



Bord na Mona's Wind Development Strategy to 2030



Bord na Mona PowerGen



Electricity: fundamental to the health & well-being of a modern society



Our Contract with Nature: Decarbonisation

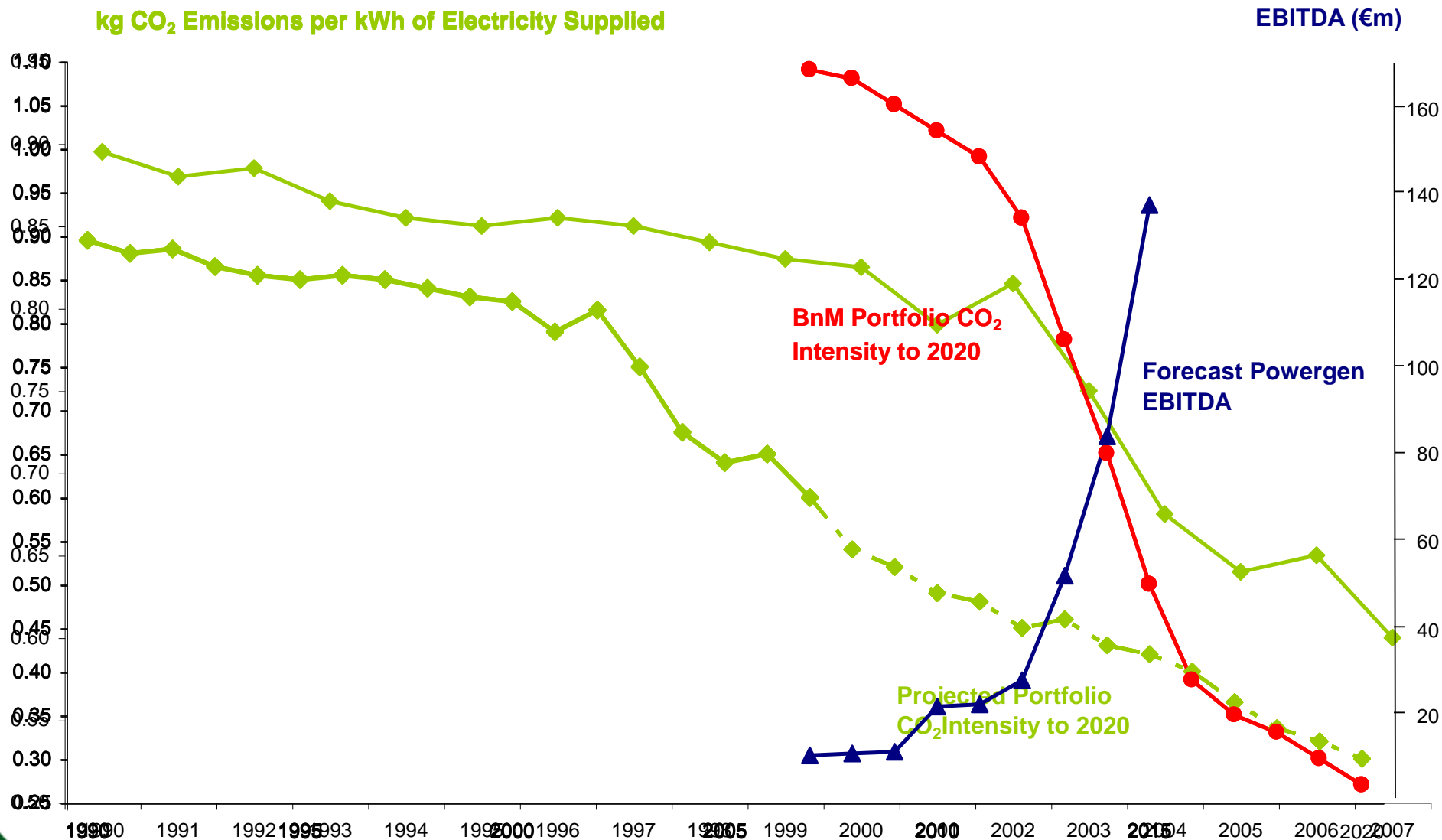
Strategic Focus: Supporting RES-E Deployment



