

Document of
The World Bank

Report No: 110654-AR

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED IBRD GUARANTEE
IN THE AMOUNT OF US\$480 MILLION
IN SUPPORT OF
THE FUND FOR THE DEVELOPMENT OF RENEWABLE ENERGY (FODER)
IN THE ARGENTINE REPUBLIC
February 2, 2017

Energy and Extractives Global Practice
Latin America and Caribbean

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CURRENCY EQUIVALENTS

(Exchange Rate Effective as of January 3, 2017)

AR\$15.94 = US\$1

FISCAL YEAR

July 1 - June 30

ABBREVIATIONS AND ACRONYMS

AR\$	Argentinian pesos
BCRA	Central Bank of Argentina (<i>Banco Central de la República Argentina</i>)
BICE	Investment and Foreign Trade Bank (<i>Banco de Inversión y Comercio Exterior</i>)
BP	Bank Procedures
CAMMESA	Wholesale energy market administrator (<i>Compañía Administradora del Mercado Mayorista Eléctrico Sociedad Anónima</i>)
CCAP	World Bank Group Climate Change Action Plan
CPS	Country Partnership Strategy
CRCOSP	Commission for the Renegotiation of Public Contracts (<i>Comisión de Renegociación de Contratos de Obras y Servicios Públicos</i>)
DFI	Development Finance Institution
ECA	Export Credit Agency
EDENOR	Distribution and Marketing Company of the North (<i>Empresa Distribuidora y Comercializadora Norte S.A.</i>)
EDESUR	South Distribution Company (<i>Empresa Distribuidora Sur S.A.</i>)
EIRR	Economic Internal Rate of Return
ENARSA	Argentine Energy Company (<i>Energía Argentina S.A.</i>)
ENRE	National Regulatory Agency (<i>Ente Nacional Regulador de la Electricidad</i>)
ESMF	Environmental and Social Management Framework
E&S	Environmental and Social
FI	Financial Intermediary
FM	Financial Management
FMA	Financial Management Assessment
FODER	Fund for the Development of Renewable Energy (<i>Fondo para el Desarrollo de Energías Renovables</i>)
FY	Fiscal Year
GDP	Gross Domestic Product
GENREN	Program for the Generation of Electricity through Renewable Sources (<i>Programa Generación Renovable</i>)
GHG	Greenhouse Gas Emissions
GoA	Government of Argentina
GRS	Grievance Redress Service
GW	Gigawatt
GWh	Gigawatt-hour
IBRD	International Bank for Reconstruction and Development
ICSID	International Centre for Settlement of Investment Disputes
ID	Project Identification Number
IFC	International Finance Corporation
IMF	International Monetary Fund

IP	Indigenous Peoples
IPF	Investment Project Financing
IPP	Independent Power Producer
IPPF	Indigenous People's Planning Framework
kV	Kilovolt
kWh	Kilowatt-hour
M&E	Monitoring & Evaluation
m ²	Square Meters
MMBTU	Million British Thermal Unit
MEM	Ministry of Energy and Mining (<i>Ministerio de Energía y Minería</i>)
MoF	Ministry of Finance (<i>Ministerio de Finanzas</i>)
MIGA	Multilateral Investment Guarantee Agency
MtCO ₂ eq	Million tons of Carbon Dioxide equivalent
MW	Megawatt
MWh	Megawatt-hour
NDC	Nationally Determined Contribution
NGO	Non-governmental Organization
OM	Operations Manual
OP	Operational Policy
OPCFM	Operations Policy and Country Services Financial Management
PAD	Project Appraisal Document
PDO	Project Development Objective
PERMER II	Renewable Energy for Rural Areas Project
PPA	Power Purchasing Agreement
PS	World Bank Performance Standards
PV	Solar Photovoltaic Energy
RfP	Request for Proposals
RPF	Resettlement Policy Framework
SADI	<i>Sistema Argentino de Interconexión</i> (national interconnected system)
SORT	Systematic Operations Risk-rating Tool
TAA	Trust Adhesion Agreement
TCF	Trillion Cubic Feet
TOE	Ton of Oil Equivalent
TWh	Terawatt hours
TRANSENER	Transport Company in High Voltage Electric Power (<i>Compañía de Transporte de Energía Eléctrica en Alta Tensión Transener S.A.</i>)
UNFCCC	United Nations Framework Convention on Climate Change
US\$	United States Dollars
VAD	Aggregate Value of Distribution
WB	World Bank
WBG	World Bank Group

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ARGENTINA
FODER Renewable Energy Fund Guarantee

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PAD DATA SHEET

Argentina

FODER Renewable Energy Fund Guarantee (P159901)

PROJECT APPRAISAL DOCUMENT

LATIN AMERICA AND CARIBBEAN

ENERGY AND EXTRACTIVES GLOBAL PRACTICE

Report No.: 110654-AR

Basic Information			
Project ID P159901	Environmental Assessment Category FI	Team Leaders Lucia Spinelli Arnaud Braud	
Lending Instrument	Fragile and/or Capacity Constraints []		
Project Investment Financing	Financial Intermediaries [X]		
	Series of Projects []		
Project Implementation Start Date 01-Mar-2017	Project Implementation End Date 1-Aug-2020		
Expected Effectiveness Date 30-Apr-2017	Expected Closing Date 1-Aug-2020 ¹		
Joint IFC No			
Practice Managers	Senior Global Practice Director	Country Director	Regional Vice President
Antonio Barbalho Pankaj Gupta	Riccardo Puliti	Jesko S. Hentschel	Jorge Familiar
Borrower: Argentine Republic			
Responsible Agency: Ministry of Energy and Mining (<i>Ministerio de Energía y Minería</i>) and Banco de Inversión y Comercio Exterior (BICE)			
Beneficiary: BICE, in its capacity as trustee of FODER			
Contact:	Sebastián Kind	Title:	Undersecretary for Renewable Energies (<i>Subsecretario de Energías Renovables</i>)
Telephone No.:	+54-11-4349-8033	Email:	skind@minem.gob.ar

¹ The project closing date is estimated based on the expected date that all sub-projects will reach commercial operation. Then the project will be closed and under corporate monitoring until the guarantee period is over.

Project Financing Data (in US\$, Millions)					
<input type="checkbox"/>	Loan	<input type="checkbox"/>	IDA Grant	<input checked="" type="checkbox"/>	Guarantee
<input type="checkbox"/>	Credit	<input type="checkbox"/>	Grant	<input type="checkbox"/>	Other
Total Project Cost:	1.374	Total Bank Guarantee:	480		
Financing Gap:	0.00				
Financing Source (estimate)					Amount
<i>RenovAr Program – Round 1 and 1.5</i>					
Size					2,424 MW
Estimated Project Cost ²					US\$3,224 million
Estimated Private Equity @ 35 percent					US\$1,128 million
Estimated Debt @ 65 percent					US\$2,096 million
of which commercial borrowing					US\$1,397 million
of which Development Finance Institutions & Export Credit Agencies					US\$699 million
Security package:					
(i) Estimated FODER On-going Payments 12-month liquidity account					US\$400 million
(ii) Estimated FODER Termination coverage					US\$1,700 million
<i>RenovAr Round 1 and 1.5 directly benefiting from the IBRD guarantee</i>					
Size					1,033 MW
Estimated Project Cost					US\$1,374 million
Estimated Private Equity @ 35 percent					US\$481 million
Estimated Debt @ 65 percent					US\$893 million
of which commercial borrowing					US\$595 million
of which Development Finance Institutions & Export Credit Agencies					US\$298 million
Security package:					
(i) Estimated FODER On-going Payments 12-month liquidity account					US\$170 million
(ii) Estimated FODER Termination coverage					US\$724 million
of which backed by IBRD guarantee					US\$480 million
Institutional Data					
Practice Area (Lead)					
Energy & Extractives					
Cross Cutting Areas					
<input checked="" type="checkbox"/>	Climate Change				
<input type="checkbox"/>	Fragile, Conflict & Violence				
<input type="checkbox"/>	Gender				
<input type="checkbox"/>	Jobs				

² Estimated based on an average investment of US\$1.33 million per MW

[X] Public Private Partnership		
Sectors / Climate Change		
Sector (Maximum 5 and total percent must equal 100)		
Major Sector	Sector	Percent
Energy and mining	Other Renewable Energy	100
Total		100
I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this Project.		
Themes		
Theme (Maximum 5 and total percent must equal 100)		
Major theme	Theme	Percent
Financial and private sector development	Infrastructure services for private sector development	100
Total		100
Private Capital Mobilized		
US\$2,525 million ³		
Proposed Development Objective(s)		
The project development objective is to increase electricity generation capacity from renewable energy sources through private investment in the energy sector.		
Systematic Operations Risk-Rating Tool (SORT)		
Risk Category	Rating	
1. Political and Governance	Substantial	
2. Macroeconomic	Substantial	
3. Sector Strategies and Policies	Substantial	
4. Technical Design of Project or Program	Moderate	
5. Institutional Capacity for Implementation and Sustainability	Moderate	
6. Fiduciary	Moderate	
7. Environment and Social	Moderate	
8. Stakeholders	Substantial	
OVERALL	Substantial	

³ Summing the estimated private equity and the commercial borrowing under RenovAr Round 1 and 1.5

Compliance			
Policy			
Does the Project depart from the Country Partnership Strategy in content or in other significant respects?	Yes	[]	No [X]
Does the Project require any waivers of Bank policies?	Yes	[]	No [X]
Have these been approved by Bank management?	Yes	[]	No []
Is approval for any policy waiver sought from the Board?	Yes	[]	No [X]
Does the Project meet the Regional criteria for readiness for implementation?	Yes	[X]	No []
Safeguard Policies Triggered by the Project	Yes	No	
Environmental Assessment OP/BP 4.01	X		
Natural Habitats OP/BP 4.04	X		
Forests OP/BP 4.36	X		
Pest Management OP 4.09	X		
Physical Cultural Resources OP/BP 4.11	X		
Indigenous Peoples OP/BP 4.10	X		
Involuntary Resettlement OP/BP 4.12	X		
Safety of Dams OP/BP 4.37	X		
Projects on International Waterways OP/BP 7.50		X	
Projects in Disputed Areas OP/BP 7.60		X	

Legal Covenants			
Name	Recurrent	Due Date	Frequency
IBRD Guarantee			
Description of Covenant			
Usual and customary conditions for guarantee operations of this nature (as reflected in the Guarantee Term Sheet included in Annex 6) will be included.			
Conditions			
Source Of Fund	Name	Type	
IBRD Guarantee			
Description of Condition			
Usual and customary conditions for guarantee operations of this nature (as reflected in the Guarantee Term Sheet included in Annex 6) will be included.			

Gender Tag Does the activity plan to undertake any of the following? Please select Yes or No for each:

Gender analysis and/or consultation on gender related issues. No

Specific actions to address the distinct needs of women and girls, or men and boys, or positive impacts on gender gaps. No

Mechanisms to facilitate monitoring and/or evaluation of gender impacts. No

Team Composition

Bank Staff

Name	Role	Title	Unit
Lucia Spinelli	Task Team Leader (ADM Responsible)	Senior Energy Specialist	GEE04
Arnaud Braud	Co-Task Team Leader (Structuring and Guarantee)	Senior Infrastructure Finance Specialist	GEEFS
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Elisabeth Maier	Team Member	Operations Officer	GEE04

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
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Argentina					Nationwide
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I. STRATEGIC CONTEXT

A. Country Context

1. **After taking office in December 2015, the new Argentine Government moved with speed to implement macroeconomic and structural reforms.** These include *inter alia* (a) the elimination of export taxes on major crops, beef, and most industrial manufacturing products and the reduction by 5 percent of export taxes on soy; (b) the unification of the exchange rate, effectively ending most foreign exchange restrictions; (c) moving from a system of discretionary- to automatically-provided import licenses in line with World Trade Organization procedures; (d) resolution of the dispute with holdout creditors; and (e) measures to enhance public transparency and accountability. In addition, the National Institute for Statistics launched a new inflation index and improved the overall quality and reliability of statistics. Electricity tariffs and transport fees were increased to improve financial and fiscal, while protecting low-income users with a social tariff. Broader efforts to reduce energy subsidies (which account for a large portion of fiscal deficit) are under way, paired with measures to protect the poor.

2. **Economic activity is estimated to have contracted in 2016, but growth is expected in 2017.** Economic activity is estimated to have contracted by 2.3 percent⁴ during 2016, taking a toll on labor markets, where 92,000⁵ formal private sector jobs were lost since October 2015 (1.5 percent of total employment). The economic contraction has been decelerating during the second semester of 2016 and economic growth is expected in 2017 (+2.7 percent⁶) on the assumption that the positive impact of recent policy changes kicks in and the global economy recovers. Demand from key trading partners is expected to strengthen. During the last two months of 2016, exports to Brazil and China grew by 30 percent and 18 percent, respectively, compared to the same period in 2015.⁷ The median estimate for inflation for 2016 is 40 percent,⁸ mostly due to currency depreciation and the reduction of energy and transport subsidies. Inflation has decelerated since August 2016. The central government primary deficit in 2016 was in line with the target established (-4.8 percent). Fiscal consolidation in 2017 will be more gradual than originally planned in part due to increased social spending, including the adjustment of pension transfers, and higher public investment.

3. **The Argentine Government has started to address the key macroeconomic imbalances with the objective of creating an environment conducive to economic growth and employment creation.** Argentina offers many opportunities in a weak global environment, and there is a strong interest from foreign investors and firms. Going forward, Argentina aims to continue building a growth enabling policy framework to enhance credibility and support broad based growth and quality employment. In particular, the following policies will be important to

⁴ Source: World Bank Group. 2017. *Global Economic Prospects, January 2017 Weak Investment in Uncertain Times*. Washington, DC: World Bank. doi:10.1596/978-1-4648-1016-9.

⁵ Source: Ministerio de Trabajo, Empleo y Seguridad Social

⁶ Source: World Bank Group. 2017. *Global Economic Prospects, January 2017 Weak Investment in Uncertain Times*. Washington, DC: World Bank. doi:10.1596/978-1-4648-1016-9.

⁷ Source: National Institute of Statistics and Census of Argentina (Instituto Nacional de Estadística y Censos - INDEC)

⁸ Source: Banco Central de la República Argentina. 2016. *Resultados del Relevamiento de Expectativas de Mercado (REM)*, December 2016.

permanently reduce inflation and put Argentina on a sustainable growth path: (a) increase public spending efficiency as well as its efficacy and reduce the fiscal deficit in line with government targets; (b) continue fostering the credibility of the Central Bank so that monetary policy can further anchor inflation expectations; (c) strengthen competitiveness and productivity through an improved business environment and investments in infrastructure and increasing competition in markets and improving the regulatory framework in sectors; (d) continue strengthening the credibility of official statistics; and (e) continue improving the provision of public goods (including transportation, health, and education) and reducing regional disparities.

4. **This proposed renewable energy guarantee is a core and strategic element of the integrated World Bank Group's support for Argentina at a pivotal time.** First, it aims to reestablish private investor confidence into Argentina. Second, the proposed guarantee has a multiplier effect as it contributes to mobilize US\$3.2bn overall investment into the Argentine renewable energy sector. Third, it supports Argentina in a strategic shift in its energy matrix towards renewable energy, carrying a significant amount of climate co-benefits and being a major contributor for the country to achieve its Nationally Determined Contribution targets under the United National Framework Convention on Climate Change (UNFCCC). Lastly, it is built on a very close coordination between IBRD (provisioning the guarantee and providing assistance in designing the standardized legal documents) and IFC (actively evaluating and financing several projects). The structure of the guarantee via a Financial Intermediary is an innovative solution that allows multiple sub-projects to be covered, leveraging more private capital.

B. Sectoral and Institutional Context

5. **Argentina is one of the largest and most developed power markets in Latin America.** With total electricity demand of approximately 126 Terawatt hours (TWh) per year, Argentina is the third largest power market in the region after Brazil and Mexico. Roughly 41 percent of demand is driven by the 40 million residential customers (98 percent of Argentinians have access to electricity), 30 percent by industrial users and 28 percent by commercial consumers. Fairly well-developed policies, regulations, and institutions govern the sector⁹, which has been opened to private investment and competition since 1992. Private companies are the main operators in all subsectors. However, the progress toward adopting clean sources of energy is yet to take place. Installed capacity of 33GW is 60 percent thermal,¹⁰ 34 percent hydro, 5 percent nuclear, and 1 percent wind. Solar represents only 8 MW (0.02 percent).

6. **Argentina has not yet taken full advantage of its abundant clean energy resources** to displace fossil fuel generation and help meet increasing demand. Although hydroelectricity accounts for over one-third of the energy mix, Argentina only uses 20 percent of its hydropower generation potential, estimated at 45GW. In the case of wind, at least 6 GW could theoretically be developed in the medium-term.¹¹ Solar resources are abundant, with the finest resources in the

⁹ Argentina followed Chile (in 1982) as one of the first countries in Latin America to initiate power sector reforms in 1992. Subsequently, a variety of power sector reforms were carried out in Peru (1993), Colombia (1994), and Brazil (1995).

¹⁰ Thermal technologies' breakdown is 49 percent combined cycle, 24 percent steam turbines, 22 percent gas turbines, and 6 percent diesel.

¹¹ Wind resources are world class, especially in the Patagonia region where capacity factors exceed 45 percent.

northwestern region.¹² In addition, the country is already one of the fourth largest producers of biofuels in the world.¹³ However, as of 2012, less than 10 percent of total final energy consumed came from non-conventional renewable sources, lower than most countries in the region.

7. Previous attempts of GoA to increase renewable energy generation produced limited results. These attempts ranged from a feed-in-tariff scheme introduced in 1998 to a public tender program in 2009.¹⁴ Despite all these efforts, only 1.8 percent of generation is currently from renewable sources. Most renewable projects found difficulties raising financing due to the limited funding capacity of local sources and the lack of access to external financing. International financiers were reluctant to provide long term financing due to unfavorable macroeconomic conditions and the energy sector fundamentals in Argentina.

8. The Argentina power sector is structured vertically into generation, transmission, and distribution businesses. Generation companies, dominated by private operators, operate through licenses in a competitive environment and are subjected to the scheduling and dispatch rules set out in the respective regulations and managed by *Compañía Administradora del Mercado Mayorista Eléctrico Sociedad Anónima* (CAMMESA). As the wholesale energy market administrator, CAMMESA coordinates dispatch operations, determines wholesale prices, administers the economic transactions in the national interconnected system (*Sistema Argentino de Interconexión*, SADI), and acts as Governmental off-taker in certain power purchase agreements (PPAs).¹⁵ Transmission and distribution businesses, also dominated by private providers, operate under public concessions.

9. The wholesale power market as well as electricity concessions have witnessed radical adjustments and have become dependent on government transfers. Set up in 1992, the wholesale power market was expected to function as a competitive market, fully indexed in the US dollar. However, macroeconomic and market conditions in the aftermath of the 2001 economic crisis made full indexation to the US dollar unsustainable. Tariffs for residential

¹² At least 11 of Argentina's 23 provinces have over 5 kWh/m² of solar irradiation on average per year.

¹³ US National Renewable Energy Laboratory (NREL) - <http://www.nrel.gov/docs/fy13osti/56792.pdf>

¹⁴ Law No. 25019 of 1998 introduced 15-year feed-in-tariffs ("*primas*") and fiscal benefits to promote generation from renewable sources and created a renewable energy trust fund to secure their funding. The scheme failed to take off due to the 2001 crisis. Law No. 26190 of 2006 established a regime to promote renewable energy generation also based on 15-year feed-in-tariffs ("*primas*"), fiscal incentives, and a renewable energy trust fund to secure their funding. Law No. 26190 declared the production of electricity from renewable sources a national interest and set the goal of at least 8 percent of domestic electricity demand to be satisfied by renewable sources (wind, biomass, small-scale hydro, tidal, geothermal, and solar photovoltaic) by 2016. No project was undertaken under this scheme as the renewable energy trust fund never became operational. In 2009, the GoA launched a program (*Programa para la Generación Renovable*, GENREN) to execute public tenders for 1GW of renewable energy capacity. Under GENREN, 895 MW were awarded to projects with sizes of up to 50 MW, granting tariffs fixed in US dollars and above the prices prevailing in the wholesale market. Funding for higher renewable tariffs was to come from a charge levied on electricity distribution and wholesale companies. Only about 15 percent of the projects awarded (130 MW of wind capacity and 7 MW of solar photovoltaic (PV)) were installed with financing coming from local banks and sponsors. Later efforts through CAMMESA (in 2011) only led to the installation of 31.8 MW, which again were financed by local banks or equity providers.

¹⁵ In recent years, the mechanism applied for remunerating the electricity generation led CAMMESA to accrue debt with power generators. In some cases, debt was collected through the pledging of funds for the construction of new generation plants; approximately 1,700 MW were installed under this mechanism.

consumers were practically frozen from 2002 to 2015 despite high inflation, exchange rate variation, and investment needs.¹⁶ Investment in generation became limited and at times forced by the government (e.g. through the requirement for power generators to reinvest profits). Also, government contributions and ad hoc arrangements became key to manage the cost increases in generation and mitigate their impact on end users. By 2015, the government transfers covered 70 percent of the average cost of energy supply while users covered the remaining 30 percent. Argentina's energy subsidies were the third highest in the region. In addition to their large fiscal impact (3.9 percent of Gross Domestic Product (GDP)) (IMF, 2015), they were unevenly distributed.

10. **The current administration has started to implement measures to ensure that tariffs reflect generation, transmission and distribution costs, aimed to ensure an adequate provision of electricity services.** In January 2016, the GoA updated pass-through mechanisms, putting tariffs on the path to reflect actual costs.¹⁷ To offset the impacts of such measures on the poor, the GoA also created a new, reduced "social tariff" for roughly 2 million of the poorest citizens of Argentina¹⁸, and launched new energy efficiency incentives for residential customers aimed to induce energy saving. GoA also required an integrated rate review for transmission concessionaires by December 2017. Elimination of energy subsidies should greatly benefit the country's current accounts and trade balances, as well as incentivize energy conservation, while social tariff would protect the poorest.

11. **The new administration in Argentina is now restarting efforts to promote renewable energy by: (i) strengthening the legal framework: (ii) creating special funding mechanisms for renewable energy projects: and (iii) establish dedicated governing and administration arrangements.** The new renewable energy law enacted in 2015 overhauls the previous regulatory framework and seeks to: (a) create competitive and transparent market rules and contract mechanisms; (b) diversify the energy matrix by requiring the use of different clean energy technologies; (c) incentivize local and regional development; (d) establish mandatory pass-through of PPAs costs to consumers; and (e) create fiscal incentives for independent power producers (IPPs) and local supply chains, among others. This new law has set mandatory renewable energy targets of 8 percent of overall electricity consumption by the end of 2017, and 20 percent by 2025.¹⁹

12. Furthermore, the new law created the Fund for the Development of Renewable Energy (*Fondo para el Desarrollo de Energías Renovables* or FODER) to facilitate the financing for renewable projects, and thus mitigate liquidity and country risks and overcome a major shortcoming of previous programs. FODER is already set up to provide guarantees as well as

¹⁶ For example, in the case of the Greater Buenos Aires area (one-third of the country's population) tariffs were frozen (in Argentine peso terms) between 2002 and 2008, only minor increases were allowed for medium and large residential clients. In the Metropolitan Areas of Buenos Aires, tariffs remain unchanged for over ten years.

¹⁷ The resolutions increased tariffs starting February 1, 2016 with wholesale market prices instantly increased to roughly 140 percent while some industrial, commercial or industrial tariffs increased as much as 673 percent. The Supreme Court partially suspended the increases taking effect until public consultation process were to be followed.

¹⁸ Due to recent implementation of the new reduced "social tariff", its effectiveness has not been assessed yet.

¹⁹ Argentina would need to construct roughly 10,400 MW in the next nine years – about 1,200 MW per year – to achieve the 2025 target.

direct financing (debt or equity) and other financial instruments as required, a key difference from previous attempts. FODER will be funded mainly by: (a) resources from the national budget, equal or higher to 50 percent of the savings achieved by switching from fossil fuels to renewables; (b) specific taxes to energy demand; and (c) revenues from the issuance of trust securities by the Fund's trustee. MEM defines FODER's financial instruments and funding needs.²⁰ The "*Banco de Inversión y Comercio Exterior*" (Investment and Foreign Trade Bank - BICE) was appointed trustee of FODER ("Trustee"), and carries-out day-to-day fiduciary activities in accordance with FODER Trust Agreement signed with MEM.

13. **To achieve GoA's clean energy goals, the Ministry of Energy and Mines (MEM) established the RenovAr program (the "Program").** The Program seeks to increase the amount of renewable generation capacity developed by private investment through auctions to purchase renewable energy generation from private sector led IPPs. Under the RenovAr Program, CAMMESA, or the institution to that end assigned by the National Government, will be the off-taker and signatory of the corresponding PPAs when awarded to the proposed IPPs. In July 2016, CAMMESA issued the first Request for Proposals under the Program (RenovAr Round 1) for 1,000 MW of clean energy capacity under 20-year PPAs. In October 2016, CAMMESA issued Round 1.5 for 1,680 MW of wind and solar energy capacity under 20-year PPAs for unsuccessful bidders of Round 1 to take advantage of strong investor interest in RenovAr (see Section III "Project Description"). For RenovAr Rounds 1 and 1.5, MEM has focused FODER on providing guarantees to both national and foreign investors to attract them to the Argentina renewable market. Thus, the primary financial instruments developed under FODER have been Payment Guarantees to be implemented through escrow accounts (the *Cuenta de Garantía* and its sub-accounts) that are designed to cover: (a) ongoing PPA payments (i.e. liquidity support); and (b) payment obligations emerging from the rights held by the IPPs to sell their project to FODER if specific macroeconomic or sector risks materialize – a classic termination coverage sought by the private sector in emerging markets ("the Put Option").

