

RENEWABLE ENERGY IN ARGENTINA

RenovAr Program

Round 1

FIRST PUBLIC CALL FOR TENDERS
FOR RENEWABLE ENERGY SUPPLY

Hambourg, September 2016



Ministry of Energy and Mining
Argentine Republic

Undersecretariat of Renewable Energy

RENEWABLE ENERGY REGULATORY FRAMEWORK

Mandatory Targets

8% @ 2017-18

16% @ 2021

20% @ 2025

Resource

Diversification

Geographical and Technological

New RE Framework

Law. 27.191

Generous

Fiscal Incentives

Applicable to IPPs and Local
Manufacturers

FODER

Public Trust Fund for
Guarantees and Financing

RENEWABLE ENERGY PROGRAM 2016-2025

Regulatory Framework Elements

Law 27.191

Senate
4Q'14 (94% positive vote)
Lower Chamber 4Q'15
(93% positive vote)

Decrees 531 y 882

Presidential
Decree
1S '16

Res. 71, 72, 123 and 136

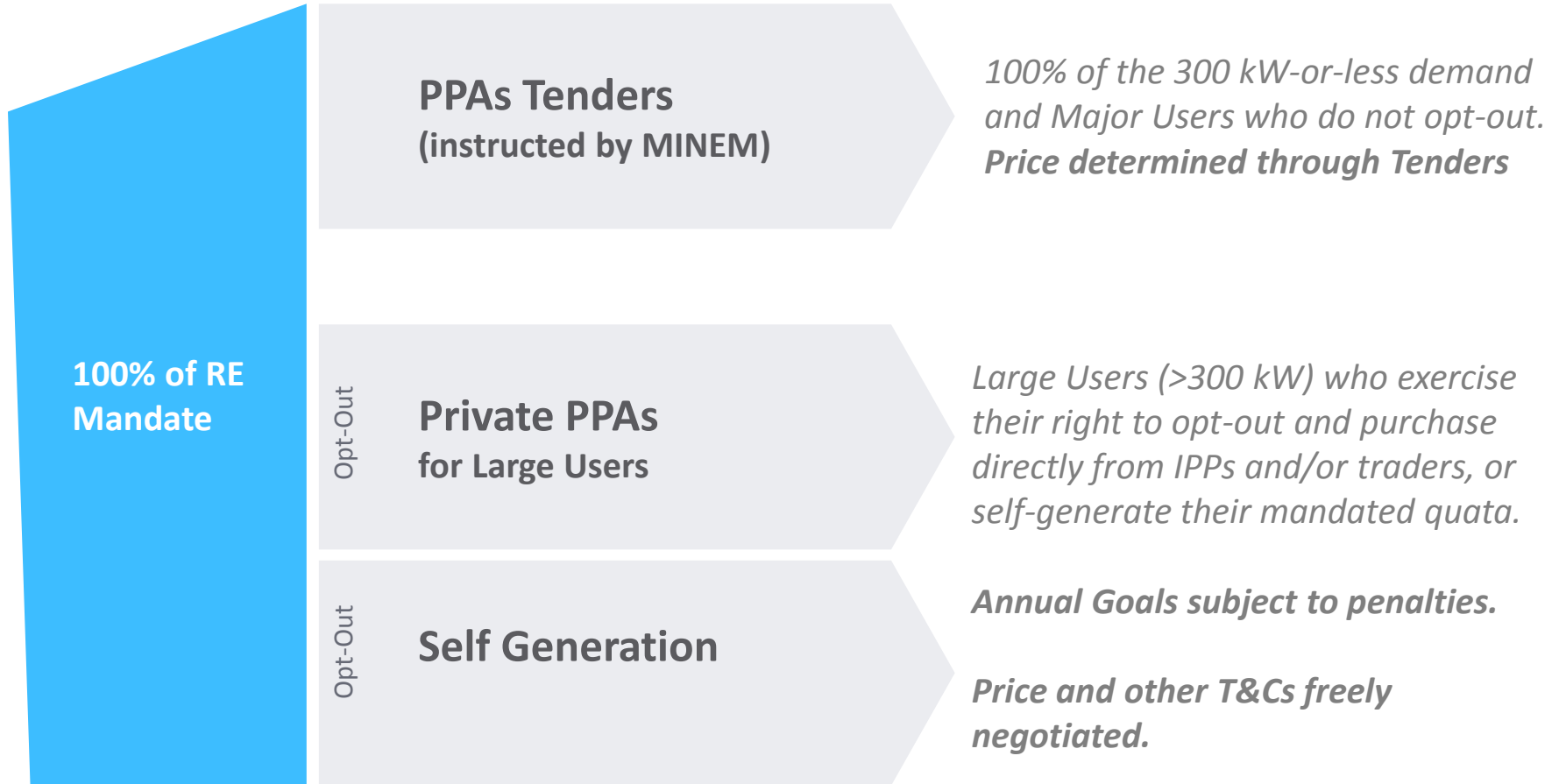
Ministry
of E&M
1S'16

RenovAr Round 1

CAMMESA
2S'16

RE MARKETS

3 Contracting Mechanisms



RenovAr Round 1

Objectives & Benefits

Objectives

Direct Investment

1,5 / 1,8 Billion USD

First Step towards the fulfillment of the 8% goal 1,9% => 4,5% (2018)

