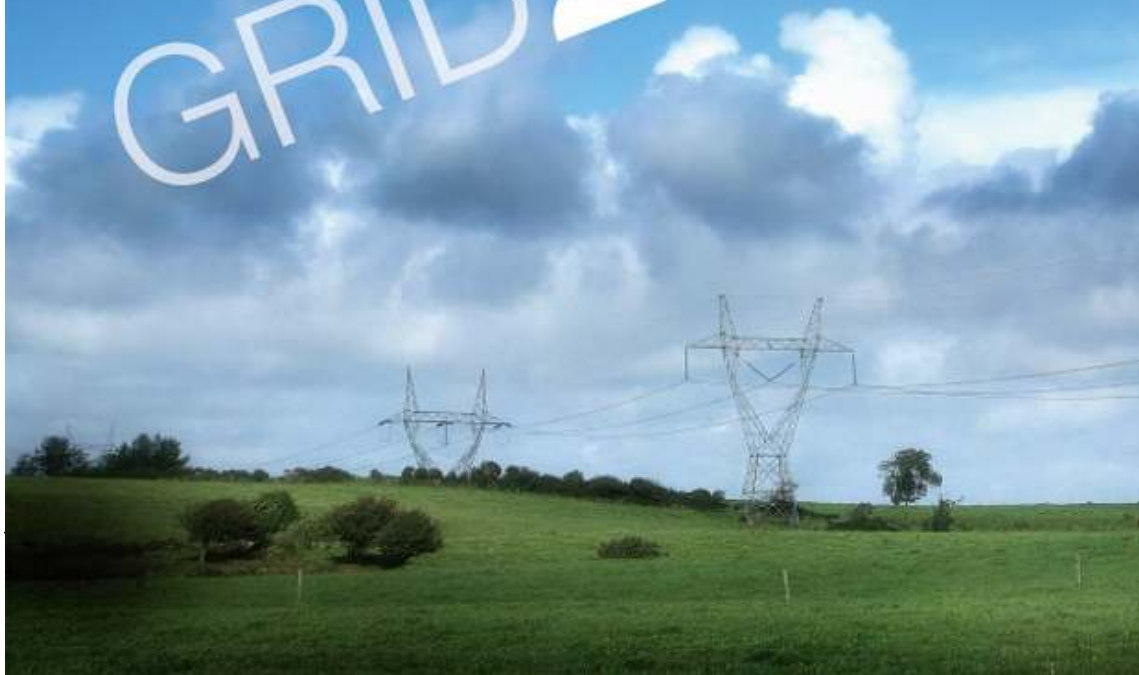




# GRID25

A Strategy for the  
Development of Ireland's  
Electricity Grid for  
a Sustainable and  
Competitive Future



**Derek Lawler**  
**EirGrid**  
**15th May 2009**

# Challenge

The biggest challenge facing the Transmission System Operator today is the development of the high voltage transmission grid to meet the country's demand for more economical, reliable and environmentally friendly electric power.



# 2025 Vision

- Ireland and world facing challenges
  - Climate change and energy security
- Demand levels in Ireland will increase
- Renewable generation will contribute 40% of Ireland's electricity needs by 2020
  - Wind will be pivotal contributor
  - Off-shore wave and wind starting to play their parts
  - Biomass making significant contribution



