

## Argentine Electricity Sectors

### Regulatory Uncertainty, Inefficiency and FX Risk Cloud Outlook

**Macroeconomic Instability:** The Argentine electricity sector arguably felt the most acute effects of macroeconomic instability and policy changes since President Mauricio Macri's election in 2015. Upon taking office, the Macri administration introduced several measures to lower generation costs, improve system reliability and increase end user tariffs in order to reduce the electricity sector cash flow deficit and government subsidy reliance. These measures were severely challenged by devaluation. Moreover, the increase in electricity tariffs partially propelled inflation to 46% in 2018 and nearly to an estimated 50% for 2019.

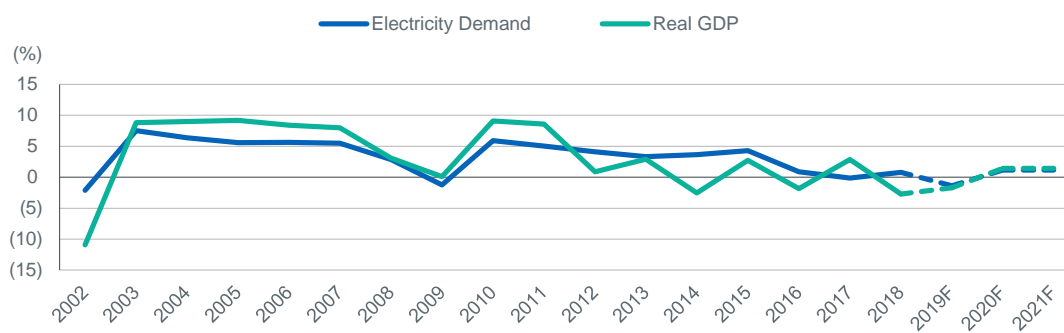
**Reliance on Government Subsidies:** Argentina's electricity sector relies heavily on government subsidies paid to Compania Administradora del Mercado Mayorista Eléctrico S.A. (CAMMESA), which are transferred to power-generation companies (GenCos). Fitch estimates CAMMESA received USD3.4 billion of subsidies in 2018, or approximately 35% of the implied costs. Subsidies decreased 21% from USD4.5 billion in 2017, which represented a subsidy of approximately 48% of the system's entire revenue. Fitch expects continued volatility in timely payments from CAMMESA in 2019 as the government lowers its fiscal deficit to comply with International Monetary Fund terms.

**Devaluation Drives Energia Base Revision:** In February 2019, the government reduced the capacity payments made to GenCos under Energia Base (formerly Resolution 19/2017 and now Resolution 1/2019) to lower deficits caused by the 2018 peso depreciation. Fitch estimates approximately 60% of Argentina's installed capacity operated under Energia Base, representing approximately USD6.1 billion in annual costs. To lower the USD3.6 billion deficit (35% of the cost of the system) in 2018, the government amended the remuneration scheme, which lowered the capacity payment of efficient power plants by 10%, while imposing a marginal-cost scheme whereby plants that dispatched less than 30% per year will only receive 70% of their implied capacity payment, which Fitch estimates will lower the deficit to USD3.0 billion per year.

**FX Exposure:** Fitch believes the largest threat to the system remains FX risk. Presently, cash inflows to CAMMESA from distribution and transmission companies are in pesos, which CAMMESA transfers to GenCos to pay remuneration schemes. From April 2018 through December 2018, Fitch estimated transfers to CAMMESA increased 14% due to peso depreciation. Moreover, Fitch does not expect any material developments to address FX risk in 2019 and 2020, as strict guidelines limit how much the government is allowed to defend the peso. As a result, Fitch estimates 2019 peso/U.S. dollar average FX rate will be 44.40, which can represent 39% of the total cost of the system in 2019.

**Investment Opportunities:** Argentina could be a dynamic market for investors once macroeconomic conditions improve. Fitch estimates 35% of Argentina's installed capacity is inefficient and only 40% of RenovAR Rounds 1 and 1.5 projects awarded will commence operations by 2019. Also, major transmission expansion-and-distribution investments are needed to improve system consistency. Generally, all of the 4,466MW of RenovAR projects awarded in the three pending auctions might cost approximately USD6.7 billion and the need to expand transmission capacity can represent an investment of approximately 1.4% of 2018 GDP.

#### Argentina Electricity Demand Versus GDP Growth



F – Forecast.

Source: Fitch Ratings, CAMMESA.

## Primary Market Considerations

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### Growth Prospects

Growth prospects for the Argentine power sector continue to be constrained by

- A high degree of government intervention;
- Macroeconomic weakness;
- A lack of interest from private investors;
- High borrowing costs; and
- FX volatility.

Argentine electricity consumption growth is primarily supported by residential demand, which is 56% of consumption, followed by industrial and large commercial at 29% and commercial at 15%. In the short to medium term, electricity supply growth will decrease in line with real GDP growth. Fitch expects the cost of the system will gradually decrease as new more efficient combined-cycle plants are scheduled to go online in 2020, coupled with renewable power sources, which may account for nearly 10% of electrical capacity after 2021. Furthermore, Argentina's ramped-up gas production from 2017 and 2018 is expected to further lower the cost to the system, as average gas prices are expected to be lower than the historical average of nearly USD7.00/MMBTU, caused by liquefied natural gas imports.

Fitch estimates Argentina will require approximately 990MW of new installed capacity per year for the next 10 years to account for the 13.3GW of inefficient installed capacity. It will also need associated transmission infrastructure to maintain a balanced supply-and-demand market. Given scarce and challenging financing markets, Fitch expects new investments will be on hold in the short to medium term, deterring private investment in the sector. A lack of financing may cause inefficient units to be used more, resulting in a higher system cost, assuming no further expansion.

### Pricing

Following the Argentine peso devaluation of 2001–2002, the government froze all regulated transmission and distribution tariffs and revoked all price-adjustment provisions and inflation-indexation mechanisms. This led to Argentina's residential/industrial energy tariffs to fall significantly below those of most Western countries. Spot prices were calculated based on the price of natural gas, which is regulated by the government, even if a plant uses more expensive fuels. This caused the system to ignore supply-and-demand dynamics, resulting in distorted pricing. This contrasts with the precrisis years, in which CAMMESA determined the spot price based on the marginal cost of the last unit to be dispatched.

Since 2002, the short-term marginal cost for many plants was set at ARS120/MWh (USD2.70/MWh at current official exchange rates). In contrast, the average marginal break-even marginal cost in 2014 was ARS550/MWh (USD67/MWh), which included power-capacity fees, the cost of generation with liquid fuels and other minor items.

The pricing scheme was reorganized by Argentine regulators in March 2013, moving away from a margin-based system to a regulated system, whereby generator income is driven by regulated revenues. Previously, independent GenCos would sell their output in the Argentine Wholesale Electricity Market (WEM) through private contracts with purchasers (typically large industrial users) or to CAMMESA through special transactions. CAMMESA operates the WEM.

