

Business Promotion



PV & Wind Framework Assessment in Argentina Preliminary results for wind power

Financial Advisory

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Policy Consulting

Executed by

Strategy Consulting



Market Intelligence

PV & Wind Framework Assessment for Argentina

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Introduction





Project basic information

SUPPORT

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PARTNERS

eclareon, BWE, CADER, Secretaría de Energía de Salta, BSW-Solar









PV & Wind Framework Assessment for Argentina

Objectives and Activities

OBJECTIVE

Contribute to the deployment of RES in Argentina

ACTIVITIES

- Identify viable business models for wind power and PV
- Analyze the legal and administrative process flows for identified business model
- Detect the existing barriers hindering the implementation of business models
- Formulate concrete recommendations for removing these barriers, based on the experience of private sector actors
- Strengthen cooperation and transfer of knowledge between relevant stakeholders





Key results

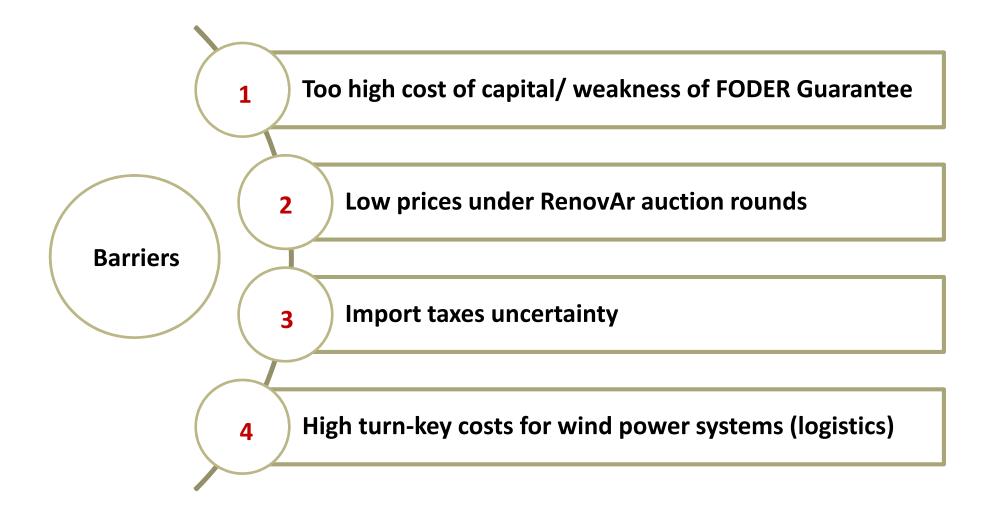


Project Development Procedure

Project Development

Site selection & Preparation of the project proposal	Due diligence to become MEM agent	Connection permit & grid access	Public auction	PPA & financial closure
Identification of renewable energy resource and potential grid connection points for site selection. Signing of the land contract. Wind or Solar prefeasibility study Electricity prefeasibility study Environmental Impact Assessment (EIA) - Environmental Impact Declaration (DIA) Projected average energy output of the RES plant Preliminary financial studies and CAPEX	In parallel to the preparation of the prefeasibility studies and EIA, the generator must conduct the due diligences according to Phase I of the "Procedures of CAMMESA" to become an agent of the "Wholesale Electricity Market" (MEM). Subsequently, the ME&M should approve by means of resolution the request to become generator agent of the MEM.	Once approved a new MEM generator agent, the latter asks for a connection permit to the local grid. The local TSO issues a preliminary decision and submits it to CAMMESA. CAMMESA evaluates the preliminary decision of the TSO and submits it to ENRE. The latter issues a final resolution on the electricity grid access. With this final resolution, the MEM generator has the commercial qualification.	Submission of the offer to RenovAr auction rounds and bid selection	The projects that have been awarded in the auction rounds must sign the PPA contract and then obtain the required financing to start the construction of the RE plant.