14. **While the risk mitigation instruments provided by the GoA were welcomed by potential financiers, market sounding exercises indicated that they would not be sufficient to attract the required levels of financing to achieve the objectives of the RenovAr Program.** Financiers expressed cautious interest in undertaking renewable projects given (i) their concerns with Argentina's track record in the last 15 years of significant policy reversal and non-compliance with contractual undertakings (i.e. political risk), and (ii) their lack of recent experience financing energy sector projects in Argentina. To enhance the likelihood of a successful RenovAr Program, the GoA requested an IBRD guarantee to backstop critical aspects of GoA's Payment Guarantees (see paragraphs 33-35). IBRD's support of the Program throughout preparation and private sector outreach helped improve its credibility and attractiveness.

15. **Renewable energies are a major component of the National Determined Contribution (NDC) presented by the Government of Argentina to the UNFCCC.** The

²⁰ In 2016, FODER was capitalized with approximately US\$408 million (US\$395 million for payment guarantees and the remaining to cover fee payments and FODER general costs). A total of US\$240 million have already been committed for calendar year 2017.

revised version of Argentina's NDC, published in November 2016, set the unconditional GHG emission reductions target to 18 percent, and the overall target (conditional plus unconditional) to 37 percent by 2030. Overall, energy has been identified as one of the main sectors to help GoA achieve its ambitious NDC commitments.

C. Higher-Level Objectives to which the Project Contributes

16. The proposed Project is a key contributor to the Government's objective of increasing renewable energy capacity, by boosting confidence of private investors in the sector and, hence, leveraging private investments. The Project, through its guarantee approach, will help leverage about US\$3.2 billion in renewable energy financing²¹, under the Round 1 and Round 1.5 of RenovAr, which is 6.7 times the amount of the guarantee itself. Private developers, equity providers, and lenders repeatedly stated that the World Bank's involvement was important for them to consider (re)entering the Argentine market. The Project is facilitating the reentry of Argentina into the international project finance markets and, thus, helping to rebuild its track record with industry and financial investors.²²

17. The proposed RenovAr Program and this proposed Project are an integral part of Argentina's transition to a cleaner energy matrix and contributes to climate mitigation. It will help Argentina meet its NDC unconditional mitigation goal of reducing GHG emissions. The RenovAr Program is expected to reduce the GHG emissions by a total of 79.64 million tCO₂e over 20 years or 4 million tCO₂ per year²³, which corresponds to approximately one percent of the GHG emissions generated by Argentina in 2015 and about four percent of the NDC target (109 million tCO₂e per year) by 2030. The Project will reduce tCO₂ by approximately 27 million over the life of the IBRD Guarantee, i.e. approximately 1.4 million tCO₂ per year. Ultimately, the Program will contribute several environmental co-benefits such as reduced air-pollution through a reduction in fossil fuel burning, safer and more secure energy supply through technological innovation both generating health and well-being benefits.

18. The proposed Project will be a key element of the World Bank Group support to Argentina's energy sector. It is fully aligned with, and complemented by other operations, such as the Renewable Energy for Rural Areas Project (PERMER II, P133288), which seeks to provide and enhance access to modern energy services in selected rural areas through renewable energy technologies. IFC is already actively evaluating options to provide debt financing to some of the selected IPPs. At the same time, project sponsors may eventually ask MIGA for political risk insurance cover. IBRD therefore collaborated with them to help ensure the success of these initial auctions.

19. The proposed Project contributes to the World Bank Group's (WBG) Twin Goals, and the Country Partnership Strategy for Argentina (CPS) FY2015-2018 (Report No. 81361-AR), which was discussed by the WBG Executive Directors on September 9, 2014. The

²¹ This amount includes also IFC renewable energy financing.

²² It is expected that reliance on guarantees will diminish over time, until it can disappear completely

²³ Calculations conducted as per the World Bank "GHG Accounting for Energy Investment Operations Guidance Manual", version 2.0, January 2015. GoA GHG reductions estimations under RenovAr Round 1 are higher since their CO₂ emission factor is slightly higher than the emission factor used by the Bank.

CPS focuses on promoting shared prosperity and reducing poverty by aiming, among others, to: (a) create employment in firms and farms and (b) safeguard natural resources. The Project will contribute to the first theme by expanding energy availability to firms and households in an efficient and sustainable manner, and fostering private investment, strengthening its enabling environment, improving financing for firms and scale-upping the country's clean energy industry. It will also contribute to reduce environmental risks and safeguard natural resources by reducing the use of fossil fuels.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

20. The project development objective is to increase electricity generation capacity from renewable energy sources through private investment in the energy sector.

B. Project Beneficiaries

21. **The proposed Project beneficiaries will be mostly private and public institutions and ultimately the consumers.** The IBRD guarantee would directly benefit FODER and eligible IPPs that opted for the IBRD guarantee by backstopping GoA's obligation to fund FODER in circumstances where FODER has to purchase private sub-projects²⁴. Indirect beneficiaries in the short term are: (a) financiers of eligible sub-projects under the RenovAr Program will have increased certainty of payment; (b) current and future grid-connected customers will benefit from a cleaner and enhanced electricity provision; (c) SADI (national system) and CAMMESA (dispatcher) would benefit from a clean and indigenous power supply at competitive prices, which would reduce the use of mostly imported and expensive fossil fuels; and in the long term (d) Argentinians will derive health benefits from enhanced climate change mitigation.

C. PDO Level Results Indicators

22. **Progress toward achieving the PDO would be assessed through a series of indicators presented in Annex 1.** The PDO level results indicators are:

- (a) Generation capacity of renewable energy (other than hydropower) constructed under the Project (MW) – Core
- (b) Generation capacity of renewable energy constructed – Wind (MW) – Core
- (c) Generation capacity of renewable energy constructed – Solar (MW) – Core
- (d) Generation capacity of renewable energy constructed – Mini-hydro (MW) - Core
- (e) Generation capacity of renewable energy constructed – Biogas and biomass (MW) - Core
- (f) Private capital mobilized (million US\$) – (Number) - Core

²⁴ Sub-projects refer to renewable energy projects that showed interested in RenovAr Round 1 or Round 1.5 and requested the IBRD guarantee. For the sake of simplicity, in the OM, ESMF, IPPF and RPF sub-projects are named as projects.

III. PROJECT DESCRIPTION

A. Project Description

A.1. The Government's RenovAr Program

23. **In September 2015, Argentina's parliament approved a new renewable energy law (Law No. 27191, 2015), which calls for increasing the share of renewable energy consumption from 1.8 percent to 8 percent in 2017 and 20 percent in 2025. To implement the proposed scale up of renewable energy proposed under the law, through private sector investment in the sector, in May 2016, GoA announced the initiation of a large-scale renewable energy program – RenovAr (the "Program").**

24. **To better understand private sector's investor and financier's appetite, MEM led market sounding** exercises with investor roadshows in the USA, Europe and in Argentina with potential developers, equity providers, commercial banks, Development Finance Institutions (DFIs) and Export Credit Agencies (ECAs).

25. **The WBG supported GoA to size the RenovAr Program, based on estimated needs and financing available, and to develop standardized legal documents for RenovAr auctions.** The IBRD and IFC teams provided advice to GoA based on international experience in similar programs, with a particular focus on ensuring a fair and balanced project risk allocation between the private and public sector, with an objective of minimizing the public sector financing/support and ensuring market success of the program. The Bank also supported GoA, as needed, to expand its reach to the global private sector investor base.

26. **Feedback from the market sounding exercise clearly showed cautious interest by the renewable energy investor base.** Concerns related to the lack of Argentina's track record with supporting financial obligations, contractual undertakings, and financing of such infrastructure projects. The World Bank's presence in these roadshow and backing of the Program through the guarantee reassured investors on the strength of the Program and its likelihood to materialize, unlike previous attempts.

27. **To ensure a market success of the Program, GoA requested World Bank's assistance in developing a risk mitigation package in support of its renewable energy objectives.** While the support provided by the GoA was welcomed by investors, it was also clear that the Bank would need to provide credit enhancement to the structure proposed by GoA. The GoA therefore requested an IBRD guarantee to backstop key risks in the government support structure developed for attracting/securing financing from the private sector – primarily related to Argentina's lack of track record with regard to consistent application of policies. A best-practice transparent auction process was designed by GoA, with key direct support from the WBG. A complimentary GoA and IBRD package of guarantees to mitigate key risks was formally offered to the market in early August 2016 as part of the bidding package.

28. **RenovAr had a strong investor interest and better than expected results in Round 1.** The first round of the RenovAr bidding process received 123 offers, with an aggregate installed capacity of 6,343 MW of clean energy capacity under 20-year PPAs (more than six times the amount requested of 1,000 MW), covering 20 out of 23 provinces. On October 7 and 14, 2016 a

total of 29 sub-projects were awarded with an average price of 6.13 US¢/kWh and a total of 1,142 MW (which accounts for 2.9 percent of the national consumption). The average offer price was lower than the 2015 average generation price of 7.05 US¢/kWh.

29. **Building on the success of RenovAr Round 1, the Government engaged in an additional Round 1.5, which was also successful at attracting investors.** In October 2016, to take advantage of strong investor interest in RenovAr Round 1, CAMMESA issued Round 1.5 for 600 MW of wind and solar energy capacity under 20-year PPAs. This new round, which was an extension of Round 1, included only those bidders that were not awarded any bids in Round 1, thus expanding Argentina's investor base. It aimed to increase renewable generation capacity in under-represented regions. Only solar and wind sub-projects that were not awarded PPAs under Round 1 were allowed to participate in Round 1.5. MEM established quotas per type of technology and region and published the applicable institutional, technical, financial and economic specifications on October 28, 2016. This round was again oversubscribed. In November 25, 2016, a total of 30 sub-projects (10 wind and 20 solar) were awarded with an installed capacity of 1,281 MW. The average awarded price is much lower than for Round 1, i.e. 5.33 US¢/kWh for wind compared to 5.94 US¢/kWh in Round 1, and 5.44 US¢/kWh for solar compared to 5.97 US¢/kWh. Projects (under both Round 1 and 1.5) are expected to reach financial closure in 2017.

30. **The RenovAr Program, with continuous GoA commitment and IBRD support, has now set an attractive framework for private sector led investments in Argentina** and in the sub-region. Commercial financiers, including Development Finance Institutions (DFIs), are expected to play a key role in financing Round 1 and 1.5 projects. Several Export Credit Agencies (ECAs) have announced their support for such projects in Argentina and many private sector lenders are expected to follow. IFC is in discussions with a few of the project developers for potential investments. Private sector investors and financiers are also expected to approach MIGA for its political risk insurance products as and when financing for private projects materializes.

A.2. The Project

31. **The proposed Project supports GoA in the implementation of the RenovAr Program with an IBRD guarantee of US\$480 million.** Specifically, the Project will benefit renewable energy IPPs that opted for the IBRD guarantee within Round 1 and 1.5 of the Program.

32. **The value added of the IBRD's presence and its guarantee structure has already been demonstrated through the success of the RenovAr auction outcomes.** For RenovAr Round 1, 15 of the 29 awarded sub-projects have requested the IBRD guarantee with an aggregate installed capacity of 590 MW and a value of US\$295 million. For RenovAr Round 1.5, 12 of the 30 awarded sub-projects have requested the IBRD guarantee with an aggregate installed capacity of 443 MW and for a total value of approximately US\$184.3 million. Through its guarantee approach under Round 1 and 1.5 of RenovAr, the Project helps leverage about US\$3.2 billion in renewable energy financing (6.7 times the amount of the guarantee itself) with US\$2.5 billion from commercial sources.

33. **Discussions with GoA, bidders, and lenders participating in the Program have indicated that the engagement of the World Bank Group, its support for the program as**

well as credit enhancement mechanisms through the guarantee, have played a critical catalytic role in attracting the large number of bids. Without IBRD support, some developers and financiers would not have participated in the auctions, which would have reduced overall competition and the technical and financial quality of the bids. Beyond the proposed RenovAr program, the proposed IBRD guarantee is also helping to facilitate the reentry of Argentina into the international project finance market and, thus, supporting to rebuild Argentina's track record with investors.

B. Project Component

34. **The Project has one component: an IBRD guarantee in an aggregate amount of US\$480 million to backstop Government's failure to fund FODER when it has to pay a Put Price to eligible renewable energy sub-projects as a result of IPPs exercising a Put Option under their respective FODER Trust Adhesion Agreement.** At the sub-project level, the guarantee is limited to a maximum of US\$500,000 per MW. The Project involves a Financial Intermediary structure conformed by BICE, in its capacity as trustee of FODER, and MEM as implementing authority of FODER.²⁵ The IBRD guarantee indirectly mitigates country risks (including lack of payments, change in policy, convertibility, and transferability risks), and thus reduces financing costs for IPPs and risks associated with signing PPAs with CAMMESA. In the medium term, the guarantee will allow Argentina to rebuild a positive track record with investors.

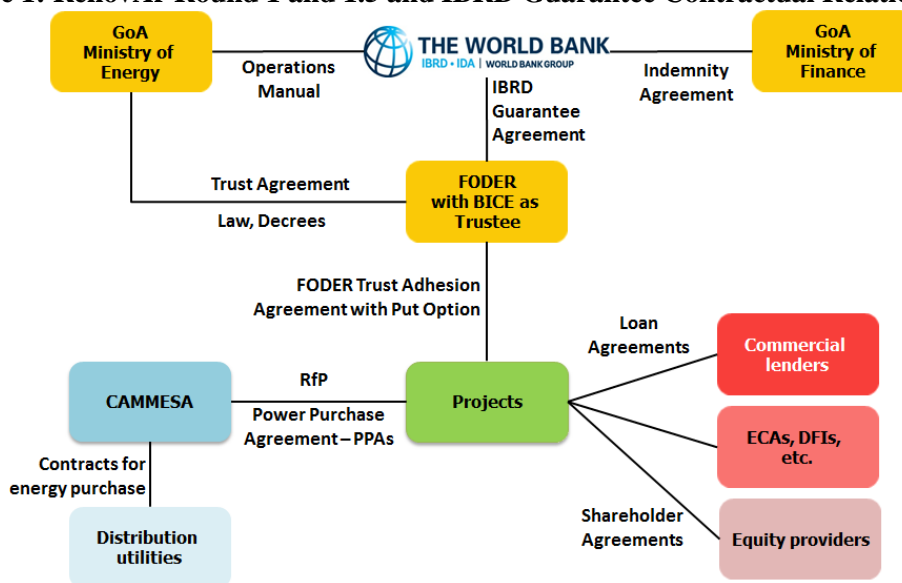
35. **The IBRD guarantee enhances the support that FODER is providing to sub-projects under the Program and it can only be called in limited circumstances as a very last resort.** FODER guarantees will cover three types of payment obligations: (i) ongoing payment obligations of CAMMESA for purchasing energy under the PPAs, (ii) government payment obligations emerging from the option to purchase eligible sub-projects, and (iii) government payment obligations emerging from the right of IPPs to sell their sub-projects to FODER (i.e. to exercise a Put Option) if specific macroeconomic or sector risks materialize. The IBRD guarantee backstops Argentina's obligation to fund FODER when FODER is required to buy out a project as a result of the exercise of a Put Option. Such guarantee benefits eligible sub-projects, and can also indirectly benefit lenders and equity investors to such eligible sub-projects. Figure 1 shows the key contractual relationships. The IBRD guarantee will be in place until the earlier of 20 years or Argentina obtaining investment grade²⁶.

36. **The IBRD guarantee will enhance FODER's creditworthiness by backstopping Put Option payments due and payable to IPPs.** To mitigate risks expressed by private investors, GoA requested the World Bank to backstop certain Put Option payments that can be triggered by the following events of default: (a) extended non-payment by the off-taker under the PPA, (b) inconvertibility, (c) intransferability, (d) material adverse changes to FODER's operations without the subproject's prior consent, and (e) non-compliance with an arbitral award or judgment.

²⁵ BICE & MEM's roles in connection with FODER are contemplated in Law 27191 and its implementing regulations.

²⁶ The IBRD guarantee is for up to 20 years, although sub-projects may request the guarantee for a shorter period.

Figure 1: RenovAr Round 1 and 1.5 and IBRD Guarantee Contractual Relationships



C. Project Financing

37. The estimated Project costs and financing structure is shown below (Table 1).

Table 1: Estimated Program and Project costs (US\$ million except size)

	Program - Round 1 and 1.5	Project - Round 1 and 1.5 with guarantees only
Size (indicative)	2,424 MW	1,033 MW
Estimated Project Cost	3,224	1,374
Estimated Private Equity @ 35 percent	1,128	481
Estimated Debt @ 65 percent	2,096	893
Of which commercial borrowing	1,397	595
Of which Development Finance Institutions & Export Credit Agencies	699	298

D. Lessons Learned and Reflected in the Project Design

38. The proposed operation incorporates lessons learned from the implementation of projects in Argentina and elsewhere. These include:

- (a) A strong commitment from the GoA is needed to increase renewable energy generation. International experiences show that to transition towards a sustainable energy path, state actors must facilitate access to both energy infrastructure and financing. To scale-up renewable energy, governments need to create the enabling environment planning effectively, and establish clear rules for all participants;
- (b) Proper eligibility criteria for sub-projects are required, and special attention should be paid on adequate due diligence of the underlying risks being covered;
- (c) A clear and detailed Operations Manual (OM) – with sufficient flexibility built in to respond to market needs – as well as standardizing certain transaction documents, helps in creating processing efficiencies and allow for speedier scale-up;

- (d) Risk mitigation instruments, such as guarantees, are needed to enable renewable energy reach successful financial close, as evidence in previous attempts by the GoA to introduce renewable technologies in the Argentinian energy matrix (i.e. GENREN);
- (e) Guarantees are not meant to be called and should be provided in support of good financially viable sub-projects, which achieve their intended development objectives;
- (f) Robust risk management of the facility should include creating “lines of defense” to manage guarantee calls and ensure the Bank has enough time to help address an issue;
- (g) Enhanced dissemination of project objectives, components, and activities is recommended to ensure swift implementation. A valuable project may be hampered by poor communication between implementing agencies, sponsors and landowners.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

39. **The RenovAr Program structure includes a Financial Intermediary role exercised by BICE, in its capacity as trustee of FODER, and MEM in its capacity as implementing authority of FODER, as contemplated by Law 27191 of 2015 and its implementing regulations.** BICE is a small fully state-owned bank focused on first-tier lending. BICE is owned 66 percent and 33 percent by the Ministry of Production and *Banco Nación* (Argentina’s largest state-owned bank), respectively. The board of directors is composed of qualified technical staff from the private sector, with expertise in financial matters. BICE is supervised by the *Banco Central de la Republica Argentina* (BCRA – Central Bank of Argentina). MEM was created in December 2015 by the spin-off of the Secretariat of Energy from the then Ministry of Planning. The new structure of MEM showcases the GoA’s commitment to clean energy as it includes a newly-formed and staffed Undersecretariat of Renewable Energy.

40. **FODER has been established as an Argentine public trust.** Consistent with Law 27191 of 2015, MEM, acting as trust settlor and implementing authority, has established the FODER trust, with BICE as its trustee. BICE, as Trustee of FODER, will be the Bank’s main counterpart for financial matters. MEM, as implementing authority of FODER, will be the Bank’s main counterpart for implementation and management of the RenovAr Program.

41. **Through a Trust Adhesion Agreement, awarded sub-projects will benefit from the new instruments being created by FODER.** The signing of such agreement will commit FODER to provide sub-projects’ sponsors with: (a) a payment guarantee to back-stop ongoing payment obligations by CAMMESA under the PPAs;²⁷ (b) the obligation to buy out and pay the

²⁷ The FODER payment – “liquidity” – guarantee will protect sub-projects from risks associated to CAMMESA not paying the electricity produced as a result of distribution companies not paying CAMMESA in-full, or paying late. This mechanism will be completely funded by the GoA through FODER. If or when CAMMESA does not have enough funds to pay the full amount due under the respective PPAs, CAMMESA will draw in advance on an account held under FODER. CAMMESA would have to reimburse FODER when it has received payments from distribution companies. Sub-projects could also submit a claim to FODER if CAMMESA had not done so and failed to pay. If FODER does not recover the funds, the demand charge would need to be increased to ensure FODER’s liquidity. The Bank guarantee does not backstop this liquidity mechanism. However, the Bank will monitor CAMMESA and GoA’s fulfillment of their contractual obligations of funding or replenishing it.

sub-project under certain specific circumstances; and (c) indirect access to the IBRD guarantee, if requested by the sub-projects in their bid.

42. **The Bank will directly guarantee FODER – a GoA instrument – and indirectly sub-projects.** FODER will pay the guarantee fees to IBRD and each IPP will pay equivalent fees to FODER. FODER is offering a discount of 1 percent on the guarantee fee to be paid by sub-projects per every percent point of national content included in each sub-project.²⁸ Sub-projects would need to comply with four main eligibility criteria to benefit from the IBRD guarantee: (a) be a private entity; (b) demonstrate capacity to handle environmental and social aspects compliant with World Bank Performance Standards; (c) not be sanctioned or debarred by the World Bank; and (d) meet industry standards for technical, economic viability, financial management and procurement. MEM will be the entity responsible for evaluating if sub-projects meet the eligibility criteria (details on implementation arrangements regarding Environmental and Social (E&S) management are provided in sections VI - E and F below and in Annex 3).

B. Results Monitoring and Evaluation

43. **The Project will build upon existing structures and capacities developed through other Bank-financed projects.** The operation's support to all M&E tasks—as well as to overall project implementation supervision and reporting—will be twofold: (a) MEM will develop and deploy systems, indicators, reports, and other instruments as necessary (b) relevant data and information will be gathered by MEM and relevant stakeholders.

44. **IBRD M&E and implementation supervision will include:** (a) prior *screening* of sub-projects, including fulfillment of eligibility criteria as well as financial and safeguard preparation aspects; (b) *ex-post* supervision of environmental and social safeguards compliance; (c) monitoring of potential risks of default, which would lead to a call on the guarantee; (d) monitoring of all Project indicators; and (e) mid-term review to assess progress towards reaching the PDO.

C. Sustainability

45. **The participation of the World Bank Group is critical in developing renewable energy investments through the private sector given the perceived country and sector risk, as well as newly created FODER's capacities.** The use of an IBRD guarantee helps boost investor confidence in the sector, thereby mitigating sector-related financial and institutional weaknesses. World Bank support can help mitigate the lack of experience to procuring renewable energy and bring the best developers to Argentina in a competitive setting that delivers sectorial targets. The World Bank presence can also facilitate the participation of other World Bank Group entities, including IFC via loans and MIGA via provision of political risk insurance to sub-projects.

46. **The proposed Project will also help Argentina and FODER build a track record with investors.** Supporting the Government plans in this initial phase is of highest importance as

²⁸ In such cases, the payment to IBRD would not be affected as the fees would be paid fully by FODER.

investors gain confidence and, over time, should be ready to take uncovered risk or access other risk mitigating instruments.

47. **RenovAr’s overall sustainability will be ensured by Argentina’s clear commitment towards renewable energy, the obligations established in the Law and the positive development impact that it will have by reducing the need for fossil fuel and helping to provide reliable and clean energy sources.** MEM is establishing clear rules for the selection of sub-projects, setting up a suitable system of tariffs and economic incentives, and making necessary resources available. Other expected benefits that will help increase ownership include providing electricity at lower costs than the current average generation cost, improving energy security and reliability, decreasing the country’s exposure to oil price volatility and reducing GHG emissions while helping the country to meet its ambitious NDC climate change mitigation goals.

48. **Another alternative to support Argentina renewable energy targets was also considered and rejected.** This included lending to GoA, that would then on-lend to sub-projects’ sponsors or use such resources to fund security arrangements. These alternatives were rejected as they presented the risk of crowding-out private sector investment, and would end-up competing with some of the new instruments already created and to be funded by the current administration (e.g. FODER), which already provide this kind of support.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

49. The overall risk rating to achieving the development objective of the proposed Project is assessed as Substantial. This risk is assessed for the overall duration of the guarantee (about 20 years). Over the three years’ implementation period (construction of the renewable power plants), risks are moderate only. Key risks include:

50. **Political and governance risk** is assessed as Substantial since political events and administration cycles over the life of the guarantee and the PPAs could impact the achievement of the objective of the project. Over a 20-year period, the RenovAr program could be affected through changes in the political context and changes in the business climate that could affect the participation of private operators, etc. The current administration, with World Bank technical support, focuses on prioritizing a number of Doing Business reforms to improve the private sector operating environment and, at the same time, deeper institutional reforms are taken place which would strengthen the overall governance and transparency in public-private interactions, including a reform of the PPP framework as well as of the public procurement system. Argentina has also recently passed an Access to Information law which is expected to strengthen accountability relationships within the country in a substantial way.

51. **Macroeconomic risk.** The Macroeconomic risk is assessed as Substantial given the potential for macroeconomic cycles that could affect the viability of the sub-projects in the longer-run, including a change in the cost in pesos of PPA’s denominated in dollars. Additionally, a severe fiscal constraint – as Argentina has experienced in the past – could undermine the support for keeping resources within FODER at required levels. The current administration is embarking on a number of institutional reforms which will impact on both

monetary and fiscal policy formulation and which are geared to establish (and demonstrate) the functioning of sustainable macro-economic policy making.

52. **Sector strategies and policies risk.** This risk is rated as Substantial. In the short-term, the electricity sector is going through a tariff re-alignment process in order for tariffs to better reflect generation, transmission and distribution costs and to allow for an adequate provision of electricity services. Such adjustments will address the challenges associated to fiscal and current account imbalances, and sector financial sustainability. Such adjustments will address the challenges associated to fiscal and current account imbalances, and sector financial sustainability. In the medium- to long-term, however, the electricity sector will also require further reforms to provide improved predictability for private investors with regard to key sector policies, encouraging longer maturity contracts to play a more important role in electricity provision. An important factor for such medium-term reforms efforts not to fall short of achieving such goal include the more important voice of private stakeholders in sector dialogues which has been initiated through the current RENOVAR program.

