A Northern Ireland company working for consumers

Sam Gibson
Moyle Operations Manager
Sam Gibson

- Moyle Interconnector Operations Manager (2 ½ years)
- Northern Ireland Electricity Networks (lots more years)
- What floats my boat?
  - Asset Management (PM for PAS55 & ISO55001)
  - Operations
  - Asset systems
A Northern Ireland company working for consumers

500MW HVDC Interconnector providing market link between Irish & GB electricity wholesale markets

Scotland to Northern Ireland High Pressure natural gas transmission pipeline, BGTP, GTTW

Source: Eng. McHale; webstogo, and the GIS team, Derryman
<table>
<thead>
<tr>
<th>Company</th>
<th>Activity</th>
<th>Mutualised</th>
<th>Bond</th>
<th>Term</th>
<th>Rate real</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moyle Interconnector</td>
<td>500MW DC link Scotland to NI</td>
<td>2003</td>
<td>£135m</td>
<td>30year</td>
<td>2.94%</td>
</tr>
<tr>
<td>Premier Transmission</td>
<td>Scotland to Northern Ireland gas pipeline</td>
<td>2005</td>
<td>£107m</td>
<td>25year</td>
<td>2.46%</td>
</tr>
<tr>
<td>Belfast Gas Transmission</td>
<td>Phoenix transmission gas pipeline Islandmagee to Belfast</td>
<td>2008</td>
<td>£109m</td>
<td>40year</td>
<td>2.21%</td>
</tr>
<tr>
<td>West Transmission</td>
<td>Mutual Energy transmission pipeline to west of NI</td>
<td>2018</td>
<td>£200m</td>
<td>40year</td>
<td>tba</td>
</tr>
</tbody>
</table>
Moyle Interconnector – The Asset

- Link between the 275kV electrical transmission networks of Scotland and Northern Ireland
  - Pan-European energy market flows
  - Reserve
  - Ancillary services

- Delivers circa £100m benefit per annum by a combination of market forces and more efficient system operation
A Northern Ireland company working for consumers
Asset Parameters

- 64 km, 250KV DC, relatively low voltage and relatively short distance
- 1000mm² Integrated return conductor cable (IRC) – originally one cable instead of two per pole
- Additional Moyle Return Cables (MRC) now added
- IRC Cables buried nominally 1m depth (or rock dumped if necessary)
- All DC electrical components indoors
- 2 x 250MW poles – bi-pole trips unusual
- Light triggered thyristors – no hard wiring to valve hall
- Siemens standard valve hall design – suitable to withstand earthquakes
- 12 x single phase transformers (plus one spare) instead of 4 x 3 phase transformers
How we operate the asset

• Maintenance Management
  - Three full time engineers supported by expertise on consultancy when required
  - Manage the Siemens converter station maintenance contract
  - Manage the Nexans cable support contract

• Operations - carried out by SONI under “Operating and Agency Agreement”
  - Schedule transferred to Moyle automatic controls
  - Release of plant for maintenance
  - Liaison with National Grid
  - Regular setting of parameters (Run back, Static Reserve)
  - SONI monitor alarms and initiate response

• Convertor Station Maintenance (Long Term Maintenance Agreement)
  - Carried out by Siemens UK with Siemens Germany technical support
  - 7 full time personnel split between two sites
  - Response and availability are embedded in contract
  - Routine maintenance/ testing; bi-annual shutdown maintenance; replacement/ refurbishment works; provide SAP services
  - Manage consumables and strategic spares
A Northern Ireland company working for consumers
A Northern Ireland company working for consumers
A Northern Ireland company working for consumers
A Northern Ireland company working for consumers
A Northern Ireland company working for consumers
A Northern Ireland company working for consumers
A Northern Ireland company working for consumers
A Northern Ireland company working for consumers
So what are we doing?

- Maximising capacity and ancillary services
- Emergency Readiness – plant, offshore cables, onshore cables
- Investment planning – mid-life refurbishment
- Decision support as required
- Enterprise Asset Management system?
- ISO 55001 certification
- Benchmarking
Questions?

sam.gibson@mutual-energy.com