



# PV & Wind Framework Assessment in Argentina

## Preliminary results for wind power

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**Executed by**



Strategy Consulting

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## INDEX

**Introduction**

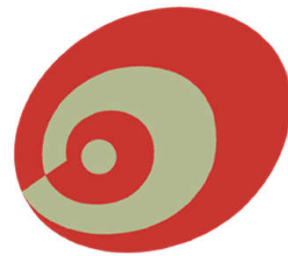
**Key results**

**Project development procedure**

**Barriers**

**Financial modelling**

**Conclusion**



# Introduction

# PV & Wind Framework Assessment for Argentina

## Project basic information

### SUPPORT

Financed by the German Foreign Office  
(March to Sept. 2017)



### PARTNERS

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



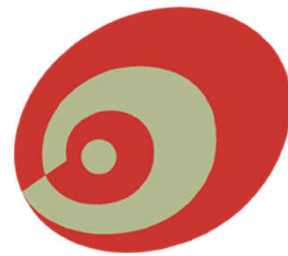
## Objectives and Activities

### OBJECTIVE

**Contribute to the deployment of RES in Argentina**

### ACTIVITIES

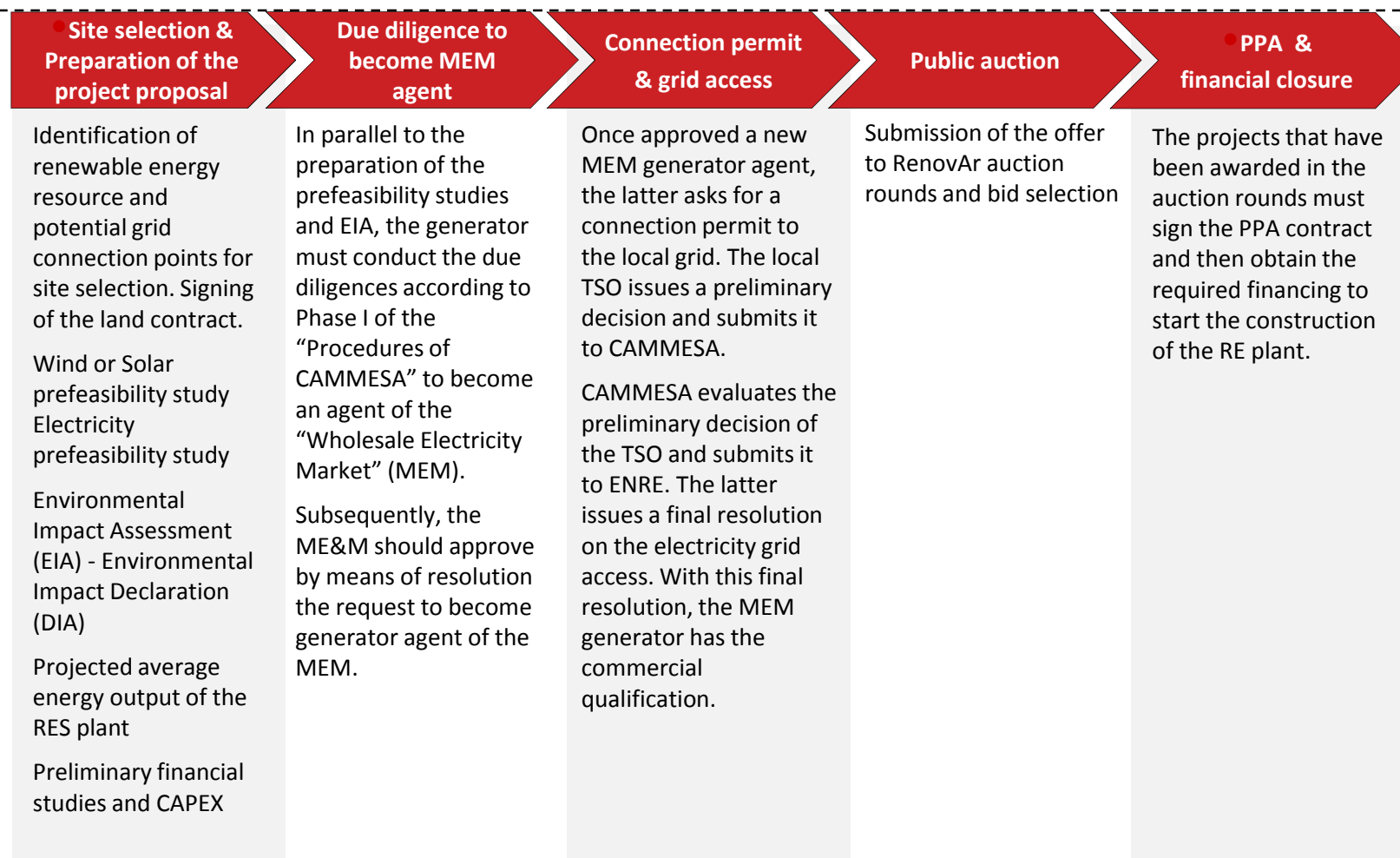
- **Identify viable business models for wind power and PV**
- **Analyze the legal and administrative process flows for identified business model**
- **Detect the existing barriers hindering the implementation of business models**
- **Formulate concrete recommendations for removing these barriers, based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

