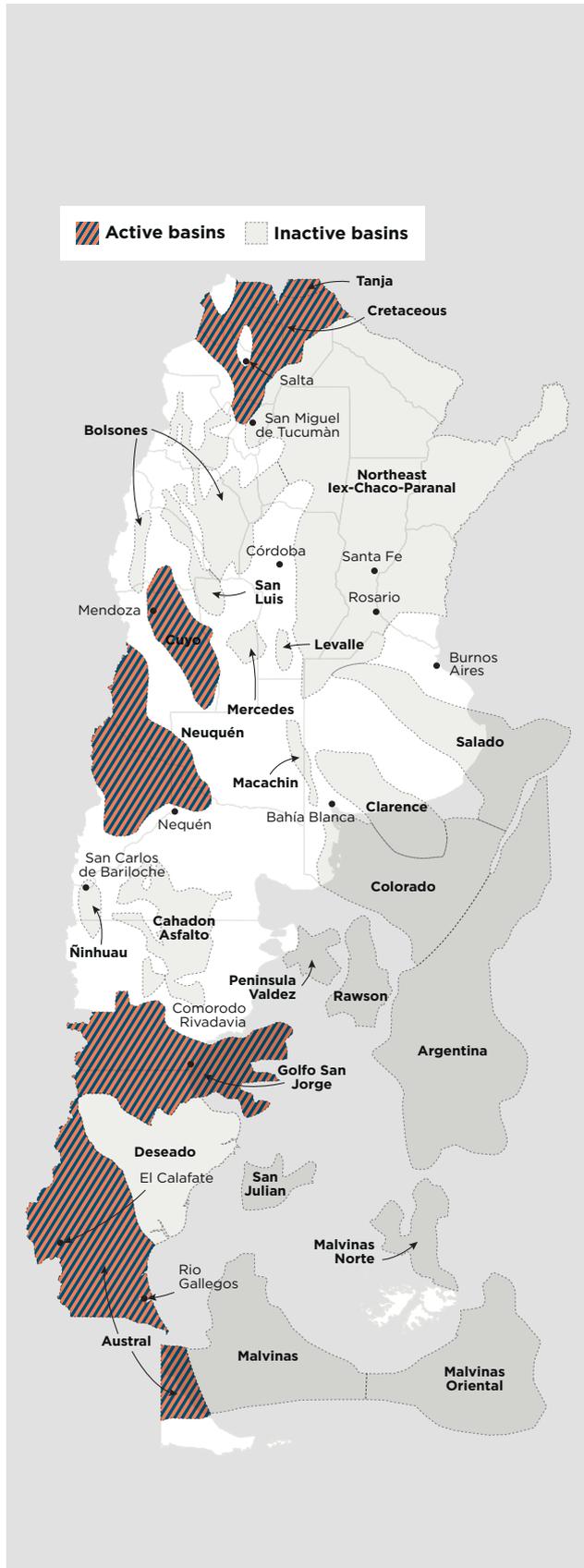




# GOING GLOBAL PHASE 3



# Argentina



## OVERVIEW

In 2016, Argentina was the largest dry gas producer and the fourth largest petroleum and liquids producer in South America, supplying around 1.235 million boe/d.

Argentina ranks 32<sup>nd</sup> in the world for proven crude oil reserves and 36<sup>th</sup> for proven natural gas reserves. Argentina has 2.4 billion barrels of proven oil reserves and 11.7 Tcf of proven gas reserves. However, The Vaca Muerta shale play could hold an additional 16.2 billion barrels of shale oil and 308 Tcf of shale gas.

Historically, Argentina's state-owned oil company YPF was the main producer in the country. In late 2014, however, a new hydrocarbon regime was instituted to provide investors with offshore exploration opportunities and to encourage investment in unconventional plays.

To incentivize foreign investment in the hydrocarbons sector and boost domestic energy supplies, policy reforms have changed the national bidding process, increasing the frequency of offshore licensing rounds, allowing for longer exploitation periods and offering tax exemptions to companies that invest more than \$250 million over a three-year period. YPF, however, remains the largest oil producer in the country and extracts oil from about 59 fields. Most other production comes from large international oil companies and state-owned enterprises.