53. The **Stakeholders risk** is also assessed as Substantial given both the novelty of, as well as the multitude of different actors in, the program. RenovAr Rounds 1 and 1.5 involve an important amount of private investors who may be investing for the first time in renewables in Argentina. In addition, those investors that requested the IBRD guarantee will need to get familiar and comply with IBRD standards. For other stakeholders in the program (provinces, NGOs, local communities, unions, etc.), the increased role of private investment in the sector will require establishing new and lasting relationships. To support this process, the Operational Manual (to be reviewed by IBRD), will include detailed responsibilities of the private investors towards a variety of different stakeholders, including also specific outreach activities and resource platforms they can draw on.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analyses

54. **RenovAr Rounds 1 and 1.5 confirm the economic viability of the energy matrix diversification process.** RenovAr will have a clear development impact and generate economic benefits from the beginning as the average energy prices for Rounds 1 and 1.5 (i.e. 61.3 US\$/MWh and 54.9 US\$/MWh²⁹) are respectively 9.2 US\$/MWh and 15.6 US\$/MWh lower than the average generation price of 70.5 US\$/MWh of the electricity system in 2015. As previous tariffs were insufficient to fully cover costs, lower generation costs achieved through RenovAr Program will help sector's sustainability. The Program will also generate positive externalities, notably regarding GHG emission reductions. The Economic Internal Rate of Return (EIRR) is 19.3 percent for the Program and 19.8 percent for the Project. Sensitivity analysis shows it is robust to strong variations in key assumptions, including the amount generated as well as costs avoided estimate. IBRD support provides strong value added to the Program by helping to mobilize private investors. There is strong rationale for public sector funds to be used

²⁹ Electricity prices reflect the actual electricity generation costs of the renewable energy projects awarded under RenovAr Round 1 and 1.5.

to set up a guarantee that mitigates risks to attract substantial private sector investment and expertise in renewable energy.

55. The financial analysis confirms the financial viability of the solar and wind sub-projects likely to receive risk coverage under the Project. The analysis is based on the average plant factor of the awarded sub-projects, average awarded price (i.e. 59.4 and 59.7 US\$/MWh for solar and wind respectively in Round 1 and 54.9 and 53.3 US\$/MWh in Round 1.5), estimated cost, financing plan analysis, cash flow, debt service, and sensitivity analyses of most relevant variables. Results show that both solar and wind sub-projects are financially viable. In the case of wind sub-projects, the Financial Internal Rate of Return (FIRR) of about 10 percent on average is within the average FIRR of similar projects in the region, with a payback period ranging from six to nine years. For solar sub-projects, the analysis also confirms their viability although the FIRR, which varies between 7.7 and 10.4 percent, is slightly lower than similar projects in the region.

56. The financial risk of the overall dispatch system should be decreasing over time. Given the small impact RenovAr Round 1 and 1.5 (only up to 5.7 percent of the overall demand in 2018) have on the overall cost of energy supply in Argentina, these rounds will not have a systemic impact on the system, and thus will barely alleviate the initial risk. However, this initial financial risk has and should continue to decrease over time due to external factors (current global reductions of oil and natural gas prices) and GoA commitments and actions to bridge the gap between end user prices and real energy costs. RenovAr Rounds 1 and 1.5 are expected to have a small, but positive impact on the financial situation of the wholesale electricity system by reducing its overall volatility, adding new generation capacity at lower prices, and eventually replacing expensive thermal generation. In summary, the financial situation of the wholesale electricity market should not be negatively affected.

57. Since the set-up of Argentina’s wholesale market in 1992, CAMMESA has never stopped meeting its payment obligations. From 2012 to 2015, the average payment time by CAMMESA increased from 16 days to 64 days. Since taking office, the new Government has taken actions to enhance flow of payment in the electricity sector, including on tariff. As a result, the average payment period has decreased to pre-2012 levels. GoA plans to continue strengthening the financial situation of the sector.

58. The Project, through its guarantee approach, will help leverage about US\$3.2 billion in clean energy financing³⁰, which is 6.7 times more than the guarantee itself. These US\$3.2 billion of clean energy financing will lead to a total of 79.64 million tCO₂ over 20 years (4 million tCO₂ per year)³¹, which is about one percent of the GHG emissions generated by Argentina in 2015.

59. WBG support provides strong value added. In particular, it helps to (i) enhance the credibility and reduce the risks of GoA’s new RenovAr program, (ii) attract potential bidders and

³⁰ This amount includes also IFC renewable energy financing.

³¹ Calculations conducted as per the World Bank “*GHG Accounting for Energy Investment Operations Guidance Manual*”, version 2.0, January 2015. GoA GHG reductions estimations under RenovAr Round 1 are higher since their CO₂ emission factor is slightly higher than the emission factor used by the Bank.

lenders, especially international ones, and (iii) bring international experience from other similar renewable programs.

B. Technical

60. **The RenovAr program relies on the utilization of known and proven technologies.** Sub-projects will be implemented in accordance with local laws and internationally accepted technical standards. Experienced private sector firms that have passed the technical criteria will design and implement the technical parameters. CAMMESA and MEM, already acquainted with the deployment of similar technologies in Argentina, will monitor the implementation of the sub-projects. The evaluation of Request for Proposals (RfPs), contractual negotiations, and supervision will be conducted by CAMMESA, MEM and provinces when relevant, and supported as needed by the Bank.

61. **The Program helps bring in private sector expertise.** The Project underpins GoA's efforts in attracting private investments in power generation and help to rebuild Argentina's track record with investors. In doing so, it helps crowd in private expertise in the construction and operation of power plants that may otherwise be difficult to mobilize under current circumstances.

C. Financial Management

A Financial Management Assessment (FMA)³² was carried out to assess the adequacy of financial management arrangements in place at BICE, which will act as trustee of FODER. The assessment conclusion is that overall FM arrangements are acceptable to the Bank, and BICE is capable of providing reliable and timely financial reporting to monitor project implementation. The Project will be fully integrated in BICE's systems; BICE has relevant experience in managing trust funds along with strong internal controls in place and adequate arrangements for accounting, reporting and auditing as evidenced by the FM assessment. BICE will maintain a financial management system and prepare financial statements in accordance with accounting standards acceptable to the Bank, both in a manner adequate to reflect the operations, resources and expenditures related to the activities under the FODER Trust Fund. BICE will have its financial statements for each calendar year audited in accordance with audit standards and by external auditors both acceptable to the Bank. Audited financial statements for such period in which the FODER Trust operations are reported will be submitted to the Bank not later than six (6) months after the end of the Trustee's calendar year, together with an opinion of the Trustee's external auditors on the financial statements. Detailed FM arrangements are described in the Project Implementation Arrangements (Annex 3).

D. Procurement

62. **The World Bank "Procurement Regulations for Investment Project Financing (IPF) Borrowers" govern the procurement of goods, works, non-consulting services, and consulting services financed by the Bank (in whole or in part) through IPF operations. As**

³² The Financial Management Assessment (FMA) was conducted in accordance with OP/BP 10.00 and in line with specific Bank guidelines Manual for World Bank-Financed Investment Operations; document issued by Operations Policy and Country Services OPCFM on March 1, 2010.

per the Section I.1 of the Procurement Policy, procurement under Bank guarantees are excluded from these Regulations.

E. Environment

63. **OP/BP 4.01 Environmental Assessment is triggered for the Project and the Project is classified as FI since the Project involves a guarantee structure via a financial intermediary (FI).** MEM is the implementing agency of the guarantee project, together with BICE, the fiduciary agency. All technical decisions related to the renewable energy sub-projects as well as the environmental and social screening and monitoring will be undertaken by MEM. An Environmental and Social Management Framework (ESMF) has been developed by MEM, which defines the environmental and social management procedures to be implemented by MEM and the individual renewable energy sub-projects covered by the guarantee. The ESMF includes screening by MEM of proposed sub-projects developed by private companies³³. The ESMF contemplates that sub-projects which would be defined as Category A under Bank policies cannot benefit from the IBRD guarantee. The ESMF also defines supervision and reporting requirements. As an FI operation, the MEM has been assessed by the Bank team as having the capacity for E&S management. Based on that, Bank prior review for the project-specific assessments carried out by the Environmental and Social Unit (UAYS) of the National Directorate of Renewable Energy of MEM will be undertaken only for the first project of each technology. The rest of the processes will be monitored by the Bank based on the annual reports prepared by UAYS, and the need of any additional review will be determined based on the level of compliance and/or non-compliance of the environmental and social requirements for the project.

64. **World Bank Performance Standards (PS) will apply to sub-projects developed by private companies.** Given that sub-projects will be developed by private companies (which will be in charge of sub-projects' design, construction / installation, and operation / maintenance, including the environmental and social assessments, assurance of legal compliance and risk management), and considering OP 4.01 guidelines, the instruments that better cover the type, extent, and depth of analysis and management required for these sub-projects that involve the private sector, are the World Bank Performance Standards for Private Sector Activities (PS1 to PS8). Thus, the ESMF requires the private sector companies to comply with PS. This implies that, in the context of this Financial Intermediary operation, the requirements of the relevant safeguard policies are best met by requiring the private awardees to comply with the PSs. In addition, the use of such standards may facilitate their access to private sector financing.

65. **As per renewable energy generation inherent characteristics, rural areas are mainly targeted for sub-project locations.** Thus, it is possible for: renewable energy generation related works to be located in natural habitat zones; forests and/or forest dependent communities to be affected; potential use of pesticides to be needed for minor management of facilities; potential use of herbicides to be needed for access roads maintenance; and energy generation related works to be located in known or suspected physical cultural resources zones. Therefore, OP/BP

³³ MEM will develop an M&E, supervision and monitoring system through which MEM will be able to compile information, request, and gather data from relevant stakeholders and produce reports as needed and committed. In particular, the system will manage to produce *inter alia*, annual reports that will include information on compliance and non-compliance of any action required through the triggered environmental and/or social safeguards.

4.04 Natural Habitats, OP/BP 4.36 Forests, OP 4.09 Pest Management and OP/BP 4.11 Physical Cultural Resources is also triggered. Also, the Project could support small-scale hydro run-of-river electricity generation facilities (ranging from 0.5 to 20 MW), some of which may require a small weir or pondage to provide water for the penstock; thus OP/BP 4.37 (Safety of Dams) is also triggered. The ESMF developed by MEM includes provisions to ensure that renewable energy sub-projects comply with the following World Bank's Performance Standards that have been determined to be relevant: (Assessment and Management of Environmental and Social Risks and Impacts, PS1 & Labor and Working Conditions, PS2; Biodiversity Conservation and Sustainable Management of Living Natural Resources, PS6; Resource Efficiency and Pollution Prevention, PS3; Cultural Heritage, PS8; and Community Health, Safety and Security, PS4).

66. **In terms of citizen engagement, an advanced draft version of the ESMF, including the RPF and the IPPF as annexes, after its revision and approval by the World Bank, was disclosed in the MEM website and in the World Bank external website on December 14, 2016 and consulted by MEM with Project-affected groups and local nongovernmental organizations (NGOs) from December 15, 2016 to January 5, 2017, including with groups/organizations who have interests or potential concerns about the Project. The institutions that participated in the consultation included public entities, academia and private associations and NGOs. As a result of the consultation process, comments and recommendations on the following topics have been revised and incorporated in the ESMF and its annexes (*inter alia*): (a) guides and reference documents in relation to mitigation measures of impacts generated by wind energy projects have been incorporated as Annex F within the ESMF; (b) the budget section of the ESMF has been clarified regarding responsibilities and resources for the implementation of social and environmental-related activities; (c) the consistence between the free, prior, informed consultation and the ILO-convention 169, and the existence of corrective measures for possible breaches, have been verified; (d) the IPPF was revised in order to avoid using the term "vulnerable" as an inherent characteristic of Indigenous Peoples; and (e) the hiring of local workers would be promoted among Private Companies in order to benefit local communities as directly as possible.. The final version of the ESMF was published on the Borrower's website on January 13, 2017 and on the World Bank external website on January 16, 2017.**

F. Social

67. **The RenovAr Round 1 and 1.5 sub-projects that requested the IBRD guarantee are located in eleven provinces across Argentina, mainly in rural or peri-urban areas. A preliminary screening process carried out by MEM³⁴ showed that some of these sub-projects are located in areas where Indigenous Peoples (IPs) are likely to be present³⁵. In**

³⁴ This preliminary screening was intended to determine the environmental and social category for each sub-project as a way to identify risks related to each sub-project and determine the environmental and social category for each sub-projects. This information was used by MEM to, *inter alia*, exclude the use of the IBRD guarantee for sub-projects which would be defined as Category A under Bank policies.

³⁵ The Indigenous Peoples Planning Framework includes a second screening process mandatory for all awardees that have requested the IBRD Guarantee. This process consists of a formal inquiry to the National Institute of Indigenous Affairs (*Instituto Nacional de Asuntos Indígenas* - INAI) and the Indigenous Peoples Participation Councils (*Consejos de Participación Indígena* – CPIs) about the presence of Indigenous Peoples in the sub-project area of influence. For those cases where Indigenous Peoples are present in the sub-project area, awardees will need to make

this context, OP/BP 4.10 Indigenous Peoples is triggered and an Indigenous People's Planning Framework (IPPF) has been prepared and consulted with the IPs representatives at the national level. The document has also been incorporated as part of the ESMF and the Project's OM, to ensure that, as appropriate, sub-projects comply with the applicable World Bank Performance Standard (Indigenous People; PS7), including with Free, Prior and Informed Consent, when required.

68. **In addition, it is also likely that in some cases sub-projects would require land easement and/or acquisition that might entail resettlement as defined by OP/BP 4.12 Involuntary Resettlement** (loss of assets, physical displacement, or livelihood losses and/or restriction on land use), which is also triggered. In accordance with the envisioned procedures to be included in the ESMF of the Project, MEM prepared a Resettlement Policy Framework (RPF), to ensure that, as appropriate, analysis of alternatives and appropriate compensation and support to potentially affected people are incorporated into the sub-projects' design to ensure that they will comply with the applicable World Bank's Performance Standard (Land Acquisition and Involuntary Resettlement; PS5). Project-related land acquisition in areas with land disputes or where the ownership of land is not clear or there are unresolved claims by IPs or other groups will be opportunely excluded.

69. **The IPPF and the RPF have been published on the Borrower's website and on the World Bank external site on December 14, 2016 as part of the dissemination process.** Since both documents have been included as an annex of the ESMF, they were also reviewed as part of the public consultations held as preparation of the Project (see Environmental section above). In the case of the IPPF, the document was additionally consulted with the indigenous authorities at the national level, from December 22, 2016 to January 5, 2017. Relevant feedback received during such consultations has been used accordingly to inform project design and incorporated, as appropriate, into a revised version of the instruments that were published on January 13, 2017 on the Borrower's website and January 16, 2017 on the Bank's external website.

G. Other Safeguards Policies Triggered

70. **The Policy regarding Projects on International Waterways—OP/BP 7.50—has not been triggered.** Initial screening of pre-identified sub-projects to be considered for support are not located on waterways defined as international ones according to OP/BP 7.50.

H. World Bank Grievance Redress

71. **Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS).** The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at

consultations with Indigenous Communities and prepare an Indigenous Peoples Plan or a Community Development Plan in accordance to what is established in the IPPF.

any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring
ARGENTINA: FODER Renewable Energy Fund Guarantee

Results Framework

Project Development Objectives					
PDO Statement					
The project development objective is to increase electricity generation capacity from renewable energy sources through private investment in the energy sector.					
These results are at	Project Level				
Project Development Objective Indicators					
Indicator Name	Baseline	Accumulated Target Values			
		YR1	YR2	YR3	End Target
Generation capacity of renewable energy (other than hydropower) constructed under the Project (MW) (Core)	0	0	333	1,033	1,033
Generation capacity of renewable energy constructed – Wind (MW) – (Core)	0	0	189	721	721
Generation capacity of renewable energy constructed – Solar (MW) – (Core)	0	0	139	306	306
Generation capacity of renewable energy constructed – Mini-hydro (MW) – (Core)	0	0	4	4	4
Generation capacity of renewable energy constructed – Biogas and Biomass (MW) – (Core)	0	0	1,2	1,2	1,2
Private capital mobilized (million US\$) – (Number) – (Core)	0	0	815	2,525	2,525
Intermediate Results Indicators					
Indicator Name	Baseline	Annual Target Values			
		YR1	YR2	YR3	End Target
GHG emissions avoided (million tCO ₂) – (Number) – (Custom)	0	0	0.54	1.2	1.37

Indicator Description

Project Development Objective Indicators				
Indicator Name	Description (indicator definition)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Generation capacity of renewable energy constructed under the Project	This custom indicator measures total installed capacity (including hydropower and other renewable energy) constructed under the Project. The baseline value is expected to be zero.	Biannual	Project owner/developer	MEM
Generation capacity of renewable energy (other than hydropower) constructed under the Project	This sub-indicator measures the capacity of renewable energy (other than hydropower) constructed under the Project. The baseline value for this indicator is expected to be zero.	Biannual	Project owner/developer	MEM
Generation capacity of renewable energy constructed – Wind	This sub-indicator measures the capacity of wind systems constructed under the Project. The baseline value for this indicator is expected to be zero.	Biannual	Project owner/developer	MEM
Generation capacity of renewable energy constructed – Solar	This sub-indicator measures the capacity of solar PV systems constructed under the Project. The baseline value for this indicator is expected to be zero.	Biannual	Project owner/developer	MEM
Generation capacity of renewable energy constructed – Other	This sub-indicator measures the capacity of other (biomass, biogas) systems constructed under the Project. The baseline value for this indicator is expected to be zero.	Biannual	Project owner/developer	MEM
Private capital mobilized	This core indicator tracks the amount of direct financing (in the form of equity and/or debt) mobilized by private entities—and using private funding—to finance investments within an IBRD/IDA operation or investments directly linked to that operation. For the Project the private capital mobilized has been calculated by estimating the private equity and the commercial borrowing under RenovAr Round 1 and 1.5	Biannual	Project owner/developer	MEM
Intermediate Results Indicators				
Indicator Name	Description (indicator definition)	Frequency	Data Source /	Responsibility for

			Methodology	Data Collection
GHG emissions avoided (tCO ₂)	This indicator measures the tons of carbon dioxide equivalent that have been avoided as a result of the Project. The baseline value is expected to be zero.	Annual	CAMMESA	MEM

Annex 2: Detailed Sector Background and Project Description

ARGENTINA: FODER Renewable Energy Fund Guarantee

Sector Background

Overview of Argentina's Energy Sector

1. Argentina is one of the largest and most developed power markets in Latin America. With total electricity demand of approximately 126 TWh per year Argentina is the 27th largest power market in the world and the third largest in the region after Brazil and Mexico. Roughly 41 percent of demand is driven by the 40 million residential consumers (98 percent of Argentinians have access to electricity services), 30 percent by industrial users and 28 percent by commercial consumers. Fairly well-developed policies, regulations, and institutions govern the sector³⁶, which has been opened to private investment and competition since 1992. Private companies are the main operators in all subsectors, operating through licenses and concessions. Out of 80 mostly privately-owned generators, the 20 largest operate 80 percent of total installed capacity (33 GW). However, the progress toward adopting clean sources of energy is yet to take place. Installed capacity is 60 percent thermal,³⁷ 34 percent hydro, 5 percent nuclear, and 1 percent wind. Solar represents only 8 MW. The size and importance of Argentina's domestic energy market places it squarely in the middle of the region's energy security agenda.

2. The Argentina power sector is vertically unbundled into generation, transmission, and distribution businesses with competitive forces expected to play a key role in generation. Generation businesses, dominated by private operators but with public or mixed operators also participating, operate in a competitive environment. Generators are subjected to the scheduling and dispatch rules set out in the respective regulations and managed by *Compañía Administradora del Mercado Mayorista Eléctrico Sociedad Anónima* (CAMMESA). As the wholesale energy market administrator, CAMMESA coordinates dispatch operations, determines wholesale prices, administers the economic transactions in the national interconnected system (*Sistema Argentino de Interconexión*, SADI), and acts as Governmental off-taker in certain power purchase agreements³⁸. Since its creation, the wholesale power market has endured radical adjustments that altered the market rules. Initially set up in 1992 by a market-oriented government, the wholesale power market was expected to function as a fully competitive market and, consequently, pricing setting rules and payment mechanisms were designed to enable the creation of such competitive market. Argentina conducted a successful privatization of generation assets with this framework. However, macroeconomic and market conditions changed in the aftermath of the 2001 crisis with a detrimental impact on the investors (further details

³⁶ Argentina followed Chile as one of the first countries in Latin America to initiate power sector reforms in 1992 and 1982, respectively. Subsequently, a variety of power sector reforms with different features were carried out in Peru (1993), Colombia (1994), and Brazil (1995).

³⁷ Thermal technologies' breakdown is 49 percent combined cycle, 24 percent steam turbines, 22 percent gas turbines, and 6 percent diesel.

³⁸ In recent years, the mechanism applied for remunerating the electricity generation led CAMMESA to accrue debt with power generators. In some cases, debt was collected through the pledging of funds for the construction of new generation plants; approximately 1,700 MW were installed under this mechanism.

below). GoA adopted a National Emergency Law No. 25561 in January 2002 that abrogated the fixed parity between the peso and the US dollar and allowed the peso to float on the exchange markets. Those reversals substantially increased the risk perception of investing in Argentina. During following decade and a half, private investment in new generation became limited and at times forced by the government (e.g. requiring firms to reinvest profits). Now the new Administration which assumed office in December 2015 is working on removing the sector imbalances and creating an environment attractive for private investment in the power sector.

3. Transmission and distribution businesses are largely privately owned and closely regulated as natural monopolies. Transmission companies collect regulated fees for transmission services, have to provide third parties access to the transmission system, and are prohibited from generating or distributing electricity³⁹. Distribution concessionaires operate distribution networks in specified areas subject to concession rights which provide for monopoly rights in their concession area, require them to satisfy demand at predetermined quality service levels, and establish maximum tariffs for services. The National Regulatory Agency (*Ente Nacional Regulador de la Electricidad, ENRE*) monitors federal distributors (in the Buenos Aires Metropolitan region) while provincial regulatory agencies supervise local distributors. ENRE's main functions include the surveillance of regulatory framework compliance, control of service supply standards, stipulation and calculation of rates, authorization of the construction and expansion of new infrastructure, and mandatory initial jurisdiction to hear any disputes arising among the energy market participants. The Ministry of Energy and Mining (*Ministerio de Energía y Minería, MEM*) is responsible for the development of power-sector policies and programs.

4. Tariffs are regulated by MEM, ENRE and provincial regulatory agencies. MEM and ENRE regulate tariff-setting by federal distributors that cover the Greater Buenos Aires area, namely the *Empresa Distribuidora y Comercializadora Norte S.A. (EDENOR)* and *Empresa Distribuidora Sur S.A. (EDESUR)*. Provincial regulatory authorities regulate tariff-setting by local distributors within their respective concession areas.⁴⁰ In practice, tariffs of power concessionaires were frozen since 2001 until 2015 despite high inflation, exchange rate variation, and investments needs.

5. The market's structure is the result of reforms undertaken in the early 1990s. Until the late 1980's, Argentina's power sector was considered a public service provided by the state or state-owned companies. The sector was dominated and directly operated by the Government through three publicly-owned utilities, offering generation, transmission, and distribution services at both federal and provincial levels. The Government regulated the sector through an Energy Secretariat. Most of the generation derived from hydropower facilities. Vagliasindi (2013) noted that "the performance of the electric power sector suffered from financial and operational difficulties due to poor management practices and insufficient investment, as well as

³⁹ Transmission is dominated by TRANSENER, which controls high-voltage lines (500kV and 200kV), 6 regional companies (which manage 220kV and 132kV lines), and 2 independent transmission companies (which manage 500kV lines).

⁴⁰ Tariffs vary widely across provinces and within provinces and sectors. The tariffs applied to average Edenor residential clients as well as small industrial and commercial customers are roughly at US\$20 ¢ per kWh.

from the absence of clear objectives, the political motives of the state-owned companies, and an economic environment of hyperinflation that reached 200 percent per month in 1989.”

6. During the 1990s, the country became one of the most well-known cases of electricity sector regulation (Joskow 2000, 2005), reducing horizontal market power and developing competitive wholesale electricity markets. Growing competition led to a significant decline in the spot price of electricity, while investments in thermal generation increased rapidly until the early 2000’s. The economic crisis in the early 2000’s prompted the Government to alter the initial reform through several regulatory interventions, such as freezing tariffs.

7. The 1992 power sector reform, liberalized and privatized key areas at both federal and provincial levels⁴¹. Reformers focused on the privatization of state-owned infrastructure and utilities as a way to reformulate the existing scheme of subsidies and decrease contributions from treasury. Additionally, the delicate situation of the power sector and the threat of recurring future supply crisis, forced the Government to seek alternatives for restructuring the sector as a way to improve efficiency and increase investments in the sector. The enactment of Law No. 24065 introduced guidelines for the restructuring and privatization of the sector, unbundling generation, transmission, and distribution services. The objective of the law was to modernize the sector by promoting efficiency, competition, improved service, and private investment.

8. In the aftermath of the 2001 crisis, however, key sector rules were again changed having a detrimental impact on investors. Power sector concessions endured radical adjustments in key terms and conditions since their establishment in early 1990s. Signed at a time of macroeconomic stability and fixed parity between the peso and US dollar, concession contracts included clauses of full dollar indexation. In the aftermath of the 2001 crisis such provision became unsustainable. A National Emergency Law (No. 25561) in January 2002 abrogated the fixed parity between the peso and the US dollar and allowed the peso to float on the exchange markets. In addition, it removed the dollar indexation stipulated in the concession contracts for the provision of public services and allowed the national government to renegotiate the concession contracts signed for the provision of public services. A federal “*Comisión de Renegociación de Contratos de Obras y Servicios Públicos*” (Commission for the Renegotiation of Public Contracts, CRCOSP) was set up in 2002 to lead the renegotiations of those concession contracts. During the renegotiations, CRCOSP modified key parameters of the original concessions agreements, particularly those regarding tariff setting. Investors filed 39 cases against Argentinian government to the International Centre for Settlement of Investment Disputes (ICSID) in the aftermath of the 2001 crisis. While Argentina did relatively well at ICSID,⁴² the measures taken by the Argentina government severely damaged investor’s risk perceptions of Argentina.