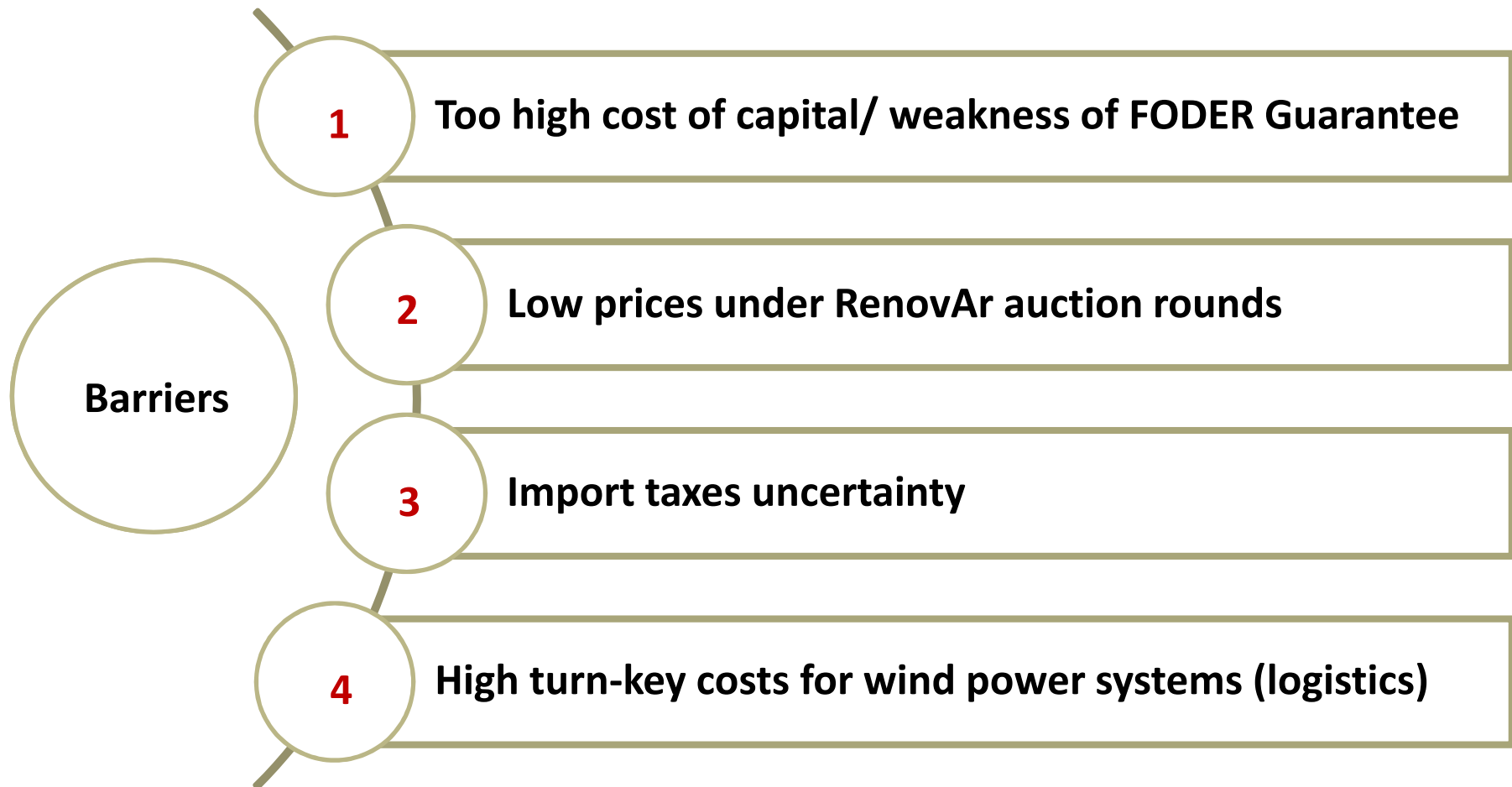


## Key results

### Project Development Procedure

#### Project Development







### 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			
Category	Share	Unit	Price
Feed-in Tariff	-	USD/kWh	-
PPA Tariff	100%	USD/kWh	0,0533
Fees		USD/kWh	-
Oversupply Price		USD/kWh	-
Undersupply 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***	x	1,00 x