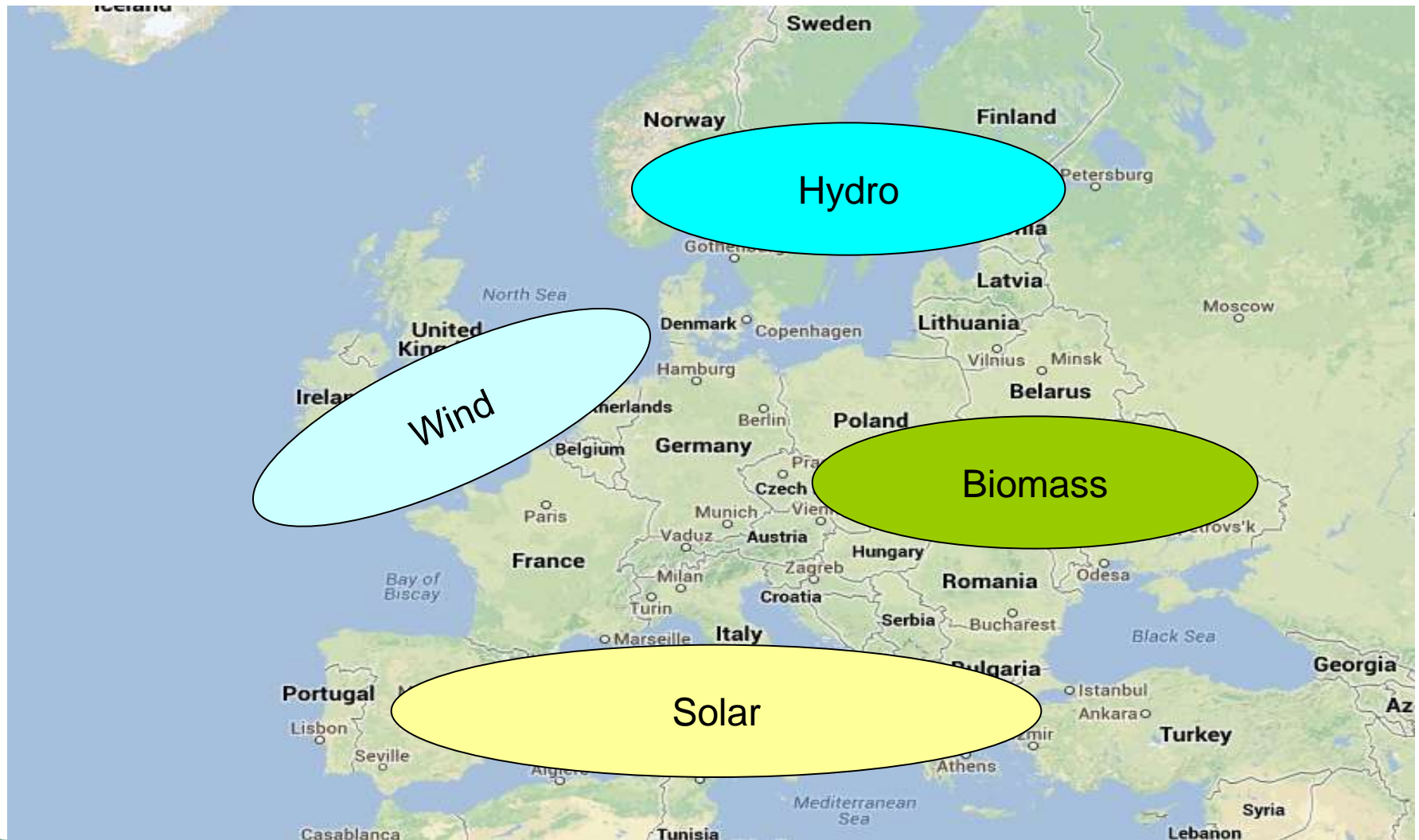
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Supporting De-carbonisation of the Electricity system