Expected Benefits

New Jobs

5000 - 8000

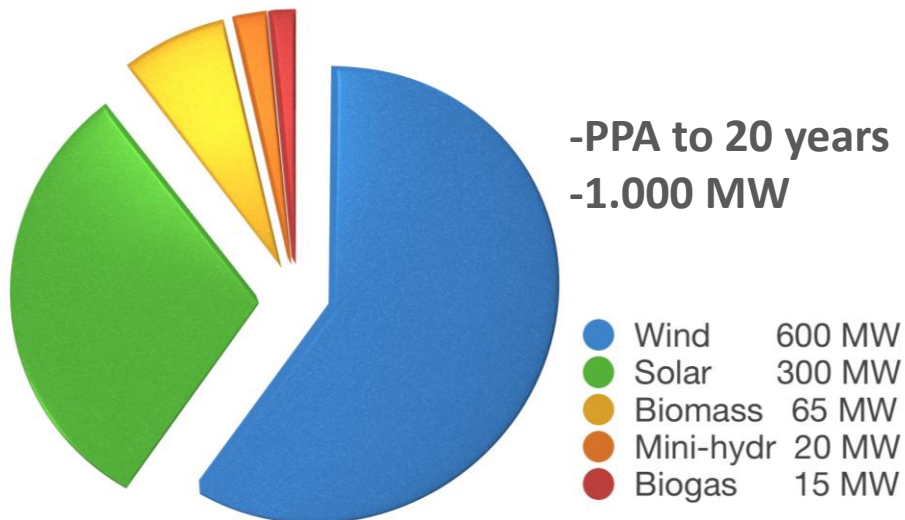
Annual Savings on Imported

Fuels for Power Generation

300 million US\$

Emission Reductions

2 million ton CO₂/year avoided
(equivalent to ~ 900.000 cars)



QUALIFICATION

Bidders and Projects

Bidders

Structure

1 or more national or foreign people

Minimum Equity

250k US\$/MW of Offered Power Capacity (OPC)

Guarantees

Bid Bond 35k US\$/MW of OPC

Performance Bond 250k US\$/MW of OPC

Request for Proposals

150k Argentine pesos + VAT (refundable if not awarded)

Commitment to create an SPV in the event of award

Projects

Maximum Offered Power Capacity

100 MW Wind and Solar,

65 MW Biomass, 15 MW Biogas, 20 MW mini hydro

Environmental Authorization

Fully granted

Land Site

Verifiable irrevocable rights

Resource

Energy Production Report by an Independent Consultant

Interconnection

Cammesa's Technical Procedure #1 studies approved. Transmission provider ok.