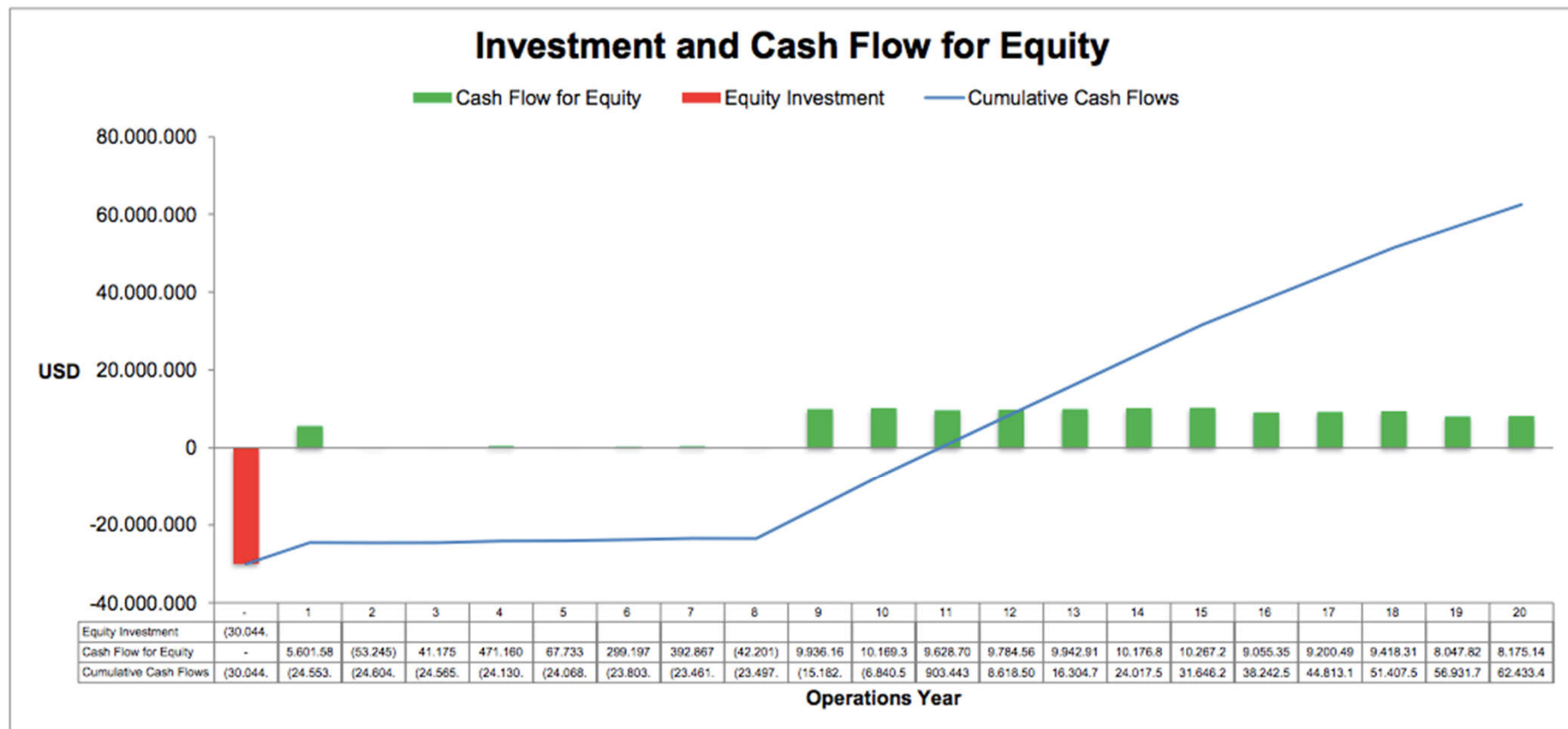
\* LCOE: Levelized Cost of Electricity

\*\* DSCR: Debt Service Coverage Ratio

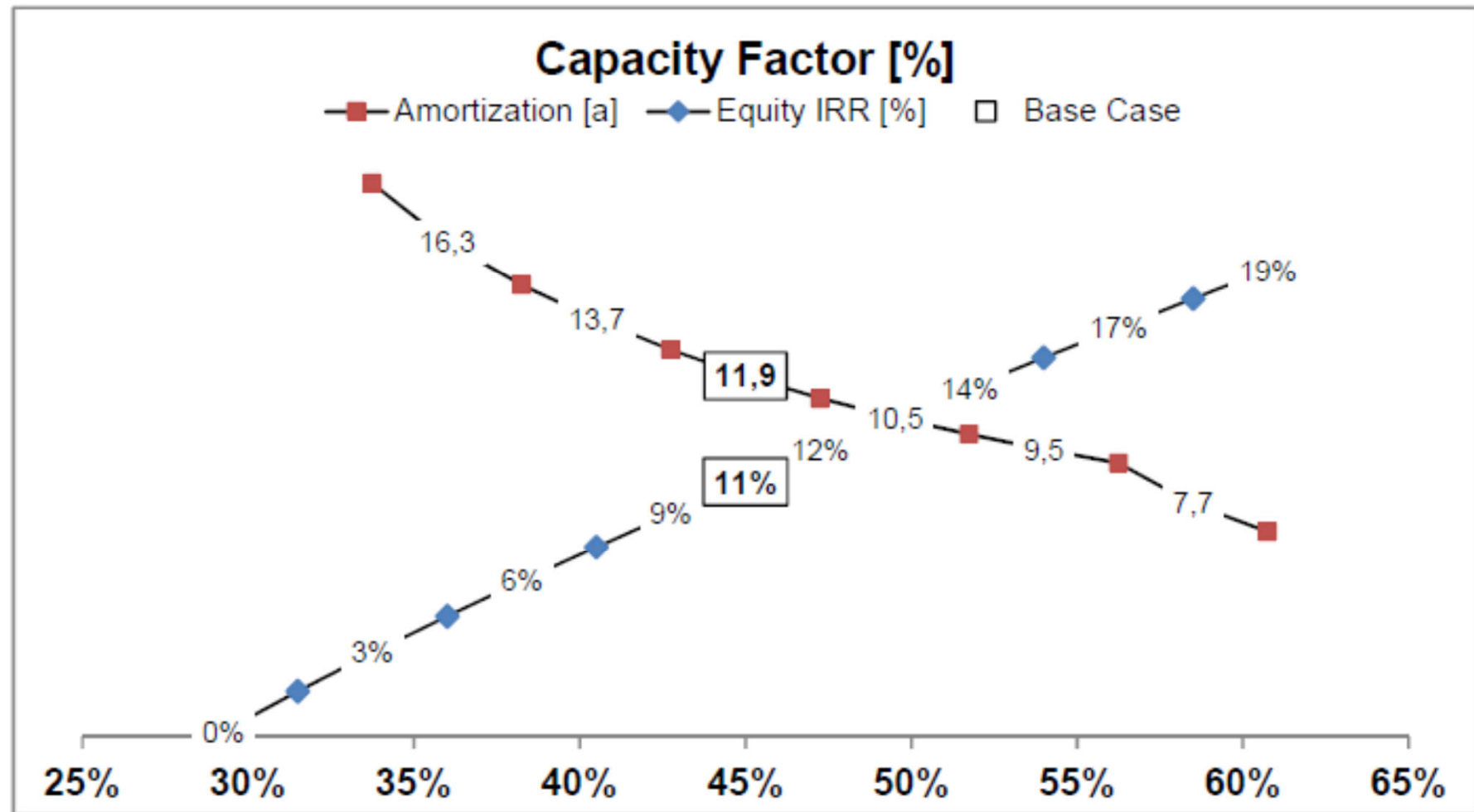
\*\*\* LLCR: Loan Life Coverage Ratio