# 2025 Vision

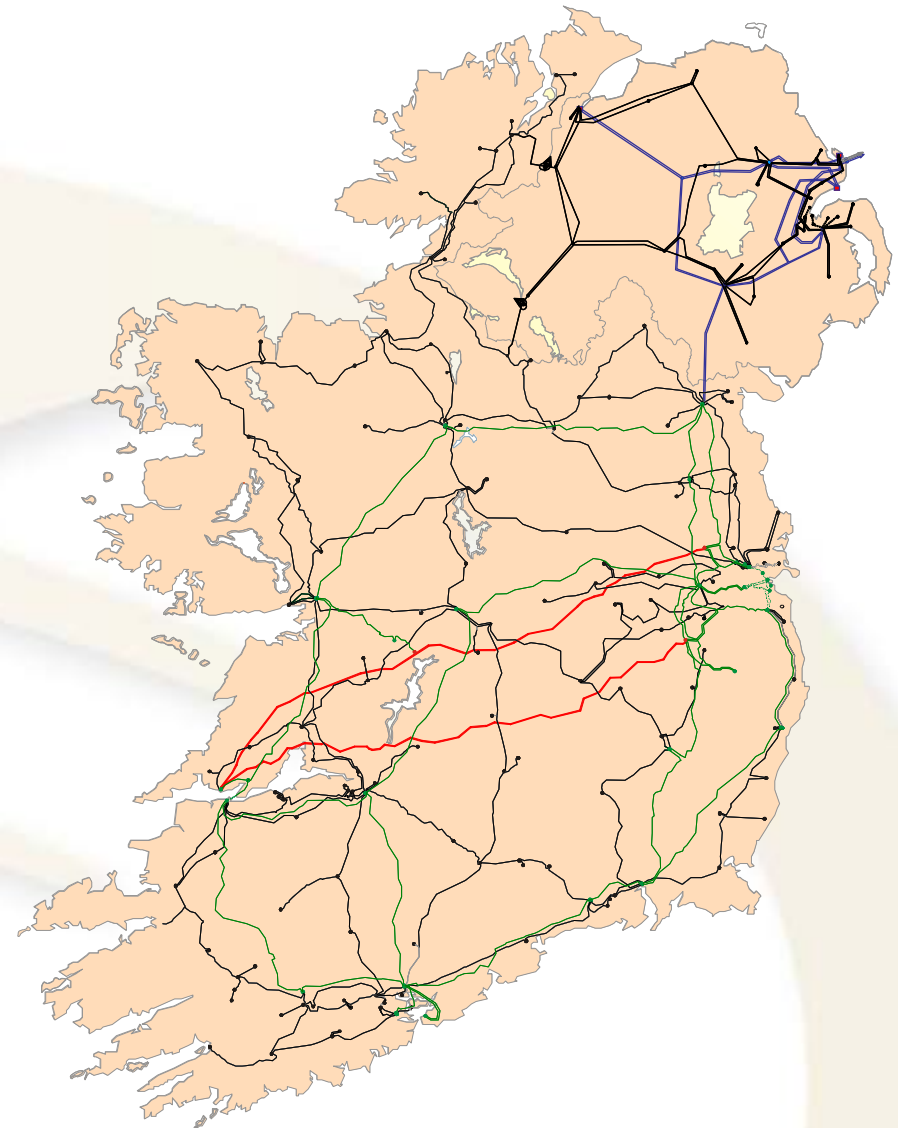
- Conventional generation and imports needed to complement renewables
- Further interconnection will be in place to increase integration with European networks
- Renewable power in non-traditional generation locations resulting in large West to East flows

Backbone network capacity needs to be doubled



# Transmission Grid

- High capacity, efficient, reliable link between
  - Generation
  - Demand centres
  - Interconnections to other systems
- Grid needs to be developed when any of these change