Wholesale Sales Agent

Authorization process Innciated

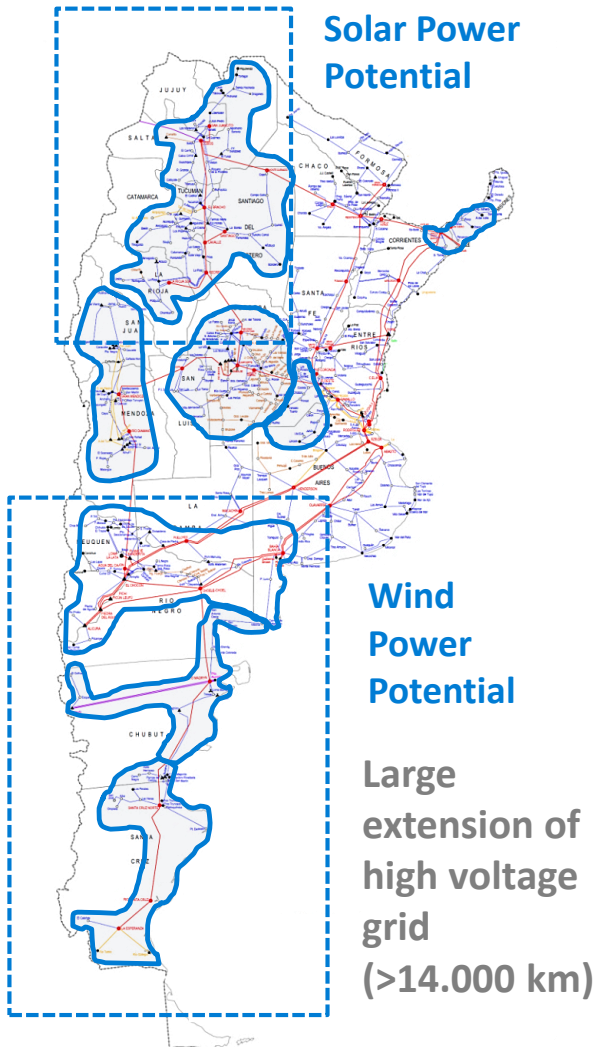
RISKS

Types and Mitigation

Risk	Mitigation
Project Quality	<ul style="list-style-type: none">- Technical Requirements- Certified Energy Production Report- Environmental Permitting and Land Rights Required
Building	<ul style="list-style-type: none">- Financial Requirements to the Bidders (Sponsor)- High Guarantee Amounts- Construction Milestones Committed and Penalized
Cash Flow (liquidity, repayment)	<ul style="list-style-type: none">- Dispatch Priority (by Law) and Priority Payment- Energy Payment Guarantee through FODER- Annual Adjustment Factor / Incentive Factor
Exchange Rate and Repatriation of Capital	<ul style="list-style-type: none">- Energy Payment Guarantee (on-time payment)- Inconvertibility/Intransferability (cause for sale, put option)
Early Termination (offtaker, country risk)	<ul style="list-style-type: none">- Put Option (exercise price pre-established in US\$)- Sovereign Guarantee (Treasury Bills as Guarantee to FODER)- International Arbitration- World Bank Guarantee

CURTAILMENT RISK

Mitigation by means of Existing Legal Framework and Proper Allocation of Interconnection Capacity



Mitigation

Dispatch Priority
Set forth by Law

Regulations on Access to the Grid
Access granted by the ENRE based on technical criteria

Penalties due to Grid Unavailability
Compensation to IPPs collected from responsible transmission services providers

Award of PPAs based on Available Capacity at each Point of Interconnection

ANEXO 3
CORREDORES - POTENCIAS MÁXIMAS - FACTORES DE PÉRDIDAS - LIMITACIONES POR PUNTOS DE INTERCONEXIÓN

CORREDOR	PUNTO DE INTERCONEXIÓN ("PDI")		TENSIÓN (kV)	FACTOR DE PÉRDIDAS	POTENCIAS MÁXIMAS POR PDI			
	NOMBRE	TIPO			POTENCIA MÁXIMA EN PDI (en MW)	LIMITACIÓN 1 (MW)	LIMITACIÓN 2 (MW)	LIMITACIÓN 3 (MW)
REDOR COMAHUE	#1 LAS ARMAS - MADARIAGA	Línea	132	0,9578	50			
	#2 ZAPALA-CUTRAL CO	Línea	132	1,0802	90			
	#3 CUTRAL CO-CHOCOCITO	Línea	132	1,0595	170			
	#4 CHOCÓN-PIEDRA DEL AGUILA	Línea	132	1,1068	80			
	#5 PLAZA HUINCUL-ARROYITO-CUTRAL CO	Línea	132	1,0733	170			
	#6 CHOCÓN 500 kV	S/E	500	1,0564	300			
	#7 TRAPAL - LOMA DE LA LATA	Línea	132	1,0591	150			
	#8 ALCURÁ - PILCANTYEU	Línea	132	1,0702	110			
	#9 GENERAL ACHA - PUELCHES	Línea	132	1,0447	130			
	#10 PRINGLES	S/E	132	1,0686	200			
	#11 BAHIA BLANCA - LURO	Línea	132	1,0846	115			
	#12 BAHIA BLANCA-TORNQUIST	Línea	132	1,0925	120			

ET CHOCÓN 500 kV (300)

ALICURÁ 132 kV (150)

PUELCHES 132 kV (130)

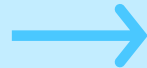
BAHIA

FODER

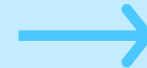
Fund for the Development of Renewable Energy

IMPLEMENTED FOR ROUND 1

- Treasury Funds
- Specific Charge to Consumers
- Sovereign Guarantees



**Payment
Guarantee
Account**



- Energy Payment Guarantee
- Early termination payment
- Payment of put option price

- Treasury Funds
- Public Offerings
- ANSES (Pension Fund)
- Multilaterals / Climate Funds