CAMMESA became the single fuel buyer and seller for power plants after March 2013 and free bilateral trading was suspended. After the suspension, large buyers were required to buy electricity directly from CAMMESA. Generators then moved to regulated remuneration, which was expected to cover fixed and variable costs, and include an additional return:

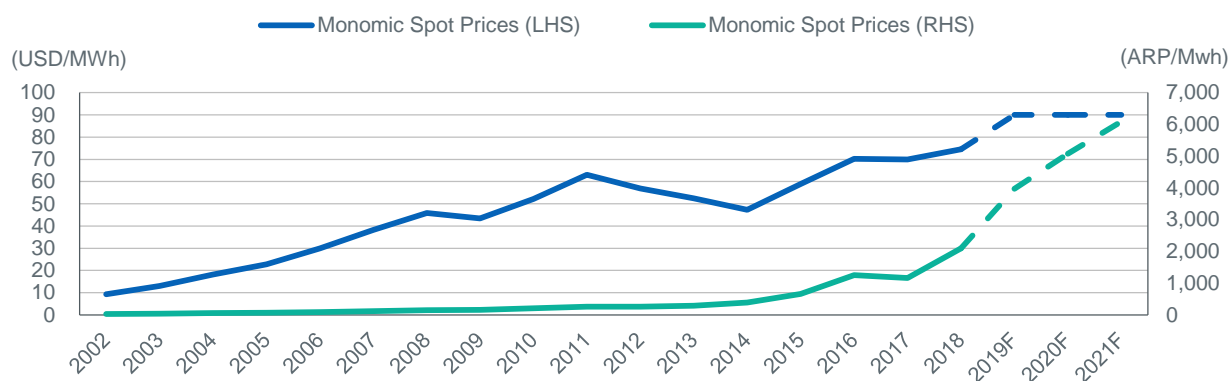
- **Fixed costs:** capacity remuneration based on target availability.
- **Variable costs:** remuneration for operation and maintenance costs, as electricity generators are not allowed to incur fuel costs.
- **Additional remuneration:** Partly paid by cash paid to the generators with the remainder accumulated in a fund that will be used to finance generation investments.

To mitigate price volatility for end users, CAMMESA manages a stabilization fund financed from the difference between the regulated and spot prices. The stabilization fund activates when spot prices exceed the regulated price and is replenished when the regulated price exceeds the spot price. Although the fund is supposed to balance in the long run, it often runs a substantial deficit. This deficit resulted from an emergency regulation implemented by the government, which modified the spot-price calculation and adjusted the regulated price to below the spot price. The deficit was covered with government subsidies. In 2015, subsidies to CAMMESA peaked at approximately USD8.7 billion. Subsidies have decreased since then and in 2018 the system's deficit was USD3.6 billion.

The transmission sector operates under monopoly conditions, with transmission companies authorized to charge different rates for their services. Distributors are regarded as a public service operating under monopoly conditions and have regulated tariffs that are subject to quality-of-service specifications. Distribution companies may obtain electricity on the Argentine WEM at a seasonal rate, which is defined by the Argentine Ministry of Energy as a cost cap of electricity bought by distributors that can be passed on to regulated customers. Argentine regulators neglect to fully review electricity tariffs and fully recognize that the cost increases have negatively affected both distribution and transmission companies, which reduced investment in these important market segments.

Since President Macri's election in late 2015, the government introduced new remuneration schemes, most recently Resolution 1/2019, which was an amendment to Resolution 19/2017. The idea was to gradually increase market-correcting regulations, so the nation can shift toward a more balanced market that is less dependent on government support. First, Energia Base was updated, increasing remuneration fees to be denominated in U.S. dollars, but settled in pesos. Second, the government announced increases in transmission and distribution tariffs, ultimately passing the cost of the system to end users. Since 2014, the CAGR of monomic prices in U.S. dollars increased 12%.

### Monomic Spot Prices (U.S. Dollar Basis)



Source: CAMMESA.

## Regulatory Overview

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### Regulatory Framework

The Argentine electricity sector is governed by the Electric Regulatory Framework law of 1992 that promotes efficiency and competition in the industry. This law allows for private-sector participation and separates the electricity services into generation, transmission and distribution activities. It also comprises the creation of a competitive wholesale electricity market, as well as transmission and distribution monopolies that reward efficient operators. These last two activities are regulated by the government and as such, require a concession to operate.

### Regulatory Bodies

The Secretaria de Energia (SE) oversees the Argentine electric industry by developing and coordinating the government's policies for the sector. In addition, the SE grants and renews operating concessions for generation, distribution or transmission, and regulates the overall electrical supply.

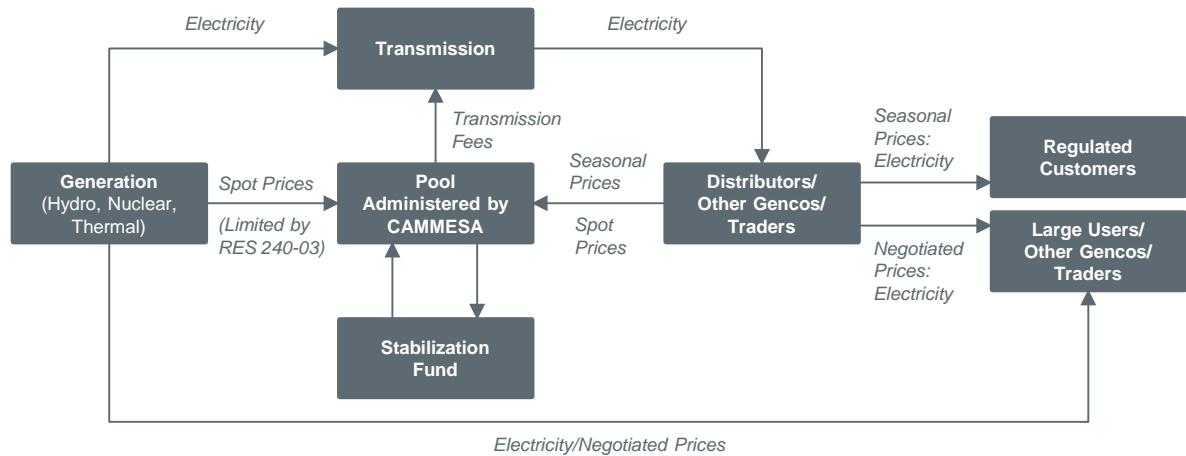
Ente Nacional Regulador de la Electricidad (ENRE) is responsible for regulating distribution and transmission companies, as well as establishing electricity tariffs. It monitors and supervises public-service companies, enforces regulatory initiatives and maintains safety and environmental standards for the country's electricity sector.

CAMMESA manages the wholesale electricity market by coordinating the electricity dispatch, ensuring the system's stability and the overall operation of the WEM. CAMMESA is a mixed-capital company 20% owned by the Argentine government, with the remaining balance by market participants (generation, transmission and distribution companies and large industrial customers).