Current Status of Argentina’s Energy Sector

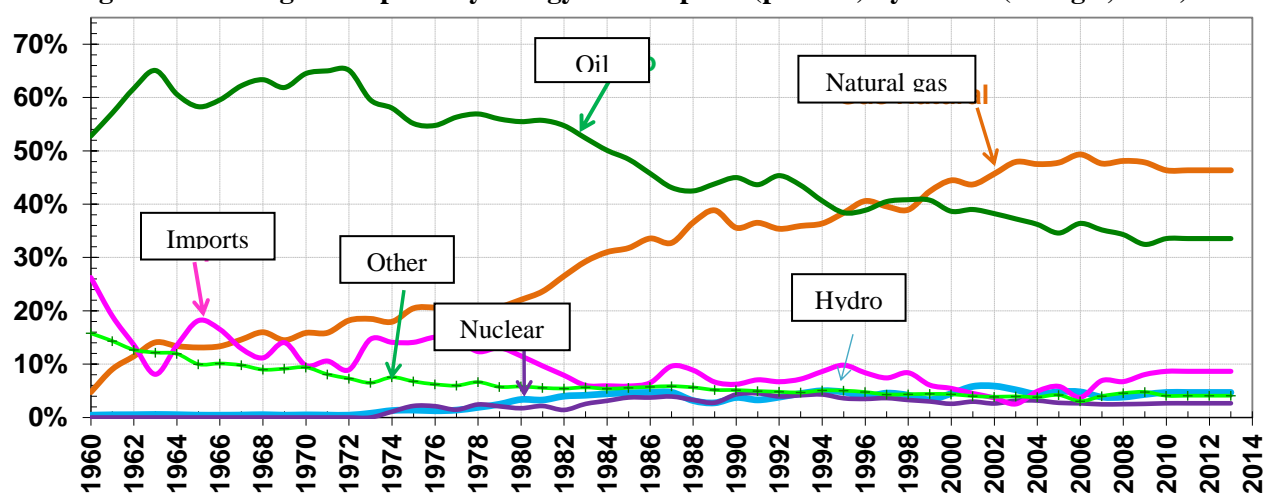
⁴¹ Argentina followed Chile (1982) as one of the first countries in Latin America to initiate power sector reforms in 1992. Subsequently, a variety of power sector reforms with different features were carried out in Peru (1993), Colombia (1994), and Brazil (1995).

⁴² Argentina won six of the ten resolved cases while a dozen more claims were withdrawn. In the awards, Argentina lost US\$400 million dollars.

9. Argentina is endowed with significant conventional and non-conventional energy resources. These include tight oil recoverable resources estimated at 27 billion barrels, and just over 800 trillion cubic feet (TCF) of shale gas (ranking second only to China) (US EIA, 2015), located in the central west part of Argentina in the *Neuquina* basin, which includes the Provinces of Neuquén, La Pampa and Río Negro. Production has started in some areas.⁴³ The country also has a huge on-shore wind potential and an unexploited hydropower potential of 40.4 GW⁴⁴ (OLADE, 2012).

10. The country's energy matrix is highly dependent on natural gas, which provides fifty-three percent of energy consumed (Figure A.2.1). Most of the natural gas (127 million British thermal unit (MMBTU) in 2014) is used for electricity generation and in the residential and industrial sectors. Oil, the country's second source of energy, is largely used in the transport sector. This dependence on natural gas – for over one-half of its energy needs – is well above the world average of roughly 25 percent. Approximately 21 percent of gas consumed is imported.

Figure A.2.1: Argentina primary energy consumption (percent) by source (Givogri, 2015)

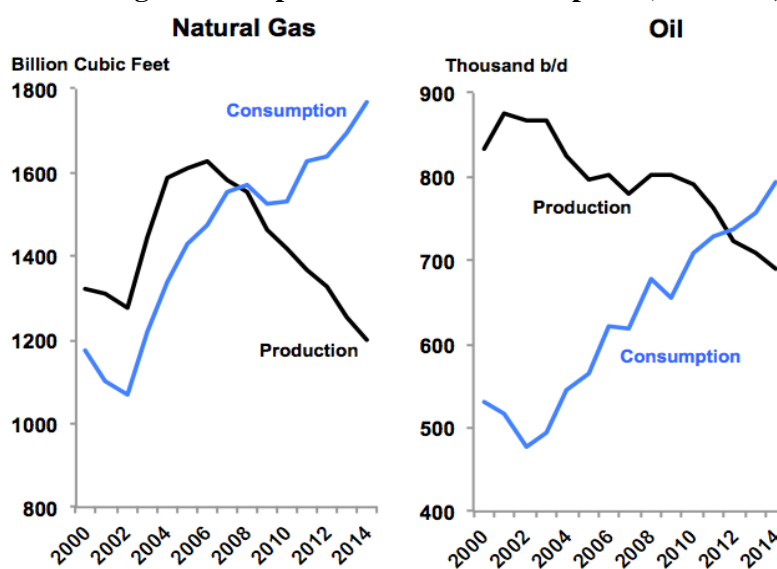


11. Domestic production of fossil fuels has been declining steadily since the millennium (Figure A.2.2). Total primary energy supply is about 80 ton of oil equivalent (TOE) while production is roughly 75 TOE. Oil and natural gas consumption has begun to outpace production, while domestic electricity generation has not kept up with demand. Consequently, in the post-crisis decade (2003-2013), Argentina's electricity imports increased substantially. In 2003, electricity imports were three times those of exports, whereas in 2013 electricity imports were 16 times larger than exports. Argentina's electricity exports have declined significantly in this period, dropping from 2.5 billion kWh/yr. to 0.5 billion kWh/yr between 2003 and 2013, respectively (CAMMESA, 2015).

⁴³ Argentina is the 3rd largest natural gas producer in Latin America – behind Mexico and Trinidad & Tobago – and the 5th largest petroleum – and other liquids – producer in the region – behind Venezuela, Mexico, Brazil, and Colombia (U.S. EIA, 2015). Worldwide, Argentina ranked 24th and 28th in terms of production of natural gas and petroleum, respectively.

⁴⁴ Current installed capacity is 32.7 GW.

Figure A.2.2: Natural gas and oil production and consumption (Clemente, 2015, Forbes)



12. Argentina has the third largest power market in LAC after Brazil and Mexico. As an early adopter of sophisticated power sector regulation in Latin America, it has put in place a complex set of rules and institutions. As of March 2015, there are approximately 80 generators in Argentina, mostly privately-owned and operating more than one power facility. The larger 20 generators operate 80 percent of Argentina’s total installed capacity of 32.7 GW. Overall installed capacity consists of 60 percent thermal⁴⁵, 36 percent hydro, 3 percent nuclear, and 1 percent wind – solar represents only 8 MW (Table A.2.1).

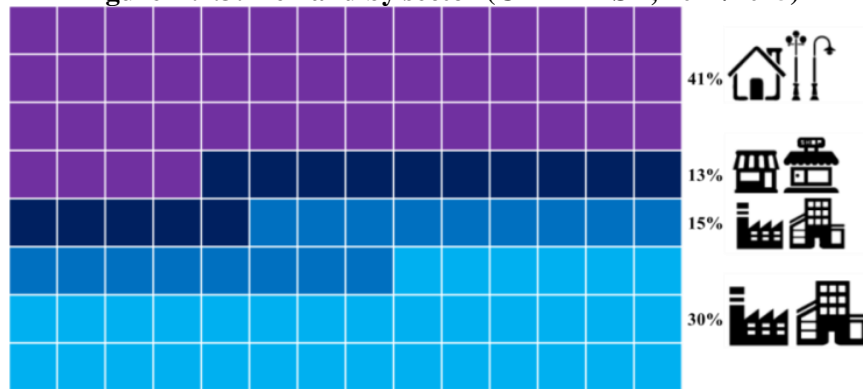
Table A.2.1: Installed capacity by technology and region (CAMMESA, 2014/2015)

Region	Thermal	Hydro	Nuclear	Wind	Solar	Total
Cuyo	584	1,071	-	-	8	1,663
Comahue	1,564	4,692	-	-	-	6,256
Noroeste	2,347	217	-	50	-	2,614
Centro	1,321	918	648	-	-	2,887
Gran Buenos Aires						
Litoral	12,280	945	362	-	-	13,587
Buenos Aires						
Noreste	293	2,745	-	-	-	3,038
Patagonia	348	519	-	137	-	1,004
Total	18,737	11,107	1,010	187	8	31,049
Total percent	60 percent	36 percent	3 percent	1 percent	0 percent	100 percent

13. Demand is distributed between the residential (41 percent), industrial (30 percent), and commercial (28 percent) sectors (Figure A.2.3).

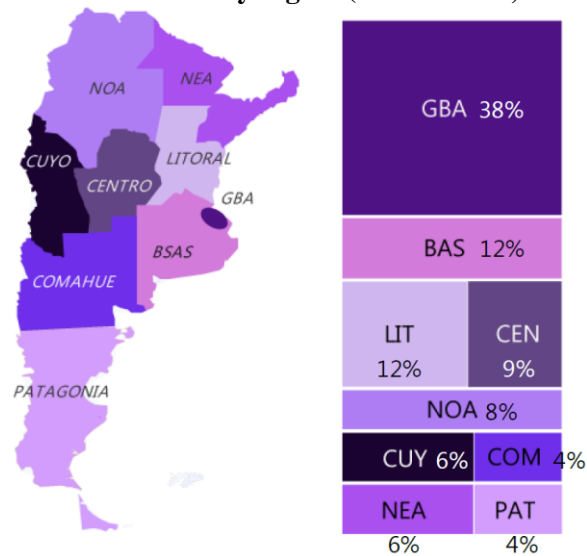
⁴⁵ Thermal technologies’ breakdown is 49 percent combined cycle, 24 percent steam turbines, 22 percent gas turbines, and 6 percent diesel.

Figure A.2.3: Demand by sector (CAMMESA, 2014/2015)



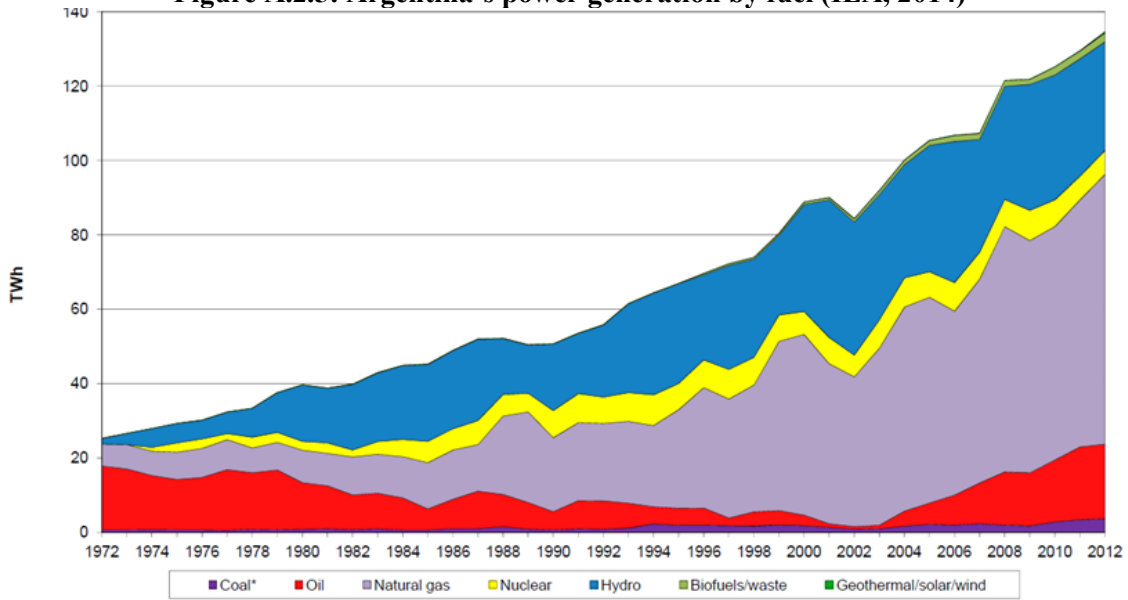
14. Approximately two-thirds of total demand is concentrated in the Buenos Aires, Greater Buenos Aires, and Littoral regions (Figure A.2.4). The system has 15 million customers, of which 13 million are residential and 1.5 million commercial, with the remainder divided between industry, government agencies, and other users. Electricity service covers approximately 98 percent of the total population with nearly 150,000 households in isolated rural areas still lacking access to electricity.

Figure A.2.4: Demand by region (CAMMESA, 2014/2015)



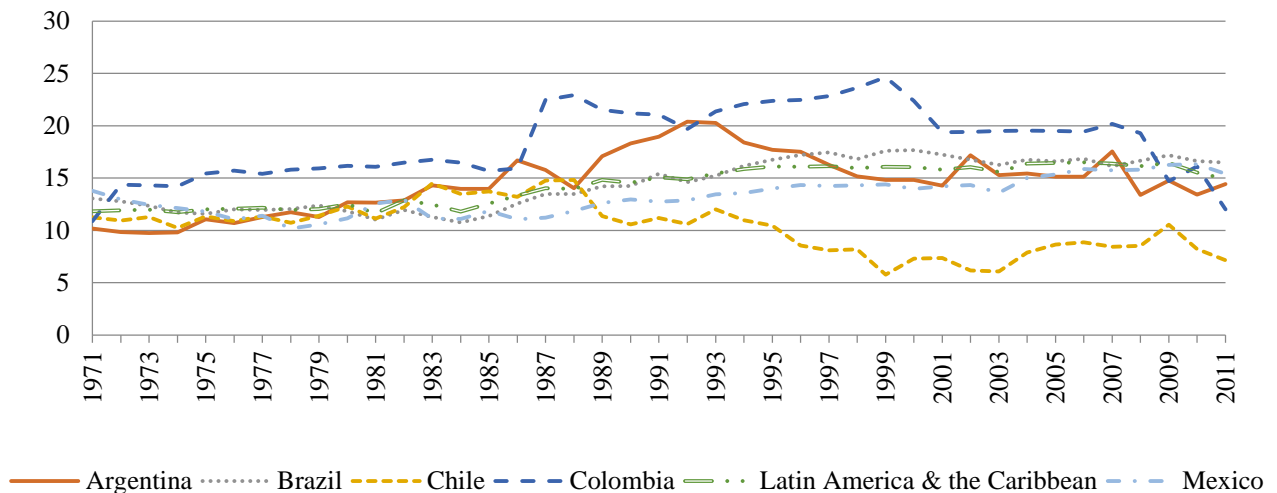
15. Argentina consumed 126.5 TWh in 2014, and remains the second-largest consumer of electricity in South America, after Brazil. Argentina maintains transmission interconnections and trade in electricity with Brazil, Paraguay, and Uruguay. The country imported 342 GWh of power mostly from Uruguay and Paraguay in 2013, slightly less than the 423 GWh imported in 2012 and significantly less than the 2,412 GWh imported in 2011. Argentina's power exports have significantly declined in recent years – dropping from 265 GWh in 2011 to zero in 2013, as domestic demand for electricity has increased (Figure A.2.5).

Figure A.2.5: Argentina's power generation by fuel (IEA, 2014)



16. Transmission and distribution losses averaged 14 percent in the period 2010-2014 (Figure A.2.6), which is similar to the average in Brazil (16 percent), Colombia (12 percent), and Mexico (15 percent) and higher than Chile (7 percent) during the same period (World Bank, 2015), as shown in Figure 24. Given the freezing of the VAD (further details below) – which has had a negative impact on transmission and distribution investments – these results are not entirely negative. The unfreezing of the VAD charge should greatly accelerate investments and improve performance on this regard.

Figure A.2.6: Transmission and distribution losses in Latin America and the Caribbean (World Bank, 2011/2015)



17. Electricity is transmitted from power generation plants to distributors through the National Interconnected System at 500 kV, 220 kV, and 132 kV. The National Interconnected System covers approximately 95 percent of the country and consists of 13,762 km of

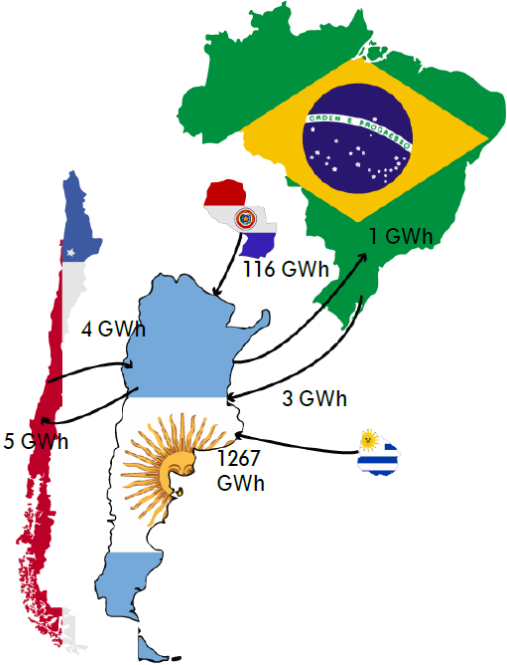
transmission lines, 16,000 transmission towers, and 29 substations. One company, TRANSENER, covers transmission at 500KV in the whole country, whereas seven regional companies are responsible for transmission grids at lower voltage (Table A.2.2). Power distribution is carried out by 30 companies (and 583 cooperatives) which operate the distribution network, subject to concession rights in specified geographic areas.

Table A.2.2: Transport infrastructure by region (CAMMESA, 2014/2015)

Transport system	500 kV	330 kV	220 kV	132 kV	66 kV	33 kV	Total
High voltage	13,824		562	6			14,392
Trunk distribution		1,116	1,113	16,410	398	24	19,061
- Cuyo			641	625			1,266
- Comahue				1,369			1,369
- Buenos Aires			177	5,583	398		6,158
- NEA			30	1,861		24	1,915
- NOA				4,908			4,908
- Patagonia		1,116	265	2,064			3,445

18. Argentina’s transmission infrastructure allows it to trade power with Brazil, Paraguay, Chile and Uruguay (Figure A.2.7).

Figure A.2.7: Argentina international interconnections (CAMMESA, 2014/2015)



19. The current administration has started to implement measures to ensure that tariffs reflect generation and transmission costs, plus an aggregate value of distribution (VAD), as mandated

by law⁴⁶. In January 2016, the GoA published two resolutions (6/2016 and 7/2016) which updated pass-through mechanisms so that tariffs reflected actual costs. These resolutions also established that ENRE was to unfreeze and gradually update the VAD charges for EDENOR and EDESUR and asked this same regulator to conduct and finalize an integrated rates review by no later than December 2016. Starting on February 1st, the resolutions dramatically increased existing tariffs; wholesale market prices instantly increased roughly 140 percent while some industrial, commercial or industrial tariffs were increased as much as 673 percent overnight⁴⁷. To offset the impacts of such measures, the Government also created a new “social tariff” that greatly reduced electricity prices for roughly 2 million of the poorest citizens of Argentina, and launched new energy efficiency incentives for residential customers that reduced their consumption⁴⁸.

Renewable Energy Policy Developments

20. Argentina is not fully taking advantage of its abundant clean energy resources. The country’s hydroelectric potential is well known (hydropower already accounts for over one-third of the energy mix and proven resources exist to at least double small-scale hydro generation). In the case of wind, it has been estimated that at least 6 GW could be developed in the medium-term (wind resources are world class, especially in the southern Patagonia region where capacity factors exceed 45 percent). Solar resources are abundant throughout the country, with the finest resources located in the northwestern region (at least 11 of Argentina’s 23 provinces have over 5 kWh/m² of solar irradiation on average per year). In addition, the country is already one of the world-largest producers of biofuels (Figure A.2.8)⁴⁹.

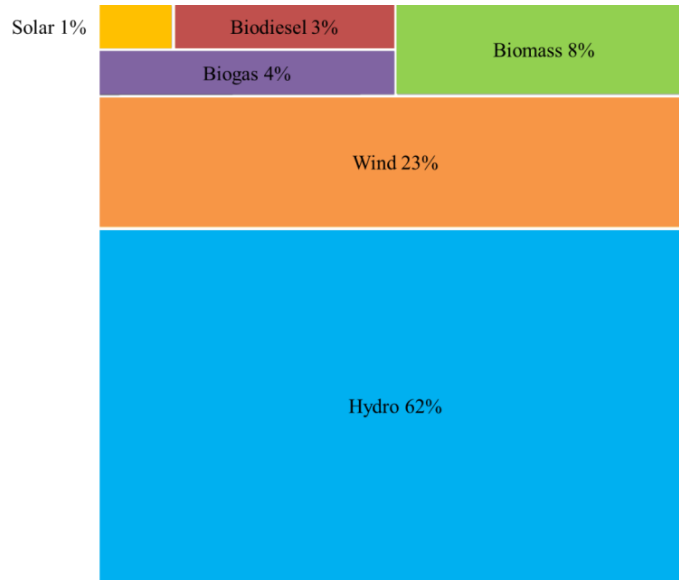
Figure A.2.8: Renewable energy generation by technology (CAMMESA, 2014/2015)

⁴⁶ For example, in the case of the Greater Buenos Aires area (one-third of the country’s population), tariffs were frozen (in Argentine peso terms) between 2002 and 2008. Until 2015, only minor increases were allowed for medium and large residential clients. In the Metropolitan Area of Buenos Aires, tariffs remained unchanged for over ten years.

⁴⁷ As mentioned before, the Supreme Court has partially blocked these increases while it reviews them. The review process has created uncertainty among CAMMESA and distribution companies on the applicable tariff framework.

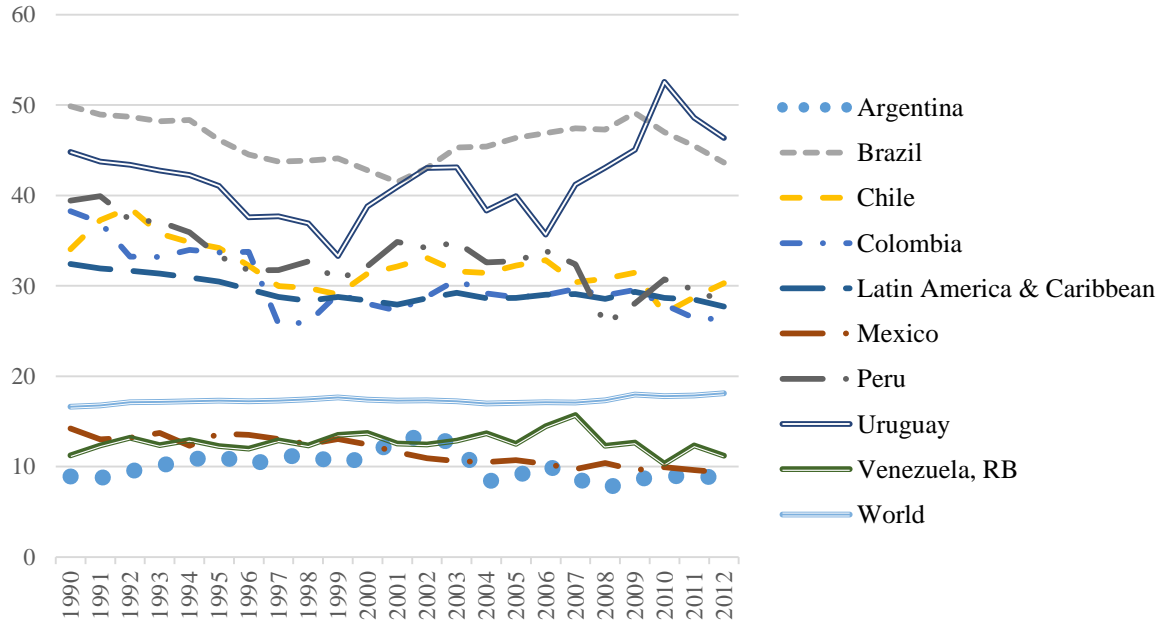
⁴⁸ Argentina’s energy subsidies were the third highest in the region. In addition to their large fiscal impact (3.9 percent of GDP) (IMF, 2015), they were unevenly distributed. Their elimination should greatly benefit the country’s current accounts and trade balances, as well as incentivize energy conservation.

⁴⁹ The understanding of the country’s geothermal resource is still at an early stage.



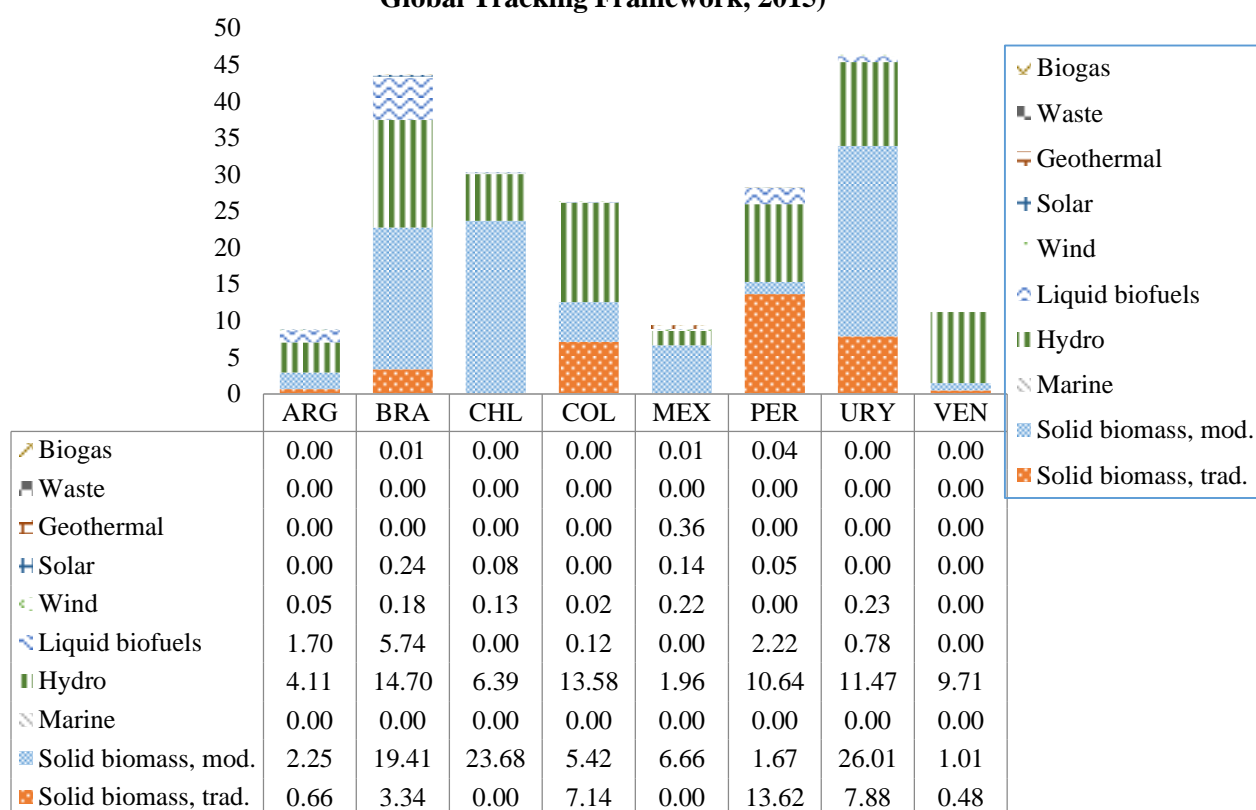
21. Since the early 1990s, renewable energy consumption has trended downward. The share of renewable has not only decreased, but remains well below the world average, the region's average and most economies in the region (Figure A.2.9).