400 kV 440 km

220 kV 1830 km

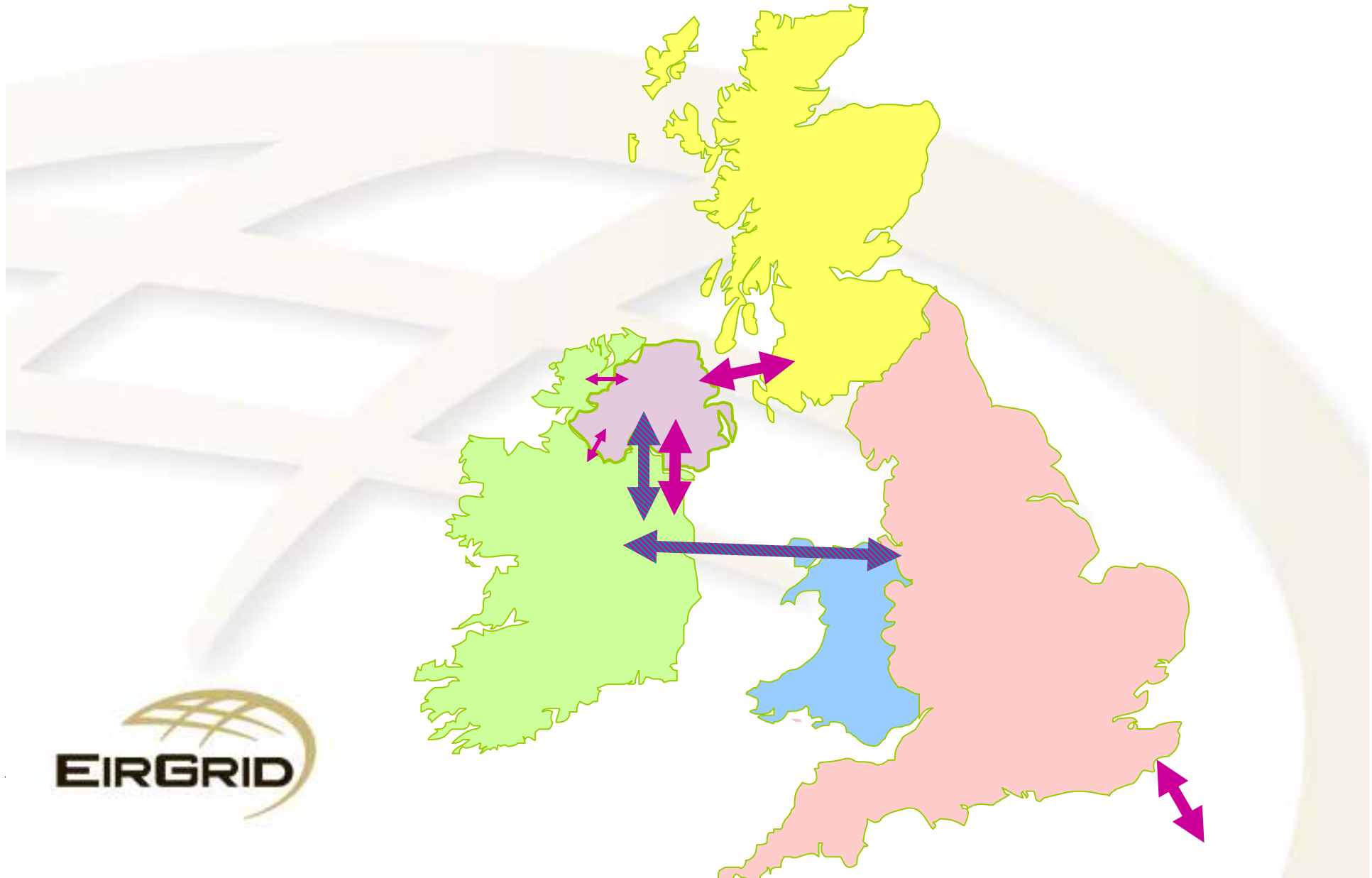
110 kV 4000 km

# Why Develop the Grid?

- Support Economic Development
- Enable Balanced Regional Development
- Access to Renewable Generation
- Facilitate Wholesale Electricity Market
- Achieve greater interconnectivity