## Industry Structure

The Argentine electricity sector is organized along three major market activities: generation, transmission and distribution, with all electricity transactions conducted through the WEM, which acts as a clearinghouse for electricity trading.

### Wholesale Electric Market (WEM)

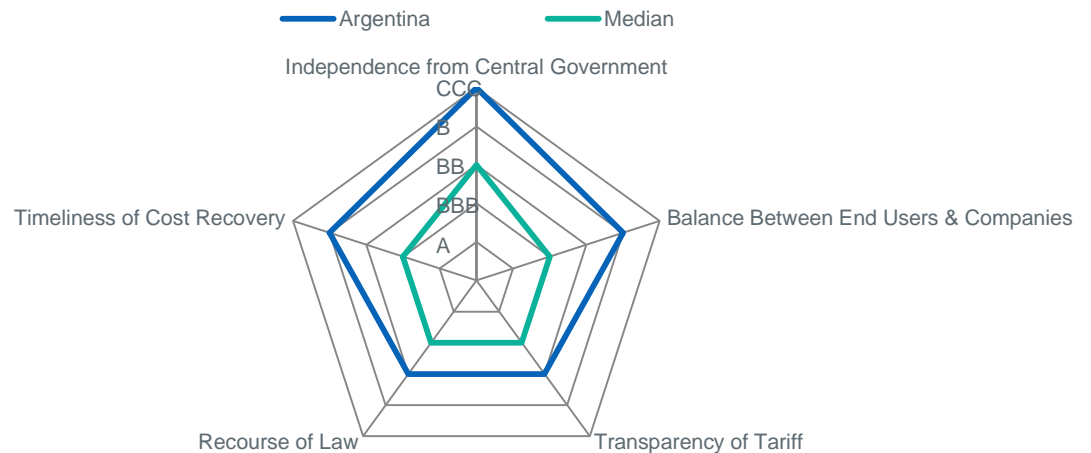


RES – Resolution. Gencos – Generation Companies.  
Source: Endesa-Chile 20-F filing.

### Regulatory Risk

Fitch considers Argentina’s regulatory risk one of the highest among rated peers given the high government intervention and history of government delays in payments and implementing social programs designed to benefit end-users. On average, Argentina’s rated regulatory risk is comparable with a ‘B’ category, while the median for the region commensurate with a ‘BB’ category.

### Argentine Regulatory Score



Source: Fitch Ratings.

## Select Regulatory Events Timeline

### Select Regulatory Events (2015 – Present)

2019	Oct.	Presidential Elections
	April	Res. No. 14/19 - partially amended SGE Res. No. 366/18, maintaining in effect the power capacity reference price, effective since February 2019, until October 2019.
	Feb.	Revision to Energia Base (Res. 1/2019)
2018	Feb.	Transfer of Edenor & Edesur's Concession Jurisdiction to Buenos Aires City and Province
	Jan.	Changes to Res. 46/2017 (Plan Gas)
2017	Dec.	Distributed Generation of Renewable Energy (Law 27/424)
	Oct.	Restructuring of Argentine Government's Energy Sector Assets (Decree No. 882/17)
	Mar.	New PPAs under Resolution No. 287/17 for projects consisting new co-generation and the termination of existing gas turbine units in combined cycle with a term of 15 years.
	Feb.	New Remuneration Scheme "Energia Base" (Resolution No. 19/2017) Revised integral tariff revision (RTI) process (Res. 63/17). The ENRE approved a new rate of return for Edenor & Edesur.
2016	Mar.	New Power Plant auction (Res. 21/2016).
	Jan.	Tariff Adjustment implemented by ENRE (Res. No.7/2016) to take effect in February 2016 and conclude in February 2017.
2015	Dec.	President Macri declared a state of emergency for national electricity system to remain in effect until Dec. 2017

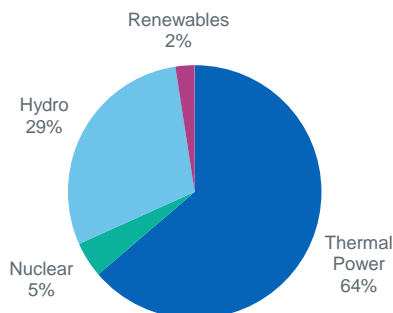
Source: Fitch Ratings.

**Generation**

*Installed Capacity*

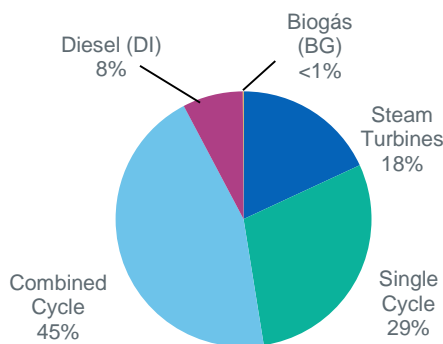
As of January 2019, Argentina had a total installed capacity of 38.6GW, of which 64% is thermal sourced. Within the 24.6GW of thermal capacity, 18% are steam turbines, 29% single-cycle gas, 45% combined cycle and 8% diesel fuel. Fitch estimates approximately 13.6GW or 55% of thermal capacity is inefficient, representing 35% of total installed capacity of the country.

**Total Installed Capacity — 2018**



Source: CAMMESA.

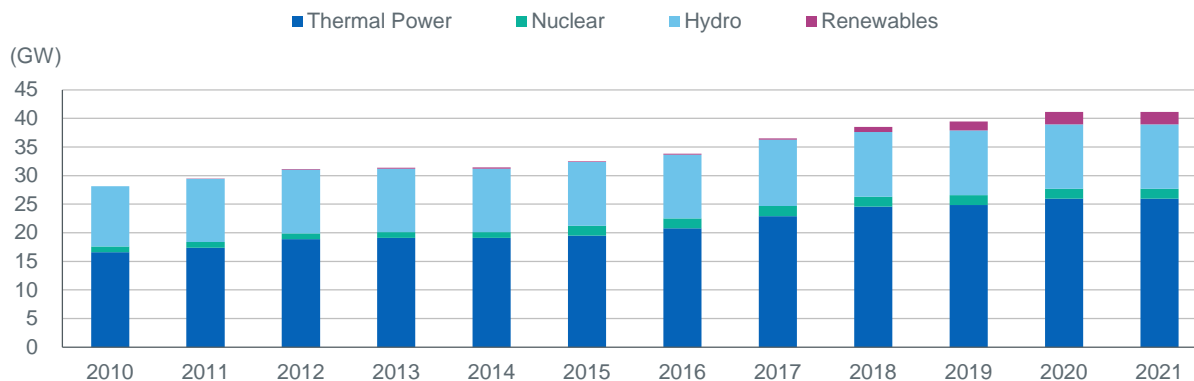
**Thermal Installed Capacity**



Source: CAMMESA.

