

- SONI Involvement
- TIA Interaction Processes
- SONI - Transmission network issues
- NIE Transmission Investment Plan
- Observations from a SONI perspective
- Issues going forward

- SONI is the licensed independent Transmission System Operator in N Ireland.
- NIE, as Transmission Owner, is responsible for planning & developing the transmission network
- SONI is now owned by EirGrid
- SONI interacts formally with both NIE and EirGrid to identify all island transmission network development needs
- SONI is responsible for facilitating connections to the N Ireland transmission system
- These processes are now established with
 - NIE through the Transmission Interface Agreement (TIA)
 - EirGrid through the System Operator Agreement (SOA)

SONI Involvement

USER

SONI (TSO)

NIE (DSO)

NIE (TO)

- SONI are required by Licence to prepare a Transmission System Capacity Statement which covers:
 - Circuit capacity, forecast electrical flows, loading on each part of the transmission system and fault levels at each transmission node for seven succeeding years
- SONI also contribute to the publication of a European Ten Year Network Development Plan
- The TIA and SOA processes are defined to allow information to flow between the Licensed entities to enable them to comply with obligations
- The Renewable Integration Development Project (RIDP)
- Second North – South Tie line

Transmission Interface Agreement (TIA) between NIE T&D and SONI sets out the responsibilities of each party regarding

“the planning and development of the **Transmission System** and, where required, the co-ordinated planning and development of both the **Transmission System** and the **RoI Transmission System** on a co-ordinated basis”.

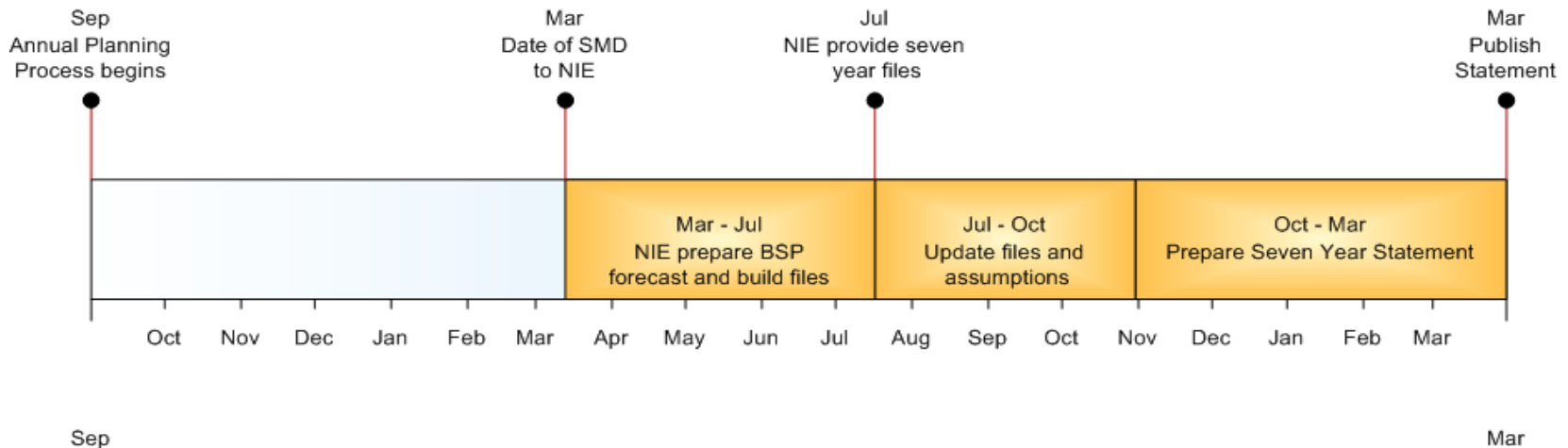
NIE agrees to plan and develop the **Transmission System** in accordance with NIE’s **Transmission Licence** and this TIA, subject to any **Transmission Derogations** from time to time.

SONI shall ensure that the **RoI TSO** plans and develops the **RoI Transmission System** in a manner co-ordinated with the planning and development of the **Transmission System**.