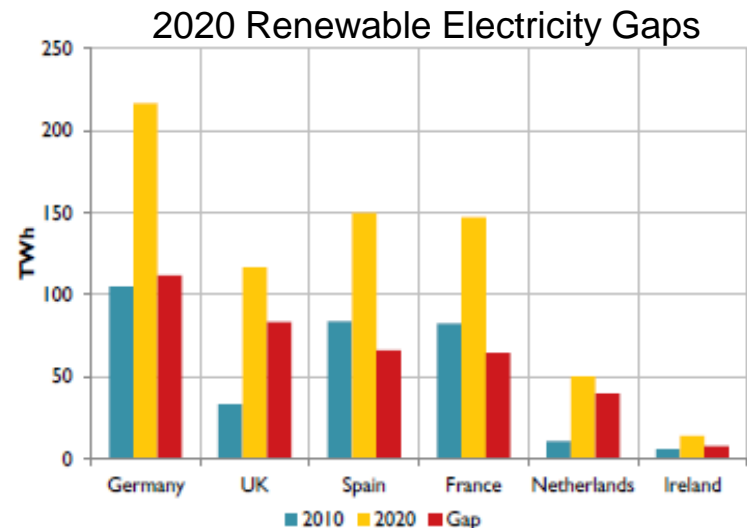


European Renewable Energy Resources



EU Renewable Energy Policy

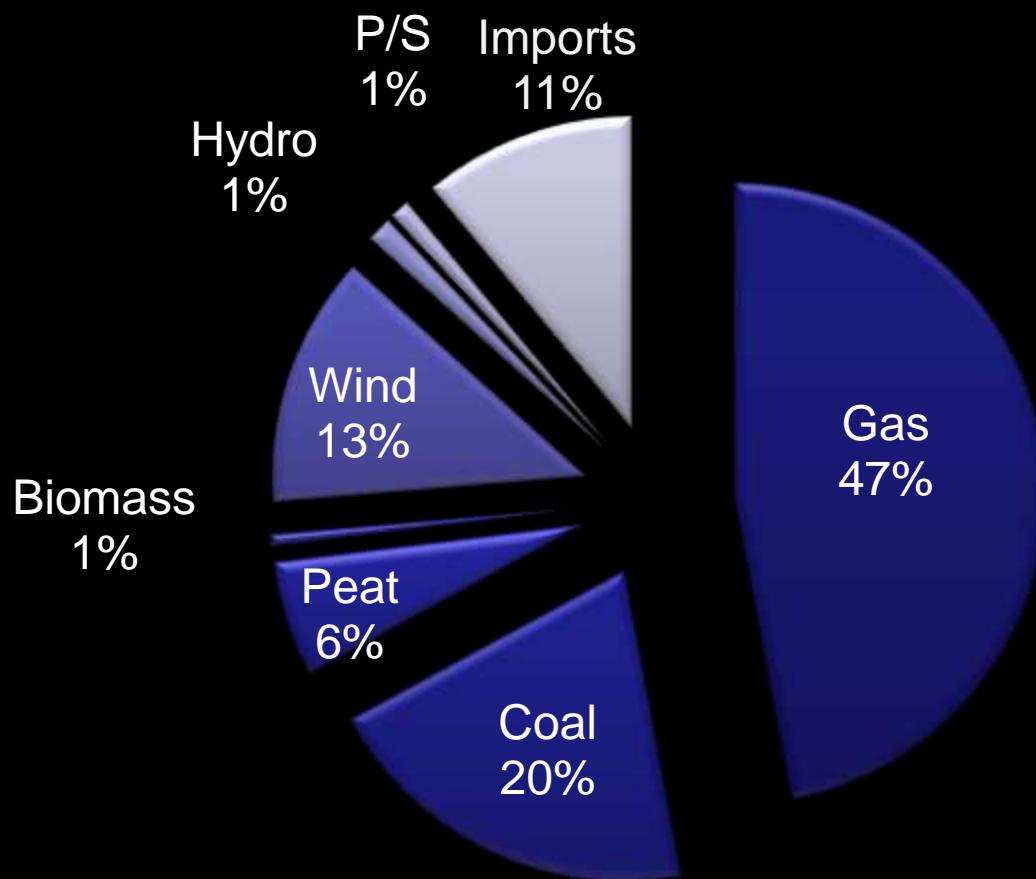
- Overall EU renewable energy target of 20% by 2020
- **Directive 2009/28/EC** - sets out targets for each Member State
- Each country determines the share of renewables in each sector (10% min. in transport)
- Directive includes 'flexibility mechanisms' for cross-border trading
- Ireland has a significant excess of RES resources beyond that which can be consumed domestically
- Ireland & UK Governments – Memorandum of Understanding, January 2013