Fitch estimates total installed capacity of Argentina will increase to 41GW by 2021, where thermal will continue to represent two-thirds of the market. But as the current pipeline suggests, renewables will represent 5%. Moreover, of the 26GW of thermal capacity, Fitch expects nearly three-quarters of the thermal installed capacity will be combined cycle attributed to Resolution 287/17, where MSU Energy will have 750MW of it capacity as closed cycle and Albanesi with 783MW.

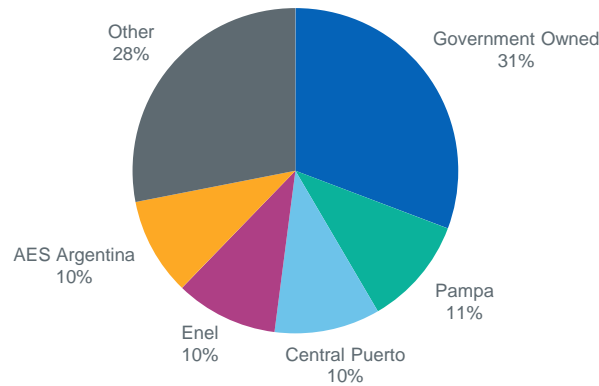
**Installed Capacity**



Source: MINEM.

As of 2018, the government has the largest market share by installed capacity with 31% of total installed capacity, and the four largest private entities, which are Pampa, Central Puerto, Enel and AES Argentina, accounted for 41% of installed capacity. The remaining 28% of capacity is comprised by smaller companies such as Albanesi, Genneia and Capex. As part of President Macri's energy reform, the government intended on selling some government assets, and as of now has only sold Brigadier Lopez (280MW), which had an expansion plan of 140MW. Fitch expects with a stabilized market and contingent on the result of the presidential election, the government will engage in further asset sales.

**Market Share by Installed Capacity 2018**

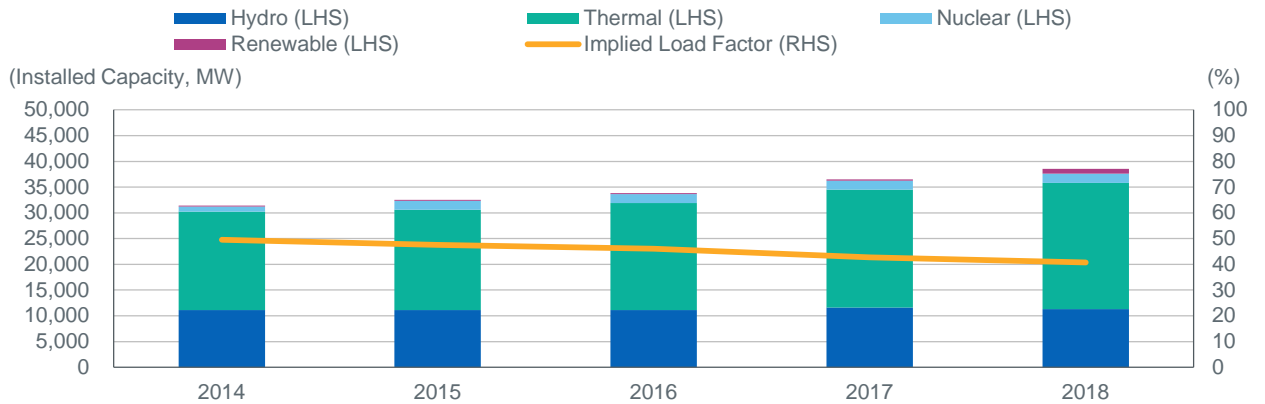


Source: CAMMESA.

*Power Generated*

Fitch estimates the market's implied load factor was 41% out of the total installed capacity in 2018, slightly less than 43% in 2017. Fitch believes that the Argentine electricity system currently operates at industry average base load and needs to increase the efficiency of the installed capacity to a level in order to avoid diminishing returns due to over usage and high costs; especially given the capacity is highly concentrated on thermal energy sources. This load factor can be relieved by increasing renewable energy.

**Utilization Rate**



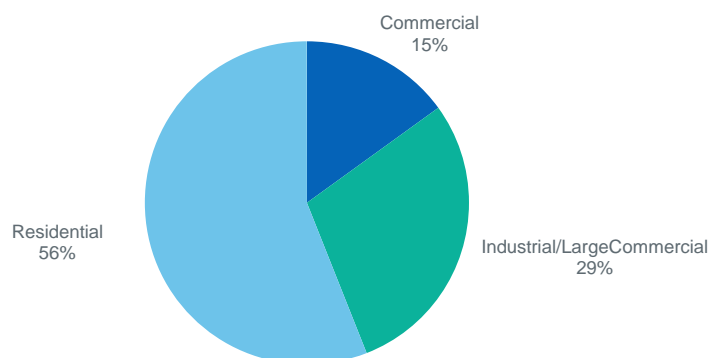
Source: CAMMESA.



### Distribution

There are 29 distribution entities within Argentina, most of which are owned by the province, but the two largest private entities are Edenor and Edesur. Edenor is a majority owned by Pampa Energia and Edesur by Enel Americas. Residential users comprised of nearly 60% of total demand in 2018 and distribution companies demanded about 80% of total power generated.

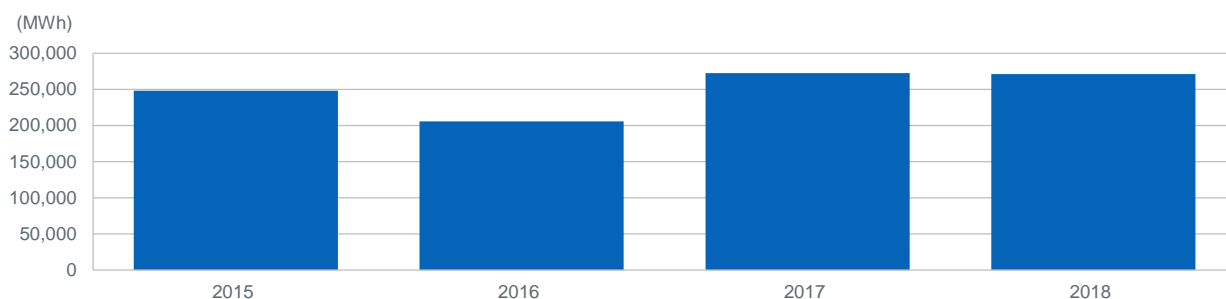
### Argentine Electricity Demand



Source: CAMMESA.

Electricity demand increased by about 9% between 2015 and 2018, due to the low cost supported by subsidies by the government and the elimination of the inflation adjustments provision in concession and the devaluation of the peso during this time period. In 2018, demand decreased by 1% due to the elimination of subsidies and new regulatory framework, which allows distribution entities to increase tariffs by inflation, electricity costs increased to end users, and had a material impact on demand. Fitch expects daily average demand to move in line with real GDP assuming no changes in tariffs.

