



Project model & Funding schemes

Technical workshop – Amman November 28/2013

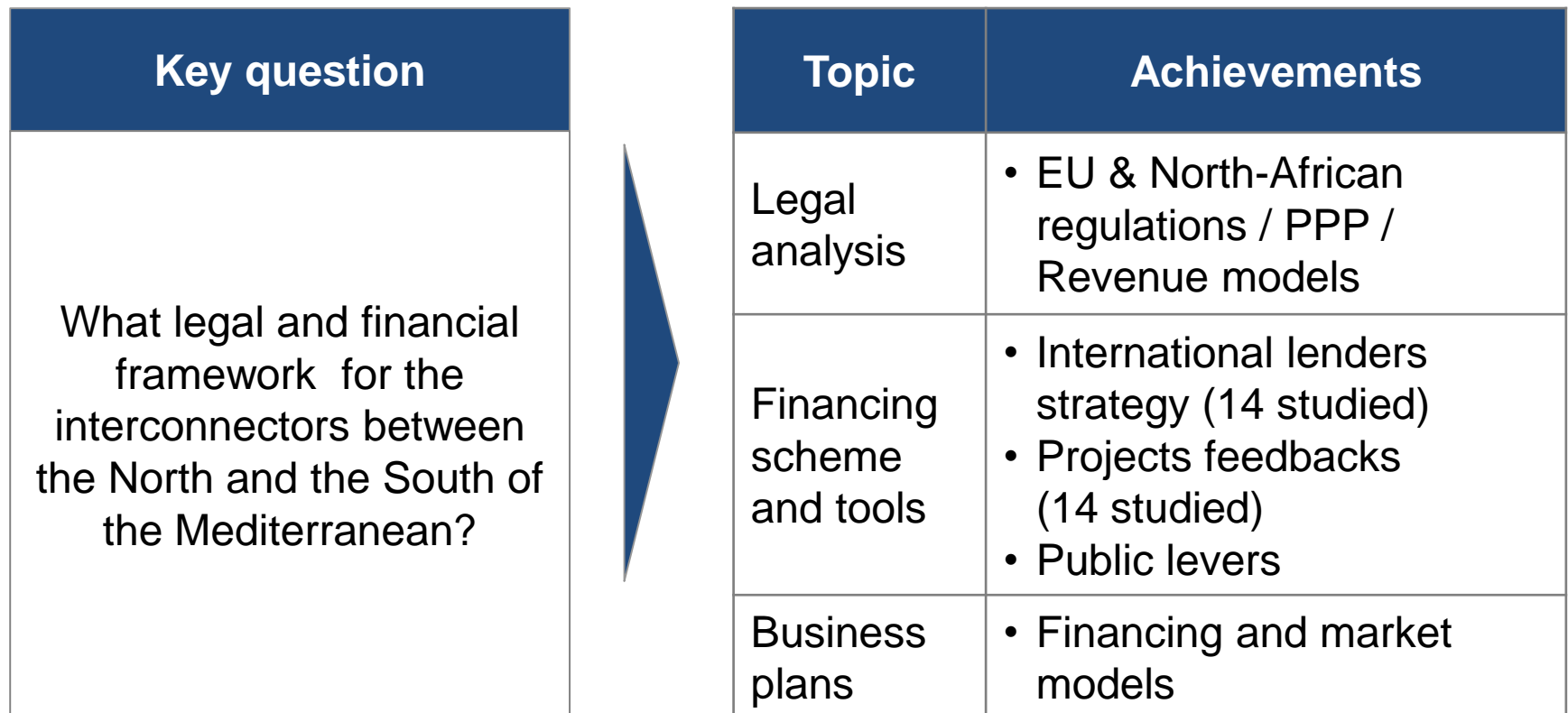
Objectives for the WG

- **Understand the conditions which govern investment in the Mediterranean interconnectors;**
- **Bring recommendations on project schemes and adapted tools of financing;**
- **Business plan for projects: examples and models**