Figure A.2.9: Renewable energy consumption as percent of total final energy consumption, 1990-2012 (World Bank, 2015)



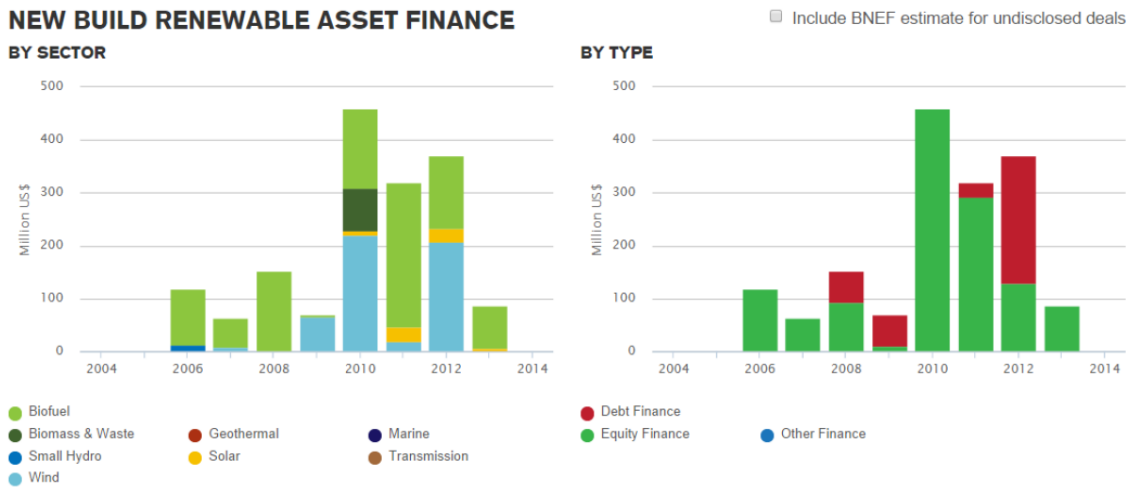
22. As of 2012, less than 10 percent of total final energy consumed came from renewable sources, lower than most countries in the region. The GoA is committed to increase the level of renewables (excluding large-scale hydro) in the forthcoming years. This represents an opportunity to seize on Argentina's vast and unexploited renewable energy resources (Figure A.2.10).

Figure A.2.10: Share of renewable energy in total final energy consumption (World Bank, SE4All Global Tracking Framework, 2015)



23. Renewable energy potential remains largely untapped for various reasons. According to Climate Scope (2014), “Argentina reached 20th position among the 55 countries assessed in *Climatescope* 2014 with a 1.24 score out of a possible 5. Compared to its regional neighbors, the country ranked 9th among Latin American and Caribbean countries. Once attractive for non-large hydro clean energy investment, Argentina has recently lost much of its luster. From 2006 to 2012, the country attracted \$2.7 billion in such funding. However, in 2013, that fell 70 percent from prior year to just \$153 million. Overall market risk, lack of financing alternatives, subsidies, low tariffs and off-taker counterparty risk and policies not fully implemented are the main hurdles renewables face in Argentina today. As a result, clean energy deployment has slowed, and today the country remains far from achieving a previously announced 8 percent non-large hydro clean energy generation target by 2016. Argentina is still home to important clean energy manufacturing and service provider value chains, but both are more a reflection of the size of its \$488 billion economy than a currently thriving renewables sector. Looking ahead, there are few signs of substantial near-term clean energy growth unless macroeconomic conditions, conventional power subsidies, or both change significantly.” BNEF (2015) offers an estimate of clean energy investment by class and technology (Figure A.2.11).

Figure A.2.11: Renewable energy asset finance (BNEF, 2015)



24. **The GoA has tried in the past – with limited success – to increase renewable energy generation.** Since 2007, both the Federal and Provincial Governments have issued policies and incentives in support of renewable energies. At the federal level, the enactment of Law No. 26190 (2006) for the promotion of renewable sources of energy (wind and solar) for electricity production superseded Law No. 25019 (1998). Law No. 26190 declared the production of electricity from renewables of national interest and set the goal of at least 8 percent of local electricity demand should be satisfied by renewable energy by 2016. Law No. 26190 provided fiscal incentives for renewable energy production and introduced feed-in-tariffs (“*primas*”) awarded for 15 years for generation from wind, biomass, small-scale hydro, tidal, geothermal, and solar sources. The so-called “*primas*” or additional compensation were set at AR\$15/MWh (US\$2.5/MWh) for wind power⁵⁰ and at AR\$900/MWh (US\$150/MWh) for solar photovoltaic (PV) energy. No activities were launched under this scheme –which has now been abandoned – as the fund that was supposed to hold resources to incentivize the launching of renewable energy resources was never operational.

25. In 2009, the Government launched the Program for the Generation of Electricity through Renewable Sources (*Programa para la Generación Renovable*, GENREN) which mandated ENARSA⁵¹ to execute tenders for 1 GW of renewable energy capacity to be sold into the grid under power purchasing agreements (PPAs) awarded for a period of 15 years. Guaranteed by the national treasury, this program only managed to produce roughly 130 MW of new wind capacity and 7 MW of solar PV facilities at 123 to 134 US\$/MWh and 547 to 598 US\$/MWh respectively⁵². The limited scope of the GENREN program was due to the difficulties IPPs faced when they tried to reach financial closure in a context of limited access to international markets. The then Secretariat of Energy also tried to increase renewable generation by establishing long-

⁵⁰ And all other technologies, excluding solar PV.

⁵¹ In 2004 the Federal Government created Energía Argentina S.A. (ENARSA Law No. 25943) with the purpose of carrying out on its own or in association with private companies the exploration and production of oil and natural gas as well as industrialization, transport and trade of oil, natural gas and electricity.

⁵² The wind projects included Rawson I and II (combined 77.4 MW) and Loma Blanca IV (51 MW) in Chubut; while the solar PV facilities were Cañada Honda I and II and Chimbera I (combined 7 MW) in San Juan.

term (15 years) supply contracts with CAMMESA. This new drive for renewables only fostered new installed capacity of 31.8 MW⁵³, presumably, because of the lack of confidence on the offtaker’s (CAMMESA) capacity to honor its commitments. CAMMESA was facing instable flow of funds from the utilities – due to the low tariffs – high level of subsidies from the treasury and constant regulatory changes.

26. Law 27191, passed in September 2015, seeks to learn from past experiences and overcome their shortcomings. The fact that the vote happened in the midst of a fierce presidential campaign and obtained overwhelming, multi-party support reflects strong national commitment to its goals and objectives. This new law has established mandatory renewable energy targets 8 percent of electricity consumption by the end of 2017, 12 percent by 2019, 16 percent by 2021, 18 percent by 2023 and 20 percent by 2025. Preliminary estimates indicate that in order to achieve the 2025 renewable energy target, the GoA would need to launch auctions for over 8,000 MW in the next 10 years – 865 MW per year (Table A.2.3). The law is a complete overhaul of the renewable energy regulatory framework and also seeks to: (a) create competitive and transparent market rules and contract mechanisms; (b) diversify the energy matrix by demanding the use of different clean energy technologies; (c) incentivize local and regional development; (d) establish mandatory pass-through of PPAs costs to consumers; (e) create fiscal incentives for IPPs and local supply chains, among others. Particularly relevant is the creation of a new trust fund (the *Fondo para el Desarrollo de Energías Renovables* – Fund for the Development of Renewable Energy – FODER) to enhance and foster renewable energy throughout the country. The Government’s determination, successful experiences in the region, and the global decrease in costs for renewables offer a favorable context for this law to be more successful than previous ones.

Table A.2.3: Renewable Capacity needs to reach 2025 targets

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Demand (TWh)	135	143	148	154	160	166	173	180	187	195
New capacity (MW)	0	12	1.387	2.825	1.200	1.800	1.300	500	300	300
Accumulated capacity (MW)	823	835	2.222	5.046	6.246	8.046	9.346	9.846	10.146	10.446
New generation (GWh)	0	83	4.487	11.272	5.363	8.529	4.937	1.684	1.067	1.067
Accumulated generation (GWh)	3.032	3.115	7.602	18.874	24.238	32.767	37.704	39.387	40.455	41.522
Annual investments (US\$ M)	0	15	1.845	3.757	1.516	2.161	1.482	542	309	293
Accumulated investments (US\$ M)	0	15	1.861	5.617	7.133	9.294	10.776	11.318	11.627	11.920
Renewable share of Demand (percent)	2%	2%	5%	12%	15%	20%	22%	22%	22%	21%

27. FODER will be a key instrument to increase renewable energy generation in Argentina and achieve the ambitious targets set by Law 27191. FODER could provide debt financing and payment guarantees (for liquidity, Put Option or a Call Option) to renewable energy projects. FODER is to be capitalized with: (a) resources from the national treasure, equal or higher to 50 percent of the savings achieved by switching from fossil fuels to renewable energy sources; (b) specific taxes to energy demand; (c) revenues from the issuance of trust securities by the Fund’s trustee and; (d) other external sources that wish to contribute to the Fund. FODER’s activities are supervised by MEM (through its Secretariats for and Economic Policy and

⁵³ In Necochea (0.3 MW, Buenos Aires), Arauco (25.2 MW, La Rioja), and Diadema (6.3 MW, Chubut) wind projects.

Development Planning). The “*Banco de Inversión y Comercio Exterior*” (Investment and Foreign Trade Bank, BICE) acts as trustee, and carries-out day-to-day management activities on behalf and under orders from MEM. With FODER’s support, the GoA – through the RenovAr program – is seeking to create and increase potential investors and financiers’ trust and confidence in renewable energy. By supporting PPAs, Argentina could reach its ambitious renewable energy targets by increasing participation and interest of potential renewable energy IPPs.

The RenovAr Program

28. In order to achieve the GoA’s ambitious clean energy goals, MEM has decided to launch “auctions” for renewable energy generation by IPPs through CMMESA (under which CMMESA will be the off-taker and signatory of the corresponding PPAs when awarded). In early 2016, MEM mandated CMMESA to launch a first Request for Proposals (RfP) for 1,000 MW of clean energy capacity for 20 years. This first round of the so called “RenovAr” program constitutes the first step to fulfil the 2017 goal established in Law 27191.

Table A.2.4: RenovAr Round 1 and Round 1,5 – Expected Impacts

Increase Renewable Energy (percent)	Contribution 2017 Renewable Energy Goal (percent)	Contribution 2025 Renewable Energy Goal (percent)	Total Investment (US\$Million)	Jobs Creation ⁵⁴	Fossil Fuel Savings (US\$Million/year) ⁵³	GHG Emission Reductions (MtCO ₂ eq/year) ⁵³
	80 percent	23 percent	3,280	10,000 – 15,000	600	2

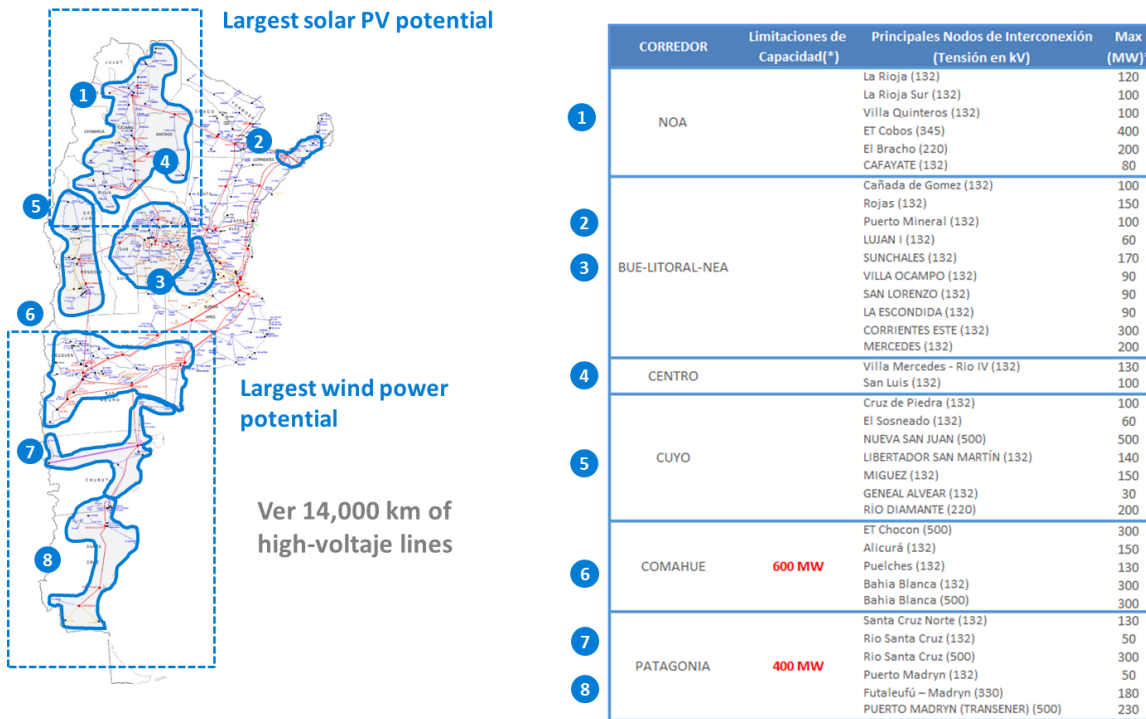
29. In alignment with Law 27191, RenovAr seeks to incentivize different clean energy technologies. Under RenovAr, Argentina seeks to support the launching of wind, solar PV, biomass, biogas and small-scale hydro sub-projects. Aggregated installed capacity by technology as well as maximum and minimum capacity per sub-project will vary by technology.

30. The program will also support regional development by financing activities throughout Argentina, matching the different resources available by province with current transmission capabilities and local regulatory frameworks to ensure all of Argentina can benefit from the transition to a clean energy matrix (Figure A.2.12). The program will also take advantage of some of the fiscal instruments created by Law 27191⁵⁵.

⁵⁴ Source: Government of Argentina

⁵⁵ As established in the RfP, IPPs can obtain fiscal benefits varying by technology.

Figure A.2.12: Regions targeted under RenovAr and infrastructure limits



31. On September 5, 2016, MEM announced the preliminary results of RenovAr Round 1. Overall, 123 offers were received for an aggregate installed capacity of 6,366 MW. In the case of wind, sponsors proposed 49 sub-projects for a total of 3,468 MW; while for solar, 58 proposals for 2,834 MW were submitted. 11 additional offers for 64 MW (for biomass, biogas and small-scale hydro) were also presented. Sub-projects proposed covered 20 out of 23 provinces (Table A.2.6).

32. On October 7 and 14, 2016 a total of 29 sub-projects were awarded under the RenovAr Round 1 with an average price of 61.33 US\$/MWh, lower than the 2015 average generation price of 70.5 US\$/MWh. The 29 sub-projects awarded have a total installed capacity of 1,142 MW (which accounts for 2.9 percent of the national consumption), and cover 14 out of 23 provinces (Table A.2.5).

Table A.2.5: RenovAr Round 1 results

Technology	Offers received	Awarded sub-projects	Provinces
Wind	3,468 MW (49 offers) <i>Target: 600 MW</i>	707 MW (12 sub-projects)	Buenos Aires, Chubut, Río Negro, Santa Cruz, Neuquén, La Rioja, Córdoba, La Pampa, Mendoza y Santa Fé
Solar PV	2,834 MW (58 offers) <i>Target: 300 MW</i>	400 MW (4 sub-projects)	Salta, Jujuy, Buenos Aires, Catamarca, Chaco, Córdoba, La Rioja; Mendoza, San Juan, San Luis
Biomass + Biogas	53 MW (11 offers) <i>Target: 65 MW + 15 MW</i>	24 MW (8 sub-projects)	Entre Ríos, Corrientes, Córdoba, Tucumán, Santa Fé, Misiones, San Luis
Hydro	11 MW (5 offers) <i>Target: 20 MW</i>	11 MW (5 sub-projects)	Río Negro, Mendoza
	6,366 MW (123 offers) <i>Target: 1,000 MW</i>	1,142 MW (29 sub-projects)	14 out of 23 provinces for the awarded sub-projects

33. Based on the successful results of RenovAr Round 1 and still with IBRD support, on October 14, 2016 MEM announced RenovAr Round 1.5. This new round was the continuation of Round 1 and aimed at increasing solar and wind capacity, especially in those regions that were under-represented in Round 1. Only those solar and wind sub-projects that applied to Round 1 and were not awarded could participate in Round 1.5. MEM established quotas per type of technology and region. Round 1.5 sub-projects had to comply with the institutional, technical, financial and economic specifications published by MEM on October 28, 2016. A total of 30 sub-projects (10 wind and 20 solar) were awarded on November 25, 2016 with an installed capacity of 1,281 MW (out of total offers for 2,449 MW).

Figure A.2.13: RenovAr Round 1.5 Regional Quotas

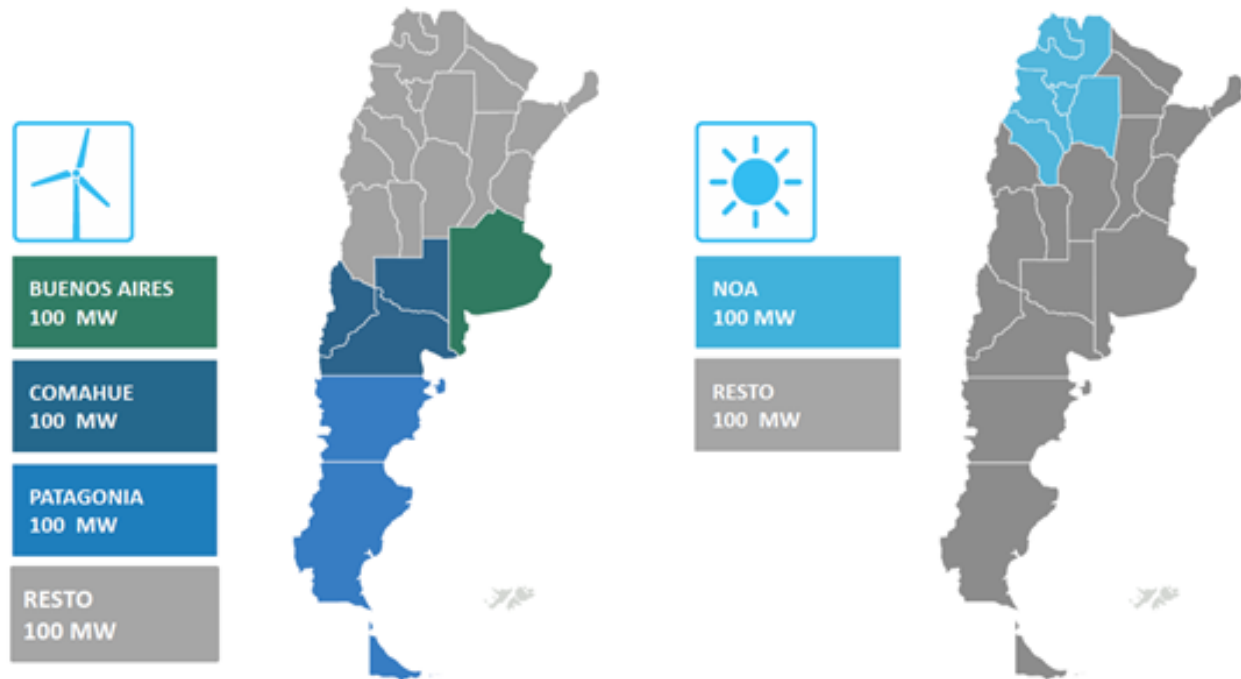


Table A.2.6: RenovAr Round 1.5 results

Technology	Offers received	Awarded sub-projects	Provinces
Wind	1,561 MW (19 offers) <i>Target: 400 MW</i>	765 MW (10 sub-projects)	Buenos Aires, Chubut, Río Negro, Santa Cruz, La Rioja, Córdoba, La Pampa y Mendoza
Solar PV	888 MW (26 offers) <i>Target: 200 MW</i>	516 MW (20 sub-projects)	Salta, Catamarca, La Rioja, Mendoza, San Juan, San Luis
	2,449 MW (45 offers) <i>Target: 1,000 MW</i>	1,281 MW (30 sub-projects)	12 out of 23 provinces for the awarded sub-projects

34. Guarantees from FODER and IBRD have been offered to IPPs participating in the RfPs launched on July 25, 2016 and October 28, 2016, by CAMESA. This first RfP is the main instrument to achieve the short-term clean energy goals set by Law 27191. RenovAr will take advantage of FODER, to both offer payment – “liquidity” – guarantees as well as “buy-back” guarantees and access to the IBRD guarantee.

Project Description and Components

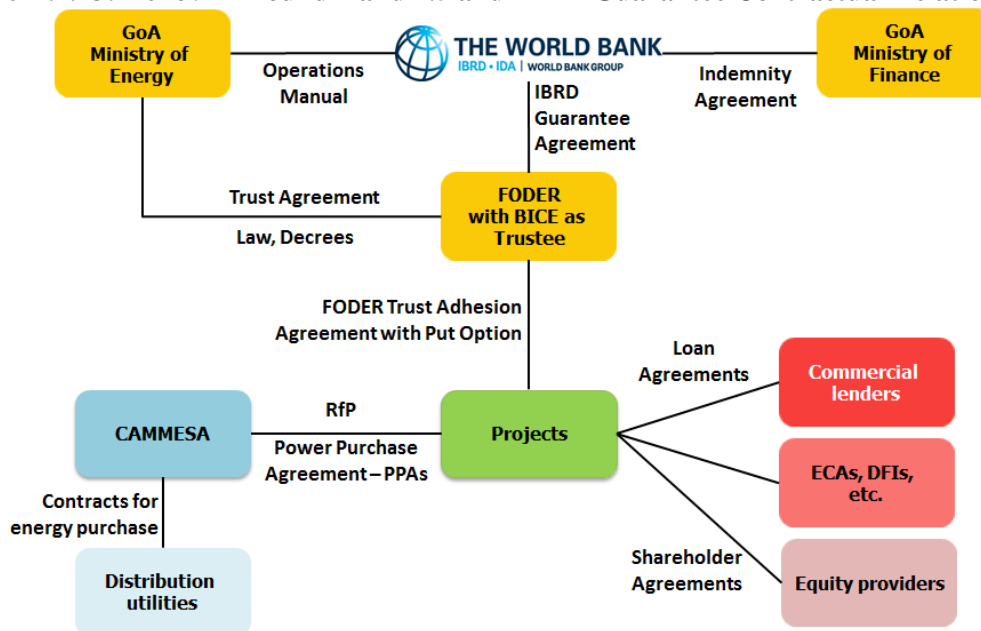
35. The Project supports renewable energy IPPs that opted for the IBRD guarantee within Round 1 and 1.5 of the RenovAr Program. The proposed IBRD guarantee of US\$480 million will backstop FODER’s obligation to pay a Put Price to eligible renewable energy sub-projects when they exercise the Put Option under their respective FODER Trust Adhesion Agreement. At the sub-project level, the guarantee offered amounts to a maximum of US\$500,000 per MW.

IPPs participating in the RenovAr Round 1 and 1.5 had the option to request IBRD guarantee support up to that limit.⁵⁶

36. The IBRD guarantee will indirectly mitigate country risks (including lack of payments, change in policy, convertibility, and transferability risks) to IPPs, and thus reduce financing costs for IPPs. It will therefore help reduce the risks associated to signing PPAs with CAMMESA. In the medium term, the guarantee will allow Argentina to rebuild a good track record with investors and thus facilitate future private investment in renewable generation.

37. The IBRD guarantee can only be called as a very last resort. The guarantee, which is in favor of FODER, backstops Argentina’s obligation to fund FODER when FODER is required to buy out a project. Such guarantee benefits project companies, and can also indirectly benefit the lenders and equity investors to such project companies. Figure A.2.13 shows the key contractual relationships.

Figure A.2.13: RenovAr Round 1 and 1.5 and IBRD Guarantee Contractual Relationships



38. While the risk mitigations instruments provided by the GoA were welcomed by potential financiers, market sounding exercises indicated that they would not be sufficient to attract the required levels of financing for the launching of “RenovAr”. Financiers therefore welcomed the presence of the World Bank and use of an IBRD guarantee. Based on multiple discussions including with IPPs, lenders, equity providers, export credit agencies (ECAs), the IBRD guarantee appears important to have attracted financiers with sufficient amounts and reasonable terms. Several IPPs and lenders mentioned that they would not consider RenovAr without it. Development finance institutions and ECAs seem likely to play a lead financing role as commercial lenders expressed cautious interest in Round 1 and 1.5. The results of Round 1 and

⁵⁶ The total IBRD guarantee amount is the sum of all the amounts requested by winning bidders.