### Annual Demand

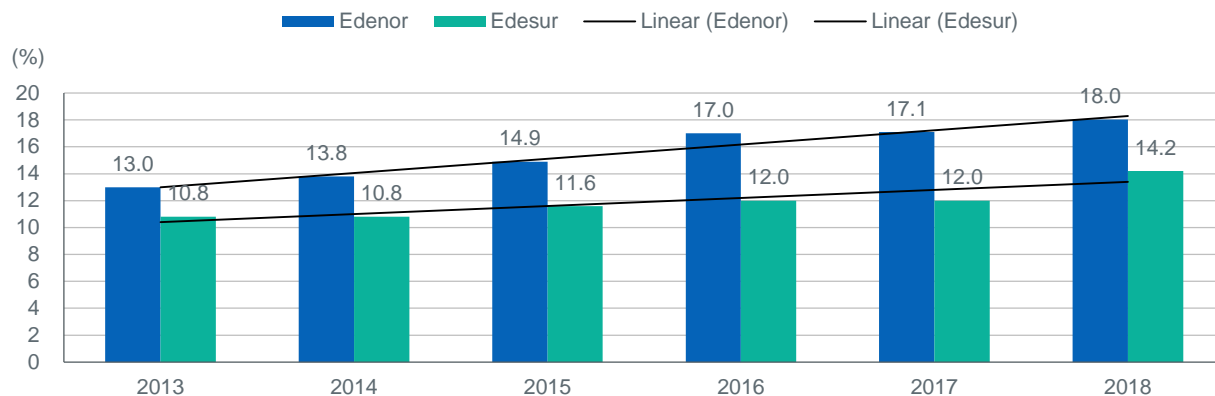


Source: Fitch Ratings, company filings.

### Energy Losses

Distribution companies in Argentina realize high energy losses and concessions awarded to private entities, Edenor and Edesur, do not allow them to pass on to customers the cost of additional energy purchased to cover any energy losses that exceed the loss factor contemplated by our concession, which is on average 10%. Distribution companies prior to the crisis of 2002, were able to reduce high energy losses and were reimbursed under their concessions. Fitch expects energy losses to continue to be relatively high through 2020 as the Argentine economy recovers.

### Energy Losses



Source: Fitch Ratings.

### Transmission

Recently, the condition of the Argentine electricity market provided little incentive to generators and distributors to further invest in increasing their generation and distribution capacity, respectively, which would require material long-term financial commitments. Although there were several investments in generation during 2017, which would increase the installed capacity power in the coming years, the highest density of investments was concentrated in the GBA area. It is still necessary to make several investments on the transmission and distribution system to guarantee the delivery of this electricity to the customer and reduce the frequency of interruptions.

Argentine Transmission System



Source: Argentine Ministry of Energy.

Corporates

Ratings			
Company Name	Long-Term Foreign Currency IDR	Long-Term Local Currency IDR	Outlook
AES Argentina Generacion S.A.	B	B	Negative
Albanesi S.A.	B-	B-	Rating Watch Negative
Capex S.A.	B	B	Negative
Central Puerto S.A.	NR	NR	NR
Genneia S.A.	B	B	Negative
MSU Energy S.A.	B-	B-	Stable
Pampa Energia S.A.	B	B	Negative

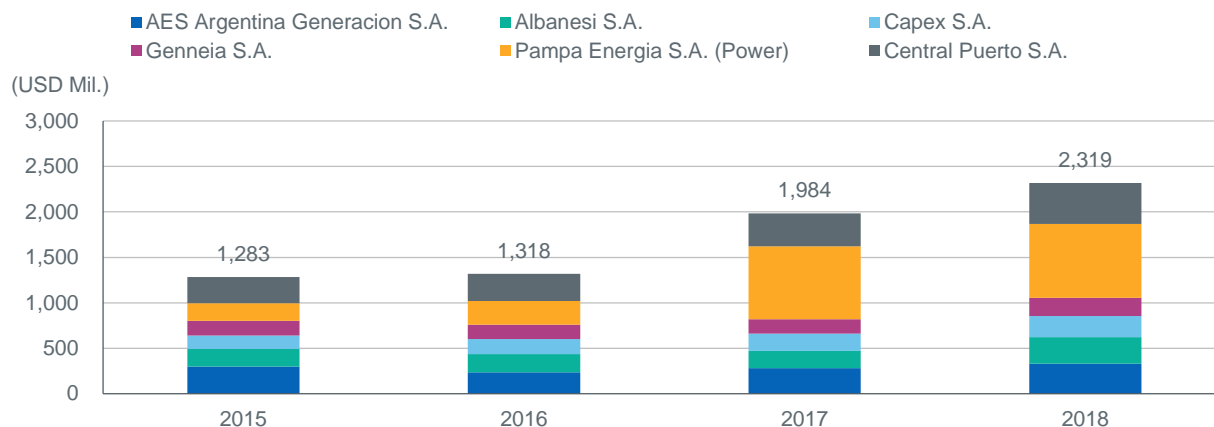
Source: Fitch Ratings.

Financial Performance

Fitch’s electricity portfolio consists mostly of power generations companies, with the exception of Pampa Energia, an integrated energy company. For comparison, the following references to Pampa below consider only Pampa’s power generation business.

Fitch observed that gross revenues in U.S. dollars increased by 8% in 2018 compared with 2017, excluding MSU Energy, which has yet to realize a full year of operations for all its facilities. The revenue increase is predominately explained by an increase of capacity in line with the 6% increase of total installed capacity of the country in 2018. Compared with 2017, gross revenues in U.S. dollars increased by 87% due to an increase in remuneration schemes associated to Energia Base payments, which comprises of approximately 60% of total payments.

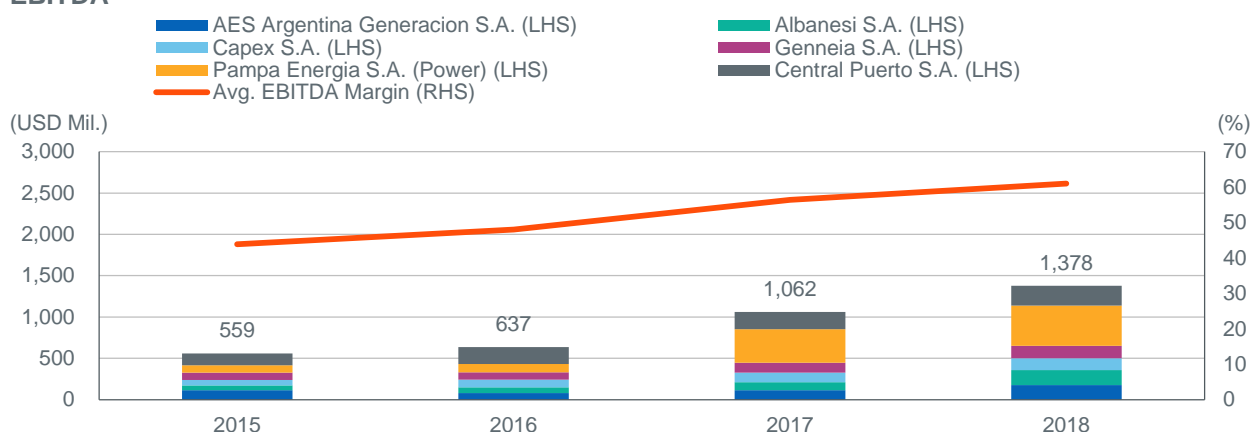
Gross Revenues



Source: Fitch Ratings, company filings.