CONTENT

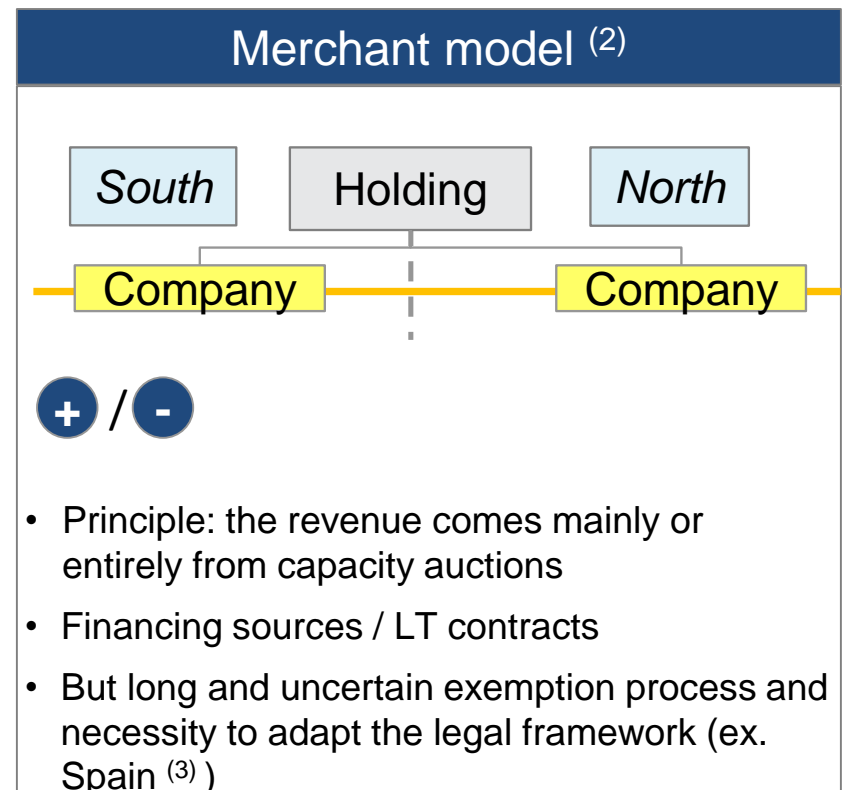
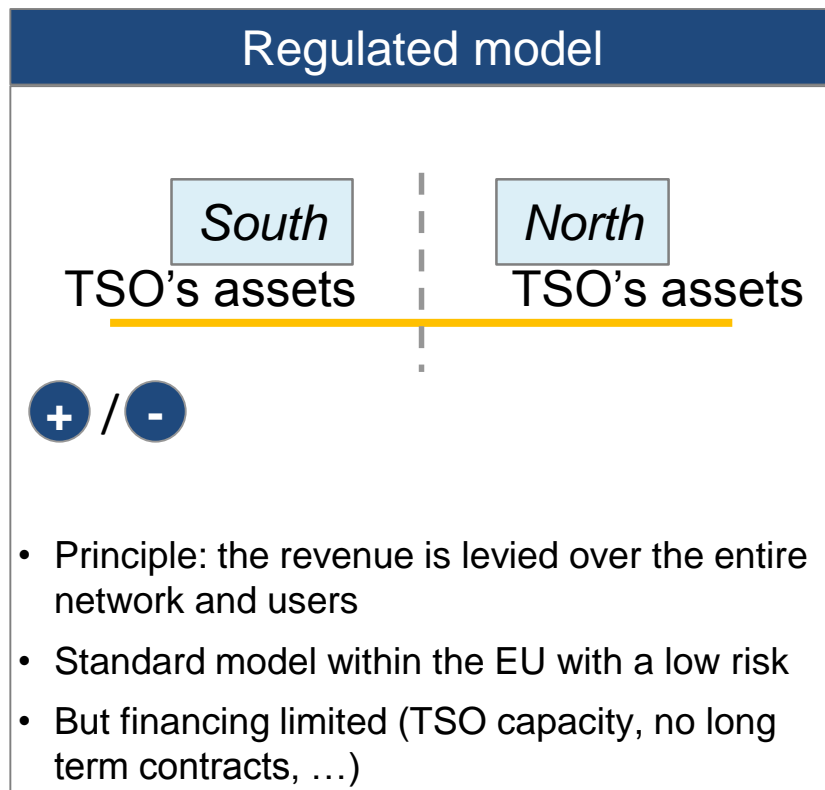
- Context
- Four recommendations
- Modeling results
- Conclusion

Project structure



INTERCONNECTION MODELS

There are two main interconnection models with their own particularities and challenges