1.5 (shown below) also indicate that about half of bidders requested the IBRD guarantee. Bidders that did not request IBRD guarantee still benefit from the FODER guarantee and therefore accepted to take more country risk, often because they have local sponsors or more experience in Argentina.

Table A.2.7: RenovAr Round 1 and 1.5 results

	TOTAL		Wind		Solar		Mini-hydro		Biogas and Biomass	
	#	MW	#	MW	#	MW	#	MW	#	MW
Round 1 – Awarded sub-projects	29	1,142	12	707	4	400	5	11	8	24
Round 1 – IBRD Guarantee	15	590	9	484	1	100	4	4	1	1
Round 1.5 – Awarded sub-projects	30	1,282	10	765	20	516	-	-	-	-
Round 1.5 – IBRD Guarantee	12	443	3	237	9	206	-	-	-	-

Annex 3: Implementation Arrangements

ARGENTINA: FODER Renewable Energy Fund Guarantee

1. The Project involves a Financial Intermediary structure to be implemented by BICE, in its capacity as trustee of FODER, and MEM in its capacity as implementing authority of FODER. The MEM was created in December, 2015 by the spin-off of the Secretariat of Energy from the then Ministry of Planning. The new Ministry's structure showcases the GoA's commitment to clean energy as it includes a newly-formed and staffed Undersecretariat of Renewable Energy. Created in 1992 BICE operates in the financial market as a first-tier bank, and all of its shares are held by the Ministry of Production and *Banco Nación* (Argentina's largest state-owned bank). BICE provides trust services since 2000 and had a portfolio of 28 trust contracts, primarily for infrastructure assets, for a total amount of US\$4.7 billion by December 2015.⁵⁷ BICE's goal is to encourage productive investment and foreign trade of Argentine companies. FODER has been established as an Argentine public trust. Consistent with law 27191 of 2015, MEM, acting a trust settlor and implementing authority, has established the FODER trust, with BICE as its trustee. BICE, as Trustee of FODER, will be the Bank's main counterpart for financial matters. MEM, as implementing authority of FODER, will be the Bank's main counterpart for non-financial matters.

2. The GoA has requested an IBRD guarantee for US\$480 million. A World Bank support letter and term sheet was published by CAMMESA on August 8, 2016. The Term Sheet included in Annex 6 is consistent with the term sheet published by CAMMESA on August 8, 2016.

3. Project Institutional and Implementation Arrangements

4. FODER payment guarantees are structured around an escrow account (Cuenta de Garantía) where GoA will set aside resources to cover payment obligations. The escrow account has three subaccounts for specific uses. One sub-account (Cuenta de Garantía de Pago por Energía) will backstop payment obligations of CAMMESA for purchasing energy under the PPA. By decree the Cuenta de Garantía de Pago por Energía is set to have a minimum balance equivalent to twelve months of payment obligations under the PPA for eligible projects. In 2016, FODER was capitalized with approximately US\$408 million (US\$395 million for the Cuenta de Garantía de Pago por Energía and the remaining to cover fee payments and FODER general costs). An additional US\$240 million have already been committed for calendar year 2017. In addition, eligible renewable projects have been given priority in the payment prioritization of CAMMESA. Another subaccount (Cuenta de Pago de Precio de Compra del Proyecto) will cover payment obligations arising from GoA's option to purchase eligible projects. A third subaccount (Cuenta de Pago de Precio de Venta del Proyecto) will cover payment obligations arising from the right of IPPs to sell their project to GoA if specific macroeconomic or sector risks materialize (i.e. to exercise a Put Option). GoA will have to issue Treasury Bills (Letras del Tesoro) in the amount of US\$3,661 million that would cover payment obligations under Cuenta de Pago de

⁵⁷ BICE 2015 Annual Report (<http://www.bice.com.ar/wp-content/uploads/2016/08/MemoriayBalance2015.pdf>)

Precio de Venta del Proyecto for the RenovAr Round 1 and 1.5. So far, the approval of the amount needed for Round 1 is underway.

5. The FODER-backed payment – “liquidity” – guarantee (*Cuenta de Garantía de Pago por Energía*) would cover IPPs from risks associated with the lack of timely payments for energy sales under the PPA (e.g. distribution companies not paying in-full their electricity purchases to CAMMESA, insufficient transfers to CAMMESA from the government, and CAMMESA not paying such electricity to the IPPs). This mechanism would be completely funded by the GoA through FODER. As shown below (Figure A.3.1), if CAMMESA does not have the resources to pay in full the amount committed under the respective PPAs, CAMMESA would be allowed to withdraw resources from *Cuenta de Garantía de Pago por Energía* to cover the deficit and pay in full energy sales under the eligible PPA. Later on, FODER would recover any withdraw from CAMMESA. If FODER is not able to recover from CAMMESA, the *Cuenta de Garantía de Pago por Energía* will be replenished through the demand charge or other government transfers to ensure that its balance remains at or above the minimum level required by Decree 531/2016.

6. IPPs awarded PPA contracts under RenovAr Round 1 and 1.5 will benefit from FODER’s payment guarantees under Trust Adhesion Agreements to be signed with MEM as implementing authority of FODER and BICE as trustee of FODER. For IPPs that have also opted for benefiting from the IBRD guarantee and are determined eligible, their respective Trust Adhesion Agreements will provide them with indirect access to the IBRD guarantee. In addition, such IPPs will enter into an acknowledgement and consent agreement with IBRD in connection with the IBRD guarantee.

7. The IBRD guarantee enhances the support that FODER is providing to sub-projects under the Program by backstopping Argentina’s obligation to fund FODER when it has to pay a Put Price to eligible renewable energy sub-projects as a result of their exercise of a Put Option under their respective FODER Trust Adhesion Agreement. At the sub-project level, the guarantee is limited to a maximum US\$500,000 per MW. FODER will pay the guarantee fees to IBRD and each IPP will pay equivalent fees to FODER. FODER is offering to the sub-projects a discount of 1 percent per every percent point of national content included in each sub-project.⁵⁸ The guarantee will be in place up to the earlier of 20 years or Argentina obtains investment grade.

8. To participate in the IBRD guarantee, sub-projects need to comply with four main eligibility criteria: (a) be a private entity⁵⁹; (b) demonstrate capacity to handle environmental and social aspects compliant with World Bank Performance Standards; (c) not be sanctioned or debarred by the Bank; and (d) meet industry standards for technical, economic viability, financial management and procurement. The Bank eligibility criteria would be applied to the sub-projects that were awarded PPAs under RenovAr Round 1 and 1.5 and requested the Bank guarantee offered in RenovAr Round 1 and 1.5 RfP (for the amount and term then requested).

⁵⁸ In such cases, the payment to IBRD would not be affected as the fees would be paid fully by FODER.

⁵⁹ i.e. For Bank guarantee purposes, a “private entity” is one that is wholly or predominantly privately owned or that is publicly owned but is an autonomous entity established and operating under commercial law for the purpose of pursuing profit.

9. The Bank's due diligence has been carried out by the Bank task team to establish whether RenovAr Round 1 and 1.5 meets the IBRD guarantee criteria of due economy and efficiency. The Bank team reviewed the documentation prepared by GoA for RenovAr Round 1 and 1.5 and found it in line with good practices for tendering renewable projects. The tender process was transparent and competitive. All tender documents (RfP, associated proposed legal contracts such as PPA, Adhesion Contract, Trust Administration Contract, and proposed Terms and Conditions of IBRD Guarantee) were made public through CAMMESA website⁶⁰. The tender generated significant investors' interest with bids significantly exceeding the GoA's request (see table A.3.1) and produced competitive prices. In addition, the Bank team included in the eligibility criteria for IBRD guarantee that sub-projects meet industry standards for technical, economic viability, and financial management. In that regard, the MEM will provide information satisfactory to IBRD that each sub-projects proposed to benefit from IBRD guarantee meets such industry standards. The OM will describe the information to be provided for this purpose. In addition, sub-projects have been informed that Anti-Corruption Guidelines apply to this operation and, therefore, their engagement in sanctionable practices may result in termination of their coverage.

Table A.3.1: Summary of Submitted Bids to RenovAr Round 1 and Round 1.5

Technology	RfP Request (MW)	Offered			Awarded	
		Total (MW)	No. Bids	Avg. Bid (MW)	No. Bids	MW
Round 1	1000	6346,3	123	51,6	1141,9	29
Wind	600	3468,7	49	70,8	707,4	12
Solar	300	2813,1	58	48,5	400	4
Biomass	65	44,5	5	8,9	14,5	2
Biogas	15	8,6	6	1,4	8,6	6
Mini Hydro	20	11,4	5	2,3	11,4	5
Round 1.5	600	2483,2	47	52,83	1281,6	30
Wind	400	1560,3	19	82,1	765,6	10
Solar	200	922,9	28	33,0	516	20
Total	1600	N/A (*)			2423,5	59

(*) Both Rounds were opened to the same sub-project pool, hence it is not possible to add this numbers

10. Based on the above, it has been found that the RenovAr Round 1 and 1.5 tender were in line with the industry practices and the outcome results in economic solutions, and, therefore, be considered to be consistent with the World Bank's over-arching fiduciary requirement with respect to economy and efficiency.

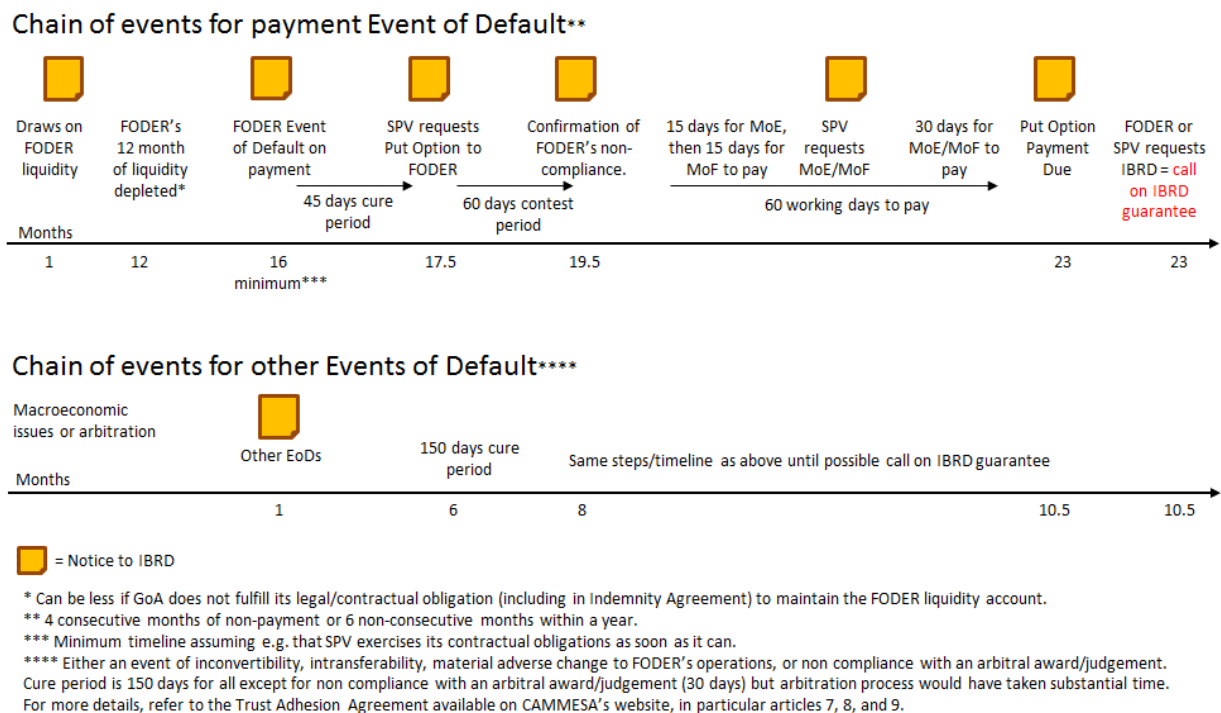
11. The proposed IBRD guarantee will enhance FODER's creditworthiness by supporting Put Option payments due and payable to IPPs. Investors and lenders have expressed interest to finance sub-projects but Argentina's/FODER's creditworthiness is an obstacle for sub-projects to be financed on a non-recourse basis at reasonable rates. To mitigate the risks expressed by the private investors, GoA requested the World Bank to backstop FODER payment obligations arising from the right of IPPs to sell their sub-projects to GoA that can be triggered by events of defaults such as (i) extended non-payment by the government off-taker under the power purchase

⁶⁰<http://portalweb.cammesa.com/Pages/RenovAr.aspx>.

agreement, (ii) inconvertibility, (iii) intransferability, (iv) material adverse changes to FODER’s operations without the sub-project’s prior consent, and (e) non-compliance with an arbitral award or judgement. Figure A.3.1 shows the structure and agreements designed.

12. Sub-projects would follow clearly defined steps to request the payment as follows: (a) in certain circumstances the IPP can require that FODER purchase its sub-project for a predetermined price (“Put Price”) as per the Trust Adhesion Agreement; (b) if FODER does not have the funds to pay the Put Price, FODER will request that MEM provide the funds to do so; (c) if MEM does not provide the funds, FODER can require that MoF provide the required funds under the “*Letras del Tesoro*” (treasury bills); and (d) if MoF does not provide the funds to FODER, then FODER can demand payment under the IBRD guarantee. If FODER fails to request MEM, MoF or the World Bank to provide funds as noted above, then the sub-project company will have the right to claim directly. Figure 3.1 shows the sequence of events that would trigger a call on the Bank guarantee and that the Bank would have adequate notices and time to react. Any amounts paid by the World Bank under the Guarantee Agreement will be reimbursed to the Bank by Argentina under the Indemnity Agreement.

Figure A.3.1: Timeline before possible a call on IBRD Guarantee



13. The Trust Adhesion Agreement spells out the methodology to calculate the Put Price. The initial Put Price for each sub-project will be set at the beginning of commercial operations (*Fecha de Habilitacion Comercial*) and will be the lower of (i) booked value in US dollars as defined by an audited accounting report submitted by the IPP and approved by MEM, or (ii) reference investment value for each technology indicated in the RfP section 12.5 (Fiscal Benefits). From the date of commercial operations, the Put Price will then decline by 5 percent per year of commercial operations.

14. To summarize, the specific events that would trigger the IBRD guarantee are:
- (a) A Put Price due to a sub-project; and
 - (b) A breach by MEM of its obligation to provide funds to the FODER Trustee to pay the Put Price if needed; and
 - (c) A breach by MoF of its obligation to pay the *Letras del Tesoro en Garantía* if needed; and
 - (d) A breach by FODER Trustee to pay to the Project Company the Put Price.

Financial Management, Disbursements, and Procurement

Financial Management Arrangements

Description and Assessment of Overall Project FM arrangements

15. The Project would be implemented by the MEM and BICE, with the latter acting as trustee of the Fund for the Development of Renewable Energy (FODER).

16. The Guarantee Agreement to be signed between FODER and the Bank aims to enhance FODER's creditworthiness by supporting Put Option payments due and payable to independent power producers (IPPs) under Trust Adhesion Agreements (*Acuerdo de Adhesión e Incorporación al Fideicomiso FODER, TAA*).

17. Power Purchase Agreements (*Contrato de Abastecimiento de Energía Eléctrica Renovable, PPAs*) are envisioned to be signed between the Electricity Off-taker (*Compañía Administradora del Mercado Mayorista Eléctrico S.A., CAMMESA* or the institution assigned by the National Government to that end) and each IPP pursuant to which, among others, CAMMESA agrees to purchase from IPPs power from renewable energy power plant. Trust Adhesion Agreements (TAAs) will be signed between BICE and each IPP giving the IPP the right in certain events to require that FODER purchase its renewable energy power for the Put Price.

18. The Guarantee Agreement will provide that, if all the specific events described in the previous paragraph occur, FODER may submit, with copy to the respective IPP, a demand notice to the Bank under the Guarantee Agreement for any outstanding eligible claim amount. If the respective IPP has not received copy of FODER's demand notice to the Bank within a number of days following the deadline established under the TAA for MoF to provide such funds, the IPP may directly submit a demand notice to the Bank under the Guarantee Agreement for any outstanding eligible claim amount. If requested, funds could be pay directly to the IPPs.

Staffing

19. In terms of trust funds management, BICE has relevant experience with an actual portfolio of 28 operations acting as trustee. The "*Gerencia de Area de Negocios Fiduciarios*"

has 21 professionals in charge of providing support to the trust funds portfolio. Besides, in the frame of other Bank project under preparation⁶¹ it is envisioned that capacity building activities on operational procedures will be provided to BICE staff.

Internal Controls and Internal Audit

20. BICE is under the scope of the General Syndicate of the Nation (*Sindicatura General de la Nación*, SIGEN), which is the Federal Government's internal audit agency under the jurisdiction of the executive branch. SIGEN supervises and coordinates the actions of the Internal Audit Units in all government agencies, approves their audit plans, and conducts independent audits.

21. BICE has an internal control system that complies with the standards issued by the *Banco Central de la República de Argentina* (BCRA). Regulatory requirements are based on good practices provided in the Committee of Sponsoring Organizations of the Treadway Commission (COSO) Report. According to the regulations of the BCRA, BICE has an Audit Committee. The BCRA has rated BICE internal audit as acceptable. Internal audit processes are included in an audit manual and meet the quality standards laid down by ISO 9001⁶².

22. BICE has a broadly adequate Internal Audit area for the current operations. The head of the internal audit reports to an Audit Committee composed of three members of the board. This area is a key control in the process of monitoring and providing assurance on the use of funds implemented by BICE. It has eight professionals with different qualifications (accounting, IT, procedures). Both planning and working methods meet the regulatory requirements of the BCRA, which are based on best international practices. The Internal Audit Area of BICE (a) has risk-based approach for audit planning; (b) applies a cycle approach for the evaluation of internal control; (c) uses sample techniques; (d) uses an adequate methodology for the follow-up weaknesses; (d) in the case of the second-tier activity, revises the controls applied by staff and verifies audit through sample review; (e) has received an adequate rating from the BCRA; and (f) has recently obtained the quality certification issued by IRAM⁶³.

Information Systems/Accounting and Financial Reporting

23. For managing its institutional accounting records, BICE uses the Bantotal system, a web-based application widely used in the banking industry in Argentina. This system has integrated modules for the preparation and execution of budget, accounting records, payments, and transfer of funds. Notwithstanding, in addition to Bantotal, BICE uses an off-the-shelf software called Calipso system in order to record all transactions related to trust funds management. Calipso will be used by BICE to record project transactions. BICE will prepare technical monthly reports to properly reflect project operations.

⁶¹ Argentina Access to longer term finance for Micro, Small and Medium enterprises project (P159515).

⁶² International Rule for the requirement for a Quality Management System.

⁶³ IRAM (*Instituto Argentino de Normalización y Certificación*) is an Argentine institute that checks and provides valid certificates on the quality and standards of the procedures of firms.

Budgeting

24. BICE does not receive national budgetary funds or government resources. The allocated and executed portions of the budget are controlled in the Bantotal system.

External Audit Arrangements

25. In line with the regulatory requirements of the BCRA, quarterly and annual financial statements are audited by external auditors. The external auditor of BICE is one of the four international auditing firms. Besides, the Supreme Audit Institution (*Auditoria General de la Nacion*) carries out BICE financial statements audits as well as financial statements audits of the trust funds managed by BICE. All financial statement audits are publicly disclosed.

Financial Reporting for the Trust Fund Guarantee

26. BICE will include the guarantee funds in its annual financial statements which will be audited by its external auditors. BICE annual financial statements' audit will be conducted under International Standards on Auditing (ISA). The audit report will be submitted to the Bank within six months after the end of each year. BICE will also prepare technical monthly reports to properly reflect project operations.

Events for exercising the Put Option and Put Price calculation are clearly laid out in the TAA, the IBRD eligible claim amount and supporting documentation required to process guarantee funds payments if the guarantee is triggered will be defined in the Guarantee Agreement. Detailed FM arrangements will be documented in the Project OM.

27. On the basis of the FM assessment, the overall FM risk rating is considered as Moderate based on the following considerations: i) the Project will be fully integrated in BICE's systems; ii) BICE has relevant experience in managing trust funds along with strong internal controls in place and adequate arrangements for accounting and reporting as evidenced by the FM assessment.

Procurement Arrangements

28. The World Bank Procurement Regulations for IPF Borrowers govern the procurement of goods, works, non-consulting services, and consulting services financed by the Bank (in whole or in part) through IPF operations. As per the Section I.1 of the Procurement Policy, procurement under Bank guarantees are excluded from these Regulations.

Environmental and Social

Introduction

29. The energy sector in Argentina has a relatively strong and consolidated environmental legal framework. There are diverse legal instruments which define the environmental requirements for generation, transmission and distribution of energy. For example, Resolution

S.E. N° 149/90 (issued by the former Secretariat of Energy, SoE) requires the presentation of a comprehensive Environmental Impact Assessment as part of the inscription process as agent of the wholesale energy market (Mercado Eléctrico Mayorista), i.e. generation, transmission and distribution agents. Also, Resolutions S.E. N° 15/92 and N° 153/93 provides a legal status to the Environmental Management Manual for Energy Transmission and the Environmental Management Manual for Thermal Energy Generation – 1988, respectively. In addition, the Resolution N° 555/01 (issued by ENRE on Oct 24, 2001 and ratified by SoE through Resolution S.E. N° 402/02), requires that certain (although the majority) agents of the wholesale energy market “... elaborate and implement an Environmental Management System on a documentary basis that includes, as a minimum, the organizational structure; the planning activities; the responsibilities; the practices, procedures and processes; as well as the resources to develop, implement, review and maintain the Environmental Policy of such agents”.

30. Table A.3.4 summarizes the safeguard policies triggered by the Project:

Table A.3.4: Safeguard Policies Triggered by the Project

Safeguard Policy	Yes	No
Environmental Assessment (OP/BP 4.01)	[X]	[]
Natural Habitats (OP/BP 4.04)	[X]	[]
Pest Management (OP 4.09)	[X]	[]
Indigenous Peoples (OP/BP 4.10)	[X]	[]
Physical Cultural Resources (OP/BP 4.11)	[X]	[]
Involuntary Resettlement (OP/BP 4.12)	[X]	[]
Forests (OP/BP 4.36)	[X]	[]
Safety of Dams (OP/BP 4.37)	[X]	[]
Projects on International Waterways (OP/BP 7.50)	[]	[X]
Projects in Disputed Areas (OP/BP 7.60) ⁶⁴	[]	[X]

Borrower capacity in implementing safeguards

31. As the authority of application of the sectorial environmental legal framework, the former Secretariat of Energy, upgraded at present in the MEM, has developed capacities for the environmental and social management of the diverse activities related to the sector, including the knowledge of and coordination with the different jurisdictional EIA systems given that Argentina is a federal country. MEM already has social and environmental staff, with experience including Bank’s safeguards management (e.g., PERMER II, P133288). Specifically for this guarantee Project, the MEM has strengthened the Environmental and Social Unit (UAYS) of the National Directorate of Renewable Energy by adding specialized human resources (at present, the Unit counts with two environmental specialists and two social specialists) and is foreseen budget *allocation* to fulfill the implementing agency’s obligations related to the implementation of the Environmental and Social Management Framework (ESMF), the Resettlement Policy Framework (RPF) and the Indigenous People’s Planning Framework (IPPF). MEM has been assessed by the Bank team as having the capacity for E&S management.

⁶⁴ By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties’ claims on the disputed areas.

32. The specific renewable energy sub-projects will be developed by private companies (i.e., private companies and sponsors will be in charge of sub-project's design, construction/installation, and operation & maintenance, including the environmental and social assessments, assurance of legal compliance and risk management) and MEM will need to carry out the capacity assessment of the different private sector companies and monitor the sub-projects' implementation in order to make sure that all sub-projects comply with the WB environmental and social performance standards. As it is stated above, in this context MEM has strengthened its social and environmental unit, in particular, in order to monitor social aspects of the different sub-projects that have required to be covered by the IBRD Guarantee.

33. An ESMF has been developed by MEM, which defines the environmental and social management procedures to be implemented by MEM and the individual renewable energy sub-projects covered by the guarantee (details below).

34. MEM will develop an M&E, supervision and monitoring system through which MEM will be able to compile information, request, and gather data from relevant stakeholders and produce reports as needed and committed. In particular, the system will manage to produce *inter alia*, annual reports that will include information on compliance and non-compliance of any action required through the triggered environmental and/or social safeguards.

35. As an FI operation, the MEM has been assessed by the Bank team as having the capacity for environmental and social management; also, no Category A sub-project will be eligible for the Bank's guarantee coverage. Based on that, Bank prior review for the sub-project-specific assessments carried out by the UAYS of the National Directorate of Renewable Energy of MEM will be done only for the first sub-project of each technology. The rest of the processes will be monitored by the Bank based on the annual reports prepared by UAYS and the need of any additional review will be determined based on the level of compliance and/or non-compliance of safeguards requirements for the sub-project. This criterion is described in the ESMF, which, in turn is part of the OM of the Project.

Social

Anticipated social aspects and corresponding assessment

36. A total of 27 sub-projects have requested the IBRD Guarantee under RenovAr Round 1 and Round 1.5. These sub-projects are located in 11 provinces in Argentina⁶⁵, mainly in rural or peri-urban areas. As a result of a preliminary screening process carried out by MEM⁶⁶ it was identified that some of these sub-projects are in areas where Indigenous Peoples are likely to be present⁶⁷. In this context, OP/BP 4.10 Indigenous Peoples is triggered and an IPPF has been

⁶⁵ Buenos Aires, Chubut, La Pampa, La Rioja, Mendoza, Neuquén, Río Negro, Salta, San Juan, Santa Cruz and Santa Fe.

⁶⁶ This preliminary screening was intended to determine the environmental and social category for each sub-project as a way to identify risks related to each sub-project and determine the environmental and social category for each sub-projects. This information was used by MEM to, *inter alia*, exclude the use of the IBRD guarantee for sub-projects which would be defined as Category A under Bank policies.

