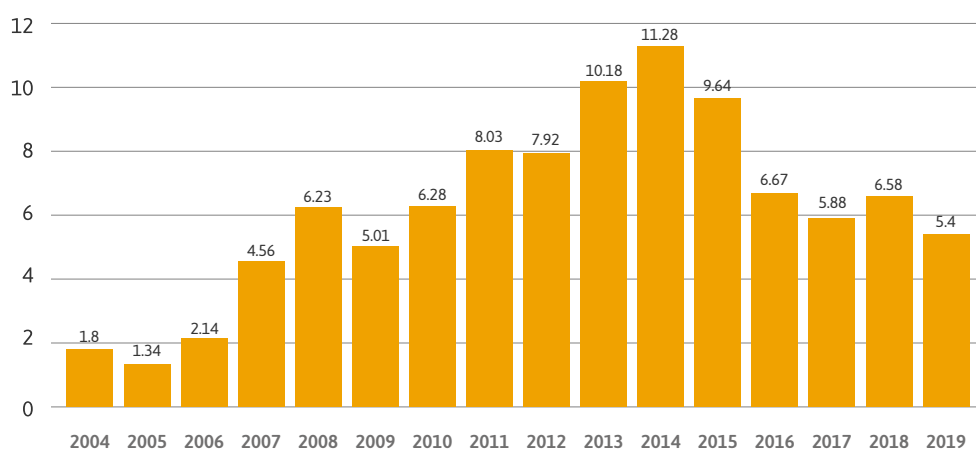
²⁰ Amount in Argentinian pesos \$320,603,661.

Budget 2019: data and values ²¹

According to what the Government expressed in the budget sent to Congress, **economic subsidies will have a higher absolute decrease: USD 7,662 million will be spent, 6.9% less than in 2018**

(Ministry of Finance, 2018a). These subsidies represent 5.4% of the total of public expenditures budgeted for 2019.

Chart 11: Subsidies regarding public expenditure (percentage).



Source: Zanotti et al., 2017, and FARN compilation.

They went from being 2% of the public expenditure in the first years (2004) to 10% in 2015 (Chart 11). Actual energy subsidies exceeded those quoted, e. g.: 130% in 2011 and 160% in 2012. The increase produced during 2018 because of the devaluation of the Argentinian peso is mentioned.

The new Secretariat of Energy, now dependent of the Ministry of Finance, has forecast expenditure for USD 4,278 million, 60% higher than in 2018 (this exceeds widely the estimated 34.8% of inflation). So, this year, in spite of having been downgraded to Secretariat, it will have more funds. **86% of the budget corresponds to money transfers to the private sector to finance regular expenditures**, i.e., destined to finance companies from the private sector, known as well as subsidies to fossil fuels.

Given this imbalance, **in 2019, regarding the GDP, the amount spent on subsidies will go from 2.2% in 2018 to 1.6%**²². In the message sent with the budget to Congress, a reduction of the energy subsidies is established, with “savings to the State of 0.1% of the GDP” (measured in Argentinian pesos), from USD 7,303 million in 2018 to USD 5,385 million.

Regarding subsidies for consumers, it says “electricity rates (will be) differentiated regarding the socioeconomic condition of the residential user”, as well as “0.3% of GDP from a wider coverage of the rate over the service cost”, estimating the rate covers 70% the residential electricity costs and 75% for the gas in households²³. So, a drop in subsidies to energy tariffs of approximately USD 175 million is established.

²¹ The analysis is in dollars; however, in the following site it's in Argentinian pesos: <https://farn.org.ar/wp-content/plugins/download-attachments/includes/download.php?id=25946>.

²² In the report published in 2018, the budgets for that year “represented 1.74% of the GDP in 2017 and 1.26% for 2018, with a year-over-year decrease of 27%”. However, it's worth mentioning that the estimation for 2018 was done on budgeted values. During the present work, values in 2018 are executed data, and that's the origin of the estimated differences. This reflects the huge budget re-assignment made by the Public Administration to face the expenditures of the subsidies agreed in dollars after the devaluation.

²³ The estimation indicated that the funds from the National Treasury to cover the rates was of 37% in 2018, 53% in 2017 and 70% in 2016. The differential should be covered by the contribution of demand.