# Importance of Interconnection for European Energy Market



# Grid25 Strategic Options

Security & Reliability



*Balance*



Costs & Efficiency



Community & Environment

Build New

400 kV

HV AC

Overhead

Upgrade

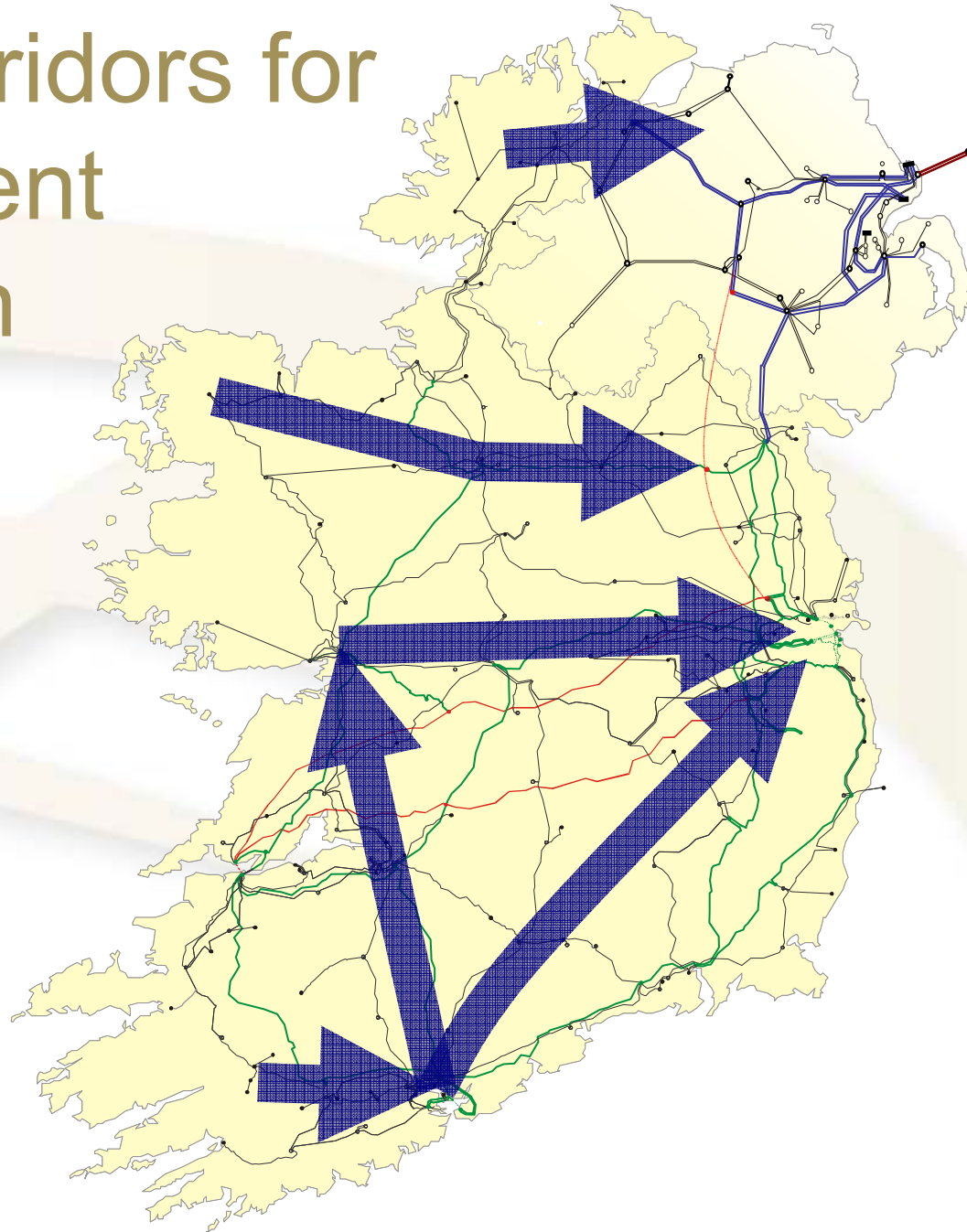
220 kV

HV DC

Underground



# Primary Corridors for Reinforcement Investigation



# GRID25 Strategic Solution (1)

- Double capacity of bulk transmission grid
- Upgrading 2,300 km of the existing network
- Constructing 1,150 km of new circuits
- Best practice and new technologies

