BAIXAS – STA LLOGAIA NEW FRANCE-SPAIN INTERCONNECTION

April 16th 2015
• Technological records for a more competitive electricity, safer and cleaner
• Outstanding construction works
• An exceptional project at the heart of the European electricity grid
THE ABSOLUTE RECORDS
ELECTRICITY LINE
3 TECHNOLOGICAL RECORDS FOR SAFE, CLEAN AND COMPETITIVE ELECTRICITY

65 km Underground electricity line world record at that power level

2000 MW Power world record in Direct Current with VSC (Voltage Source Converter) technology

320 kV World record of voltage level For an XLPE cable in direct current

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Advantages of VSC technology *Voltage Source Converter*

- Fast flow reversal
- Flexibility of grid operation
- Low impact on the environment
THE CHALLENGE OF CONNECTING DIRECT CURRENT TO ALTERNATIVE CURRENT

• **1st time** a Direct Current line runs in parallel with Alternative Current lines in Europe

• **Need for real-time simulation** of the impact of these stations on the alternative grids
OUTSTANDING CONSTRUCTION WORKS
This is the 1st tunnel built exclusively dedicated to operate an electrical line

2 tunnel boring machines

37 directional drillings up to a length of 700m

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CONTRIBUTION OF MAJOR INDUSTRIAL EUROPEAN PARTNERS

SIEMENS
Converter stations

EIFFAGE and Dragados
Technical gallery under the Pyrenees

PRYSMIAN
DC-cables manufacturing and laying

Ferrovial and SAGTHEPAULT
Trenches and directional drillings

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PRIORITY PROJECT
FOR THE EU
• Increasing the density of the European electricity grid to enhance security of supply

• Improving the integration of renewable energies

• Contributing to French, Spanish and European companies competitiveness
NATIONAL AND EUROPEAN BENEFITS

• At regional level:
  – Enhance security of supply for residents of Roussillon and Empordà areas
  – Increase the economic attractiveness of both regions

• At national level
  – Improve security of supply, particularly during cold periods

• At european level:
  – Developing the integration of the Iberian market into the European electricity market
  – Strengthen the whole European electricity power grid
• Taking maximum advantage of Spanish renewable energy sources
  30,000 MW of renewable energy are available in Spain

• Allowing to increase the exports during low production periods in Spain

• France-Spain power exchanges:
  2014 balance Fr → Sp of 3.6 TWh

Decreasing 1 million tonnes of CO₂ per year
FRANCE-SPAIN MONTHLY TRADE BALANCE

Spain to France

France to Spain

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France-Spain commercial transactions and renewable energy production in Spain from January 1st to February 1st 2015
MAIN PHASES OF THE PROJECT

2008 : Project starting
• June 27th 2008 : signature of the Zaragoza agreement between French and Spanish governments
• October 1st 2008 : creation of the mixed-capital corporation Inelfe (50% RTE- 50% REE)
• December 13th 2010 : REE obtains the Environmental Impact Statement of the project
• May 4th 2011 : RTE obtains Declarations of Public Utility of the project

2011 : Works Beginning
• September 2011 : beginning of earthing works for converter and tunnel
• Early 2012 : civil works beginning
• 2013 : cables laying

2015 : Interconnection commissioning
• February : electrical tests beginning
• June : commercial commissioning
SUPPORT OF THE EUROPEAN INSTITUTIONAL PARTNERS

A 700 million € investment

Subsidy of 225 million €
Credit of 350 million €
Thank you for your attention