Business Model: Auctions with PPA

Analysis data based on interviews with Argentinean experts

Project Overview

Project Parameters			
System Size	MWp	50	
Capacity Factor	%	45%	
Specific System Cost	USD/MWp	1.500.000	
Investment Subsidy	USD	-	
Total System Cost	USD	75.000.000	
Fixed Operation Costs	USD p.a.	2.437.500	
Variable Operation Costs	USD/kWh	-	

	Investment		
Project Duration		Years	20
Equity		USD	30.044.764
Debt (Gearing)	70%	USD	52.500.000
Loan Tenor		Years	8
Interest Rate (Year 1-3)		%	8,00%
Interest Rate (Year 4+)		%	7,00%
Discount Rate		%	2,0%

Business Model				
Cat	egory	Share	Unit	Price
Feed-in Tari	ff	-	USD/kWh	-
PPA Tariff		100%	USD/kWh	0,0533
	Fees		USD/kWh	-
	Overysupply I	Price	USD/kWh	-
	Undersupply I	Penalty	USD/kWh	-

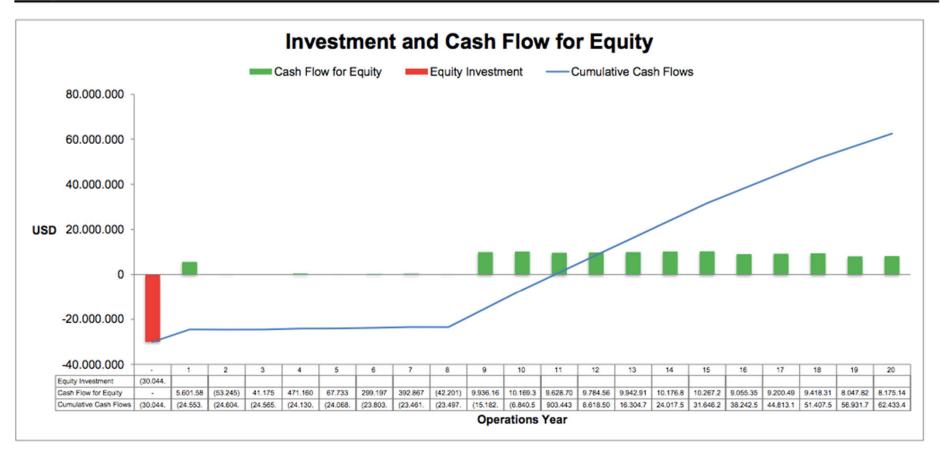
Results		
Net-Present Value	USD	59.572.463
Project IRR	%	8,51%
Equity IRR	%	10,51%
Payback Period	Years	11,88
LCOE* (w/o subsidy)	USD/kWh	0,05
LCOE (w subsidy)	USD/kWh	0,05
Min DSCR**	x	0,99 x
Min LLCR***	х	1,00 x
* LCOE: Levelized Cost of Electricity ** DSCR: Debt Service Coverage Ratio		