**Project Finance
Account**



- Long Term Loans
- Building Loans
- Financial Guarantees

GUARANTEE MECHANISM

2 Contracts 3 levels of guarantee

1 Power Purchase Agreement

Energy Sales

2 FODER Trust Adhesion Agreement

Energy Payment and Early Termination Guarantees

1 FODER Guarantee

Energy Payment

2 Sovereign Guarantee

Termination Payment 1

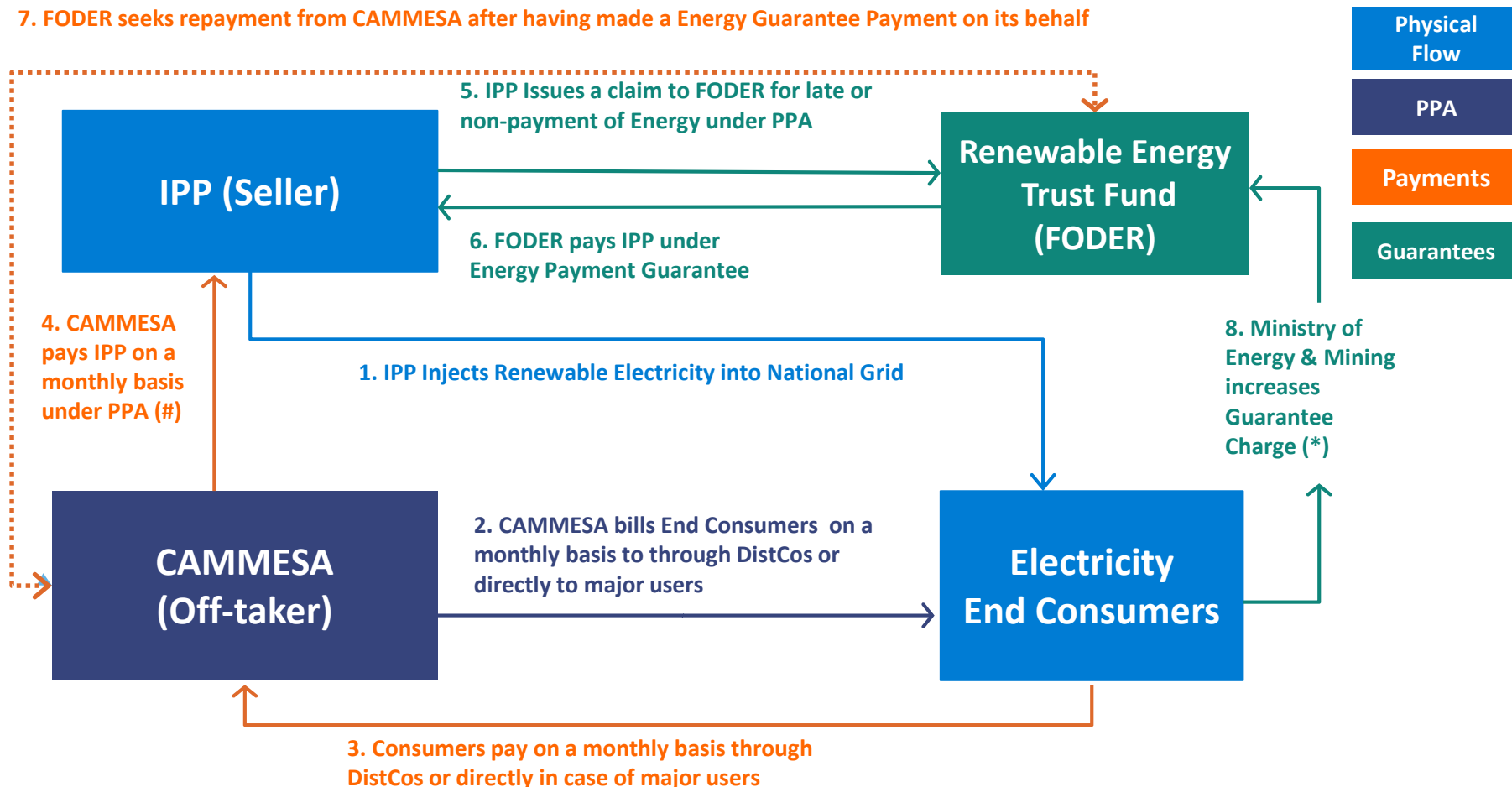
3 World Bank Guarantee

Termination Payment 2

LIQUIDITY GUARANTEE

1 Energy Payment Guarantee

7. FODER seeks repayment from CAMMESA after having made a Energy Guarantee Payment on its behalf



(*) To replenish FODER so that it always holds 12 months worth of eligible PPA payments as liquid reserve

(#) CAMMESA coordinates efforts with FODER on a monthly basis in order to ensure that all payments are covered in full on due date

EARLY TERMINATION AND PUT OPTION

Causes and Compensation

Causes

Non-Payment by the Buyer for more than 4 consecutive months or 6 any months within a year (which has not been remedied by the FODER Guarantee)

Inconvertibility Event (material)

Intransferability Event (material)

Early termination and/or amendment of FODER contract and/or guarantees without IPPs consent

Non-observance of an arbitration award

Compensation

FODER will eventually purchase the Project's assets (not the SPV stock)

Approved Book Value

Amount in US\$ certified after COD capped at certain maximum amount per MW (as per the RfP)

Put Option Price (exercisable by Seller)