Ireland: 40% renewable elect.
12.3 TWh
UK: 31% renewable elect.
117 TWh

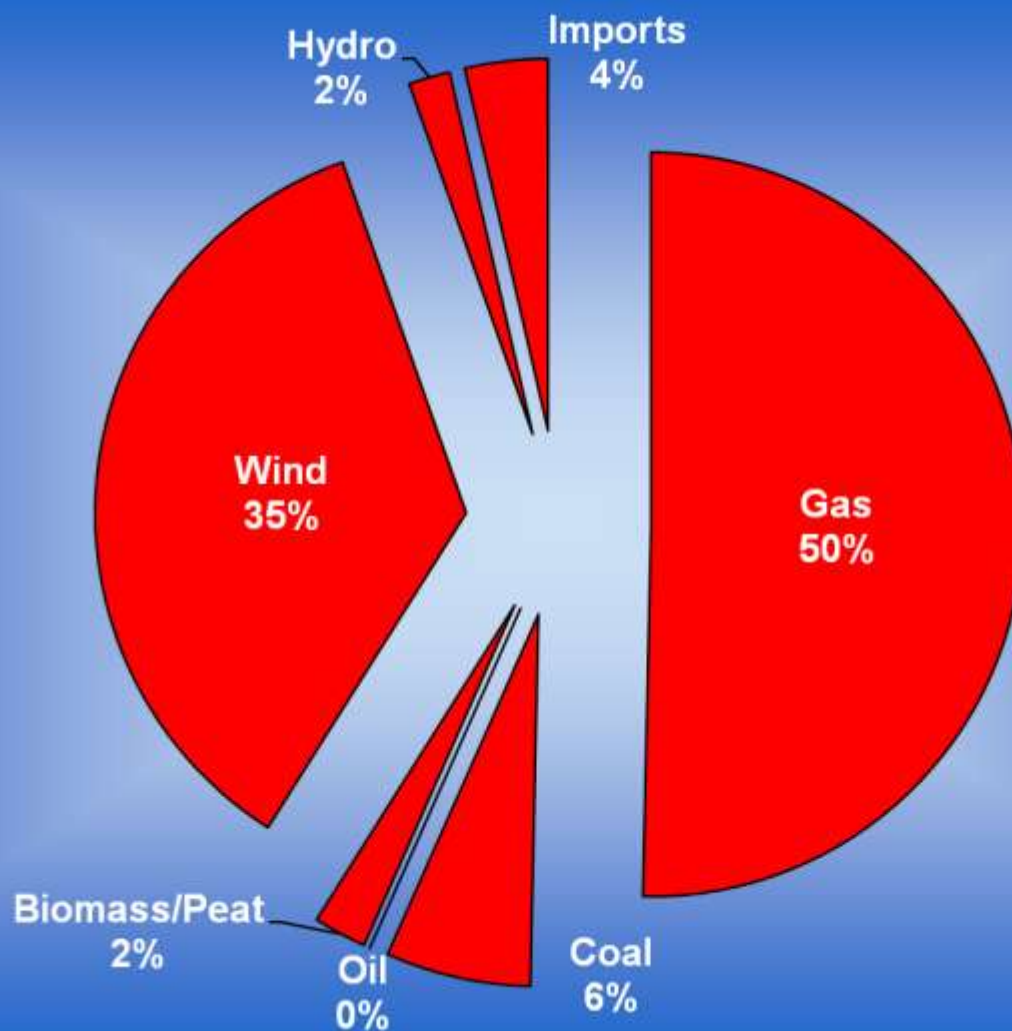
1 TWh = 1000 million units (kWh)

Electricity Generated by Fuel Type in 2013 (YTD)



Import Dependency: ~ 78% (Mainly Fossil Fuels)

Electricity Generated by Fuel Type in 2020



BNM: 21 Years of Wind Development



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Virgin Raised & Blanket Bog



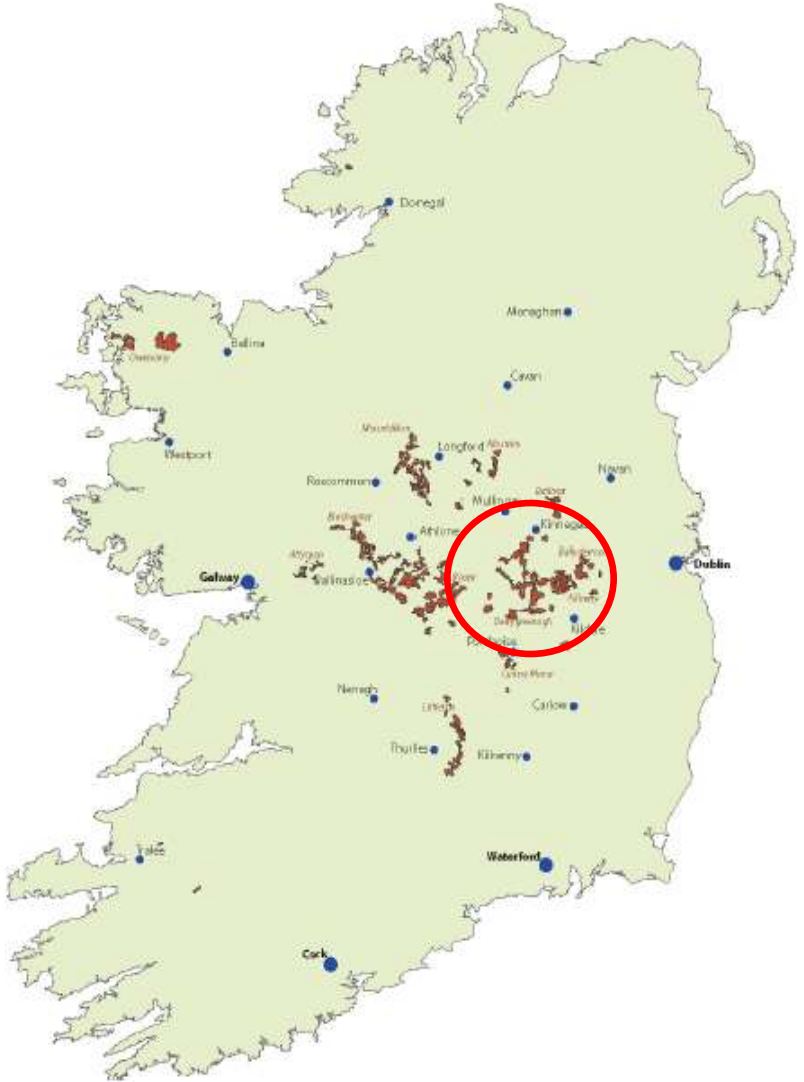
Not In Play for Wind farm Development

Cut-away Peat lands: In play



BNM's Wind Development Strategy to 2030

- C. 80,000 ha landholding
- 130 discrete bog units
- Large, uninhabited industrial landbanks
- Bog units in clusters connected by land links / machinery pass ways
- Close proximity to grid & motorway infrastructure
- Cutaway in 2020 c. 36,000 ha
- Current area classified as cutaway c. 5,000 ha in eastern region
- Potential for large scale wind farm development ~200 MW in construction
- ~300 MW under development
- Focus on meeting Irelands 2020 targets
- What are the future opportunities?