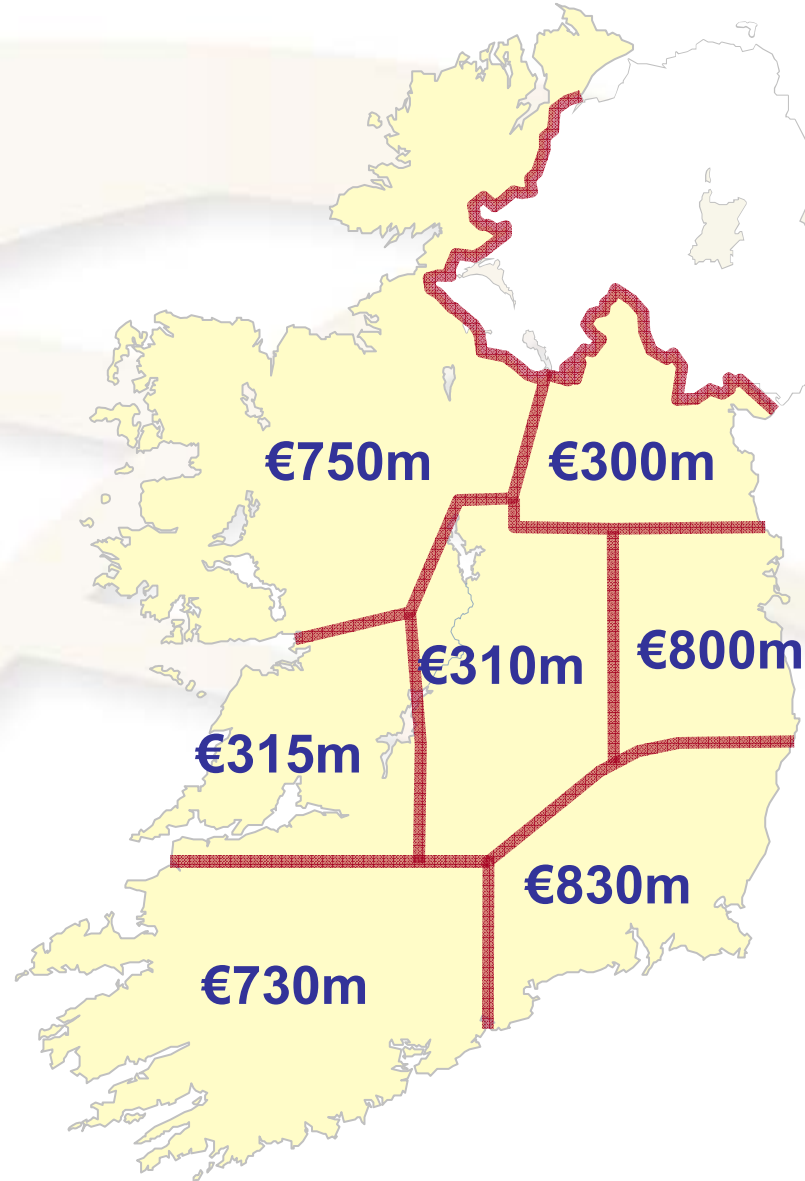


# GRID25 Strategic Solution (2)

- Balanced Grid Development in each Region
- Minimise new line lengths
- New bulk transmission lines built at 400 kV
- Investment of €4bn in Ireland's infrastructure



# Regional Breakdown of Expenditure



## What GRID25 does ...

- Delivers on Public Policy
- Incorporates Social and Environmental Responsibility
- Represents Value for Money
- Involves Use of New Technology
- Helps lower Ireland's Carbon Emissions



# GRID25 is essential

- To support regional development
- To ensure reliability & security of supply

**Delivery requires proactive support from key stakeholders**

- To underpin the competitive electricity market



## Conclusion - GRID25 will provide:

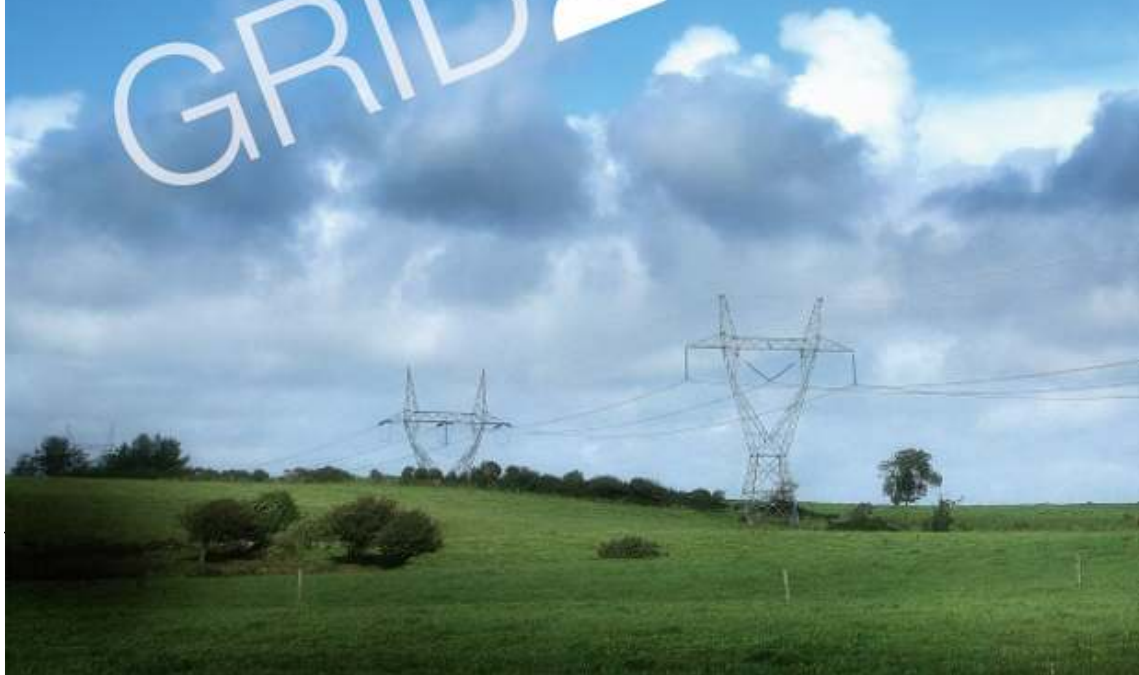
- Strong platform for renewed economic growth
- Regional access to reliable and high quality power supplies
- Facilitate access to renewable resources





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# Thank You

**Derek Lawler**

**EirGrid**

**15<sup>th</sup> May 2009**