100% of the Approved Book Value depreciated linearly from COD

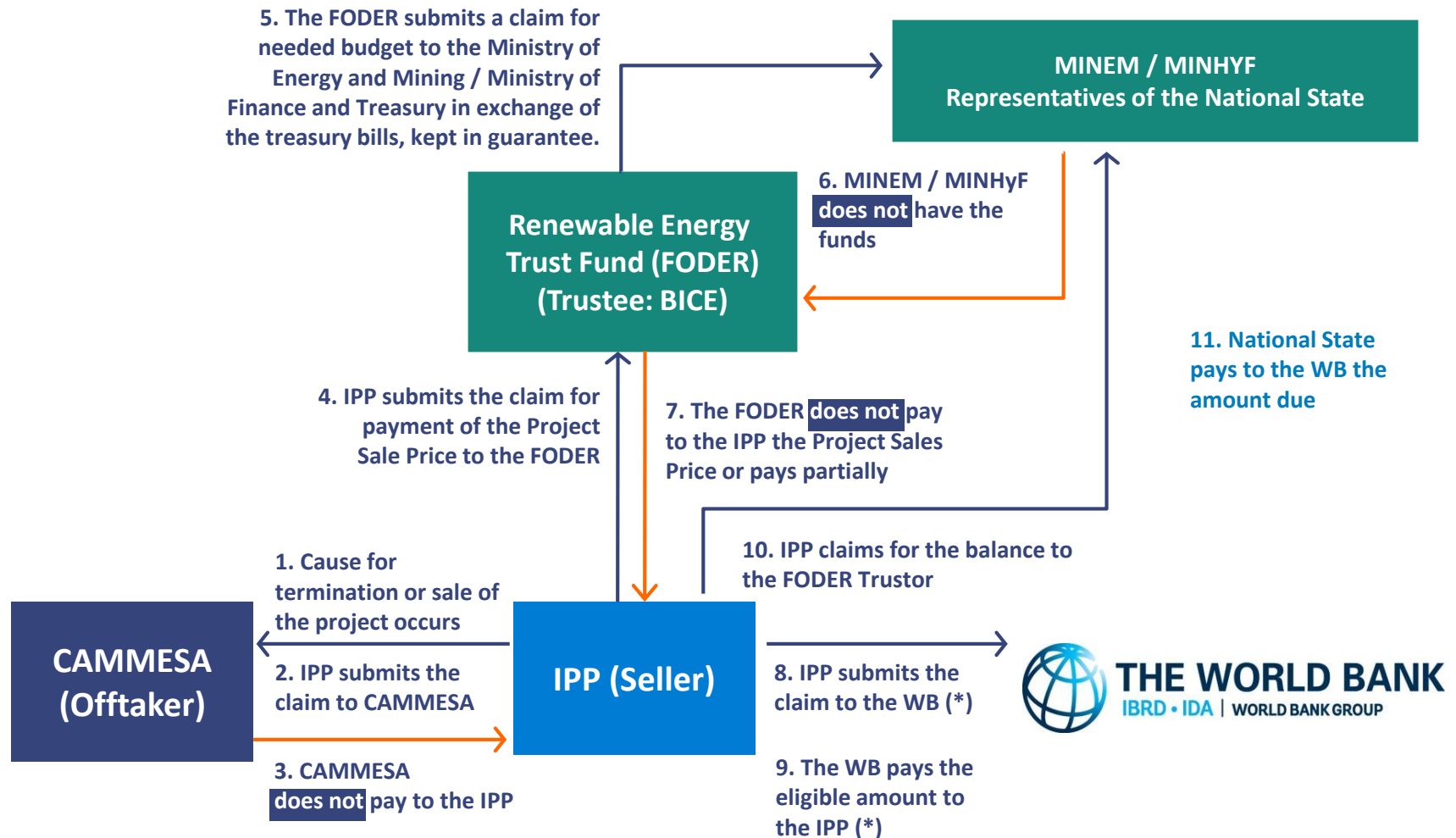
Call Option Price (exercisable by FODER)

75% of Approved Book Value depreciated linearly from COD

SOLVENCY GUARANTEE (TERMINATION)

2 Termination Payment Guarantee via Treasury Bills

3 The World Bank



(*) The FODER grants individuals and legal entities which have issued projects the irrevocable right to directly submit claims before the World Bank in certain cases and to receive payments from the World Bank.

RENEWABLE ENERGY IN ARGENTINA

BIDS SUBMITTED



Ministry of Energy and Mining
Argentine Republic

Undersecretariat of Renewable Energy
Secretariat of Electric Power

BIDS SUBMITTED

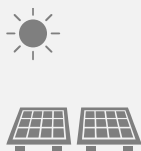
Total Bids Submitted: 123



Bids: 49
MW: 3468

WIND

Provinces: Buenos Aires, Chubut, Río Negro, Santa Cruz, Neuquén, La Rioja, La Pampa, Mendoza, Córdoba and Santa Fé



Bids: 58
MW: 2834

SOLAR

Provinces: Salta, San Juan, Jujuy, Catamarca, San Luis, La Rioja, Mendoza, Neuquén, La Pampa, Córdoba, Buenos Aires and Chaco



Bids: 11
MW: 53

BIOMASS
Y BIOGAS

Provinces: Entre Ríos, Corrientes, Córdoba, Tucumán, Santa Fé, Misiones and San Luis