Mountlucas Windfarm: 80 MW



Eastern Site Entrance from R400

Internal Access Roads: 21 km



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28 Turbine Foundations & Hardstands



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Completed Foundation



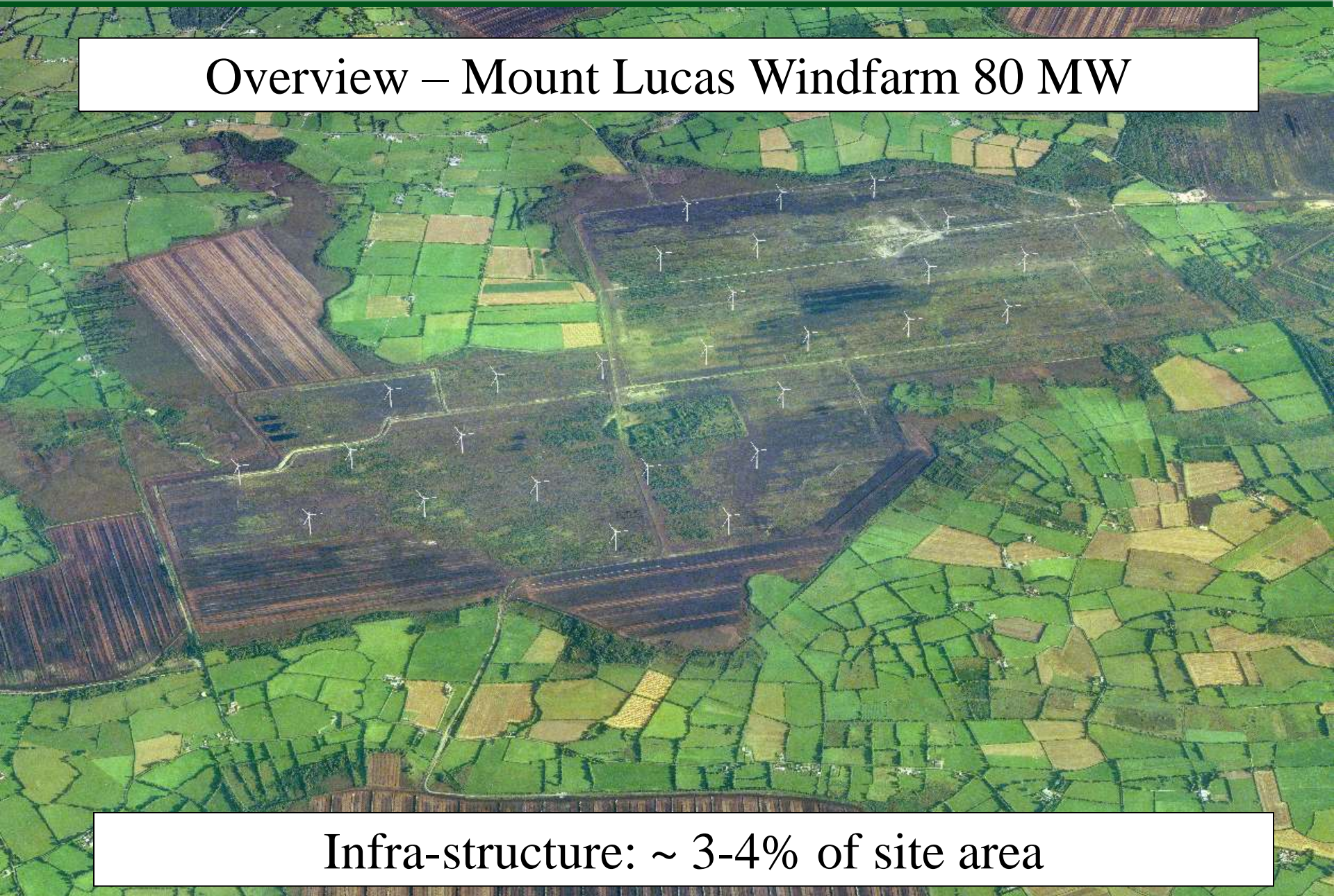
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Mountlucas Windfarm: 110 kv Substation