Within Fitch’s rated portfolio, EBITDA margins remain strong averaging 61% in 2018, a 9% increase compared with 2017 and a 39% improvement compared with 2015 EBITDA margins. Fitch expects EBITDA margins will improve in 2019 due to peso depreciation, which on average is 70% of operating costs for Fitch’s rated portfolio while 100% of revenues are U.S. dollar denominated.

**EBITDA**



Source: Fitch Ratings, company filings.

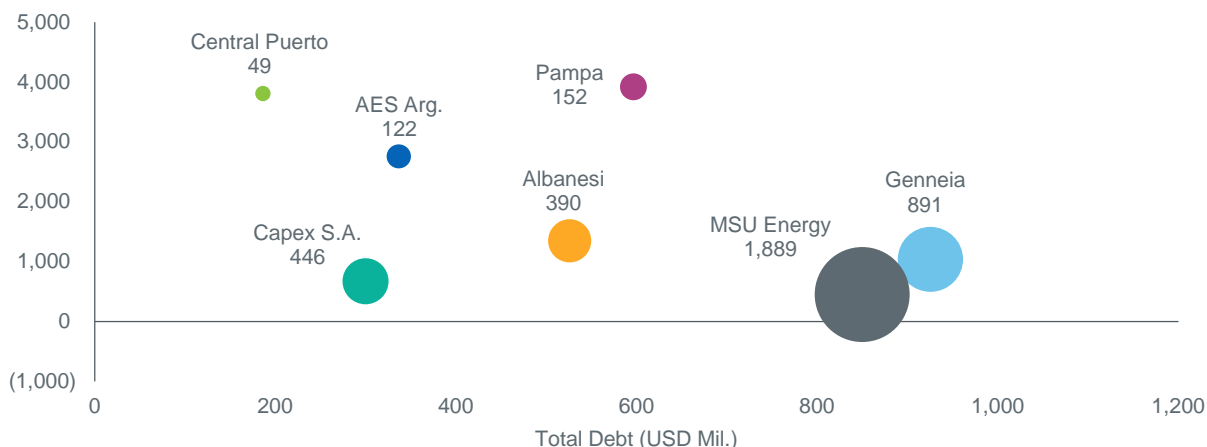
Fitch believes a relevant metric to compare GenCos in Argentina is looking at their EBITDA/MW of installed capacity ratio, given they each operate under different remuneration schemes. Fitch’s estimates illustrate there is a significant variance within its rated portfolio, best demonstrated by companies such as MSU Energy, Genneia and Albanesi, who were awarded purchase power agreements (PPAs) under Resolution 21, 286 and RenovAR. Furthermore, Albanesi and MSU Energy were awarded PPAs under Resolution 21. Similarly, Genneia has a high EBITDA/MW ratio due to its expansion in renewables under the RenovAR program, which Fitch estimates may increase to USD186,000/MW in 2021 once it completes its expansion pipeline. Moreover, thermal-based GenCos benefit from not incurring fuel costs, as CAMMESA provides gas and diesel fuel to the GenCos.

Comparatively, when plotting total debt/installed capacity, MSU Energy, Genneia and Albanesi have the highest debt/installed capacity due to them incurring debt to finance expansion plans, which are estimated to go online by first-half 2020. MSU Energy is expected to add an additional 300MW of installed capacity by June 2020, decreasing its total debt/MW ratio to USD1.1 million/MW from USD1.9 million/MW, remaining the highest in Argentina. Genneia will improve its ratio to USD640,000/MW, and Albanesi is expected to increase to approximately USD450,000/MW in 2020 considering the successful issuance of USD300 million of debt in 2019. Argentina’s three largest power GenCos by installed capacity (Pampa Energia, Central Puerto and AES Argentina) have the lowest debt/MW ratios, due to their conservative expansion plans and capital structures.

### Counterparty Risk

#### Total Debt (USD000)/MW

(Installed Capacity, MW)



Source: Fitch Ratings.

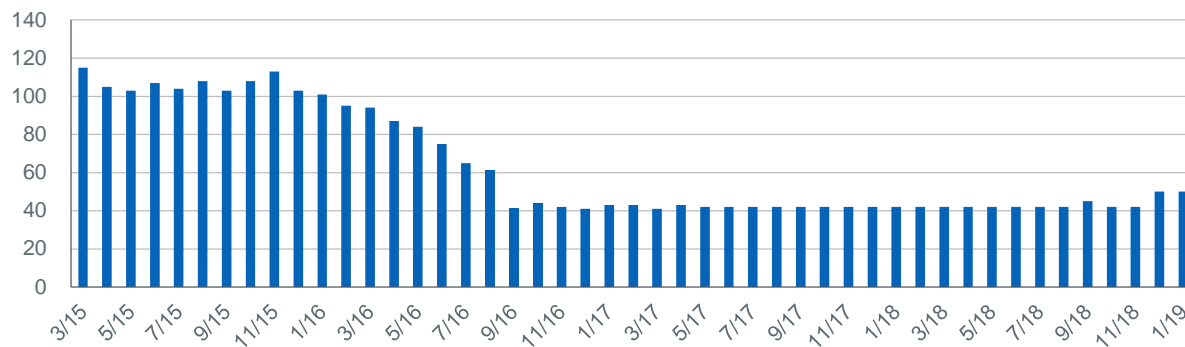
### Payment Delays

Ratings of Argentine utility companies are limited by the country ceiling of Argentina (B) as well as by the sector's exposure to receipt of subsidies from the government. Fitch believes Argentine GenCos face a heightened counterparty risk, as they depend on payments from CAMMESA, which acts as an agent on behalf of an association representing agents of electricity generation, transmission, distribution, as well as large consumers or wholesale market participants (Mercado Mayorista Eléctrico; MEM).

Although CAMMESA's payment track record has been consistent and on time, since 2015, historically, payments have been volatile given that the agency depends partially on the Argentine government for funds to make payments. The notable exceptions were a delay in September and December 2018 and January 2019 in the FX portion of CAMMESA's payment to market participants due to Argentina's currency crisis. Per the chart below, CAMMESA's payment days reach over 100 in 2015, but are normalized to 42 on average, increasing slightly to 50 in December 2018 and in January 2019 due to the peso devaluation during that period. To Fitch's knowledge, CAMMESA has not defaulted on any payments and has been paying interest on its delayed payments.