Bids: 5
MW: 11






SMALL
HYDRO

Provinces: Río Negro and Mendoza

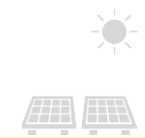
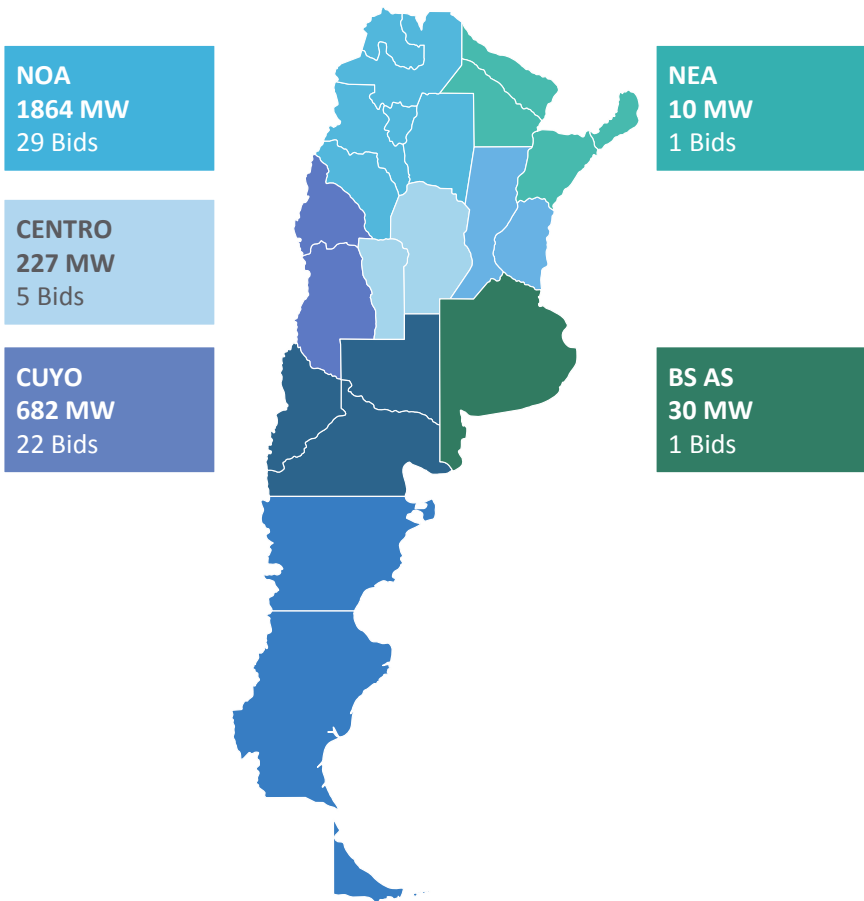
SUBMITTED BIDS

Detail

DATA PRIOR TO TECHNICAL ASSESMENT OF THE BIDS

TECHNOLOGY	BIDS	Offered Power Capacity [MW]	Average OPC per Bid [MW]	Power Capacity Quota RenovAr - Round 1 [MW]
WIND 	49	3469	70.8	600
SOLAR 	58	2813	48.5	300
BIOMASS 	5	44	8.9	65
BIOGAS 	6	9	1.4	15
MINI HYDRO 	5	11	2.3	20
TOTAL	123	6346	51.6	1000

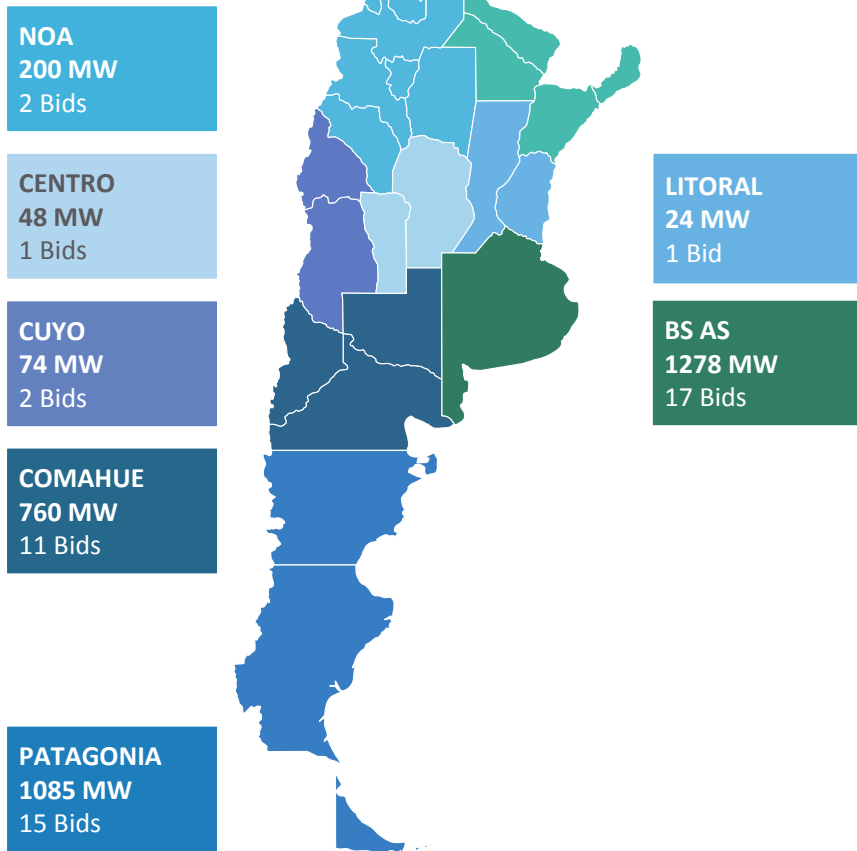
GEOGRAPHICAL DISTRIBUTION - SOLAR



SOLAR			
REGION	Bids	Offered Power Capacity [MW]	Average OPC per Bid [MW]
NOROESTE	29	1864	64
BUENOS AIRES	--	--	--
PATAGONIA	--	--	--
COMAHUE	--	--	--
CUYO	22	682	31
CENTRO	5	227	45
LITORAL	--	--	--
NORESTE	1	10	10
AMBA (*)	1	30	30
TOTAL	58	2813	48,5