NIE / SONI Interaction Timescales

SONI WORK

- PLEXOS DISPATCH STUDIES
provide generation dispatch for files
- SONI ACS FORECAST FINALISED
- ALL-ISLAND TSO ASSUMPTIONS PREPARED



ANNUAL PLANNING PROCESS

- GRID PLANNING REVIEW
followed by NIE response
- TRANSMISSION NETWORK ANNUAL REPORT
followed by SONI response
- TRANSMISSION INVESTMENT PLAN
followed by SONI response

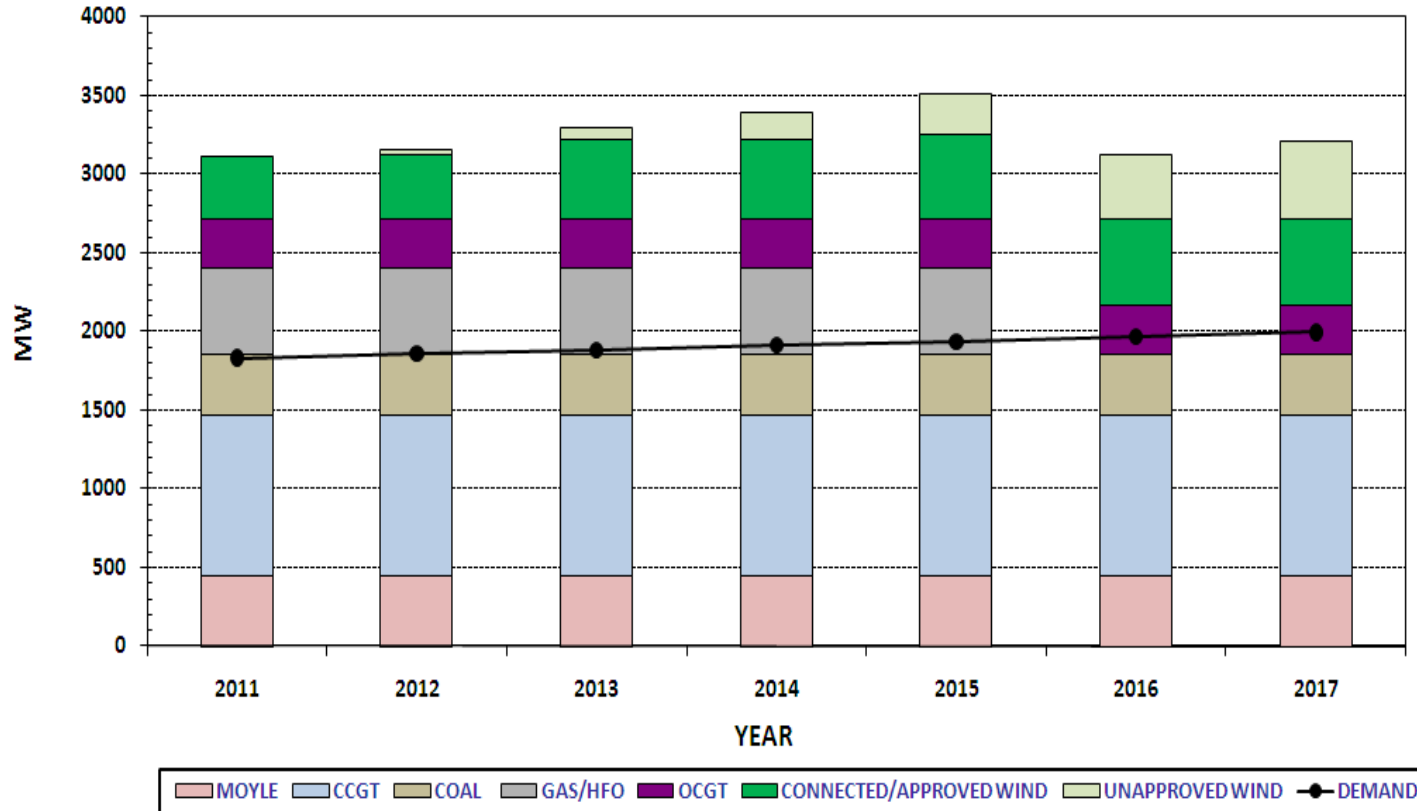
TRANSMISSION SEVEN YEAR STATEMENT

- GENERATION UPDATE
- DEMAND ANALYSIS
- LOAD FLOW ANALYSIS
- FAULT LEVEL ANALYSIS
- TRANSMISSION CAPABILITY MATRIX

Identified Transmission network issues fall into the following categories:

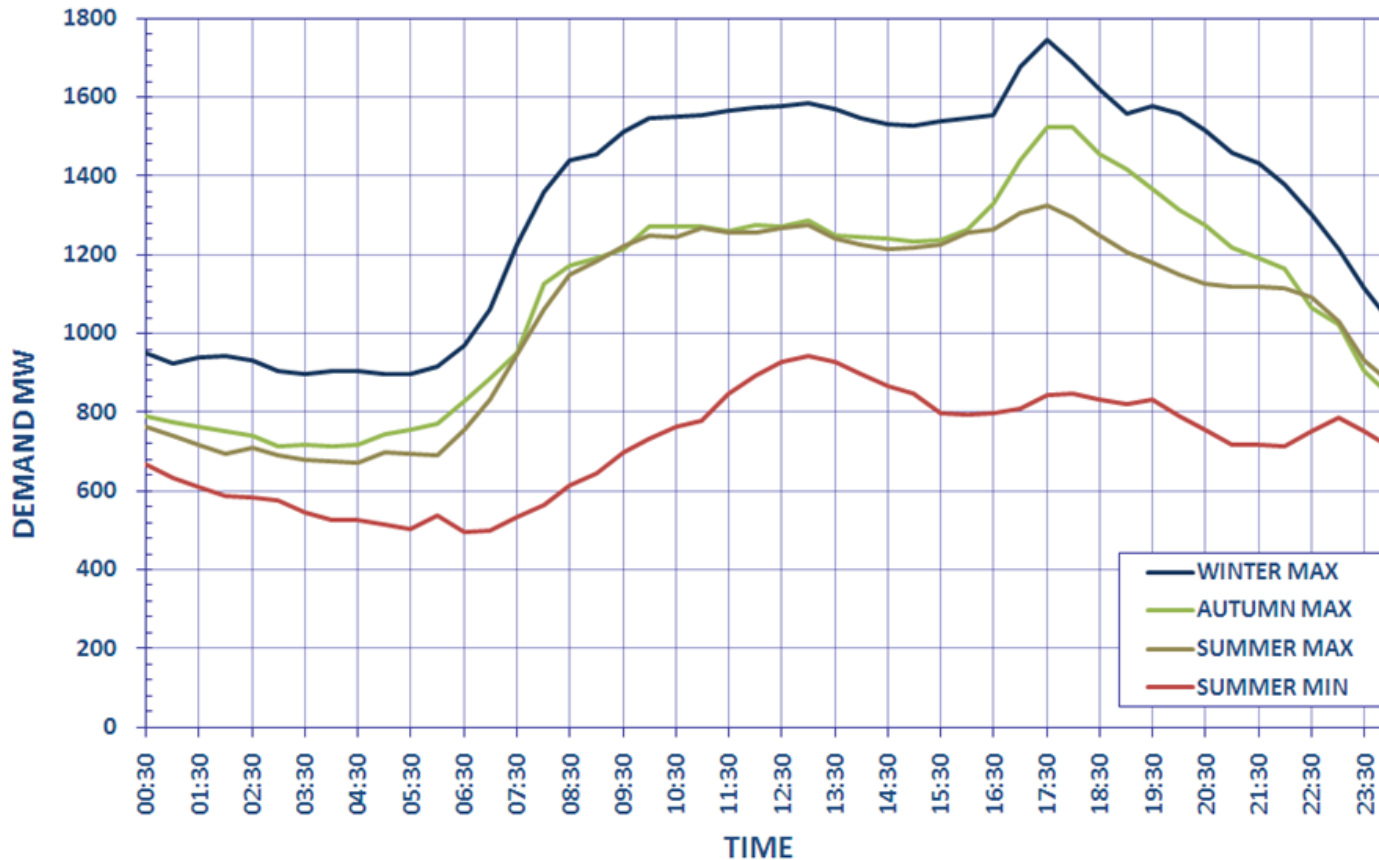
- System voltage stability
- Fault level issues
- Transformer capacity
- Security of Supply issues
- Interconnection
- Constraint issues