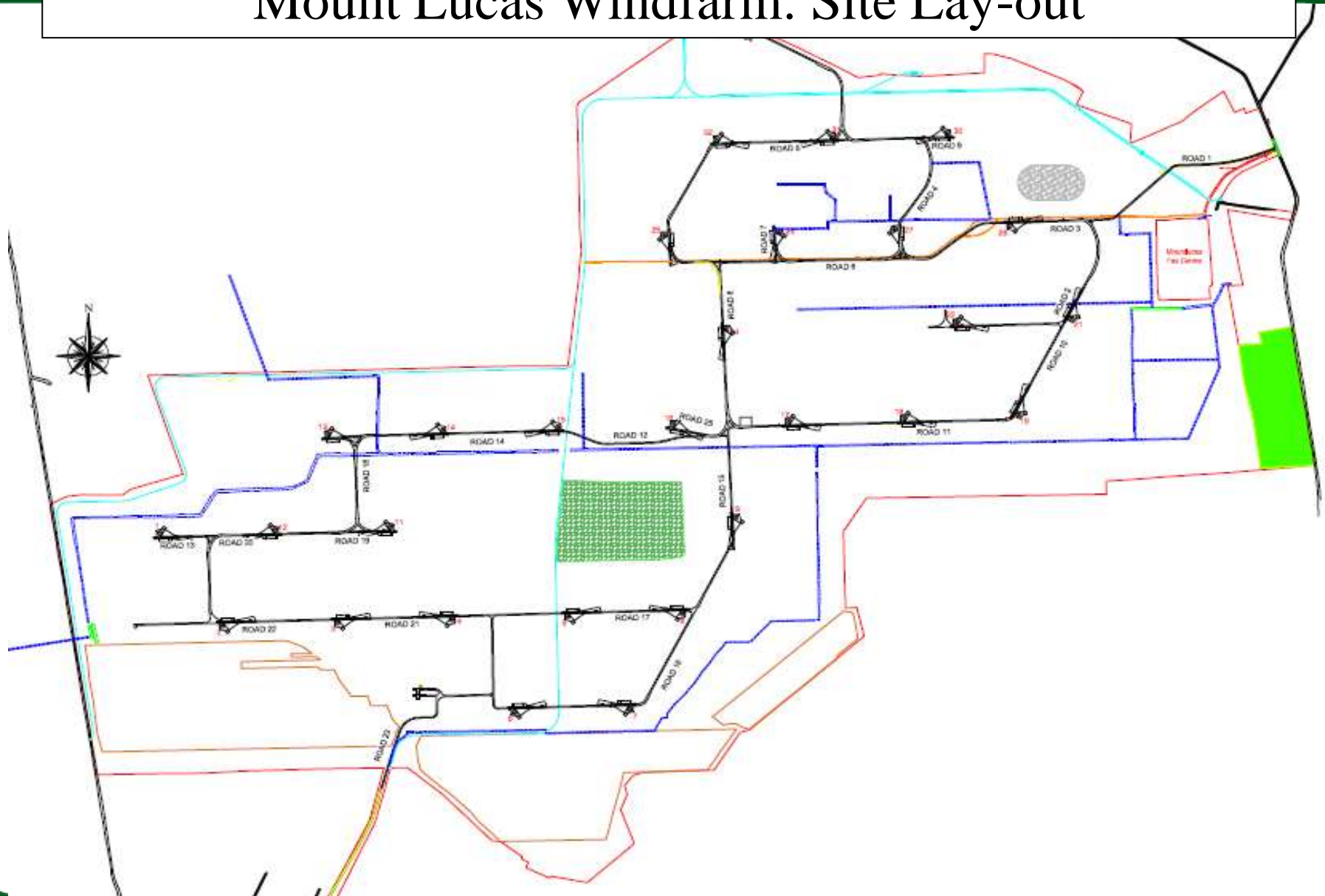


Overview – Mount Lucas Windfarm 80 MW



Infra-structure: ~ 3-4% of site area

Mount Lucas Windfarm: Site Lay-out