(*) Buenos Aires Metropolitan Area

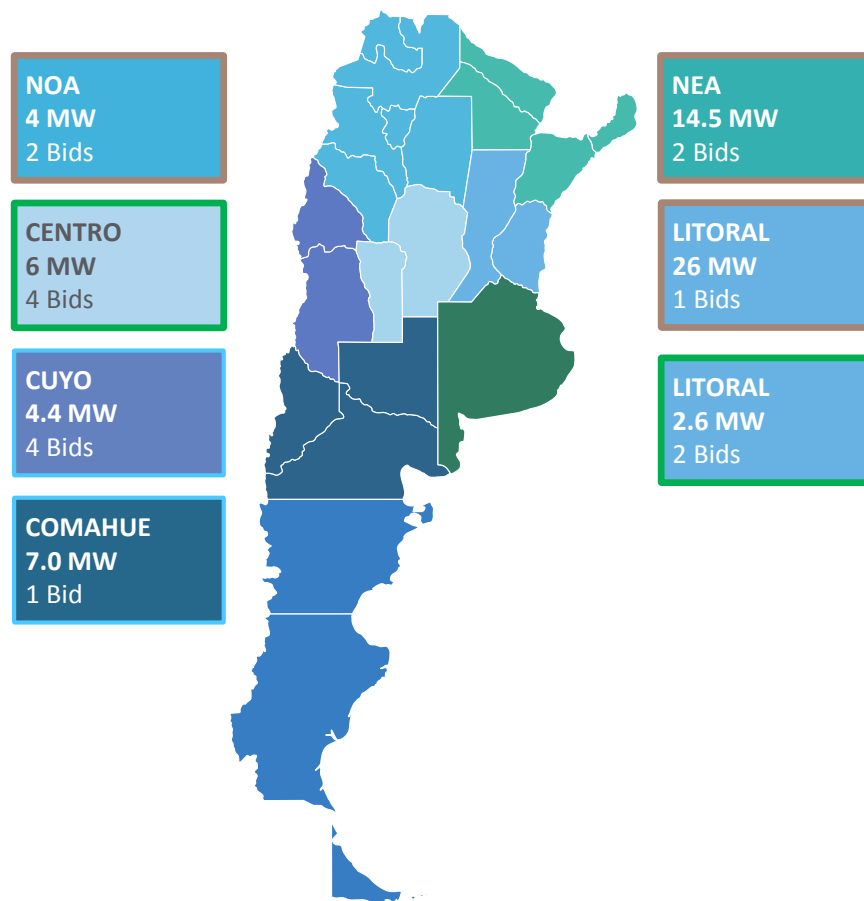
GEOGRAPHICAL DISTRIBUTION - WIND



WIND			
REGION	Bids	Offered Power Capacity [MW]	Average OPC per Bid [MW]
NOROESTE	2	200	100
BUENOS AIRES	17	1278	75
PATAGONIA	15	1085	72
COMAHUE	11	760	69
CUYO	2	74	37
CENTRO	1	48	48
LITORAL	1	24	24
NORESTE	--	--	--
AMBA (*)	--	--	--
TOTAL	49	3469	70,8

(*) Buenos Aires Metropolitan Area

GEOGRAPHICAL DISTRIBUTION - BIOMASS - BIOGAS – MINI HYDRO



BIOMASS

REGION	Bids	Offered Power Capacity [MW]	Average OPC per Bid [MW]
NOROESTE	2	4.0	2.0
LITORAL	1	26.0	26.0
NORESTE	2	14.5	7.3
TOTAL	5	44.5	8.9

BIOGAS

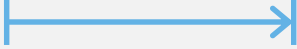
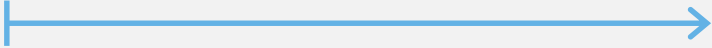
CENTRO	4	6.0	1.5
LITORAL	2	2.6	1.3
TOTAL	6	8.6	1.4

MINI - HYDRO

COMAHUE	1	7.0	7.0
CUYO	4	4.4	1.1
TOTAL	5	11.4	2.6

NEXT STEPS

Remaining Tender Process Schedule

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Bid Submission Date	• 5/9			
Bid Assessment Period				
Technical Qualification Announced		• 3/10		
Economic Bids Opened		• 7/10		
Winning Bids Awarded		• 12/10		
PPA & FODER Adhesion Agreement Signed				



Thank you

Undersecretariat of Renewable Energy
Secretariat of Electric Energy

Ministry of Energy and Mining
Argentine Republic

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Documents available at: www.cammesa.com.ar y en www.minem.gob.ar