*** LLCR: Loan Life Coverage Ratio



Profitable investments after 11.9 years

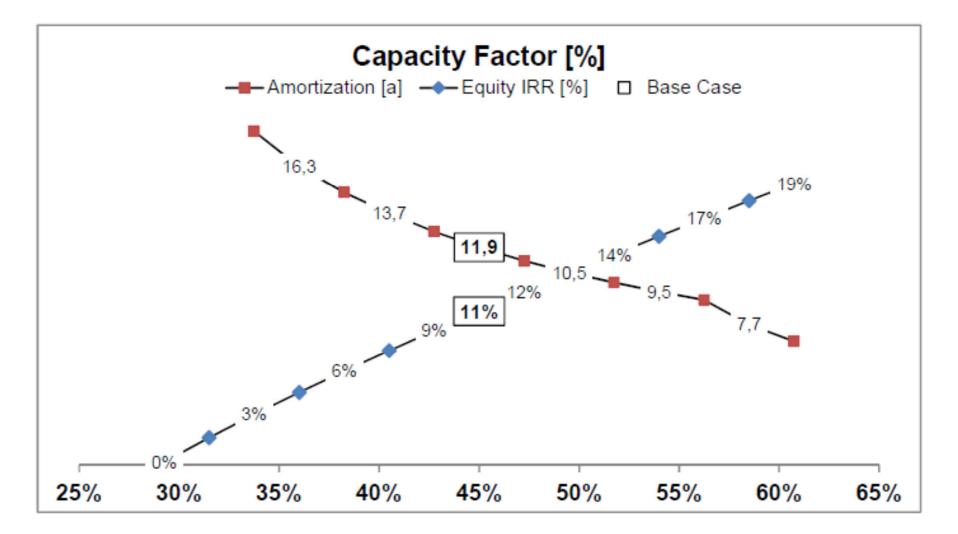
Project Cash Flows





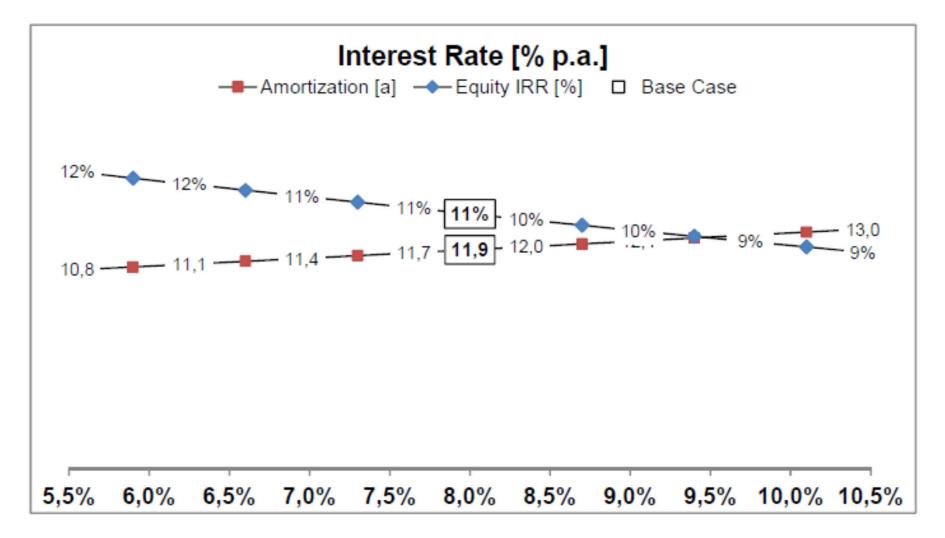
Business Model: Auctions with PPA

Capacity factor decisive for successful wind power project



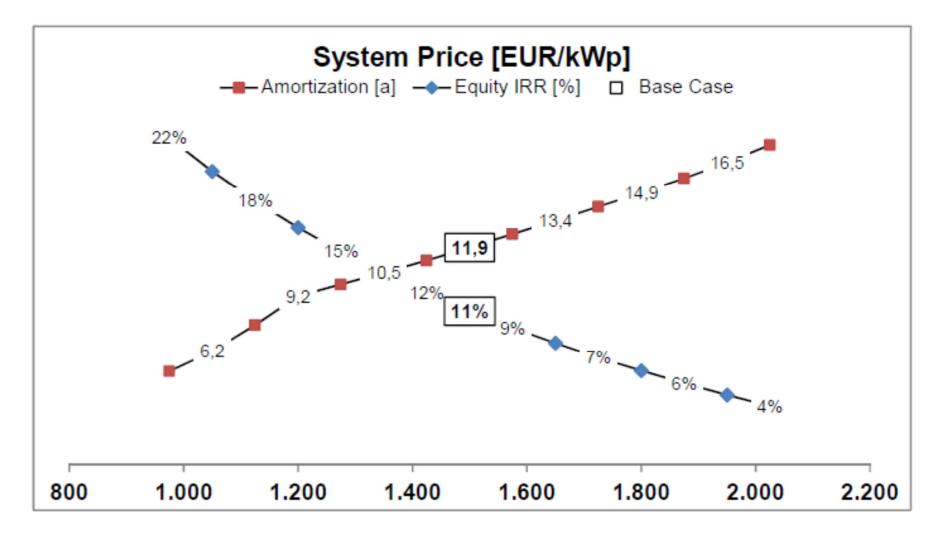


Potential in reduction of interest rate





System price important factor







Conclusions



Investments in Wind Energy in Argentina



- Low auction result in challenging market Low system costs important component
- Cost of capital & innovative logistics possible approaches





ideas into energy.