(1) Sovereign bi/multilateral (2) A possible representation (3) and France if we consider a direct interconnection between France and a country out of the EU

RECOMMENDATIONS

Recommendation N°1 : search for diversified funding

- **The main multilaterals will trigger the “virtuous circle” of funding**
- **The Euro Project Bonds should be considered**

- **Multilateral lenders** (World Bank, EIB, EBRD, AfD, EU) **in addition to private financing:**
Credibility and high investment capacity ► a reference to federate other investors (bilateral, commercial) ► should thus be convinced in priority
- **Euro Project Bonds mechanism** : the EIB guarantees a portion of the debt in order to reduce the risk of the remaining share of the debt ► securitize the project for private investors

RECOMMENDATIONS

Recommendation N°2: secure long- term contracts

- **Long-term contracts for electricity transmission should be sought ?**
- **Buying groups could ease these contracts (compliance with competition law to be checked)**

- **The long-term booking of a significant share of the capacity** of the future infrastructure by buyers or sellers is a “must have” for obtaining funding.
- **For the regulated option, “open seasons”**, similar to those currently arranged for gas transmission, could be introduced
- **These capacity contracts will be facilitated by long-term contracts for electricity supply** (renewable, from South to North, or conventional from North to South)

(1) Lower costs for buyers and/or innovation stimulation among sellers/suppliers are good assets to justify purchasing groups

RECOMMENDATIONS

Recommendation N°3: implement appropriate Public- Private partnerships

- **An agreement between public and private partners should be designed (merchant case)**
- **It may be interesting to have separate north and south project companies**

- **The partnership would optimize the funding mobilization** through the creation of project companies involving private, public and TSO partners
- **Separated project companies** in the North and the South will help better target funding (Afd, EBRD, etc)

RECOMMENDATIONS

Recommendation N°4: prepare an international agreement

- **An interstates agreement for the project should be sought**


- **Obtain a political decision from the relevant States** (EU members and third-parties) and their very long-term commitment (50 to 70 years) ► Objective of a stable regulation
- **Initiate a change in the regulation if necessary** ► In the South, vertical unbundling ► In the North, allow a pure private interconnection, ...
- **Define the procedures to initiate with the Authorities** ► guarantees of reliable public counterparties ► relevance of the project in the association agreement between EU countries and third countries, ...

SIMULATION

Two interconnections have been modeled in a simplified way

Algeria – Spain interconnection	
Length	300 km
Capacity	1 GW
Capex	700 M€
Duration	
- Studies	2 years
- Construction	3 years
- Operation	40 years

Algeria – Italy interconnection	
Length	800 km
Capacity	1 GW
Capex	1500 M€
Duration	
- Studies	2 years
- Construction	3 years
- Operation	40 years



SIMULATION

WACC computation details by risk levels

Assumptions			
Studied case	Pure regulated	Pure Merchant	
		With strong long-term guarantee	Without long-term guarantee
Project characteristics	<ul style="list-style-type: none"> • Only TSOs 	<ul style="list-style-type: none"> • Multilaterals • LT contracts • Public warranties 	<ul style="list-style-type: none"> • Private investors • High level of equity • Faster amortization
Risk free rate	1.5%	1.5%	1.5%
Business risk	3.5%	5.5%	8.5%
Country risk	2.0%	2.0%	2.0%
Construction risk	0.5%	1.0%	2.0%
Total project WACC	7.5% ⁽¹⁾	10.0%	14.0%
Project attractiveness	✓	✓	✗

(1) Do not include risk premium requested by infrastructure owners for new projects

SIMULATION

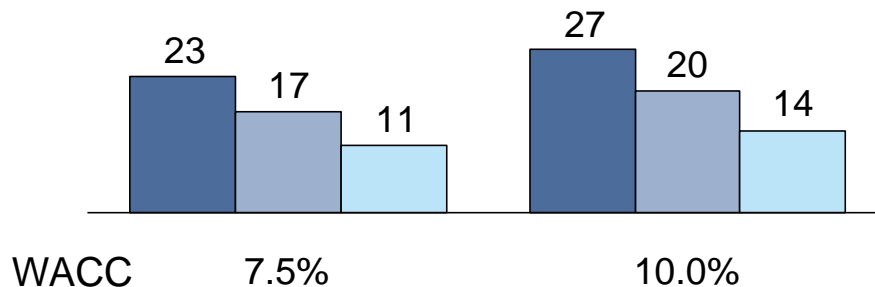
Without subsidies the economic model of such interconnections implies a very high spread between North and South prices