Although a funds reduction is presented by 2019, when comparing the budgeted USD 3,841 million in the message sent to Congress in 2018, the expenditures paid is twice the budget, as it's indicated that USD 7,303 million were paid. This huge budget re-assignment in 2018 is due to the devaluation (higher than 100%) of the national currency, given the dollarization of the subsidies agreed through Resolution 46/17 from the then Ministry of Energy. According to the message sent to Congress, *"the main impact of a deviation of 1% in the type of exchange projected will operate in the energy subsidies, as they have a high percentage in foreign currency. The final impact will create an additional need of subsidies of about 0.03% of GDP (ARS 5,700 million)"*.

Analysing budget lines, in the framework of the programme Formulation and Execution of Hydrocarbon Policy, the Secretariat will "increase the hydrocarbon offer by incentives to exploration and exploitation of crude oil and gas deposits, as well as production of derivatives, transport and development of alternative fuels, through incentive programmes", onshore as well as offshore²⁴. It also mentions the importance of "promoting private investment of oil and increase of gasoil and petrol production", as well as continuing the promotion of "investments in non-conventional natural gas, by way of programmes with specific incentives". These specific incentives reference the "Incentive Programme to Investments on Natural Gas Production Development from Non-Conventional Deposits", i.e., the development of Vaca Muerta deposit.

After a review of the fossil fuel subsidies within the 2019 budget, the most notable difference with previous years is that, for the first time, there are budget lines identified as subsidies within the new Secretariat of Energy: "Subsidies

to Natural Gas Offer" and "Subsidies to Natural Gas and LNG Demand", by a total of **USD 1,217 million**. Preference remains on the production subsidies with 70%.

The offer subsidies, with a total of USD 850 million, aim to promote gas production²⁵, foreseeing an increase in production of 6.10%, in order to drive non-conventional deposits in 12,274 million m³. These funds will be shared with the USD 85 million destined to conventional gas and the remaining USD 765 million to Vaca Muerta gas. 88% will be destined to private companies and 12% to provinces and municipalities.

Regarding subsidies to demand, the total is USD 362 million to cover 156,000 tons of propane gas undiluted distributed by pipelines to users, and 900,000 bills of users with gas. 75% of the funds are granted to distributing private companies (USD 272 million) and the remaining 25% to the Households with Gas Cylinder Programme (USD 90 million).

Although subsidies are explicitly mentioned, if we consider the definition by the World Trade Organization (WTO)²⁶, there are other budget lines that should also be considered as backups to the industry in the proposed budget for 2019.

On the other hand, within the framework of the Formulation and Execution of the Electric Energy Policy Programme, the line Electrical Market Sustainability sets the subsidy to electrical energy supply, 139,532,000 MW/hour with **USD 2,653 million** destined to private companies.

In this context, hydrocarbon infrastructures are promoted by three projected gas pipelines (Centro II, Costa Gas Pipeline and Tandil - Mar del Plata, and Cordillerano - Patagónico Gas

²⁴ In 2019, the offshore exploration of hydrocarbon potential will be explored, by granting permits according to the bid presented in 2018.

²⁵ To do it, Resolutions CPyCE del PNIH N° 60/2013 (Plan Gas II), MINEM N°74/2016 (Plan Gas III) y MINEM N° 46/2017 (Plan Gas non-conventional) will be implemented.

²⁶ Established in the Agreement on Subsidies and Countervailing Measures, it indicates that there is a financial contribution when "there is a financial contribution by a government to an activity or there is any form of income or price support. Among others:

- direct transfer of funds (e.g. grants, loans, and equity infusion), or liabilities (e.g. loan guarantees);
- government revenue that is otherwise foregone or not collected (e.g. fiscal incentives such as tax credits);
- a government provides goods or services other than general infrastructure, or purchases goods;
- funding mechanism".

Transport System), with budget lines for a total of **USD 58 million**. The Patagonia LNG project, the building of plants for gas liquefaction in order to export liquefied gas after 2023, will be taken into account.

According to budget 2019, some works relating to energy projects will be addressed by PPP. Among others, Vaca Muerta train, Thermoelectric Power Plant Building in Carbón Río Turbio in the province of Santa Cruz, works that do not involve public funds, according to the data published in the bill. So far, these works are in standby due to the increase in country risk.

On the other hand, it is worth mentioning the programme **Formulation and Execution of Hydrocarbon Policy**, with USD 1,277 million budgeted, to develop initiatives to increase gas production, and drive exploration and exploitation of new deposits allowing to reduce the current difference between gas production and consumption in Argentina, emphasising amounts to develop non-conventional gas deposits. Out of the total, **USD 1,016 million** will be transferred to the private sector to finance regular expenses, i.e., subsidies.