Extras

REQUIREMENTS BY TECHNOLOGY

	Wind	Solar	Biomass	Biogas	Mini Hydro
Minimal Power Capacity	1 MW	1 MW	1 MW	1 MW	0,5 MW
Maximal Power Capacity	100 MW	100 MW	65 MW	15 MW	20 MW
Renewable resource measurement and/or availability	Minimum of 1 year worth of on-site resource measurement at time of EPR. Must provide an EPR certified by an Independent Consultant (1)	Must provide an EPR certified by an Independent Consultant (1)	Must provide certificate of source and sustainability of biomass resource	Must provide certificate of source and sustainability of biomass resource	Must provide certified EPR(1) and Energy Production Estimates
Maximal Execution Term from PPA Signature (2)	730 days	730 days	730 days	730 days	730 days

(1) “EPR” or “Energy Production Report” means a briefing on the on site energy production capacity, which is to be certified by an Independent Consultant, who, in turn, must have a minimum of 1.000 MW verifiable background experience on similar renewable energy projects (local or international). This report must be current (max. 6 months old) when the bids are submitted. At any time after the allocation of the contract, in the event of a change of generation equipment mentioned in the EPR presented to qualify, the Bidder will have to present a another EPR for the new equipment, which will have to be analyzed and approved by MINEM.

(2) Except for Solar photovoltaic projects with interconnection points on the Andes-Cobos line (345 kV), which will have a term of 900 days from PPA signing.

CONTENTS OF BID SUBMISSION

Envelope “A” (Legal and Technical Project & Sponsor Information)

- General project description and technical details
- Bidders legal requirements
- Bidders financial and technical requirements
- Completed forms and details of requested applicable fiscal benefits, including the Declared Local Component form (used as tiebreaker for price differences under 3%)
- **Technical Project Requirements:** (i) Project Memo, (ii) Site/Land Rights, (iii) EPR (iv) Technology used, (v) Environmental permits, (vi) Proof of initiation of request for license as “Agente MEM”, (vii) Proof of initiation of request for access to transmission capacity (“ENRE”) and copy of PT1 Studies.

Note: The EPR included in the Bid shall be consistent with the Technical Project that may be issued in such Bid, although such EPR does not refer to the same equipment or design that was submitted to get the corresponding Environmental Authorization. After the issuing of Bids and the eventual award, the Project Design shall be changed and/or improved, as long as a new EPR is submitted to CAMMESA and the Guaranteed Energy and Minimum Guaranteed Energy values included in the Agreement are adjusted.

Envelope “B” (Economic Offer)

- Technology in which it competes
- Offered Price, expressed in US\$ per MWh without VAT
- Offered Power Capacity (MW)
- Minimal Offered Power Capacity for partial award (MW)
- Guaranteed Energy (MWh/year)
- Minimum Guaranteed Energy (MWh/year)
- Amount and term of World Bank GuaranteeMundial

SELECTION AND AWARD PROCESS

For each individual Technology:

- Calculate Adjusted Offered Price (POA) using Offered Price, Loss Factors (#) and a 0,15 U\$S improvement for each 30 days of Offered Execution Deadline priority vs. Maximum Execution Deadline
- Discard those Bids whose POA is over the Maximum Award Price (*)
- Sort Bids in ascending order by POA
- In the case of a tie, the selection criteria will be, in order of hierarchy, lowest POA, highest Local Component, and finally, by draw.
- Allocation and award will occur only if:
 - The Offered Power Capacity or Minimal Power Capacity for partial award do not exceed the Interconnection Node Capacity, the Maximum Power Capacity by Technology, nor the Total Required Capacity (1.000 MW) and,
 - The Bidder does not exceed its Financial Capacity
- For Wind energy, only up to 500 MW will be allocated on the Comahue and Patagonia corridors, except in case the remaining 100 MW quota is not allocated in the rest of the country.

*(#) **Loss Factors** are to be calculated by CAMMESA and will account for marginal losses in the transmission network attributable to the RE projects.*

() **Maximum Award Price**: Calculated by MINEM (Energy and Mines Ministry) and informed to CAMMESA in a closed envelope to be opened at the same time that economic bids are opened.*

RENEWABLE POWER PURCHASE AGREEMENT (RPPA)

Main Issues

- **Parties:** CAMMESA (Wholesale Market Administrator), on behalf of the power distribution agents and the wholesale market large users who do not opt-out.
- **Object:** Building, commissioning, O&M of a Power Plant which will supply Renewable Power to the grid
- **Price:** According to each Bid, expressed in US\$ per MWh, with annual pre-set adjustment plus Incentive Factor applied on a calendar-year basis.
- **Volume:** 100% of the power generated by the Contracted Power Capacity
- **Guaranteed Energy:** \geq P90 according to the EPR
- **Term:** 20 years from Commercial Operations Date
- **Penalties to the Seller:**
 - Failing to meet the Interconnection and/or Commercial Operations Deadline (penalty applied on a daily basis)
 - Minor Supply Deficiency (<10% of Guaranteed Energy, GE) with makeup on the next year and Major Supply Difference (>10% of GE) with immediate application of a penalty based on a fixed “Deficiency Cost” (160 US\$/MWh)

PRICE ADJUSTMENT – TO INCENTIVIZE EARLY PERFORMANCE