Average spread (€/MWh⁽¹⁾) over a 30-year period necessary to obtain the required profitability (WACC) without subsidy

Algeria-Spain case

Utilization rate of the interconnection

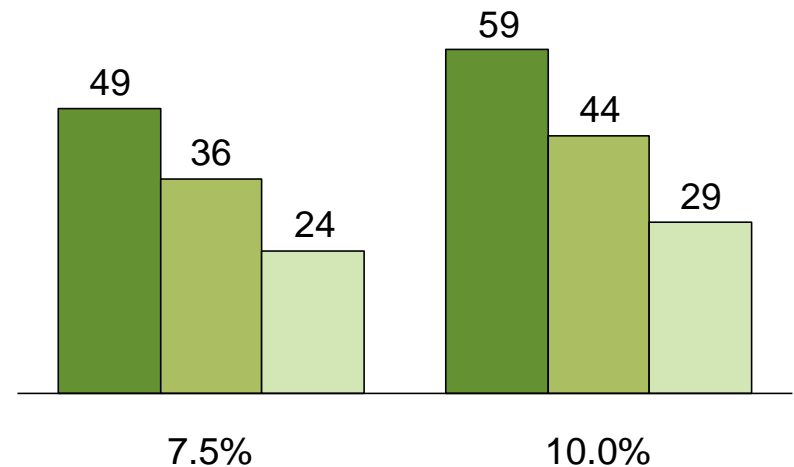
45% 60% 90%



Algeria-Italy case

Utilization rate of the interconnection

45% 60% 90%



(1) In real terms

SIMULATION

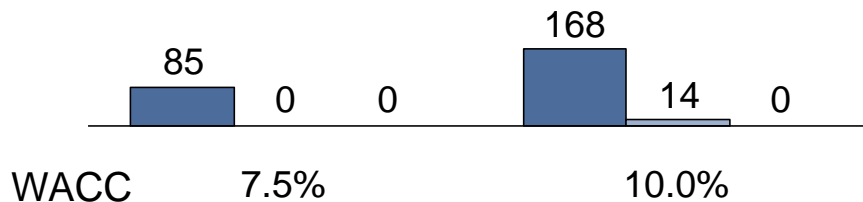
Thus, additional public funding will be necessary in most cases

**Additional required funding (M€) to the spread revenue
Case with spread = 20 €/MWh**

Algeria-Spain case

Utilization rate of the interconnection

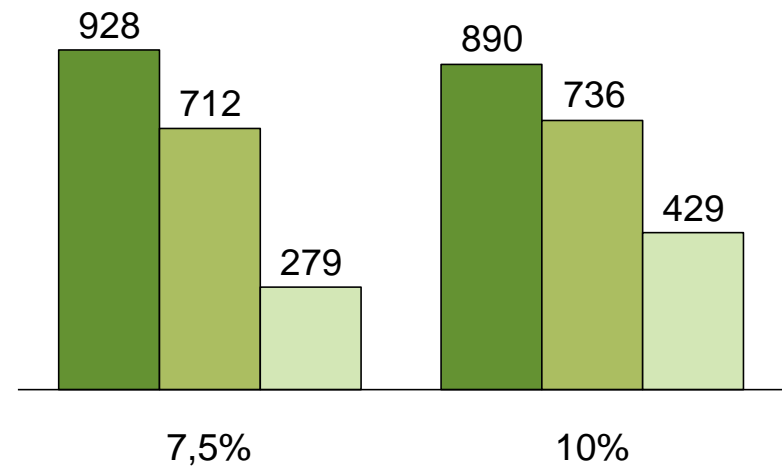
45% 60% 90%



Algeria-Italy case

Utilization rate of the interconnection

45% 60% 90%



CONCLUSION

The financing of such interconnectors over the Mediterranean is possible :

**Public - Private
partnership**

**Private investors
potentially
interested, but hard
to please**

**A strong
commitment from
the States**

- Necessity to ensure the financing through:
 - Long term contract
 - Financial sponsors of reference (multilateral lenders)
 - Regulatory Authorities involvement
 - Level of return between 7.5% and 10%
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- A required revision of the legal frameworks related to interconnections ;
 - Public support or warranties