### Profitable investments after 11.9 years

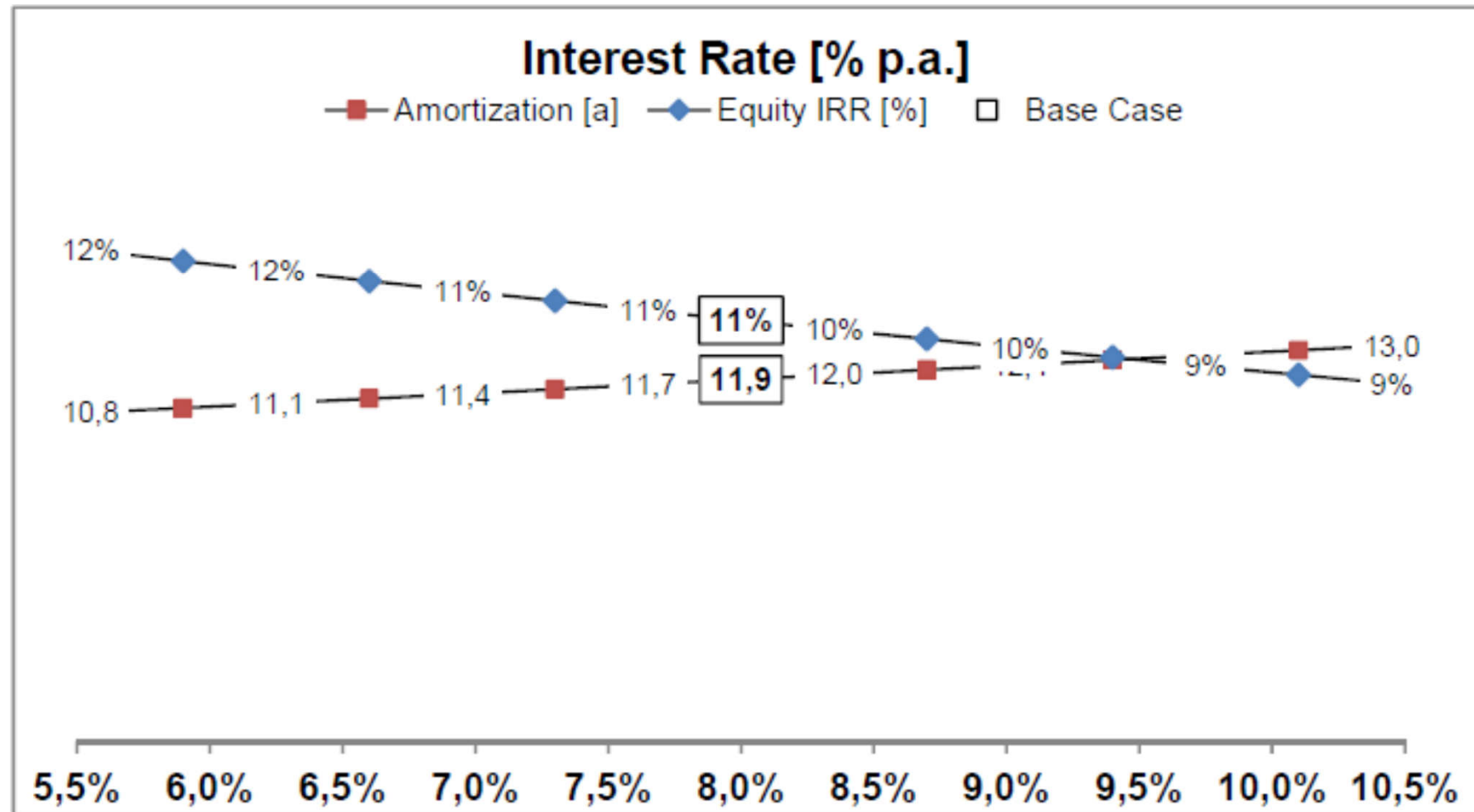
#### Project Cash Flows



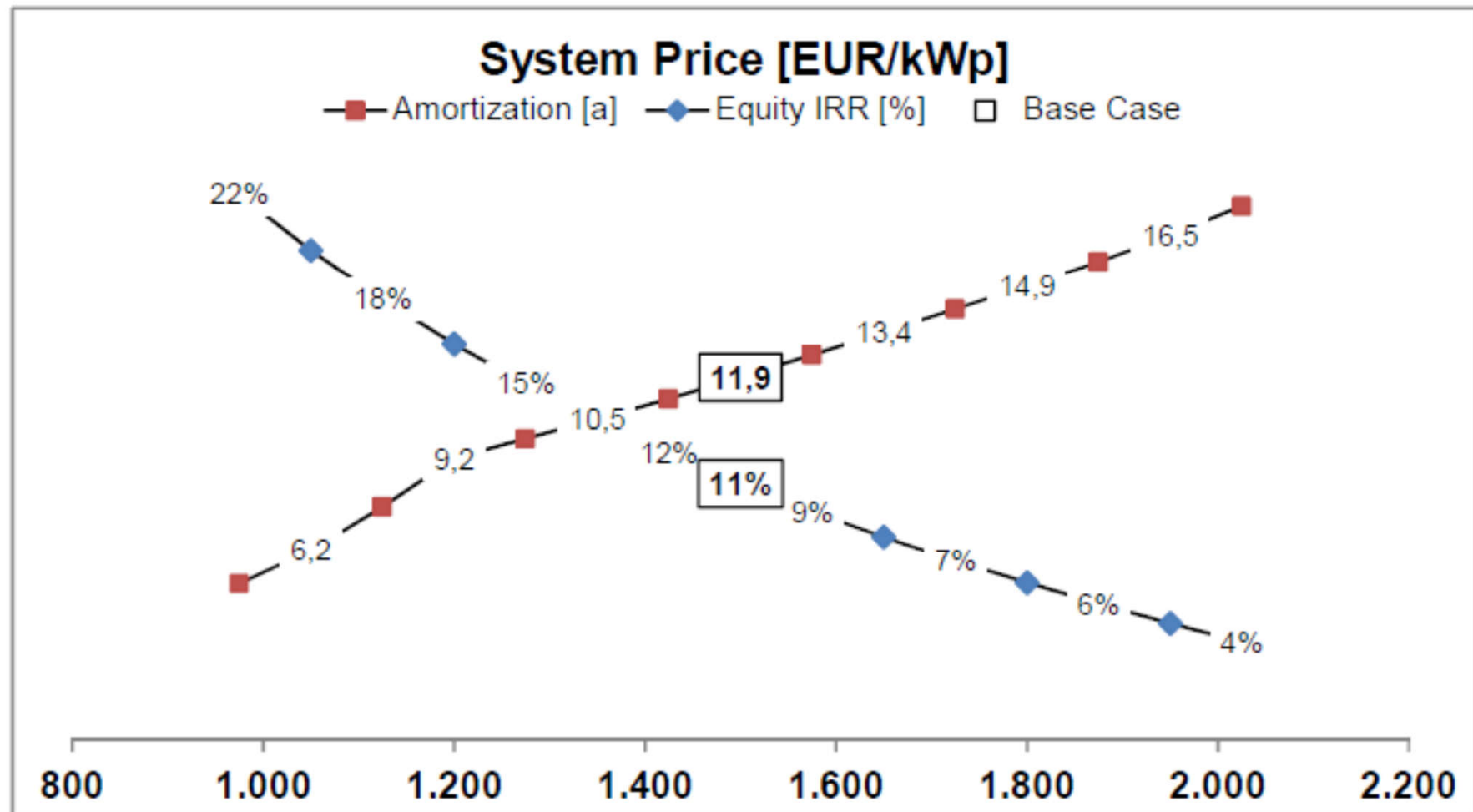
## Capacity factor decisive for successful wind power project

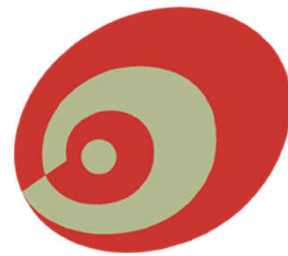


## Potential in reduction of interest rate



### System price important factor





## Conclusions

## Investments in Wind Energy in Argentina

Significantly  
conditioned  
by

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



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