“CRITIQUE”
THE OFFSHORE WIND INDUSTRY, IRELAND’S OPPORTUNITY

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IRELAND’S PROBLEM - OFFSHORE WIND THE SOLUTION

• IRELAND’S PROBLEM
  ▪ High level of energy insecurity, increased following Brexit decision
  ▪ Persistent level of dependency on imported fossil fuels
  ▪ Highest per capita GHG gas emissions of 27 Member States
  ▪ Will not meet 2020 targets, facing billions in fines as a result**
  ▪ Having missed 2020 targets, Ireland even more at risk in not meeting 27% 2030 targets
  ▪ Ireland stands alone as the only European country with an Atlantic coastline not developing its offshore wind resource
  ▪ Current policy of offshore wind is for export only [Jan 2012 Government Decision]
  ▪ Nearly 3000MW of offshore wind resource in Irish Sea ready for construction

• OFFSHORE WIND IS GOOD FOR THE IRISH ECONOMY
  ▪ Cost competitive with all other power technologies after 2020
  ▪ Drives service industries in Ireland
  ▪ Avoids large fines
  ▪ Significant net benefit to economy (Indecon Report 2008)
  ▪ Provides future opportunity for rural development on the Atlantic seaboard in the West of Ireland.

**An Taoiseach 23 February 2016 admitted Ireland will not meet 2020 targets. Department of Finance/SEAI/EPA now expressing concern.
ENERGY IS NOW CENTRE STAGE - WORLDWIDE

1. World: COP 21

2. Europe: 2030 Targets
   Regional Co-operation Focus, especially in the Maritime Zone
   Resource Efficiency
   Energy Union
   EU Lead on – Grid (NSCOGI)/Market Mechanism/Support

3. France: RTE Liaison Ongoing
   Priorities: Energy/Celtic Interconnector/Future Reinforcement

4. UK: DECC Liaison Being Maintained
   Priorities: Decarbonisation/Interconnection/Offshore

   Targets deficit realisation now requires that offshore wind will be needed for domestic purposes
MACRO POLICY OVERVIEW – EUROPE

- Priority 2 out of 5 EU Commission President Juncker
  - European Energy Union under VP Maros Sefcovic
  - EU to become world number one in Renewable Energy

- Geo Political risk increasing daily/security of supply/0% interconnected to Europe post Brexit with Energy Union priority being 10% by 2020

- 2016 Renewables Directive (30 November 2016) – “Europe’s untapped geographical potentials need to be exploited”. This will unlock offshore wind in Ireland.

- NSCOGI (Northern Seas Countries Offshore Grid Initiative). Proposal DG Energy in parallel with Netherlands Presidency for 4 Clusters including Isle of Man Hub designed to open up the Irish Sea. Political Declaration 6 June 2016

- EU Fund for Strategic Investments (EFSI) extended to 2020. Energy Focus.

- Serious Cost Reduction Program being implemented ref Offshore Wind through technology improvements. Target to be less than 10cts kWh by 2020 and 8cts kWh by 2025 (7 June 2016).

- Danish and Dutch Governments de-risked offshore wind to achieve Vattenfall €63.80 MW/Hr and Dong €72.70 Mw/Hr.
TRAJECTORY TO 2020 TARGETS – SEAI APRIL 2016

Significant progress has been made, but to realise Ireland’s 2020 targets and reap the associated economic benefits requires an acceleration of effort.

- Significant progress to date
- Accelerated actions are now needed to meet targets

2005

2015

2020

- Around half of energy efficiency target achieved. Renewable Energy 8.6% of final energy consumption
- 2020 Energy Efficiency target 20% reduction in demand, Renewable Energy 16% of final energy consumption
RENEWABLE ENERGY TARGETS - IRELAND’S SHORT TERM PROBLEM

- **Ireland to miss 2020 Targets facing potentially billions in fines due to:**
  1. Ireland won’t meet targets for heat and transport
  2. Economic improvement increasing need for higher renewables production. Forecasts were based on 1.7%. Currently it’s 6.8% with expectation of over 7% per annum.
  3. Planning issues impacting onshore wind investment, i.e. Rates, Planning Guidelines, O Grianna, etc. plus suitable onshore sites may be reaching saturation point.
  4. Over 1600MW of data centres looking to connect into Ireland.