In the Treasury bonds²⁷, is included the budget line “Financial Assistance to Public Companies and other Agencies in the Fuels and Energy Industry” for **USD 1,618 million**. Some of these assignments will be for Integración Energética S.A. (formerly ENARSA), mainly to fill the gap between the domestic market selling price and the import price of natural gas and acquisition of liquefied natural gas, as well as for Yacimientos Carboníferos Río Turbio to assist with the operational expenses.

IEASA results from the merging of Energía Argentina S.A. (ENARSA) and Emprendimientos Energéticos Binacionales S.A. (EBISA), in

order to research, explore and exploit solid, liquid and/or gas hydrocarbon deposits, transport, storage, distribution, marketing and industrialization of these products and their derivatives, direct as well as indirect, and granting transport and natural gas distribution as public services, in any stage of the value chain of electrical energy, and in all the markets of energy goods and services.²⁸

The company estimates future revenues of USD 3,829 million, 60.5% from the sale of fuels and 39.5% from National Treasury transfers made to fill the gap between the price of importing fuel and the domestic market selling price.

Regarding tax expenditures, next year **USD 301 million** will not be received due to tax exemptions related to production and

²⁷ The Treasury bonds show the State helping financially different areas of the public and private sectors, and covering commitments with provincial, national and international agencies.

²⁸ It's also in charge of marketing electrical energy in the binational uses and international interconnections, where the State would have appointed the former Agua y Energía Eléctrica S.E.

²⁹ The framework for these exemptions is of Works of Critical Infrastructure. Law 26.422, art. 34. It establishes, “Imports for consumption of new goods not produced in the country, destined to infrastructure are exempt from paying the import rights and statistics and checking fees, when the infrastructure is to:

- a) Generate, transport, and distribute electrical energy;
- b) Prospect, explore, product, and exploit gas and oil;
- c) Establish new oil refineries and expand existing ones;
- d) Transport, store and/or distribute hydrocarbons.”

sustainable use of biofuels (Laws 26.093 and 26.334), and up to **USD 166 million** within the tax benefits on imports of equipment for energy generation related to prospection, exploration, production and exploitation of gas and oil, among others.²⁹

As shown in the table below, **subsidies to fossil fuels account for USD 6,008 million of the budget proposal.**

A year-over-year comparison shows differences according to the currency used for estimations. If estimations are done in Argentinian peso, the budget for 2019 exceeds in 60% the budget for 2018, doubling the forecast inflation for the next year. If the year-over-year comparison is done in dollars, the budget for 2019 is 6% lower than that for 2018. This is as a result of the subsidy agreed in dollars, in a context with currency devaluation.

Table 10: Subsidies to fossil fuels in the Budget Proposal for 2019.

Budget lines/Programmes	Total (USD million)
Subtotal of offer subsidies	850
Conventional	85
Non-conventional	765
Total of offer subsidies	362
HOGAR Programme	90
Distributing companies	272
Electrical Market Sustainability	2,653
Hydrocarbon Infrastructure (three gas pipelines)³⁰	58
Treasure bonds	1,618
Subtotal of tax expenditures	467
Biofuels	301
Works of Critical Infrastructure	166
Total subsidies 2019	6,008

Source: Compilation based on data from National Budget 2019

This equals the budget assigned for the Ministry of Education, Culture, Science and Technology, and doubles the amount paid by the State to the National Universities in 2018.

It's clear the efforts to fulfil the commitments agreed (in dollars), whether with the IFM or private companies, are a fiscal exertion on the National Treasury in the current devaluation context.

During 2018 the carbon tax was in effect, with the value fixed in USD 10/ton according to the last tax reform. However, that amount was converted to pesos to the value of the dollar in December 2017. The value of carbon emitted is in pesos, while the gas emitted is paid in dollars.