EXISTING AND PLANNED GENERATION

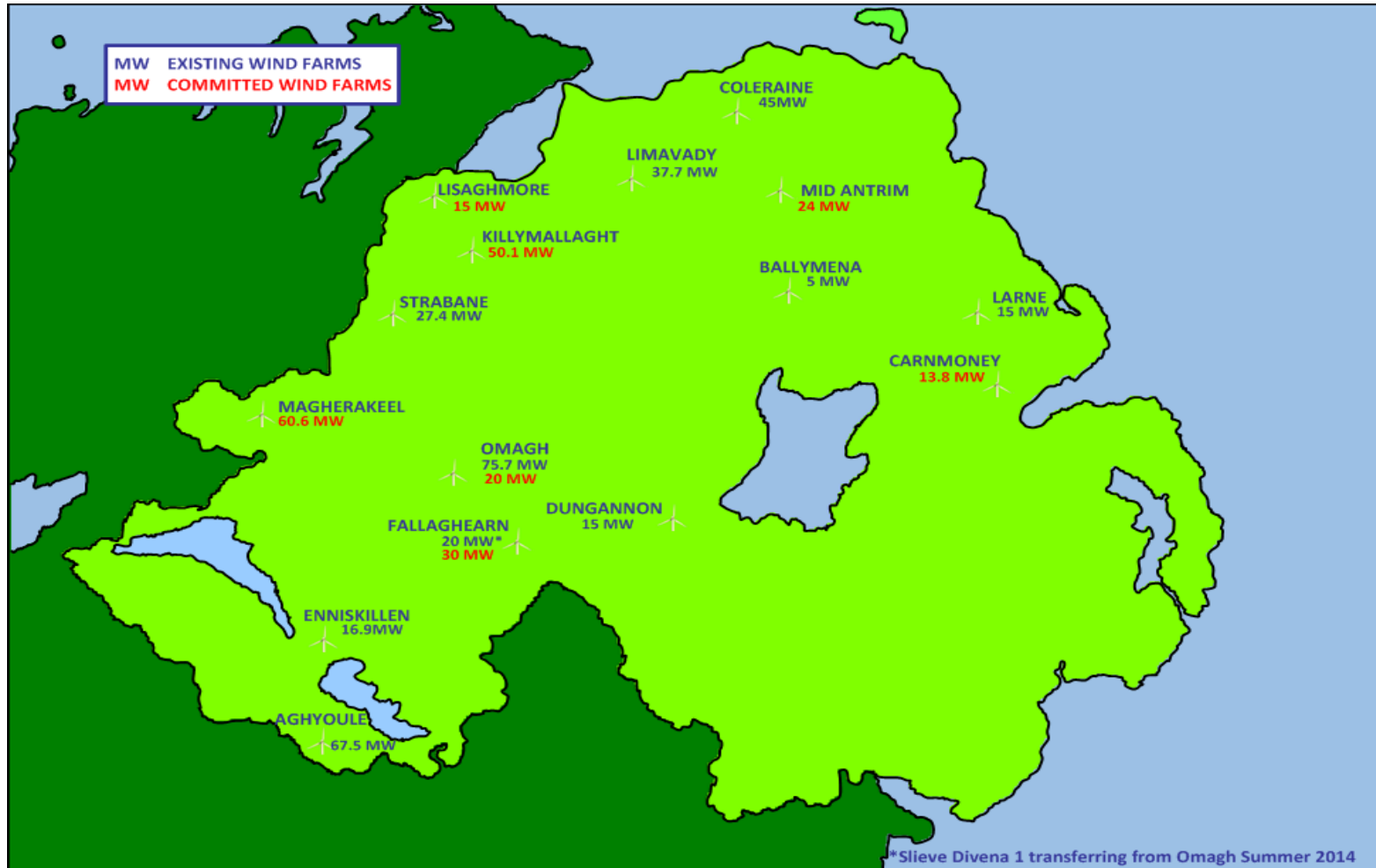


DEMAND PROFILES

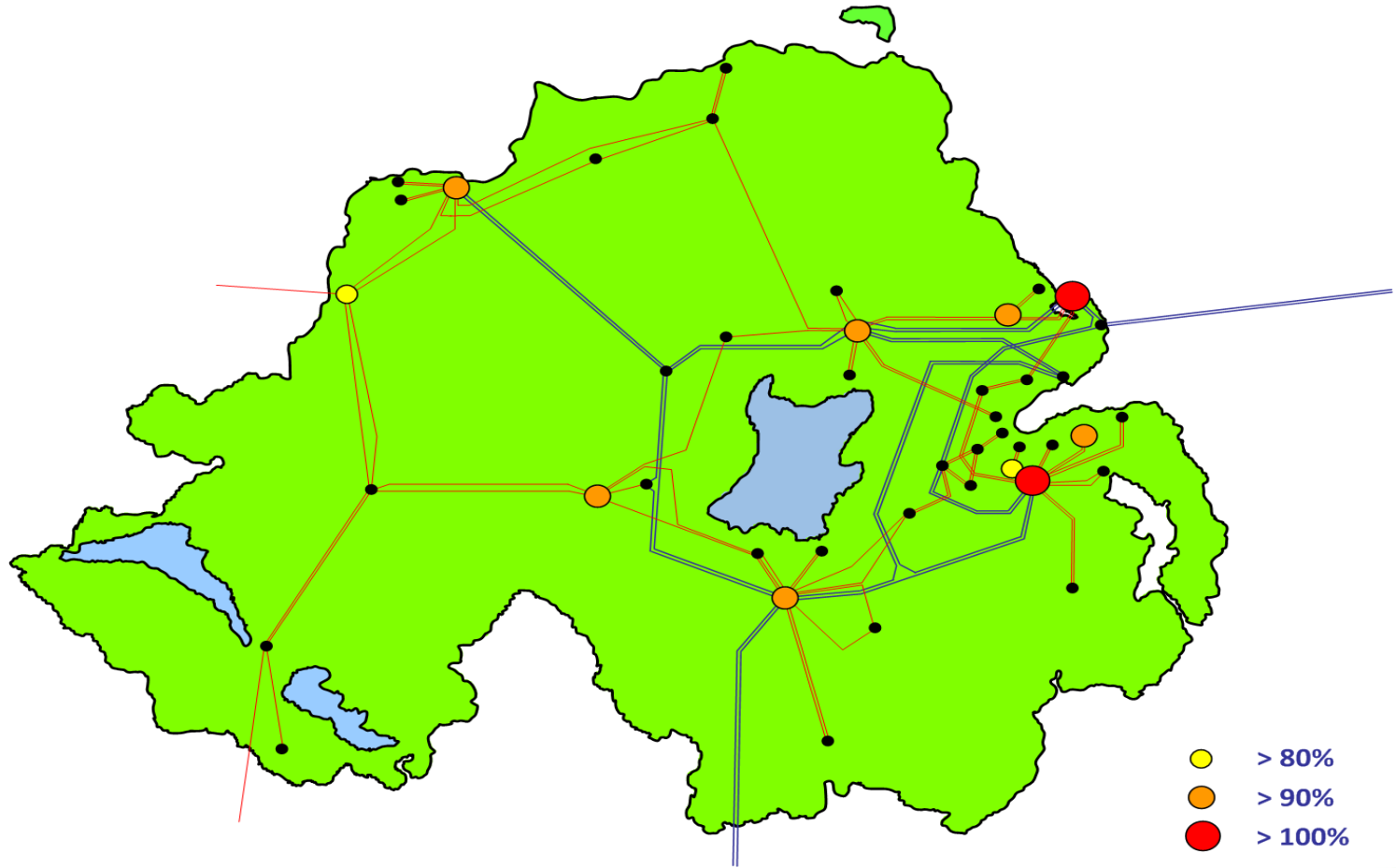
DAILY DEMAND PROFILES 2009/10



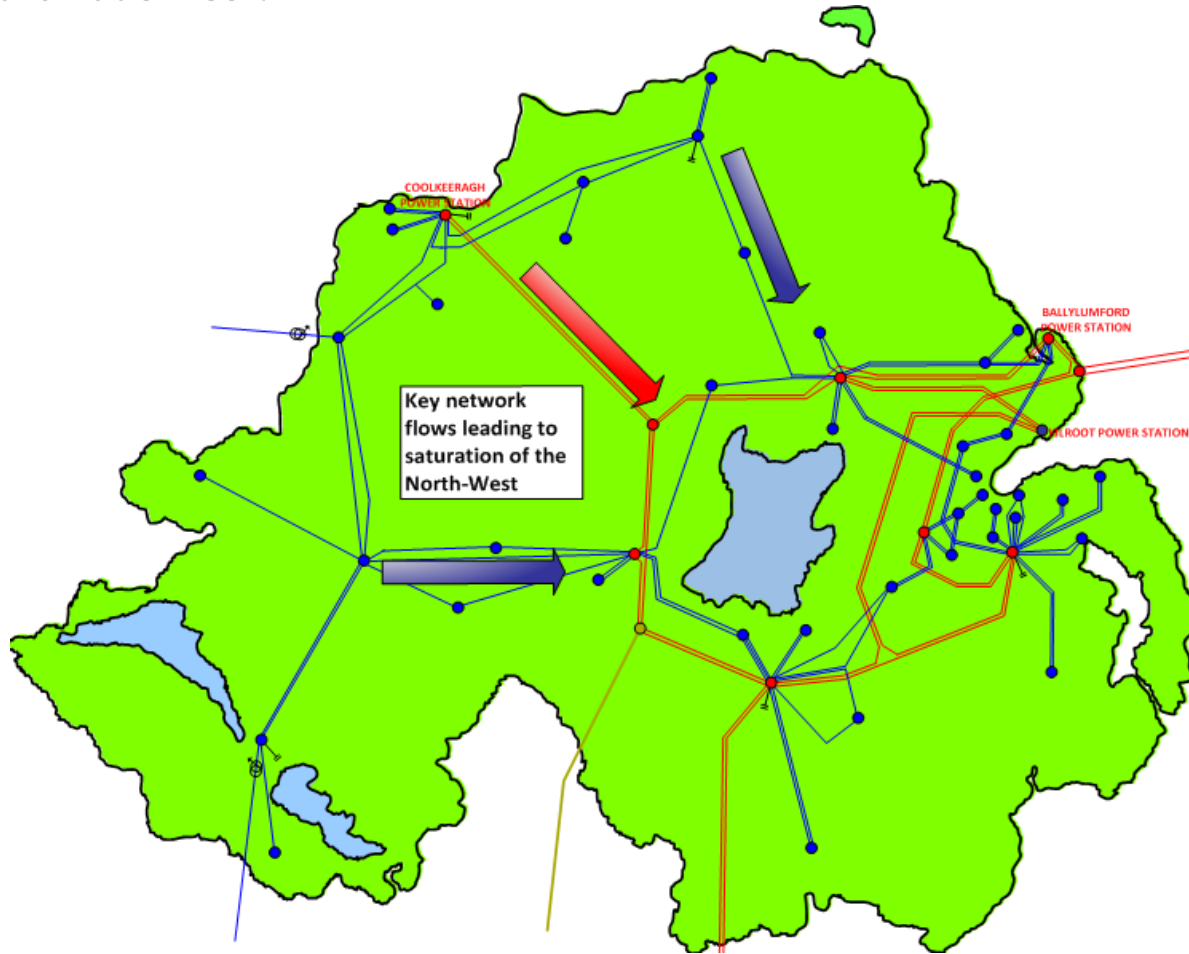
EXISTING AND COMMITTED WIND GENERATION



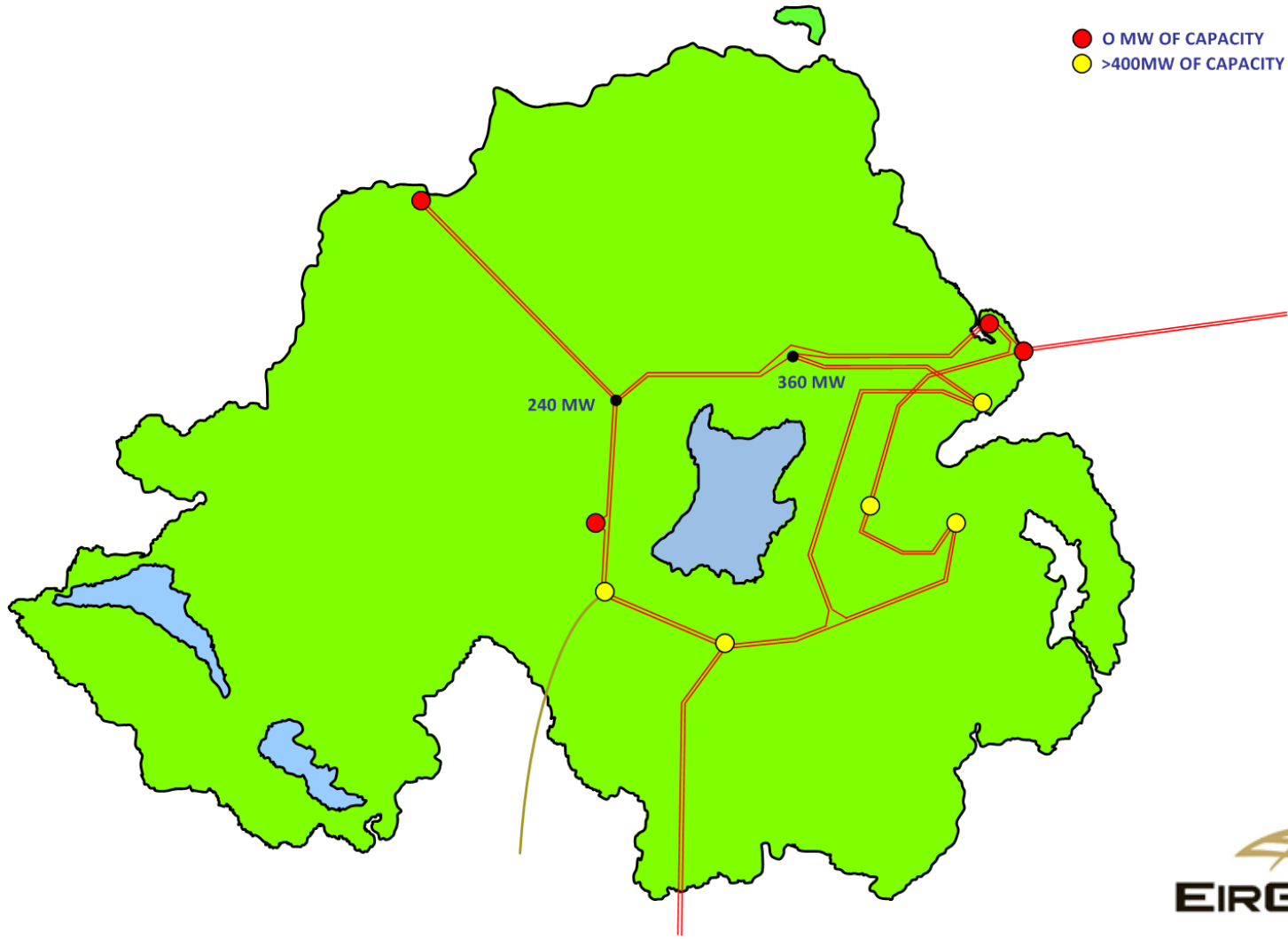
FAULT LEVEL



TRANSMISSION SYSTEM CAPABILITY



TRANSMISSION SYSTEM CAPABILITY



NIE Transmission Investment Plan

- NIE will deal with this in detail
- Interaction between SONI / NIE has been improving
- MTP (BAU) will address voltage and Fault level issues
- MTP (Renewables) will begin the process of providing the infrastructure required if we are to meet European and Govt. targets
- SONI are keen to move quickly into implementation phase

- Outage Planning to achieve Planned developments
- Network development required to meet changing needs
- Operational complexity
 - At present
 - During implementation
- A clear unambiguous longer term view of electricity infrastructure development for N Ireland is required

Issues going forward

- Constraint costs
- Limitations of a 5 Year Plan
- Establishing transparent linkages between NIE Investment Plans and SONI relationship with Users (TUoS and Access)
- Interconnection
- Special Protection Schemes