East-West HVDC Interconnector

6 May 2015 – ISGAN Webinar

Séamus Power (EirGrid)
### Context

<table>
<thead>
<tr>
<th>Min / Max Demand (All-Island)</th>
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<td>2,300 MW / 6,500 MW</td>
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<th>Installed Generation</th>
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<tr>
<td>Conventional: 9,901 MW</td>
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<td>Wind: 2,825 MW</td>
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<th>Interconnection</th>
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<td>750 MW</td>
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<th>2020 RES Targets</th>
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<td>40%</td>
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<tr>
<th>Fuel Mix</th>
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<td><img src="chart.png" alt="Fuel Mix Pie Chart" /></td>
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What is the East-West Interconnector?

- 500 MW HVDC-VSC Interconnector linking Ireland & Northern Ireland system to Great Britain system
- €570m investment
- 264 km of DC cable
- Commenced: 2007
- Completed: 2012
- Contracts to commercial operation in 45 months
Objectives and Benefits

Security of Supply
- Provide additional capacity
- Reduce dependence on imported fuels

Promote Competition
- Exert downward pressure on price
- Direct access to GB market

Accommodate RES
- Reduce RES curtailment
- Assist meeting RES targets
Technology

• Choice of technology key - HVDC VSC
  – Represents the optimum whole-life techno-economic solution
  – Well-suited to the technical characteristics of island systems
• Environmentally friendly XLPE cable utilised
• Performance during transient events
Advanced Ancillary Services

- **Frequency Response**
  - Very fast active power response for high and low frequency events

- **Black Start**
  - Speed up restoration of grid in event of major blackout

- **Voltage Control**
  - Steady-state reactive power
  - Voltage support during faults
Community Engagement (construction phase)

- Full-time community liaison officers
- Funding for local projects & improved safety
- Engagement with primary schools
- Disruption minimised
- Local information offices
WHOLESALE ELECTRICITY PRICES LOWER BY 9% DUE TO EIRGRID INTERCONNECTOR

- East West Interconnector exerts significant downward pressure on wholesale electricity prices.

Wednesday, 30 April 2014: EirGrid has announced, at the launch of its 2013 Annual Results, that wholesale electricity prices in the Single Electricity Market on the island of Ireland are lower by 9 per cent since the EirGrid East West Interconnector (EWIC) commenced full commercial operations.

EWIC links power markets in Ireland and Great Britain. It has contributed to downward pressure on wholesale electricity prices.
Current Status and Results

- Countertrading reducing RES curtailment
- 300 GWh between July and December 2013
Lessons Learned and Best Practices

- Choice of technology key
- Developing and maintaining good stakeholder relationships
- Separate project managers for Ireland, Great Britain and marine works
**Next Steps**

**Irish-Franco Interconnector being considered**

June 6, 2015. The national Transmission System Operator, EirGrid in Ireland and the French transmission system operator, RTE (Régie des Transports Electriques) have signed a Memorandum of Understanding to consider further development of an interconnector linking the electricity systems of Ireland and France.

As Ireland’s interconnector network is developed, an interconnector to the Irish coast of Donegal and the north-west coast of France will enable the two countries to exchange energy, improving security of supply and reliability of both systems to a greater extent. In recent months, EirGrid and RTE have conducted studies which indicated the benefits of an interconnector between Ireland and France.

An initial statement on the new transmission system operator’s role and plans was also delivered by RTE President, Michel de Baroigea. The €650 million project is expected to connect the two countries by mid-2016, with further work planned for 2017.

EirGrid, the Irish Electricity System Operator, has committed to maintaining a fully connected grid and continuing to deliver flexible, reliable power generation. This statement will take place in June 2015.

EirGrid Chief Executive, Niall O’Mara, commented: “This project, if it proceeds, would be expected to be in place by 2015. The benefits of the Irish-France interconnector could include increased security of supply, improved interchange with other grids, and the potential to export renewable energy.”

The collaboration is also expected to promote the development of the Irish-France interconnector. RTE President, Michel de Baroigea, said: “The construction of the interconnector would promote the integration of renewable energy. It is an important step forward, both for the Atlantic region and the European electricity market. This project could also improve the quality of electricity supply in the north-west region of France.”

Ends

**Celtic Interconnector**

High Voltage Direct Current (HVDC) Interconnector between Ireland and France

The Celtic Interconnector (CIC) is a planned high voltage direct current (HVDC) link between Ireland and France. The project is funded by the European Commission under the Connecting Europe Facility (CEF) programme. The project is expected to commence in 2017 and be completed in 2018.

The project will facilitate the transfer of renewable energy from Ireland to France and vice versa, and will contribute to the decarbonisation of the European electricity sector.

The project is expected to reduce greenhouse gas emissions by approximately 1.5 gigatons of CO2 over the next 20 years.

The project is expected to create up to 1,500 jobs during the construction phase and up to 500 new jobs in the operation phase.

The project is estimated to cost approximately €2.5 billion. The funding is provided by the European Commission under the Connecting Europe Facility (CEF) programme.

The project is expected to be operational by 2018.

The project is expected to significantly reduce greenhouse gas emissions by approximately 1.5 gigatons of CO2 over the next 20 years.

The project is expected to create up to 1,500 jobs during the construction phase and up to 500 new jobs in the operation phase.

The project is estimated to cost approximately €2.5 billion. The funding is provided by the European Commission under the Connecting Europe Facility (CEF) programme.

The project is expected to be operational by 2018.

The project is expected to significantly reduce greenhouse gas emissions by approximately 1.5 gigatons of CO2 over the next 20 years.

The project is expected to create up to 1,500 jobs during the construction phase and up to 500 new jobs in the operation phase.

The project is estimated to cost approximately €2.5 billion. The funding is provided by the European Commission under the Connecting Europe Facility (CEF) programme.

The project is expected to be operational by 2018.

The project is expected to significantly reduce greenhouse gas emissions by approximately 1.5 gigatons of CO2 over the next 20 years.

The project is expected to create up to 1,500 jobs during the construction phase and up to 500 new jobs in the operation phase.

The project is estimated to cost approximately €2.5 billion. The funding is provided by the European Commission under the Connecting Europe Facility (CEF) programme.

The project is expected to be operational by 2018.
Thank You!