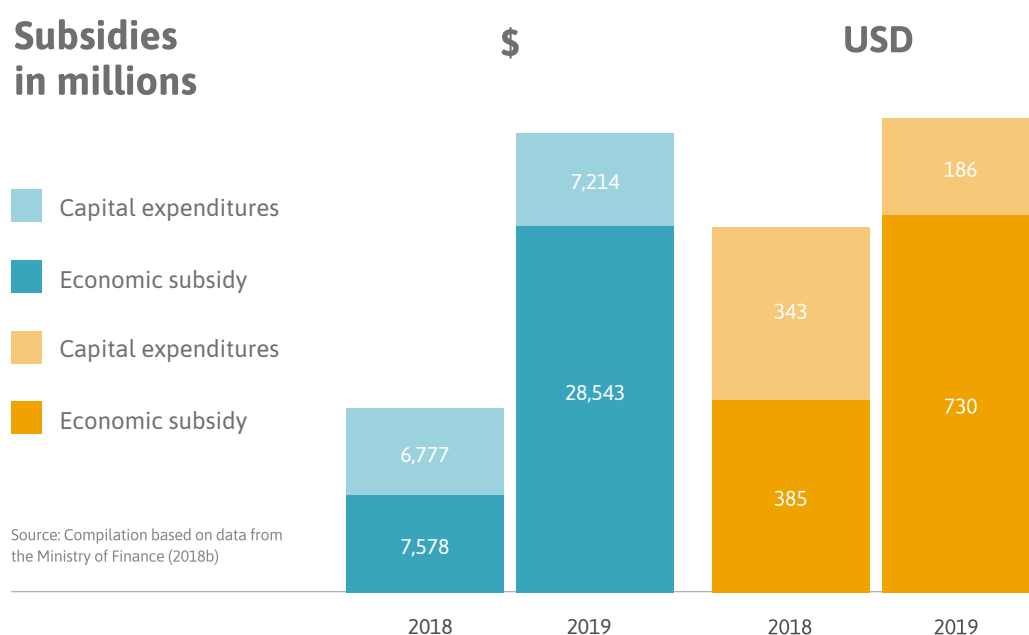
³⁰ Building of Centro II Pipelines; Expansion of Costa Gas Pipeline System and Tandil - Mar del Plata; Expansion of Cordillerano - Patagónico Gas Transport System

Execution during the first quarter of 2019

In the year-over-year comparison between the first quarter of 2018 and 2019, the difficulty to face the commitments made by the State (Resolution 46 in dollars) is clearly seen. If economic subsidies to energy are compared, published by the Ministry of Finance in their Monthly Report on Incomes and Expenditures of the Non-Financial Public Sector, the estimation in pesos shows an increase of 377% during the first quarters of 2018 and 2019, whereas in dollars, the same increase is of 189%.

So, during the first period of 2019, subsidies to fossil fuels have increased, regardless of the unit of measurement. Based on data published in the above-mentioned report, net expenditures to subsidies reached USD 730 million. **This shows that 43% more of funds were paid in energy subsidies than the social expenditure in the same period for 2019³¹.**

Chart 12: Comparison of subsidies paid during the first quarter 2018-2019.



³¹ Social expenditures reached USD 508 million. Social expenditure includes Universal Child Allowance, Food Policies, Social Emergency, Universal Health Care (medicines, prevention and control of vaccine-preventable diseases) and Households with Gas Cylinder Programme (Law 26.020)

Final words

2018 witnessed important changes, economic, political and energy upheavals. The macroeconomic situation impacted greatly on the energy policy, especially with the agreement signed with the IMF. **The reduction of the subsidies resulted in social discomfort due to the increase of rates, and private discomfort for the future changes involved in Resolution 46E/2017.**

The modification of Resolution 46E/2017 means less payments for the national government, in an effort to clean the fiscal situation and satisfy the demands from the IMF. After analysing the data, a reduction in the amounts paid on subsidies to gas companies and consumers is clearly seen, particularly on the latter. Currently, the reviewing of Resolution 46 is in process, and the Government will analyse again the productive plans presented by the companies in order to receive the subsidies. On their side, the companies are willing to face the government, and even engage on legal actions.

The changes in the Energy sector in the Government, with 3 ministers in a year and the modification of Ministry to Secretariat under Finance, are but a glimpse of the Government problems, the importance the energy industry has for the Treasury and the problems presented by the energy policy that needs to be adopted.

While some people still claim that Vaca Muerta is the economic and energy solution for the country, facts show the hydrocarbon sector is not so stable nor sustainable. Today, the natural gas production in Vaca Muerta is challenged, as it's uncertain it will be enough to cover the country energy demands during wintertime. The parting of the regasification vessel and the changes in Resolution 46/2017 were not favourable to the supply.