### CAMMESA Payments

(Days Outstanding)

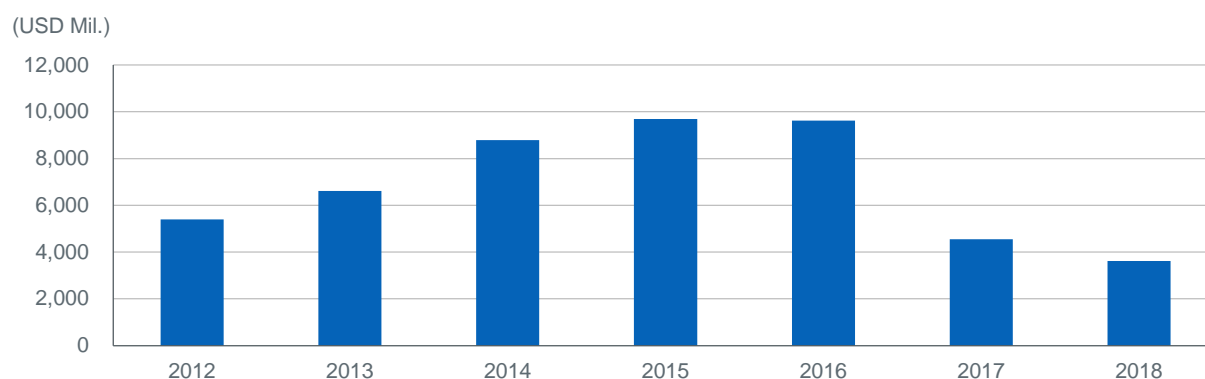


Source: CAMMESA.

### Government Subsidies

Fitch estimates that government transfers to CAMMESA decreased 21% in 2018 compared with 2017 and 63% since 2015 when President Marci was inaugurated. Transfers to CAMMESA gradually decreased as tariffs increased in 2017 and 2018. Transmission and distribution tariffs were revised to narrow the deficit between cash inflows from end users to CAMMESA and outflows to generators from CAMMESA, but the tariff increases are not enough to keep the system balanced. Concurrent with the nominal decrease in transfers to CAMMESA, Fitch estimates the government was subsidizing less as far as a percentage of the total cost of the system. Per Fitch estimates, the USD3.6 billion of transfers in 2018 represents a subsidy of 35% of system cost, possibly USD10.2 billion in 2018, up 7% from USD9.5 million in 2017, when USD4.5 billion represented a 48% subsidy. In Fitch's view, this was a positive development compared with 2015 and 2016, when the system was entirely subsidized.

### Government Transfers to CAMMESA



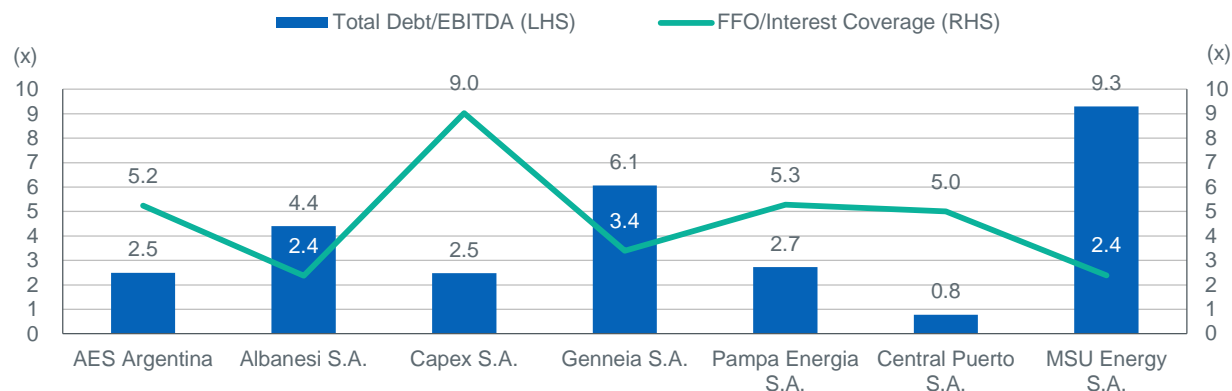
Source: Fitch Ratings, Argentine government.

Fitch expects CAMMESA to rely on the government for more support as inflation and peso devaluation risks remain high, and cash payments to CAMMESA will not cover its PPAs. Since 2019 is an election year, Fitch believes the government will support CAMMESA and will not increase tariffs, given the current economic challenges of high inflation and high unemployment. After the election, there may be a short-term amendment to Energia's bases, which, again per Fitch's estimates, represents 60% of the cost of power generation or USD6.1 billion. This is a difficult option, as Argentina needs improvements to its installed capacity and an adjustment in Energia Base will further discourage efficiency investment, and further extend Argentina's current challenges.

### Liquidity

On average, Argentina power companies are under-leveraged for their rating levels, as they are all restrained by the country ceiling of Argentina (B/Negative). Pampa, Central Puerto, AES Argentina and Capex SA are strongly positioned to weather any delays in payments, given their strong cash balances, while, Albanesi, Genneia and MSU Energy have tighter EBITDA to interest expense ratios and robust committed capex programs.

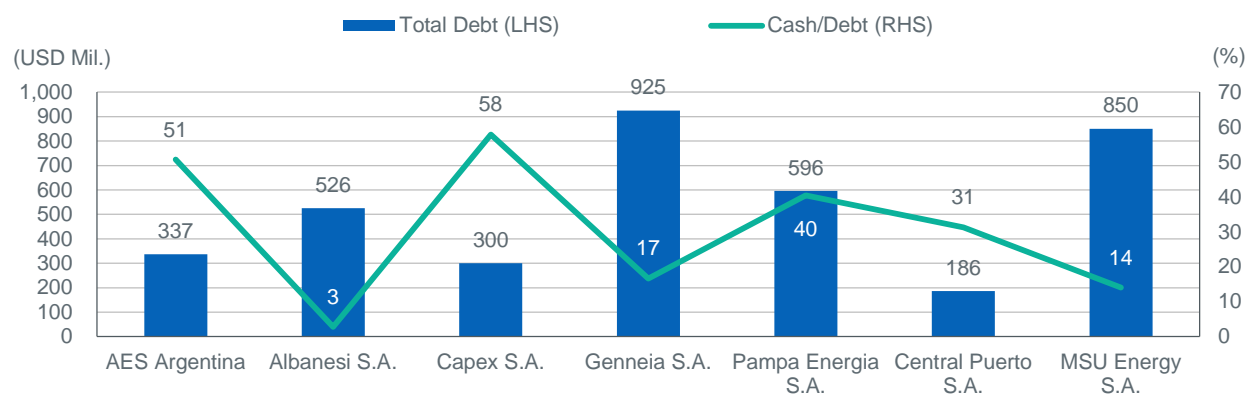
#### Credit Metrics — 2018



Source: Fitch Ratings, company filings.