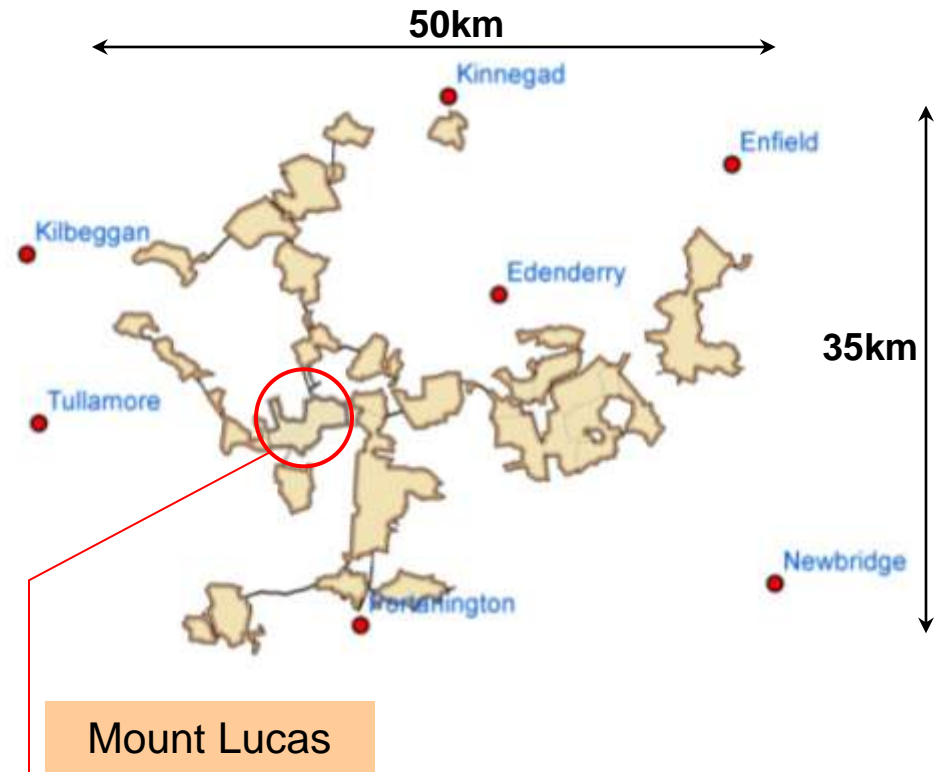


BnM – CEH Concept:

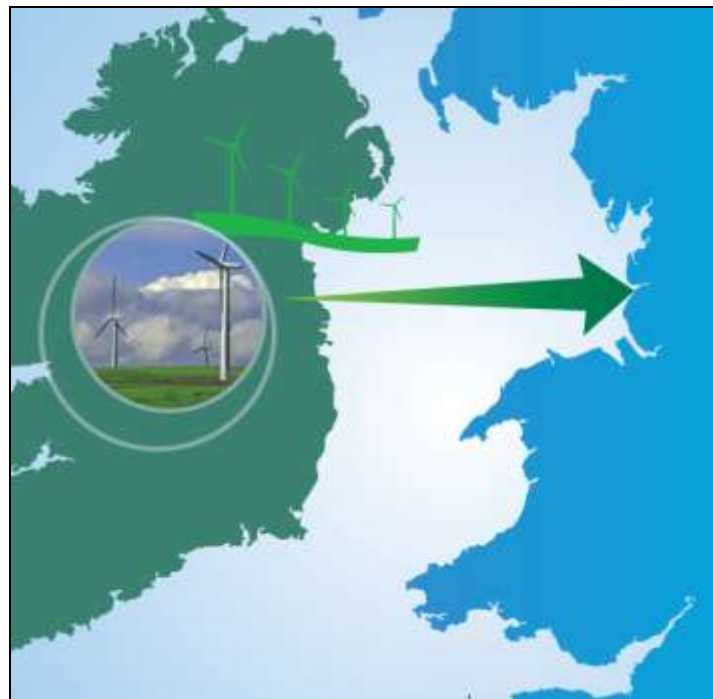
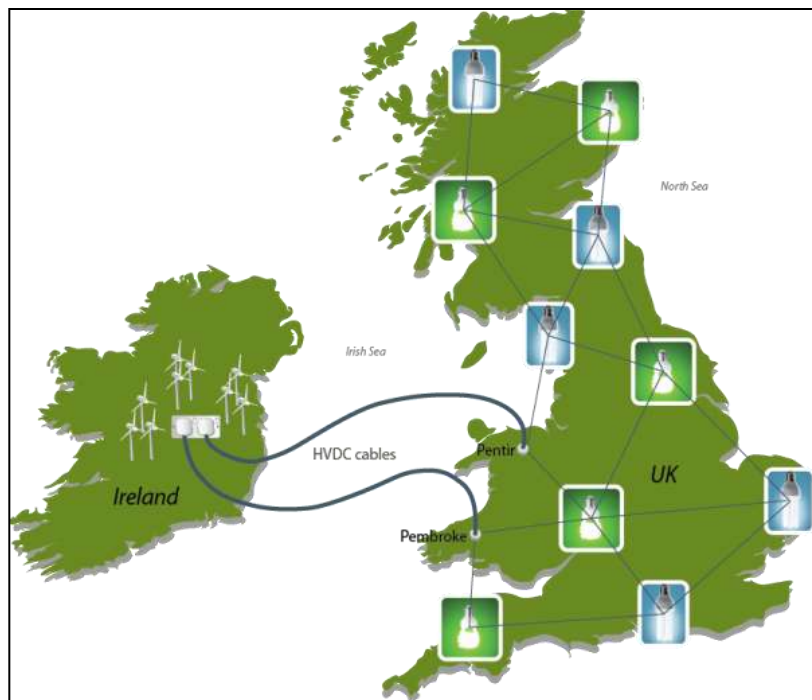
Clean Energy Hub