OIL & GAS RESERVES  
**2,701** (million boe)

RESERVE LIFE  
**9.9** years

OIL & GAS PRODUCTION  
**1,235** (thousand boe/d)

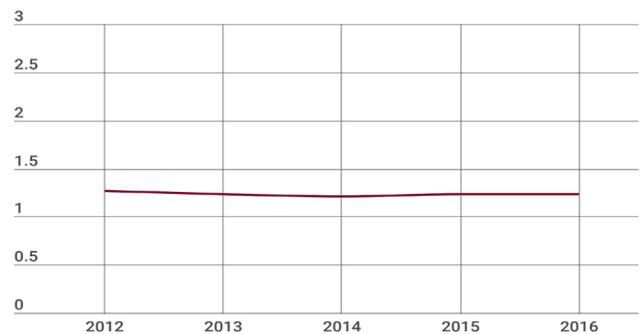
PRODUCTION FIVE-YEAR CAGR  
**-0.57%**

ACTIVE E&P COMPANIES/ACTIVE CANADIAN E&P COMPANIES  
**64/6**

OIL PRODUCTION  
**50%**

GAS PRODUCTION  
**50%**

FIVE YEAR PRODUCTION (MILLION BOE/D)



## **ARGENTINA**

YPF was Argentina's largest natural gas producer in 2015, accounting for about 31 per cent of the country's total domestic supply.

There are currently six Canadian exploration and development companies operating in Argentina among the 64 companies operating in the country.

### **OPPORTUNITIES**

Argentina ranks as a high-risk/high-reward export market in our analysis. It has excellent opportunities in unconventional resources that are in early development stage, with current production of around 75,000 boe/d. It has EOR opportunities focused on polymer flooding, and heavy oil opportunities. There is also a growing interest in offshore development.

The U.S. ITA estimates the country will spend around \$995 million on oilfield equipment imports in 2020.

#### **Unconventional resources**

Argentina has an estimated 308 trillion cubic feet of technically recoverable shale gas and 16.2 billion barrels of tight oil. The Vaca Muerta Formation in the Neuquen Basin is in early stages of development. The formation is estimated to cover a total area of 30,000 square kilometres, of which 77 per cent is estimated to contain oil and 23 per cent is estimated to contain wet and dry gas.

An industry assessment of the Vaca Muerta estimates that development of a 1,100 square kilometre core area could boost Argentina's current oil production by 50 per cent. The country would require total investments of \$28 billion to drill 2,000 producing oil wells, which would mean 60 additional drilling rigs, in addition to the ones already existing in the country.

Argentina's gas production could also increase by 50 per cent. The country would require total investments of \$14 billion to drill more than 1,000 wells, necessitating 40 more drilling rigs than Argentina currently has working.

To achieve the production goals, the country would require investments of \$25 billion per year just to develop the existing prospective resources.

Consultancy Wood Mackenzie expects production in the Vaca Muerta to reach 113,000 boe/d in 2018 and to climb to between 700,000-1,250,000 boe/d by 2030.

#### **Enhanced oil recovery**

Argentina has a well-established enhanced oil recovery sector focused on the Golfo San Jorge Basin, the largest producing region in the country. Around 42 per cent of production from the field is currently under secondary or enhanced recovery schemes.

However, an enhanced oil recovery research and innovation project is being developed within the framework of an agreement established by the Ministry of Science, Technology and Productive Innovation. The strategic objective is the development

of pilot projects aimed at improving the output of fields with a long production history.

#### **Heavy oil**

Argentina is not a major heavy oil producer, but it does have a significant resource in the Neuquén Basin, and the Vaca Muerta could also be prospective for heavy oil in some areas. There are an estimated six billion barrels of heavy oil resource in Argentina.

#### **Oil and gas infrastructure**

Argentina has more than 15,500 kilometres of natural gas transmission pipelines that, in the last 20 years, have increased their capacity 109 per cent.