Liquidity is a concern for the smaller, capex-committed companies such as Albanesi, Genneia and MSU Energy, compared with the rest of the portfolio who, on average, have a cash/total debt ratio of 42% coupled with a strong maturity profile. The smaller entities have weaker liquidity profiles, with cash covering less of a portion of debt, modestly covering expected interest expenses and less tolerant liquidity profiles to weather a delay in payments from CAMMESA, making them more risky than their counterparts, reflected in Albanesi and MSU Energy's ratings of 'B-'. Fitch estimates Genneia's liquidity will improve in 2019 and 2020 as a majority of expansion projects have been completed.

#### Cash Profile — 2018



Source: Fitch Ratings, company filings.



## Appendix

Project Pipeline						
Project Name	Sub-Sector	Value (USD Mil.)	Size (MW)	Operator	Status	Timeframe End
El Bracho Closed Cycle Plant, Tucuman	Thermal	320	261	YPF SA	Completed	2016
Rawson Wind Farm Expansion, Chubut (III)	Wind	33	25	Genneia	Completed	2017
Barker Thermal Power Plant, Buenos Aires	Thermal	225	150	MSU Energy	Completed	2017
General Rojo Thermal Power Plant, Buenos Aires	Thermal	225	150	MSU Energy	Completed	2017
Piedra Buena Power Plant Expansion, Santa Cruz	Thermal	140	100	Pampa Energia	Completed	2017
Loma La Lata Thermal Plant Expansion, Neuquen	Thermal	338	375	Pampa Energia	Completed	2017
CTLL	Thermal	90	105	Pampa Energia	Completed	2017
Pilar	Thermal	103	100	Pampa Energia	Completed	2017
Ing. White	Thermal	92	100	Pampa Energia	Completed	2017
Loma Campana	Thermal	78	105	YPF SA	Completed	2017
Timbues Thermal Power Plant, Santa Fe	Thermal	181	170	Albanesi	Completed	2018
Albanesi Power Plant, Rio Cuarto, Cordoba	Thermal		1,134	Albanesi	At planning stage	2018
La Castellana Wind Farm, Buenos Aires	Wind	148	99	Central Puerto	Completed	2018
Achiras	Wind	74	48	Central Puerto	Completed	2018
Chubut Norte I	Wind	50	28	Genneia	Completed	2018
Puerto Madryn I Wind Farm, Chubut	Wind	110	70	Genneia	Completed	2018
Ullum I, II & III Solar Plant, San Juan, Cuyo	Solar	79	82	Genneia	Completed	2018
Villalonga I Wind Farm, Bahia Blanca, Buenos Aires	Wind	82	55	Genneia	Completed	2018
Villa Maria Thermal Power Plant, Cordoba	Thermal	225	150	MSU Energy	Completed	2018
Corti Wind Farm, Bahia Blanca, Buenos Aires	Wind	175	100	Pampa Energia	Completed	2018
Mario Cebreiro	Wind	139	100	Pampa Energia	Completed	2018
YPF Thermolectric Power Plant, Tucuman	Thermal	410	410	YPF SA	Completed	2018
Mendoza Thermal Power Plant Expansion, Lujan de Cuyo, Mendoza	Con-generation	91	93	Central Puerto	Under construction	2019
Neochea	Wind	31	38	Genneia	Under construction	2019
Pomona I Wind Farm, Rio Negro	Wind	135	101	Genneia	Under construction	2019
Puerto Madryn II Wind Farm, Chubut	Wind	236	150	Genneia	Completed	2019
Iglesia - Guanizuli Solar Plant, San Juan	Solar		80	Jinko Solar	Completed	2019
Genelba Gas-Fired Power Station Expansion Project, Marcos Paz, Buenos Aires	Thermal	350	196	Pampa Energia	Under construction	2019
Coronel Rosales Wind Farm, Buenos Aires (Corti) II	Wind	51	50	Pampa Energia	Under construction	2019
Coronel Rosales Wind Farm, Buenos Aires (Corti) IV	Wind	61	60	Pampa Energia	Under construction	2019
Coronel Rosales Wind Farm, Buenos Aires (Corti) III	Wind	51	50	Pampa Energia	Under construction	2019

*Continued on next page.*  
Source: Fitch Ratings, Argentine Secretary of Energy.

<b>Project Pipeline (Continued)</b>						
<b>Project Name</b>	<b>Sub-Sector</b>	<b>Value (USD Mil.)</b>	<b>Size (MW)</b>	<b>Operator</b>	<b>Status</b>	<b>Timeframe End</b>
Del Bicentenario I (PEBSA I) Wind Farm, Santa Cruz	Wind	125	100	Petroquímica Comodoro Rivadavia S.A.	Under construction	2019
Del Bicentenario II (PEBSA II) Wind Farm, Santa Cruz	Wind	31	25	Petroquímica Comodoro Rivadavia S.A.	Under construction	2019
Arroyo Seco Cogeneration Plant, Santa Fe	Con-generation		100	Albanesi	At planning stage	2020
Ezeiza Closed Cycle Plant, Buenos Aires	Thermal	160	150	Albanesi	At planning stage	2020
Rio Cuarto Closed Cycle Plant, Cordoba	Thermal		113	Albanesi	At planning stage	2020
San Pedro Closed Cycle Plant, Buenos Aires	Thermal		105	Araucaria Energy - Stoneway	At planning stage	2020
San Lorenzo Cogeneration Plant, Santa Fe	Con-generation	384	330	Central Puerto	Under construction	2020
La Genoveva I Wind Farm, Bahia Blanca, Buenos Aires	Wind	105	87	Central Puerto	Under construction	2020
La Florida - Biomass	Biomass	51	19	Genneia	Under construction	2020
Chubut Norte III Wind Farm, Chubut	Wind	59	58	Genneia	Under construction	2020
Chubut Norte IV Wind Farm, Chubut	Wind	84	83	Genneia	Under construction	2020
Villa Maria Closed Cycle Plant, Cordoba	Thermal	163	100	MSU Energy	Under construction	2020
Barker Closed Cycle Plant, Buenos Aires	Thermal	163	100	MSU Energy	Under construction	2020
General Rojo Closed Cycle Plant, Buenos Aires	Thermal	163	100	MSU Energy	Under construction	2020
San Jorge Wind Farm, Tornquist, Buenos Aires	Wind	125	100	Petroquímica Comodoro Rivadavia S.A.	Under construction	2020
El Mataco Wind Farm, Tornquist, Buenos Aires	Wind	125	100	Petroquímica Comodoro Rivadavia S.A.	Under construction	2020
Canadon Leon Wind Farm, Santa Cruz	Wind	180	100	YPF SA	Under construction	2020

Source: Fitch Ratings, Argentine Secretary of Energy.

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[Fitch Affirms Argentina at 'B'; Outlook Negative \(May 2019\)](#)

[Sector Navigators \(March 2018\)](#)

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