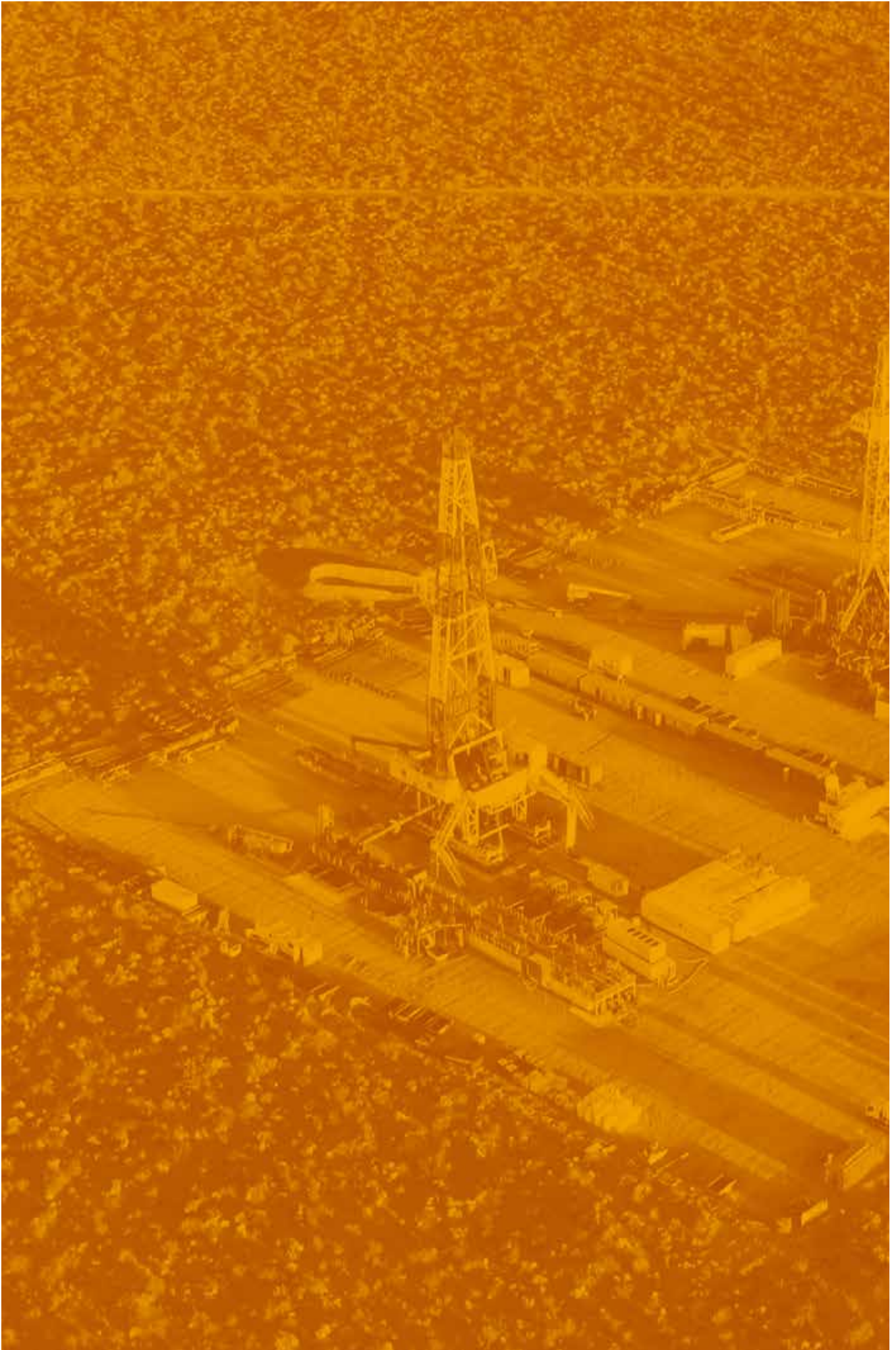
As Kofman and López Crespo (2018) say, the objective of the Government of achieving self-sufficiency does not imply directly better energy sovereignty.

Measurements taken imply short-term solutions to structural problems, resulting in a change of the regulatory framework related to subsidies, as a way to promote the production of electricity with non-conventional gas. However, there's an obvious need to have long term policies, extending beyond the limits of a presidency.

A critical issue to attract investments is predictability, something lacking in the national energy politics. It's necessary to have guidelines for a diversified energy matrix, including measures to facilitate access to energy together with environmental care.

The incentive scheme within the national politics apparently does not favour this, with rates higher for the population and subsidies to production lacking a clear long term projection, even for the Government that in 2018 could not reduce subsidies, given the national currency devaluation and the commitments entered into in dollars with the gas exploration companies.

Economic incentives do not appear to be enough by themselves to attract investments, especially when the payment method is not clear and could end in legal actions against the State, given its modification. Also, in some cases the subsidies have been a high percentage of the revenues of the beneficiary companies, or a high percentage of the investments agreed with the State.



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