- **EU fines for missing EU targets could be as high as €1 billion for 2020 and annually thereafter until ever increasing targets are met. Fines higher than cost of meeting targets.**

- **Ireland’s FDI Policy promoting a clean green island and failing miserably on its 2020/2030 targets, notwithstanding its massive natural resources, is contradictory.**

- **2016 Recommendation:** Reverse Government 2012 decision. Connect offshore wind into Ireland to help meet 2020 and 2030 targets. When targets met, trade energy as in the Pan European model.

- **2017 Recommendation:** Government Policy clarification on offshore wind resource and development of same needs full clarity. Support for circa 1000MW will open up Ireland in years to come to same opportunities other fellow EU Member States now capitalising on.
Ireland’s National Territory – 10 x Land Mass
STATUS OF OFFSHORE PROJECTS UNDER DEVELOPMENT IN IRISH WATERS

- **Oriel Windfarm (2021)**
  Consent for 55 turbines East of Dundalk Bay. 330MW. **CONSENTED & GRID OFFER**

- **Dublin Array (2022)**
  Application for 145 turbines on the Kish/Bray Banks. 725MW. **APPLICATION IN PROCESS**

- **Codling Wind Park (2021/2022)**
  Lease for 220 turbines on the Codling Bank. Application for a further 200 turbines. 1100MW. **CONSENTED & GRID CONTRACTED to WALES.**

- **SSE Renewables (TBC)**
  Lease for 200 turbines on the Arklow Bank. 525MW. **CONSENTED**

- **SUMMARY**
  Total Above, Consented/Final Stages Consenting: 2680MW
  Further in Irish Sea post new Foreshore Act: 5/6GW
  Potential in Atlantic with floating turbines, etc: +30GW
IRISH OFFSHORE WIND DEVELOPMENT IS INEVITABLE - WHEN?

**PHYSICAL FUNDAMENTALS**

- High Capacity Factor
  - Mid 40s
- Close to Shore
  - Low O&M
- Shallow Water
  - Up to 30m Water Depth
- Seabed Sediment Conditions
  - Glacial Till
- Low Tidal Streams
  - Shelter High Wave Loads

**POLICY**

- 27% 2030 target will require minimum 3000MW from Irish offshore wind
- OREDP/SEA Completed including 3000MW consented/pending
- EU Energy Union Priority particularly post Brexit
- Further EU Pressure on Ireland re Targets post Renewables Directive 2016
OFFSHORE WIND WILL BE COMPETITIVE WITH NEW GAS POWER

Offshore Wind Will Be Competitive With New Gas Power

At this point, the average cost of energy from offshore wind is competitive with CCGT, even with the lowest gas price forecast.
Ireland – UK – Europe – The Future
IRELAND’S PROBLEM - OFFSHORE WIND OPPORTUNITY

- Today onshore at saturation based on lack of available sites/recent adverse planning decisions, solar and biomass limited, wave and tidal premature, offshore wind has the scale.

- Offshore Wind the Solution
  - Offshore wind cost competitive post 2020
  - Ensures targets are met, thus saving significant fines
  - Kick starts the biggest offshore wind resource in Europe, Ireland possessing one third of all such potential in Western Europe per Siemens
  - Stable long term political policy needed which will deliver on the creation of a new indigenous sector to rival Agri-food and Tourism.

- NOW Ireland Practical Recommendations
  - Reverse January 2012 Government decision in relation to offshore wind enabling this resource help solve Ireland’s immediate target problems
  - Support directly 1000MW offshore wind to assist 2020 targets thus providing Irish Government Policy clarification
  - Government to acknowledge FDI business case for 3000MW offshore wind in Ireland
  - Government to continue with Climate Change Cabinet Committee liaising closely with Irish Climate Change Advisory Council and those who will deliver
  - Achieving in 2030 and 2050 requires action today considering the long-term nature of energy investment
The National Offshore Wind Association of Ireland (NOW Ireland) is the representative organisation for offshore wind farm developers in Ireland

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