- Wind farm development on cutaway peatlands in the East Midlands (Phase 1)
 - 5,000 ha currently
 - 12,730 ha by 2020
- Scope for ~1,000 MW onshore wind capacity
- Wind farms linked together to form a 'Clean Energy Hub'

East Midlands Region

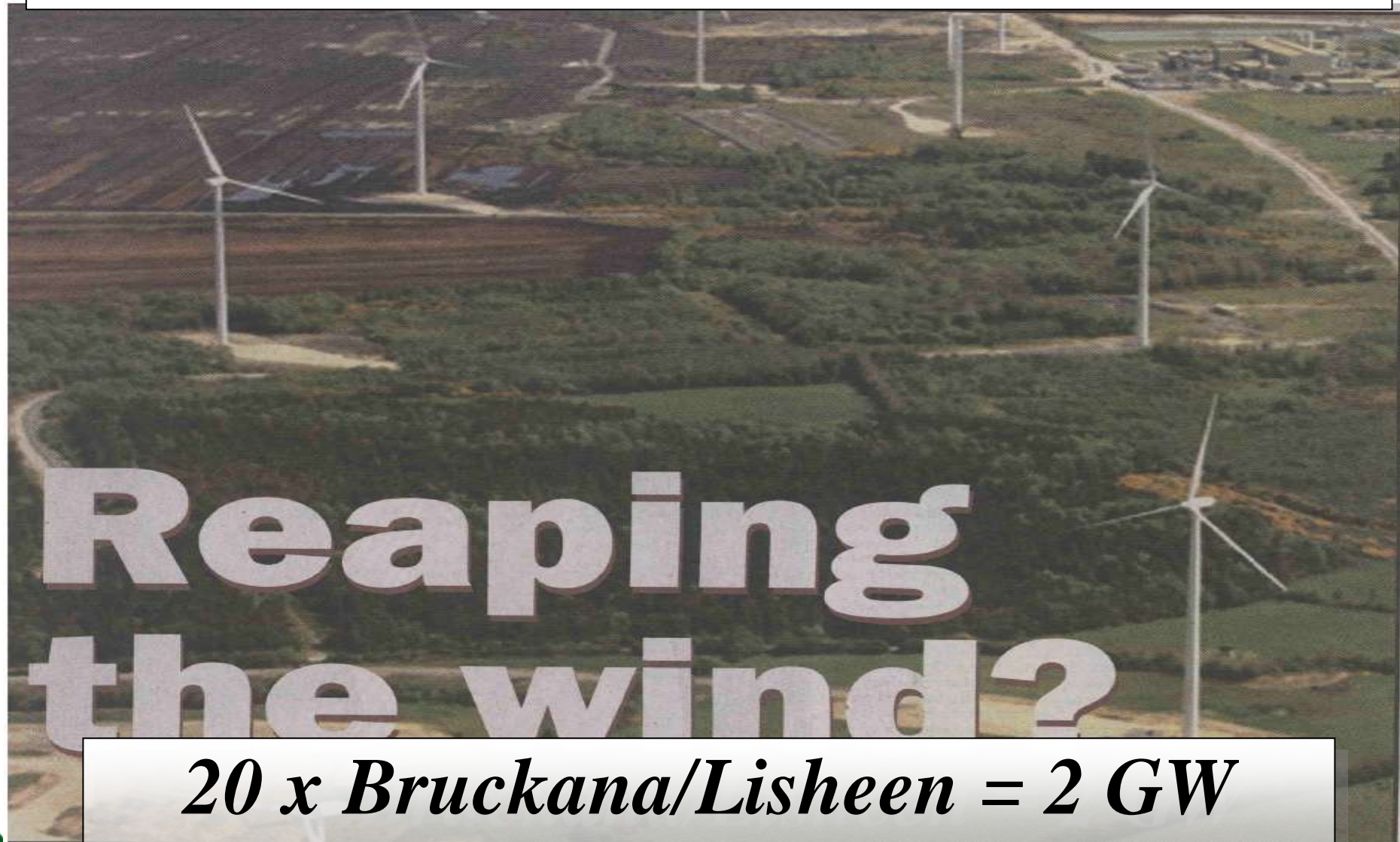


RES – E Export Potential



BNM Developing a Clean Energy Hub: 1 – 2 GW of generating capacity on and around our landholding in the East Midlands focused on electricity exports

Bruckana / Lisheen ~100 MW



20 x Bruckana/Lisheen = 2 GW

Lisheen Wind farm: few houses dot the landscape here and, more importantly, it has an existing connection to the national grid

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Adjacent Land: Where deemed “Appropriate” Optimises Energy Capture



Creating Sites with High Amenity/Biodiversity Value



What does 2030 look like?

- 10 GW on-shore wind
- 10 GW off-shore wind
- 4/5 GW I/C
- Flexible power system
- 60-70% RES-E



Achieving Europe's RES-E Potential