Four gas pipelines that cross the Andes to Chile and another four that cross to Brazil and Uruguay have been built. The Noroeste Argentino gas pipeline is under construction and it will cover the only region of the country not part of the gas network.

Gas transporter TGS has proposed an \$800 million pipeline and gas treatment plant in the Vaca Muerta, with construction to be completed by 2020. The pipeline will have an initial 144 MMcf/d capacity that could be expanded to 1.2 bcf/d. Pipelines in Vaca Muerta are currently moving 60 2.1 bcf/d of natural gas and have total capacity for 2.6 bcf/d.

Crude oil produced in Patagonia is transported to the refineries by tanker and by trunk pipelines. The Golfo San Jorge and Austral basins have a local pipeline network that carries the crude to the loading terminals of ships that transport it to refineries in Buenos Aires.

The heavy oil produced in the Neuquén Basin reaches the refineries through a pipeline network. Other oil produced in the country is refined at regional facilities.

#### **Oilfield services market**

Argentina has a mature market for traditional oilfield services dominated by large regional and global integrated companies. Large suppliers like Halliburton, Schlumberger and Baker Hughes have been in the country for almost 80 years and are well established.

However, as unconventional resource development takes off, significant opportunities could emerge all along the supply chain.

The Argentinian Institute of Energy calculates that investments in the upstream sector between 2016 and 2023 will reach \$11.2 billion. Around 40 per cent of this amount will be used for drilling rigs, fracturing sets and chemicals, and the remaining 60 per cent in security, components and services. The cumulative effect of activity related to shale development in 2035 could reach 35,238 wells drilled and a fleet of 227 drilling rigs.

At the moment, the supply chain serving companies specialized in exploration and production is very limited.

The oilfield services industry is unionized in Argentina, and that has resulted in higher labour costs in the past.

## ARGENTINA

### Local content

Argentina has strict local content rules. The proportion of Argentine citizens may not be less than 75 per cent of the personnel employed by each permit holder or concessionaire. There are no federal regulations that require the companies to hire a minimum percentage of companies with local capital or with a minimum term of being settled in Argentina.

At the provincial level, in recent years most of the provinces have enacted regulations that promote and oblige the companies to employ residents of the relevant province and hire companies domiciled within their territories. The minimum percentage established in such regulations varies between 60 per cent and 80 per cent.

### Canadian market penetration

A number of Canadian companies have ongoing operations in Argentina, ranging from drilling contractors and well servicing companies to oilfield equipment manufacturers. One of the significant challenges of doing business in Argentina is that import and customs regulations of previous governments amounted to *de facto* quotas on how much equipment was allowed in the country. For every two rigs imported, one had to be built in the country. Local content rules also created a barrier to entry as products had to be manufactured in Argentina using local workers. But despite these restrictions, Canadian well servicing and drilling companies are taking root in the country.

## DOING BUSINESS IN ARGENTINA

Argentina is one of the largest economies in Latin America with a GDP of more than US\$874 billion in 2017.

Canada and Argentina have no formal free trade agreement. However, Canada had foreign investment promotion and protection agreements with Argentina since 1993. Argentina is also part of the Southern Cone Common Market and preliminary free trade negotiations are underway with the countries that comprise this group.

The government of Argentina functions within the framework of a federal system. Argentina is divided into 24 jurisdictions, 23 of which are provinces and one is the Autonomous City of Buenos Aires. Each jurisdiction has its own constitution and laws.

Federal taxes include income tax, VAT, minimum presumed income tax, personal assets tax, tax on debits and credits in checking accounts, custom duties and social security taxes. Provincial taxes imposed on the upstream oil industry are turnover tax, stamp tax and royalties. Activities carried out in Tierra del Fuego are exempt from corporate income tax, VAT and minimum presumed income tax.