⁶⁷ The Indigenous Peoples Planning Framework includes a second screening process mandatory for all awardees that have requested the IBRD Guarantee. This process consists on a formal inquiry to the National Institute of

prepared and consulted with the IPs representatives at the national level. The document has also been incorporated as part of the ESMF and the OM of the Project, to ensure that, as appropriate, sub-projects comply with the applicable World Bank Performance Standard (Indigenous People; PS7), including with Free, Prior and Informed Consent, when required. For those cases where Indigenous Peoples are present in the sub-project area of influence, awardees must carry out free, prior and informed consultations with Indigenous Communities gaining the broad community support (and, when required, awardees will seek Free and Prior Informed Consent) and prepare an Indigenous Peoples Plan or a Community Development Plan in accordance to what is established in the IPPF. The IPPF also states that activities that would be carried out as part of the implementation of the instrument (e.g. consultations with INAI, meetings with social specialists working on the sub-projects financed by this operation, strengthening of institutional capacity, etc.) will be financed by the program.

37. In order to be eligible, sub-projects will need to demonstrate land-use legal rights for their specific locations, including land that may be needed for the right of way for transmission lines to the nearest connection point. Since renewable energy highest potential normally is strongly related to specific locations, particular premises may be needed for a sub-project, including land that may be needed for the right of way for transmission lines to the nearest connection point. It is expected that in the majority of cases land transactions will be conducted in a fully voluntary – willing buyer-willing seller – basis, following two operative principles: (a) informed consent and (b) power of choice (the latter is only possible if the sub-project location is not fixed. But it is likely that in some cases sub-projects would require land easement and/or acquisition that might entail resettlement as defined by OP/BP 4.12 Involuntary Resettlement (loss of assets, physical displacement, or livelihood losses and/or restriction on land use), which is being triggered. In accordance with the envisioned procedures to be included in the ESMF of the Project and taking into account that specific locations for sub-projects have not been identified yet, MEM will prepare a RPF, to ensure that, as appropriate, analysis of alternatives and appropriate compensation and support to potentially affected people are incorporated into the sub-projects’ design to ensure that they will comply with the applicable World Bank’s Performance Standard (Land Acquisition and Involuntary Resettlement; PS5). Project-related land acquisition in areas with land disputes or where the ownership of land is not clear or there are unresolved claims by IPs or other groups will be opportunely excluded. The RPF will guide the preparation of site specific Resettlement Action Plans (RAPs) to ensure that, as required, analysis of alternatives and appropriate compensation and support to potentially affected people are incorporated into the sub-projects’ design. In addition, the RPF states that in these cases, the UAYs will carry out actions in order to strengthen awardees’ capacity and would finance such activities/actions to support awardees.

Consultations and disclosure

Indigenous Affairs (*Instituto Nacional de Asuntos Indígenas* - INAI) and the Indigenous Peoples Participation Councils (*Consejos de Participación Indígena* – CPIs) about the presence of Indigenous Peoples in the sub-project area of influence. For those cases where Indigenous Peoples are present in the sub-project area, awardees will need to make consultations with Indigenous Communities and prepare an Indigenous Peoples Plan or a Community Development Plan in accordance to what is established in the IPPF.

38. The IPPF and the RPF have been published on the Borrower's website and on the World Bank external site on December 14, 2016 as part of the dissemination process. Since both documents have also been included as an annex of the ESMF, they were also reviewed as part of the public consultations held as preparation of the Project (see Environmental section below). In the case of the IPPF, the document was additionally consulted with the indigenous authorities at the national level, From December 21, 2016 to January 5, 2017. Relevant feedback received during such consultations has been used to inform project design accordingly and incorporated, as appropriate, into a revised version of the instruments that were published on January 13, 2017 on the Borrower's website and January 16, 2017 on the Bank's external website.

Environmental

Anticipated environmental aspects and corresponding assessment

39. The Project will have a largely positive impact on the environment by promoting the supply, through private companies, of renewable energy in Argentina, thereby reducing the demand for use of fossil fuels for energy generation. In this sense, ambitious objectives have been established⁶⁸: mandatory renewable energy targets of 8 percent of electricity consumption by the end of 2017 and 20 percent by 2025 for all consumers. Overall, the Project will support the GoA's objectives to improve energy security, diversify the energy matrix, and reduce environmental impacts.

40. The Project's sub-projects involve a limited number of relatively standard/typical renewable energy generation infrastructure projects / works. These are small-to-medium scale⁶⁹ with relatively moderate, localized and site-specific negative environmental and social impacts which are expected to be non-irreversible, not significant, and that can readily be prevented or mitigated with routine/standard measures.⁷⁰ During construction stage, potential negative environmental impacts related to renewable sub-projects generation and connectivity are related to civil works at project site/area, access roads, substations, distribution lines and distribution networks. These potential impacts during construction stage are basically common for all foreseen technologies under the RenovAr Program. Construction activities may lead to temporary change/loss in vegetation and natural habitat (land clearance, for example), air emissions (dust and vehicle emissions), noise related to excavation, construction and vehicle transit, transportation of materials, solid waste generation and wastewater generation from temporary building sites and worker accommodation (construction camps). During operation stages, potential impacts will depend on the different sub-projects technologies. In general terms, risks and potential adverse impacts could be, for example, on landscapes, local fauna, avifauna, indigenous plants and trees. examples of potential impacts per technology are as follows: a) Wind: incidental damages on avifauna and bats (collisions); alteration of landscapes; noise; b) Solar: incidental damages on avifauna (collisions, blindness); alteration of landscapes; c) Biomass and biogas: air emissions; alteration of soil properties when utilizing forest wastes as raw material; d) Small-hydro schemes: alterations on riverine and/or aquatic ecosystems.

⁶⁸ Law 27191, passed in September, 2015.

⁶⁹ Nominal power ranges in MW, by technology, are: (a) wind: from 1 to 100 MW; (b) solar: from 1 to 100 MW; (c) biomass: from 1 to 65 MW; (d) small-scale hydro: from 1 to 20 MW; and, (e) biogas: from 1 to 15 MW.

⁷⁰ That will be known during implementation and MEM's due diligence of sub-projects.

Cumulative environmental impacts are not expected to be significant, as the Project is nationwide in scope.

41. OP/BP 4.01 Environmental Assessment is triggered for the Project and the Project is proposed to be classified as FI since the Project involves a guarantee structure via a financial intermediary (FI). In practical terms, the FI consists of two entities: (a) the MEM, as the actual GoA's counterpart organism; and (b) the FODER, managed by BICE as trustee, solely in charge of funds mobilization according to the instructions provided by pertinent involved entities. The MEM is the implementing agency of the guarantee project, together with BICE, the fiduciary agency. Technical decisions related with the renewable energy sub-projects as well as the environmental and social screening and monitoring will be done by MEM. An ESMF has been developed by MEM, which defines the environmental and social management procedures to be implemented by MEM and the individual renewable energy sub-projects covered by the guarantee. The ESMF includes screening by MEM of proposed sub-projects developed by private companies. The ESMF excludes the use of the Project guarantee for sub-projects which would be defined as Category A under Bank policies. Given that sub-projects will be developed by private companies (which will be in charge of sub-projects' design, construction / installation, and operation & maintenance, including the environmental and social assessments, assurance of legal compliance and risk management), and considering OP 4.01 guidelines, the instruments that better cover the type, extent, and depth of analysis and management required for these sub-projects that involve the private sector are the World Bank Performance Standards for Private Sector Activities (PS1 to PS8). Thus, the ESMF requires the private sector companies to comply with Performance Standards. In addition, the use of such standards may facilitate their access to private sector financing. The ESMF also defines supervision and reporting requirements.

42. Since rural areas are mainly targeted, it is possible for renewable energy generation related works to be located in natural habitat zones. Therefore, OP/BP 4.04 Natural Habitats is triggered. The ESMF developed by MEM includes provisions to ensure that, as appropriate, sub-projects comply with the applicable World Bank's Performance Standard (Biodiversity Conservation and Sustainable Management of Living Natural Resources; PS6).

43. It is also possible for renewable energy generation related works to potentially affect forests and/or forest dependent communities. Therefore, OP/BP 4.36 Forests has been triggered. The ESMF also includes provisions to ensure that, as appropriate, sub-projects comply with the applicable World Bank's Performance Standard (Biodiversity Conservation and Sustainable Management of Living Natural Resources; PS6).

44. OP 4.09 Pest Management is being triggered since, for example, potential use of pesticides could be needed for minor management of facilities and potential use of herbicides could be needed for access roads maintenance. The ESMF to be developed by MEM includes provisions to ensure that, as appropriate, sub-projects comply with the applicable World Bank's Performance Standard (Resource Efficiency and Pollution Prevention; PS3).

45. Since rural areas are mainly targeted, it is possible for renewable energy generation related works to be located in known or suspected physical cultural resources zones. In addition, some sub-projects may involve excavations and soil movement and, therefore, there is a potential for chance finds of physical cultural resources. Thus, OP/BP 4.11 Physical Cultural Resources is

triggered. The ESMF includes provisions to ensure that, as appropriate, sub-projects comply with the applicable World Bank’s Performance Standard (Cultural Heritage; PS8).

46. Also, the Project could support small-scale hydro run-of-river electricity generation facilities (ranging from 0.5 to 20 MW), some of which may require a small weir or pondage to provide water for the penstock; thus OP/BP 4.37 is also triggered. The ESMF developed by MEM includes provisions to ensure that renewable energy sub-projects comply with the applicable World Bank’s Performance Standard (Community Health, Safety and Security; PS4).

Operational Policy (OP)	Framework / Instrument	Performance Standards (PS)
➤ Environmental Assessment OP4.01	Environmental and Social Management Framework (ESMF)	➤ Assessment and Management of Environmental and Social Risks PS1 ➤ Labor and Working Conditions PS2
➤ Natural Habitats OP4.04 Forests OP 4.36	ESMF	➤ Biodiversity Conservation and Sustainable Management of Living Natural Resources PS6
➤ Pest Management OP4.09	ESMF	➤ Resource Efficiency and Pollution Prevention PS3
➤ Indigenous Peoples OP4.10	Indigenous Peoples Planning Framework (IPPF) which is part of the ESMF	➤ Indigenous Peoples PS7
➤ Physical Cultural Resources OP4.11	ESMF	➤ Cultural Heritage PS8
➤ Involuntary Resettlement OP4.12	Resettlement Policy Framework (RPF) which is part of the ESMF	➤ Land Acquisition and Involuntary Resettlement PS5
➤ Safety of Dams OP 4.37	ESMF	➤ Community Health, Safety and Security PS4

Consultations and Disclosure

47. The RenovAr Program had a first stage of broad dissemination and open public consultation of a preliminary Call of Proposals (“*pre-Pliego*”), which took place from May 17, 2016 to July 1st, 2016. Input received was used to refine the operation’s design.

48. An advanced draft version of the ESMF, including the RPF and the IPPF as annexes, after its revision and approval by the World Bank, has been disclosed on the MEM Website and in the World Bank external Website on December 14, 2016. These documents were consulted by MEM from December 15, 2016 to January 5, 2017, involving an ample sample of institutions - state bodies, academia, private associations, and nation-wide & local-presence NGOs- identified by MEM as key stakeholders who have interests or potential concerns about the Project. The institutions that participated in the consultation included: (a) public sector: Servicio Meteorológico Nacional (Mediciones del recurso solar), CNEA (Comisión Nacional de Energía Atómica. Pruebas de instalaciones de energía distribuida, convenio con IRESUD), INTI (Instituto Nacional de Tecnología Industrial), Subsecretaria de Recursos Hídricos, Autoridades

de Cuenca Hídricas, Departamento Irrigación de Mendoza, Dirección de Recursos Energéticos de San Juan, Departamento Hídrico Provincial de Río Negro, EPEC (Empresa Provincial de Energía de Córdoba), PROBIOMASA, CAMMESA, INVAP (Investigación Aplicada - Sociedad del Estado, Provincia de Río Negro), ENHIDRO (Emprendimientos Hidroeléctricos Sociedad del Estado Provincial del Neuquén); (b) academia: Universidad Nacional de la Plata (Estudios eólicos, solares e hidráulicos, Banco de pruebas Hidráulicas), Universidad Nacional de Lujan (Estudios eólicos y solares), Universidad tecnológica Nacional (Estudios eléctricos y de ingeniería), Universidad de Cuyo (Facultad de Ingeniería), Universidad de Santiago del Estero (Estudios del recurso forestal y subproductos), Universidad de Buenos Aires (Facultad de Ingeniería); (c) private associations: CADER (Cámara Argentina de Energías Renovables), Cámara De Comercio Alemana (Desarrollos solares), Cámara de Generadores eólicos; CIPIBIC (Proyectos e Ingeniería de Bienes de Capital), CREE (Centro Regional de Energía Eólica); and (d) NGOs: Fundación Ambiente y Recursos Naturales (FARN), Fundación Vida Silvestre, Aves Argentinas, The Nature Conservancy, Fundación Avina, Red de Comunidades Rurales, Red Argentina para la Cooperación Internacional, Asociación Cultural para el Desarrollo Integral and Fundación Gran Chaco. It is important to highlight that the last four NGOs included in the list are mainly dedicated to support vulnerable groups in rural and peri-urban areas (these groups include indigenous communities). As a result of the consultation process, comments and recommendations on the following topics have been revised and incorporated in the ESMF and its annexes (*inter alia*):(a) guides and reference documents in relation to mitigation measures of impacts generated by wind energy projects have been incorporated as Annex F within the ESMF; (b) the budget section of the ESMF has been clarified regarding responsibilities and resources for the implementation of social and environmental-related activities; (c) the consistence between the free, prior, informed consultation and the ILO-convention 169, and the existence of corrective measures for possible breaches, have been verified; (d) the IPPF was revised in order to avoid using the term “vulnerable” as an inherent characteristic of Indigenous Peoples; and (e) the hiring of local workers would be promoted among Private Companies in order to benefit local communities as directly as possible. The final version of the ESMF was published on the Borrower’s website on January 13, 2017 and on the World Bank external site on January 16, 2017.

Other Safeguards Policies Triggered

49. The Policy regarding Projects on International Waterways—OP/BP 7.50—has not been triggered. Initial screening of pre-identified sub-projects to be considered for support are not located on waterways defined as international ones according to OP/BP 7.50.

Annex 4: Implementation Support Plan
ARGENTINA: FODER Renewable Energy Fund Guarantee

Strategy and Approach for Implementation Support

1. The Implementation Support Plan describes the support Argentina will require to implement key mitigation measures identified in the PAD. The Plan will seek to ensure that major risks are addressed and the Project can be implemented in a swift manner. The project design already takes these issues into account and provides mitigation options to be backed by the Bank. The Plan will be implemented by the Bank team involved in the operation taking into account country level risks, legal framework, and local context. The Implementation Support Plan is indicative and flexible, relies on experiences and lessons learned from Argentina and elsewhere, and will be revisited during project implementation based on progress made on the ground.

Overall Project Implementation

2. The Bank strategy to support implementation will rely on continuous monitoring and constant interaction and advice to MEM. Even though MEM will count with proven, capable, and experienced staff, hands-on and constant collaboration and advice will be necessary to overcome the challenges associated to an increase in project scope and boundaries.

3. Satisfactory implementation from start will require the preparation of critical tasks in the following areas:

(a) Legal:

- (i) The Bank team will work closely with MEM to help expedite the effectiveness due diligence; and the signing of all agreements between all relevant stakeholders.

(b) Technical:

- (ii) The team will support the training and enlargement of the MEM team as well as support knowledge transfer between relevant stakeholders (mainly sub-projects' sponsors).

(c) Financial:

- (i) The analysis of relevant sub-projects fulfilment of eligibility criteria and other financial aspects.

(d) Financial management:

- (i) Provide training to MEM and BICE and review processes.

(e) Safeguards

- (i) Provide training to MEM’s environmental and social teams and to sponsors (as needed); and
 - (ii) Supervise the implementation of safeguards instruments by MEM.
 - (f) M&E
 - (i) Support the drafting of terms of reference to prepare activities needed for a successful M&E framework and systems.
4. Particular key issues to be addressed also include:
- (a) Implementation capacity
 - (i) Argentina’s renewable energy goals may prove too ambitious: The magnitude of the renewable energy generation scale-up required to comply with Law 27191 may over-extend supply chain and implementation capacities, create technical hurdles for the dispatcher, CAMMESA, and overall, prove technically challenging for existing institutions. To mitigate these risks, the proposed operation would support technical assistance activities with GoA and relevant stakeholders. The team will also provide advice to MEM as needed, supervise the implementation of safeguards instruments by MEM, and prepare specific technical and safeguard guidelines and training activities with MEM through knowledge exchanges and sharing lessons learned elsewhere.
 - (ii) FODER performance risk: There is a risk that BICE, as trustee of FODER, does not perform the actions it is contractually obliged to, for instance not making a payment even though funds are available. However, BICE is a publically owned bank with an established track record. The team has reviewed contractual relationship between GoA and BICE to ensure adequate checks and balances, and will receive notices in certain events of non-compliance with contractual obligations.
 - (b) Implementation arrangements
 - (i) Inadequate funding to FODER: There is a risk that FODER does not have the required funding to backstop PPA ongoing payment requirements, which could lead to a Put Option amount being due. If FODER does not have the required funds and the GoA does not replenish FODER adequately, this would lead to a call on the IBRD guarantee. The team will continue evaluating the electricity sector to quantify the risk associated with non-payment or late payment by CAMMESA, and the risk that FODER does not receive sufficient funds to backstop ongoing payments.
 - (c) Stakeholder involvement
 - (i) Lack of projects and facility not being used: Facilities are often designed but rarely meet success. The main reason is that the pipeline of projects is often

weak and that key risks are not mitigated. In Argentina, the potential and appetite for renewable projects is a positive indication. During preparation, the team worked with GoA to identify the pipeline and review experiences from other facility support and the Round 1 results proved that there are projects.

- (ii) Dissemination of information for sponsors, beneficiaries and relevant stakeholders. Improved dissemination and incorporation of new stakeholders during implementation will be sought.
- (iii) Supporting sub-projects in all provinces and utilizing different technologies may be problematic due to lower capacity or lack of experience. The team will support MEM, provinces and sponsors.

Implementation Support Plan

5. The Bank team will undertake field visits when needed and have discussions with MEM other stakeholders as well as IPPs. During project implementation, it will also maintain a constant presence in the field with at least two supervision missions per year (and even more during the first year of implementation). The team will also support the strengthening of MEM and will develop capacity-building activities and support training workshops for other stakeholders.

6. As needed, the team will work together with the implementing agency to maintain a viable delivery model, allocate adequate human resources—in quantity and quality—for and throughout the implementation period and continuously provide valuable guidance through local staff.

7. Implementation support will be carried out at the following levels:

- (a) **Technical:** Technical staff will be located in the Buenos Aires and Washington offices. Additional technical experts will also be used, especially for the development of technical specifications for new technologies deployment.
- (b) **Financial and Guarantees:** As usual for guarantee operations, specialized guarantee specialists and guarantee lawyers, respectively from the Financial Solutions (GEEFS) and from the Legal Structured Finance & Guarantees (LEGSG) units, will provide advice and support from Washington D.C.
- (c) **Safeguards:** The Bank will support MEM with Buenos Aires senior staff as well as local experts and consultants.

Table 4.1: Implementation Support Plan

Time	Focus	Skills Needed	Resource Estimate (annual)
From Project's effectiveness date to Aug 1, 2020	Financial and guarantees	Guarantee specialist, co-TTL	12 staff weeks per specialist
	Safeguards	Social and environmental specialists	2 staff weeks per specialist
	Legal	Guarantee lawyer	8 staff weeks per specialist

Time	Focus	Skills Needed	Resource Estimate (annual)
	Financial management	Financial management specialist	1 staff weeks per specialist
	M&E	Task team leader	12 staff weeks per specialist
	Implementation capacity	Task team leader and rest of the team	
	Implementation arrangements	Task team leader, legal counsel and rest of the team	
	Stakeholder involvement	Task team leader, social specialist and rest of the team	4 staff weeks per specialist
From Aug 1, 2020 to the end of the guarantee period	Financial and guarantee	Guarantee specialist	2 staff weeks per specialist

Table 4.2: Skills Mix Required

Skills Needed	Number of Staff Weeks per year	Number of Trips per year	Comments
Financial and guarantees specialist	12	2	Based in Washington, D.C.
Financial management specialist	1	—	Based in Buenos Aires
Social specialists	2	2	Based in Buenos Aires, supported by local consultants
Environmental specialists	2	2	Based in Buenos Aires, supported by local consultants
Guarantee lawyer	8	2	Based in Washington D.C.
Task team leader and rest of the team	16	—	Task team leader based in Buenos Aires

Annex 5: Monitoring and Evaluation

ARGENTINA: FODER Renewable Energy Fund Guarantee

General Overview

1. M&E, supervision, and reporting tasks are essential to analyze progress, provide necessary corrective measures during implementation, and assess the operation's impact. In the case of the proposed Project, M&E will build upon the existing information flows and dynamics developed through other Bank-financed operations.
2. **The Project will build upon existing structures and capacities developed through other Bank financed projects.** The operation's support to all M&E tasks—as well as to overall project implementation supervision and reporting—will be twofold: (a) MEM will develop and deploy systems, indicators, reports, and other instruments as necessary (b) relevant data and information will be gathered by MEM and relevant stakeholders.
3. M&E and implementation supervision will be conducted as specified in both the OM and the Grant Agreement, and will be divided into two main tasks: (a) *ex-ante* supervision of sub-projects characteristics, including fulfillment of eligibility criteria as well as financial and safeguard preparation aspects; and (b) *ex-post* supervision, and monitoring of all indicators.

Main Tasks

Ex-ante activities

4. In order to appropriately manage and screen all sub-projects, MEM will design and deploy a management system. This system will help follow up on prior activities needed to screen and approve potential supported sub-projects. These activities would include the processes to supervise, certify and accept potential sub-projects requesting the IBRD guarantees.
5. The *ex-ante* system will consider issues such as: eligibility criteria for participating in the operation; commitments from technical and financial proposals; fulfillment and signing of PPA, Trust Adhesion Agreement and other agreements; environmental and social aspects (compliance with performance standards), etc.
6. Access to such a system will be limited to MEM staff and potentially to other relevant stakeholders on a case-by-case basis.

Ex-post activities

7. MEM will develop an M&E, supervision and monitoring system. Taking into account any reporting obligations included in this PAD, the OM and any other agreement, the supervision and monitoring system will allow MEM to compile information, request, and gather data from relevant stakeholders and produce reports as needed and committed. In particular, the system will manage to produce all monthly, biannual, mid-term and completion reports as well as satisfy any additional information needs. The project's OM includes further information on the system's design, tasks, inputs needed, and methodologies.

8. MEM will rely on the system to also request, compile, gather, and present results per indicator (for further details on these, please see Annex 1). Overall responsibility for these activities will reside within MEM. Other specific responsibilities will be detailed through (a) relevant agreements with other key players; (b) the OM; and (c) any other relevant agreement.

9. This task will provide further details on indicators composition, construction, results, definitions, key players, roles, responsibilities and process for data collection, sources of information, timelines, methodologies and others (also included in the OM).

10. MEM will also define additional information needs. These additional data will help not only assess performance and compliance with higher-level project development and intermediate objectives, but also provide a deeper understanding of the renewable energy sector. It will also compile aggregate information at the national and provincial level, aiming at also analyzing other benefits and impacts of supported sub-projects.

11. In addition, data to be compiled will also help construct the results needed to report project development and intermediate outcome indicators and other studies, such as baseline and impact assessments. Specific details are included in the Project's OM.

12. Finally, the operation will also prepare the following reports (detailed in the Project's OM): (a) baselines on renewable energy demand and supply prior to sub-projects implementation; (b) mid-term review report; (c) impact assessment and evaluation, to be produced after implementation; and (d) implementation completion and results report and associated documents.