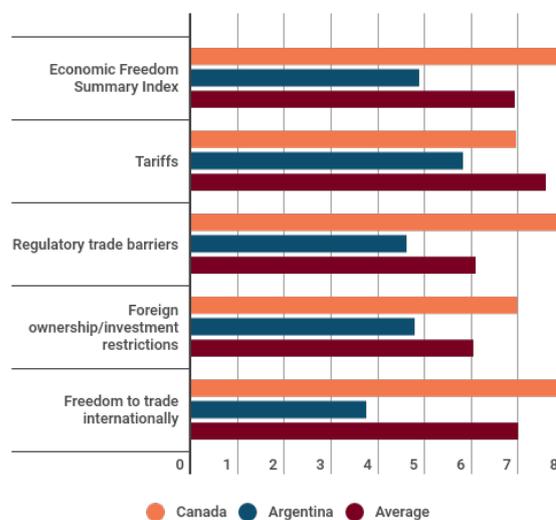
Regulation of the extraction of oil and gas has been a subject of discussion since the National Constitution was amended in 1994. The provinces became the owners of the natural resources that exist in their territory.

The constitutional amendment has led to arguments as to whether the provinces now have power, in addition to the federal government, to regulate the extraction of oil and gas. In practice, provinces have generally issued legislation regulating the extraction of oil and gas within their respective provinces.

Each province has its own regulatory authority for health, safety and the environment.

The Fraser Institute economic freedom index ranks Argentina in the bottom quartile for economic freedom, scoring 4.88 out of a possible 10. When it comes to freedom to trade internationally it scores a 3.73 out of 10.

### FRASER INSTITUTE FREEDOM TO TRADE SCORES COMPARED TO CANADA AND GROUP AVERAGE (SCORE OUT OF 10)



SOURCE: FRASER INSTITUTE

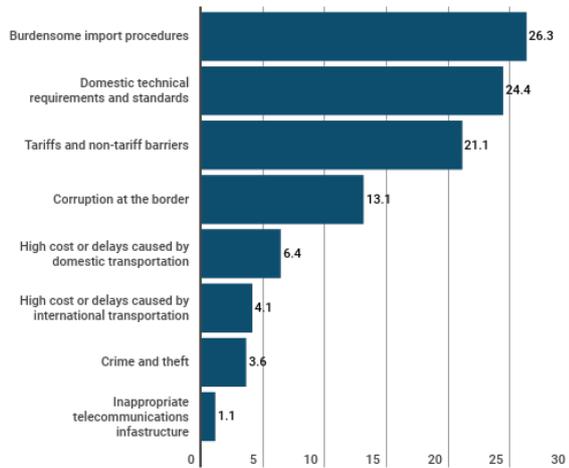
Argentina ranks 94<sup>th</sup> out of 136 countries on the World Economic Forum Enabling Trade Index, up 10 places compared with 2014. Driving the improvement has been greater efficiency of its border administration, and an improved overall infrastructure network. The country has simplified its import licensing program with the introduction of its Comprehensive Import Monitoring System which has cut border compliance time from 12 days to 2.5 days.

However, the predictability of the import process remains a major issue, and the financial cost of border compliance remains among the world's highest.

The overall operating environment still requires significant reform, with weak property protections and a lack of efficiency and accountability in public institutions. The World Bank Group's Doing Business series currently ranks Argentina at 117<sup>th</sup> in the world.

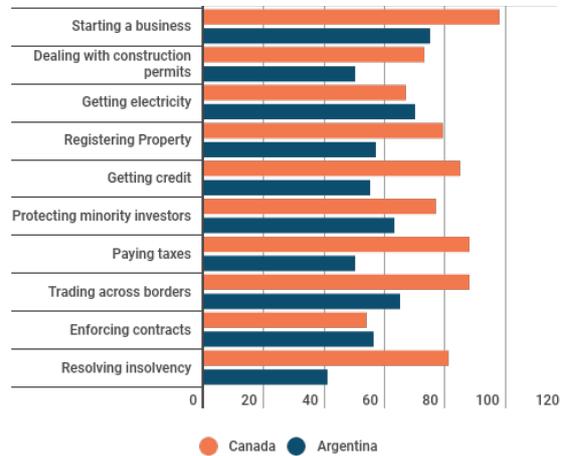
**WEF EXECUTIVES' RANKING OF THE MOST PROBLEMATIC FACTORS FOR IMPORTING TO ARGENTINA**