Annex 6: IBRD Indicative Term Sheet

ARGENTINA: FODER Renewable Energy Fund Guarantee Term Sheet

Parties and Agreements	
Argentina:	Republic of Argentina represented by the Ministerio de Finanzas (“ <i>MoF</i> ”) and the Ministerio de Energía y Minería (“ <i>MEM</i> ”).
Electricity Off-taker:	Compañía Administradora del Mercado Mayorista Eléctrico S.A. (“ <i>CAMMESA</i> ”).
FODER:	“Fondo para el Desarrollo de Energías Renovables” (“ <i>FODER</i> ”) a trust fund created by law 27.191 of September 23, 2015, and established by the FODER Trust Agreement.
Project Companies:	<p>Eligible companies having been selected by the MEM to supply energy from renewable sources to CAMMESA through the RenovAr Round 1 and 1.5 competitive auction and having signed a PPA and a FODER Trust Adhesion Agreement (each a “<i>Project Company</i>”, and collectively the “<i>Project Companies</i>”). Eligibility criteria for such eligible companies are defined in the RenovAr Pliego de Bases y Condiciones (“<i>Request for Proposals</i>”) issued by MEM for Round 1 and 1.5, the Indemnity Agreement and/or Operations Manual, and in the FODER Trust Adhesion Agreements and include:</p> <ul style="list-style-type: none"> a) Being a private entity⁷¹; b) Having the ability to manage environmental and social aspects of the project compliant with World Bank Performance Standards. Projects with potentially significant adverse social and/or environmental impacts that are sensitive, irreversible, diverse, or unprecedented (World Bank’s Category A) are not eligible to benefit from IBRD guarantee cover; c) Not being debarred by the World Bank for a Sanctionable Practice (corruption, fraud, coercion, collusion) in accordance with World Bank Sanctions Procedures; and

⁷¹ i.e. For Bank guarantee purposes, a “private entity” is one that is wholly or predominantly privately owned or that is publicly owned but is an autonomous entity established and operating under commercial law for the purpose of pursuing profit.

	d) Meeting industry standards for technical, economic viability, financial management and procurement.
IBRD:	International Bank for Reconstruction and Development.
PPA:	The Power Purchase Agreement (“ <i>Contrato de Abastecimiento de Energia Electrica Renovable</i> ”) signed between CAMMESA and each Project Company pursuant to which, among others, CAMMESA agrees to purchase from the Project Company power from its renewable energy power plant.
FODER Trust Adhesion Agreement:	<p>The Acuerdo de Adhesión e Incorporación al Fideicomiso <i>FODER</i> among the FODER Trustee, the MEM as settlor of FODER and as implementing agency (Autoridad de Aplicación) and a Project Company whereby, among others, the Project Company has the right (the “<i>Put Option</i>”) in certain events to require that FODER purchase the assets of its renewable energy power plant for the Put Price.</p> <p>The events triggering the Put Option shall be specifically included in the RenovAr Request for Proposals and in the FODER Trust Adhesion Agreement. The Put Option can only be exercised by the Project Companies at or after financial close (Cierre Financiero), as defined under the PPA (“<i>Financial Close</i>”).</p>
FODER Trust Agreement:	Contrato de Fideicomiso (“ <i>FODER Trust Agreement</i> ”) between the MEM as trust settlor (Fiduciante) and as implementing agency (Autoridad de Aplicación), and Banco de Inversión y Comercio Exterior S.A. as trustee (Fiduciario) (“ <i>BICE</i> ” or the “ <i>FODER Trustee</i> ”).
Indicative IBRD Guarantee Terms and Conditions	
Beneficiary:	BICE, acting as trustee of FODER.
Guaranteed Event:	<p>Upon the exercise of the Put Option by a Project Company, the combination of:</p> <ul style="list-style-type: none"> (i) a breach by MEM of its obligation, contemplated in Section [8.1(c)] of the respective FODER Trust Adhesion Agreement, to provide funds to the FODER Trustee to pay the Put Price; (ii) a breach by MoF of its obligation to pay the <i>Letras del Tesoro en Garantía</i> as contemplated in Decreto 882/2016 and Section [8.1(d)] of the respective

	<p>FODER Trust Adhesion Agreement; and</p> <p>(iii) a breach by FODER Trustee to pay to the Project Company all or any portion of the corresponding Eligible Payment.</p>
<p>Maximum Guaranteed Amount:</p>	<p>US\$480 million.</p> <p>In no instance will IBRD have any liability to backstop an otherwise Eligible Payment if the aggregate of all sums paid by IBRD under the Guarantee would exceed this cap. The cap will be included in the IBRD Guarantee Agreement.</p> <p>The Maximum Guaranteed Amount may be permanently reduced upon written request to IBRD from FODER and countersigned by a Project Company/Project Companies in an amount not to exceed the amount of the guarantee nominally allocated to such Project Company/ Companies. Such request (i) will permanently reduce the Maximum Guaranteed Amount in increments of \$1,000,000 only, (ii) may not be delivered more often than once every 12 months, (iii) will not carry any additional fee, charge or penalty for FODER, and (iv) will not require that IBRD reimburse any Guarantee Fees received that may relate to the reduced amount.</p> <p>The Maximum Guaranteed Amount will also be permanently reduced, in an amount equivalent to the amount of guarantee nominally allocated to the relevant Project Company, upon written notice from IBRD to FODER of a cancellation of the IBRD Guarantee at a Project Company level for (i) a Sanctionable Practice engaged in by the relevant Project Company, (ii) a material breach by the relevant Project Company of its obligations under the World Bank Performance Standards that has not been cured within the applicable cure period, or (iii) failure by the relevant Project Company to pay to FODER its portion of the guarantee fees.</p>
<p>Committed Guaranteed Amount:</p>	<p>The portion of the Maximum Guaranteed Amount that, on a quarterly basis, FODER indicates to IBRD that is committed or shall become committed as a result of Project Companies reaching Financial Close as defined under the PPA.</p> <p>Prior to the beginning of each quarter, FODER will report to IBRD the Committed Guaranteed Amount associated with Projects Companies that have reached Financial Close in the previous quarter, and that are expected to reach Financial Close during the following quarter.</p>

Uncommitted Guaranteed Amount:	The Maximum Guaranteed Amount minus the Committed Guaranteed Amount. IBRD shall have no obligation to make any payment with respect to any Uncommitted Guaranteed Amount.
Guarantee Effectiveness Date:	Date on which all the conditions precedent to the effectiveness of the IBRD Guarantee have been met or waived.
Guarantee Availability Period:	Period during which the Committed Guaranteed Amount can be increased.
Guarantee Availability Expiration Date:	End of the Guarantee Availability Period. Three (3) years from the Guarantee Effectiveness Date.
Guarantee Expiry Date:	The earlier of (i) 20 years from the Guarantee Effectiveness Date, or (ii) Argentina reaching investment grade as described in the RenovAr Request for Proposals.
Project Company Guarantee Expiry Date:	For each Project Company, the Project Company Guarantee Expiry Date is the earliest to occur of (a) the Guarantee Expiry Date and (b) the last day of the period of IBRD guarantee coverage indicated in the respective FODER Trust Adhesion Agreement. Subject to the prior agreement of MEM and the Trustee, one year prior to the expiry of its Project Company Guarantee Expiry Date, any Project Company that has requested a period of IBRD guarantee coverage of 15 years or less may, by written request to the Guarantor, request that the period in (b) above be extended to a date not later than 20 years from the Guarantee Effectiveness Date. Any such extension is subject to (x) the approval of the Guarantor, acting reasonably, and (y) payment of the first quarterly installment of the Revised Guarantee Fee applicable to the extended period of IBRD guarantee coverage.
Eligible Payments:	The Put Price due and payable by FODER to a Project Company pursuant to a FODER Trust Adhesion Agreement to the extent not paid and up to the Eligible IBRD Claim Amount.
Put Price:	With respect to each Project Company, the price defined in the respective FODER Trust Adhesion Agreement as the <i>Pago del Precio de Venta del Proyecto</i> .
Eligible IBRD Claim Amount:	With respect to each Project Company, the lower of (i) the amount requested by the Project Company in its offer and granted after the award as set forth in the respective FODER Adhesion Agreement which cannot be more than US\$500,000

	per MW; or (ii) the Put Price due and payable by FODER.
Claim under the IBRD Guarantee:	<p>If there is a dispute between CAMMESA, FODER, MoF, or MEM and the Project Company as to FODER’s obligation to pay the Put Price or as to the amount of such Put Price, the IBRD Guarantee would be callable only in respect of amounts that are no longer subject to dispute (whether through settlement agreement between the parties, expert determination, or arbitral award (i.e., an arbitral award is not necessarily required)).</p> <p>The FODER Trust Adhesion Agreement will provide that exercise of the Put Option and demand for payment of the Put Price will be made by the Project Company to FODER, with copy to MoF, MEM and IBRD. Such claims will clearly indicate the Put Price and the Eligible IBRD Claim Amount. FODER Trustee will demand from MEM payment of the Put Price within 15 days from receipt of such demand notice. If MEM does not comply with its obligation, the <i>Letras del Tesoro en Garantía</i> shall become due and payable and FODER, within 5 days, shall request MoF to pay within 15 days amounts due under such <i>Letras del Tesoro en Garantia</i> so that FODER can pay the Put Price. The FODER Trust Adhesion Agreement will further provide that if FODER and/or MEM do not comply with their obligations mentioned above, then the Project Company will be entitled to directly submit such request to MEM and/or MoF.</p> <p>The Guarantee Agreement will provide that if MoF fails to pay the <i>Letras del Tesoro en Garantia</i> (as requested by FODER or by the Project Company pursuant to the terms of the FODER Trust Adhesion Agreement), FODER may submit, with copy to the respective Project Company, a demand notice to IBRD under the IBRD Guarantee Agreement for any outstanding Eligible IBRD Claim Amount. If the FODER Trustee does not submit such demand notice to IBRD within the term contemplated in Section 9.2(b) of the FODER Trust Adhesion Agreement, the Project Company may submit a demand notice to IBRD under the IBRD Guarantee Agreement for any outstanding Eligible IBRD Claim Amount. If requested by the Project Company or by FODER, IBRD will pay in US\$to the local or off-shore account designated by the Project Company.</p>
Conditions precedent to the Effectiveness of the	Usual and customary conditions for guarantees of this type, including but not limited to the following:

<p>IBRD Guarantee:</p>	<p>a) Provision of satisfactory legal opinions; and</p> <p>b) Payment in full of the:</p> <p style="padding-left: 40px;">a. Front-End Fee and of the first installment of the Guarantee Fee and Standby Fee as applicable; and</p> <p style="padding-left: 40px;">Initiation Fee and Processing Fee (if invoiced by IBRD to FODER).</p>
<p>IBRD Guarantee Exclusion, Limitation, Withholding and Termination Events:</p>	<p>Standard exclusion, limitation, withholding and termination events for transactions of this nature, including:</p> <p>Limitation (triggered by Project Company acts):⁷²</p> <p style="padding-left: 40px;">a) Material breach by a Project Company of its obligations under the World Bank Performance Standards [that remains uncured after the expiration of any applicable cure period.</p> <p>Partial cancellation (triggered by Project Company acts):⁷³</p> <p style="padding-left: 40px;">b) Sanctionable Practice by a Project Company;</p> <p style="padding-left: 40px;">c) Extended Limitation for a Project Company (i.e. material breach by a Project Company of its obligations under the World Bank Performance Standards [that remains uncured after the expiration of any applicable cure period.</p> <p>Limitation (triggered by FODER/Argentina acts)⁷⁴:</p> <p style="padding-left: 40px;">d) Material breach by FODER of its obligations under the Guarantee Agreement or by MEM or MoF under the Indemnity Agreement that is not cured within any applicable cure period.</p> <p>Withholding (triggered by FODER acts)⁷⁵:</p> <p style="padding-left: 40px;">a) Sanctionable Practice by the Trustee (Limitation will be lifted upon acceptable substitution of the Trustee), by MEM, or by CAMMESA;</p>

⁷² i.e. Limitation triggered by Project Company acts: Coverage under the IBRD Guarantee with respect to the relevant Project Company will be suspended upon notice by IBRD to the respective Project Company, and until IBRD issues a revocation notice.

⁷³ i.e. Upon partial cancellation triggered by Project Company acts, coverage under the IBRD Guarantee with respect to the relevant Project Company will terminate, World Bank will have no further liability with respect to claims by the relevant Project Company, and Maximum Guaranteed Amount will be reduced accordingly.

⁷⁴ i.e. Limitation triggered by FODER Trustee act: Trust Adhesion Agreements entered into by FODER after notice of limitation event will not benefit from IBRD guarantee coverage. Limitation does not affect IBRD coverage for existing Trust Adhesion Agreements.

⁷⁵ i.e. IBRD may withhold amounts otherwise due and payable to FODER.

	<p>Termination (triggered by FODER acts)⁷⁶:</p> <p>b) Nonpayment of any installment of the relevant Guarantee Fee, Standby Fees, or Upfront Fees. [Note: IBRD would accept payment in full of fees from a third party on behalf of FODER. In this case, Beneficiaries could designate a fee payment agent to collect from Beneficiaries and pay all fees to IBRD in order to prevent termination of the IBRD Guarantee for lack of fee payment.]</p>
IBRD Guarantee Related Agreements	
IBRD Guarantee Agreement:	Agreement signed between IBRD and BICE, as trustee of FODER.
Governing law:	New York Law.
Dispute Resolution:	Arbitration in Washington DC according to UNCITRAL Arbitration Rules.
Indemnity Agreement:	<p>Agreement signed between IBRD and Argentina (acting through MoF and MEM).</p> <p>Argentina (acting through MoF) commits to reimburse and indemnify IBRD on demand, or as IBRD may otherwise direct, for all payments under the Guarantee.</p> <p>Argentina (acting through MEM) commits to:</p> <p>a) Comply with a framework agreed with IBRD to screen, evaluate and supervise the sub-projects, including an Operations Manual and an Environmental and Social Management Framework (which will include the environmental and social management procedures to be implemented by MEM and the individual sub-projects covered by the guarantee. Project Companies will be in charge of such sub-projects' design, construction, installation, and operation & maintenance, including the environmental and social assessments, assurance of legal compliance, and risk management), (ii) ensure CAMMESA complies with all its obligations under the PPAs (and any other transaction document);</p> <p>b) Cause CAMMESA to obtain IBRD's consent prior to</p>

⁷⁶ i.e. Termination triggered by FODER act: upon termination, World Bank will have no further liability under the Guarantee Agreement.

	<p>agreeing to any change to a PPA and any other relevant transaction document which would materially affect the rights or obligations of IBRD under the IBRD Guarantee Agreement or any other transaction document;</p> <p>c) Provide certain notices to IBRD;</p> <p>d) Cooperate with IBRD and furnish to IBRD, or ensure other public entities provide, all such information related to such matters as IBRD shall reasonably request; and promptly inform IBRD of any condition which interferes with, or threatens to interfere with, such matters.</p> <p>If Argentina breaches any of its obligations under the Indemnity Agreement, IBRD may suspend or cancel, in whole or in part, the rights of Argentina to make withdrawals under any other loan agreement with IBRD, or any IBRD loan to a third party guaranteed by Argentina, and may declare the outstanding principal and interest of any such loan to be due and payable immediately. A breach by Argentina under the Indemnity Agreement will not, however, forgive any guarantee obligations of IBRD under the Guarantee.</p> <p>The Indemnity Agreement will follow the usual legal regime and include dispute settlement provisions customary for agreements between member countries and IBRD.</p>
IBRD Guarantee Fees⁷⁷	
Guarantee Fee (recurring):	[50-100] ⁷⁸ bps per annum of the Committed Guaranteed Amount, payable quarterly in advance by FODER/Fee Payment Agent one month prior to the next quarter guarantee period. Guarantee fees will be calculated based on the reported amount corresponding to Project Companies that have reached Financial Close and that are expected to reach Financial Close during the following quarter.

⁷⁷ FY17 pricing. All fees will be updated based on the pricing applicable at the time of approval by IBRD’s Board of Directors.

⁷⁸ Depending on the tenors of the guarantees requested by the Project Companies. The Guarantee fee is comprised of a basis 50 bps per annum plus a maturity premium. The annual maturity premium is as follows: 0 bps for 8 years and below; 10 bps for greater than 8 and up to 10 years; 20 bps for greater than 10 and up to 12 years; 30 bps for greater than 12 and up to 15 years; 40 bps for greater than 15 and up to 18 years; and 50 bps for greater than 18 and up to 20 years.

Revised Guarantee Fee (recurring):	If a Project Company's Guarantee Expiry Date is extended as provided above, the applicable guarantee fee will be (a) calculated based on the extended period of IBRD guarantee coverage (<i>i.e.</i> , the original period <i>plus</i> the period of extension) as per the higher of (i) the pricing applicable at Board approval and (ii) the pricing applicable at the time of approval of the extension, and (b) payable prospectively during the period of extension.
Stand-by Fee (recurring):	25bps per annum of the Uncommitted Guaranteed Amount, payable quarterly in advance by FODER/ Fee Payment Agent one month prior to the next quarter guarantee period. This fee starts accruing at the earlier of (i) sixty days after the signing of the guarantee agreement or (ii) effectiveness of the guarantee.
Up-front Fees: (one time only)	Payable by FODER/ Fee Payment Agent: a) A Front-End Fee of 25bps of the Maximum Guaranteed Amount; b) An Initiation Fee of 15 bps of the Maximum Guaranteed Amount; c) A Processing Fee of 50bps of the Maximum Guaranteed Amount; d) Reimbursement of IBRD outside legal counsel expenses, up to US\$300.000. IBRD shall inform to FODER in advance before hiring legal counsel.
Fee Payment Agent	In case FODER does not pay the guarantee fees to IBRD, a private sector, commercial agent could be designated as a fee payment agent to collect from Beneficiaries and pay all fees to IBRD before the due date for the payment of fees in order to avoid termination of the Guarantee.

Annex 7: Economic and Financial Analyses
ARGENTINA: FODER Renewable Energy Fund Guarantee

Economic Analysis

1. **RenovAr Round 1 and 1.5 confirms the economic viability of the energy matrix diversification process.** RenovAr Round 1 and 1.5 will generate economic benefits from the beginning as the average energy prices for Round 1 and 1.5 (i.e. 61.3 US\$/MWh and 54.9 US\$/MWh) are respectively 9.2 US\$/MWh and 15.6 US\$/MWh lower than the average generation price of 70.5 US\$/MWh of the electricity system in 2015. The Program will also generate positive externalities, notably regarding GHG emission reductions.

2. **The economic analysis shows that the Economic Internal Rate of Return (EIRR) and Net Present Value (NPV) are strong.** The EIRR is 19.3 percent for the Program and 19.8 percent for the Project while the NPV is US\$3.8 billion for the Program and US\$1.8 billion for the Project. Sensitivity analysis based on strong decrease in amount generated, avoided cost estimate, and/or carbon benefits shows that both the Program and Project are robust to such changes. Even in an extreme scenario where these three key assumptions all decrease by 20 percent, the EIRR is still 10.0 percent for the Program and 10.5 percent for the Project. The tables below show key assumptions and results and the generation per renewable technology awarded.

Table A7.1 Economic Analysis - Key assumption and results

Assumption	Unit	Program	Project
Capacity - total	MW	2,424	1,033
O&M cost*	USD/MW/yr	38635	
Capacity factor*	%	39%	42%
Estimated investment cost*	US\$ million/MW	1.3	1.4
Benefit of displaced energy**	US\$/MWh	70.5	
Grid emission factor***	tCO ₂ /MWh	0.493	
Carbon benefit	US\$/tCO ₂	30	
Discount rate	%	6%	
Economic NPV - base case	USD Million	3,829	1,823
Economic IRR - base case	%	19.3%	19.8%
EIRR - 20% generation decrease	%	14.3%	14.8%
EIRR - 20% avoided cost decrease	%	15.2%	15.7%
EIRR - 20% carbon benefits decrease	%	18.4%	19.0%
EIRR - 20% decrease for all three	%	10.0%	10.5%

* Weighted average between technologies awarded in Round 1 and 1.5

** Based on the average generation price for the system in 2015. This is conservative since the generation from gas oil and fuel oil only (9,965GWh and 11,398GWh) is substantially higher than the expected generation from renewable in RenovAr Round 1 and 1.5 (about 8,270 GWh). Even with a conservative 55 US\$/bbl oil price assumption, such displaced thermal energy variable cost is estimated at about 100 US\$/MWh. Also, no additional

capacity is required to allow for the integration, or back up, of the renewable energy from RenovAr Round 1 and 1.5. Therefore, every kWh of renewable energy will displace existing generation, most likely from thermal sources.

*** WB GHG Accounting for Energy Investment Operations Guidance Manual version 2.0, January 2015

Table A7.2 Average price and estimated annual generation by technology type

Technology	Average Awarded Price (USD/MW)	Generation (GWh/Yr)
Wind	56	5.828
Solar	57	2.192
Biogas	154	67
Biomass	110	117
Mini-Hydro	105	65
Total		8.270

3. **RenovAr has a clear development impact as shown by the economic returns.** Associated benefits include: (i) diversify the energy matrix through the use of renewable energy technologies; (ii) displace fossil fuels for energy generation; (iii) contribute to increase national energy security; (iv) increase the renewable energy installed capacity in the short, medium and long term; (v) incentivize and develop the national renewable energy industry and its value chain (equipment manufacturers and services providers); and (vi) mitigate related risks allowing to minimize the energy price in the long term.

4. **WBG support provides strong value added.** In particular, it helps to (i) enhance the credibility and reduce the risks of GoA’s new RenovAr program, (ii) attract potential bidders and lenders, especially international ones, and (iii) bring international experience from other similar renewable programs. **There is strong rationale for public sector funds** to be used to set up a guarantee that mitigates risks to attract substantial private sector investment and expertise in renewable energy.

Greenhouse Gas (GHG) Analysis

5. **RenovAr will have a positive impact on the environment, especially in the reduction of Greenhouse Gas (GHG) emissions.** The GHG emission reductions have been estimated for the 59 awarded sub-projects with a total of 2,424 MW. The following assumptions were considered in the calculation of the emission reductions: (i) a grid emission factor of 0.493 CO₂/MWh⁷⁹ as per the World Bank *GHG Accounting for Energy Investment Operations Guidance Manual* version 2.0, January 2015; and (ii) a plant load factor for each technology have been estimated based on the energy expected to be delivered by the sub-projects to the SADI (this information was provided during the bidding process).

⁷⁹ GoA uses a different grid emission factor of 0,5342 ton CO₂/MWh, which results in a slightly higher number of GHG emission reductions.

Table A7.3 Plant load factor per technology type

Technology	MW	Generation (GWh/Year)	Plant Load Factor (%)
Wind	1473	5,828	45.1
Solar	916	2,192	27.3
Biogas	8.6	67	88.8
Biomass	14.5	117	92.5
Mini-hydro	11.4	65	65.3
TOTAL	2423	8.270	

6. **Based on the assumptions mentioned above,** the Project is expected to reduce a total of 27.39 million tCO₂ over the life of the IBRD Guarantee of each sub-project. The overall GHG emission reductions for RenovAr Round 1 and Round 1.5 over the duration of the PPA is 79.64 million tCO₂, i.e. 4 million tCO₂ per year which is approximately one percent of the GHG emissions generated by Argentina in 2015.

Table A7.4 GHG emission reductions

	PERIOD	MILLION tCO ₂
All RenovAr Round 1 & 1,5	Annual	4,07
Renovar Ronda 1 & 1,5 - IBRD Guarantee	Duration of the guarantee	27,59
Renovar Ronda 1 & 1,5 - IBRD Guarantee	20 years	35,49
All RenovAr Round 1 & 1,5	20 years	81,54

Financial Analysis

7. The financial returns were analyzed at the sub-project level to confirm that sub-projects likely to receive risk coverage under the Project are financially viable and produce sufficient returns. The financial analysis of a typical wind energy sub-project confirms the viability of the awarded sub-projects. The analysis is based on the average plant factor of the awarded sub-projects (0.465 in Round 1), average awarded price (i.e. 59.4 US\$/MWh and 53.3 US\$/MWh for wind respectively for Round 1 and 1.5), estimated cost, financing plan, cash flow, debt service and sensitivity analyses of most relevant variables. Results show that wind sub-projects are financially viable. The Financial Internal Rate of Return (FIRR) of about 10 percent is within the average FIRR, of similar projects in the region, with a payback period ranging from 6 to 9 years (depending on the price and the load factor). The tables below show the key assumptions and results

Table A7.5 Financial analysis: Wind energy sub-project

Wind Project 69 MW									
Plant load factor									
0.4									
Price									
49,1 USD/MWh			59,4 USD/MWh			67,2 USD/MWh			
Financing Costs									
	7%	8%	9%	7%	8%	9%	7%	8%	9%
Project IRR	6.68%	6.86%	7.05%	9.53%	9.71%	9.89%	11.50%	11.68%	11.85%
Shareholder IRR	6.35%	5.69%	5.06%	12.31%	11.56%	10.83%	16.63%	15.81%	15.02%
Payback Period	9	8	8	7	7	7	6	6	6

Wind Project 69 MW									
Plant load factor									
0.5									
Price									
49,1 USD/MWh			59,4 USD/MWh			67,2 USD/MWh			
Financing Costs									
	7%	8%	9%	7%	8%	9%	7%	8%	9%
Project IRR	10.04%	10.22%	10.40%	13.18%	13.36%	13.53%	15.39%	15.57%	15.75%
Shareholder IRR	13.42%	12.65%	11.90%	20.47%	19.60%	18.75%	25.73%	24.79%	23.88%
Payback Period	7	7	7	6	6	6	5	5	5

8. In the case of solar sub-projects, the analysis is based on the average plant factor of the awarded sub-projects (0.262 in Round 1), average awarded price (i.e. 59.7 US\$/MWh and 54.9 US\$/MWh for solar respectively for Round 1 and 1.5), estimated cost, financing plan, cash flow, debt service, and sensitivity analyses of most relevant variables. Results shows that solar sub-projects are financially viable. Although the analysis confirms their viability, the FIRR, which varies between 7.7 and 10.4 percent, is slightly lower than similar projects in the region. The tables below show the key assumptions and results.

Solar Project		
Installed capacity	MW	100
Capacity per solar panel	W	320
Investment per Wp	USD/Wp	1
O&M costs per year	1,000 USD	22
Equipment amortization	Years	10
Debt	%	65
Length of financing	Year	12
Duration PPA contract	Year	20

Solar Project 100 MW						
Plant load factor						
0.22			0.26			
Price						
59,7 USD/MWh			59,7 USD/MWh			
Financing Costs						
	7%	8%	9%	7%	8%	9%
Project IRR	7.72%	7.90%	8.09%	10.05%	10.22%	10.40%
Shareholder IRR	8.51%	7.80%	7.12%	13.52%	12.72%	11.96%
Payback Period	8	8	8	7	7	7

Table A7.6 Financial analysis: Solar energy sub-project

9. **The financial risk of the overall dispatch system should decrease over time.** Given the small impact RenovAr Round 1 and 1.5 (only up to 5.7 percent of the overall demand in 2018) have on the overall cost of energy supply in Argentina, these rounds can barely alleviate the initial risk of the system. However, this initial risk has been and should continue to decrease over time due to external factors (global reductions of oil and natural gas prices) and GoA commitments and actions to bridge the gap between end user prices and real energy costs. RenovAr Round1 and 1.5 are expected to have a small, but positive impact on the financial situation of the wholesale electricity system by reducing its overall volatility, adding new generation capacity at lower prices, and eventually replacing expensive thermal generation. In summary, the financial situation of the wholesale electricity market should not be negatively affected by RenovAr Round 1 and Round 1.5.

10. **Since the set-up of Argentina’s wholesale market in 1992, CAMMESA has never stopped meeting its payment obligations.** From 2012 to 2015, the average payment time by CAMMESA increased from 16 days to 64 days. Since taking office, the new Government has taken actions to enhance flow of payment in the electricity sector, including on tariff. As a result, the average payment period has gone down to pre-2012 levels. GoA plans to continue strengthening the financial situation of the sector.