% OF RESPONDERS RANKING AS # 1 ISSUE



Note: From a list of factors, respondents were asked to select the five most problematic factors in their country and rank them. The scores correspond to the responses weighted according to their rankings

**WORLD BANK *DOING BUSINESS* RANKING COMPARED TO CANADA**



This distance to frontier score helps assess the absolute level of regulatory performance over time. An economy's distance to frontier is reflected on a scale from 0 to 100, where 0 represents the lowest performance and 100 represents the best performance across all economies and across time.

SOURCE: 2018 WORLD BANK *DOING BUSINESS* REPORT

**WORKING IN ARGENTINA**

**Work visa**

A work visa is required for Canadian employees working in Argentina. The visa is issued by the National Directorate of Migration.

The visa is applied for directly by the contracting company in Argentina. If the company is not registered as a legal entity in Argentina, a declaration from the authorities in the company's country of origin should be presented at the Argentine consulate as well as commercial references.

The most common types of work visas are short-term visas, which are valid for 15 days and can be extended for another 15 days once in Argentina, and temporary residence visas issued for employees contracted by companies in Argentina, with a minimum duration of six to 12 months. A formal labour contract between the company in Argentina and the employee is required in order to obtain the visa.

A second type of temporary residence visa is issued to employees sent abroad by their company for at least six to 12 months. A labour contract is not required. Once employees arrive in Argentina, they also need to apply for a DNI/ National Identity Document and a CUIL/Unique Code for Labor Identification.

**Taxes**

Income tax is payable by anybody who earns money. For the self-employed, this has to be paid every two months and expenses are deductible before the amount of tax is calculated.

Those who live in Argentina are taxed on their income no matter where in the world it comes from and this applies to all those who have been granted a residency visa of a minimum of 12 months.

Income tax in Argentina has brackets ranging from nine per cent to 35 per cent.

**PESTEL ANALYSIS**

Category	Analysis
<b>POLITICAL</b>	Argentine leaders have often made unilateral decisions regarding the petroleum sector, including in some instance expropriating developments. New leadership, however, is working to regain industry confidence.
<b>ECONOMIC</b>	In December 2015, the country lifted its long time capital controls, leading to an immediate devaluation of its currency by roughly 30 percent. As a result, production costs on local goods and labour have been reduced. Inflation is also running at 23 per cent.
<b>SOCIAL</b>	A strong labour union movement keeps labour costs high in Argentina, although a deal reached in early 2018 should help lower these costs. Economic nationalism surrounding resources has also been a long-standing feature of Argentina, but there is growing optimism attitudes are changing with the current government opening up to the world.
<b>TECHNOLOGICAL</b>	Argentina has relied on imported technology to develop its resources. However, it has science and technology agreements with Canada and other countries that could kickstart oilfield technology development.
<b>ENVIRONMENT</b>	There is broad support for shale gas development in the country, but there is a growing minority questioning its safety.
<b>LEGAL</b>	With a centralized power structure, the rule of law has not being strong in Argentina. The new government is working to provide more certainty. The new petroleum regime has also raised questions about jurisdiction between the federal and regional governments.

**INSIGHTS**

- An under-developed supply chain is raising costs in Argentina. Until the supply chain is developed it will be hard to make money in shale
- In the short term we are not going to have more capacity to move this (shale) gas, and planning for infrastructure to increase transport capacity needs to start now
- A tonne of infrastructure in large pipelines, and smaller pipelines, is needed
- Argentina is high cost due to unions
- Accessing remote areas is a challenge. Logistics are a big concern
- May have to invest large amount of capital investment on roads to operate
- Similar to Canadian shale plays. Very promising

**RECOMMENDATIONS**

- Argentina is an attractive market for Canadian exporters.
- The future of the Argentinian oil and gas sector lies within the shale oil and gas developments, which will require foreign investment and technological advancement to catch up to the North American shale industry.
- Any exporters with supply chain expertise will find a ready market in Argentina.