

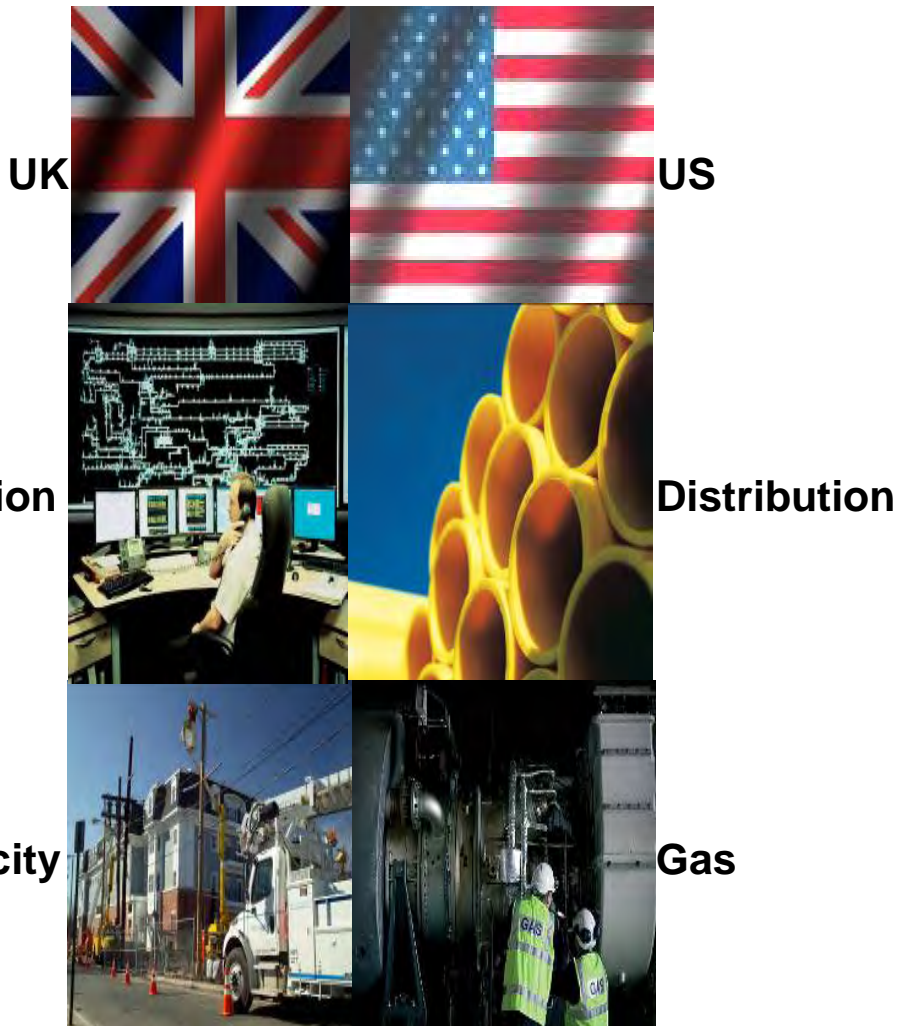
Welsh Electricity Transmission
November 2008

nationalgrid

The power of action.™

National Grid – our business

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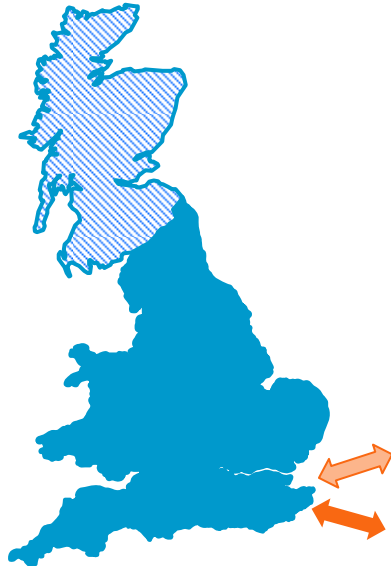


Facts:

- Total employees - 27,000
- Largest UK utility
- 2nd largest US energy utility

UK footprint.....

Electricity Transmission



Transmission Owner England and Wales

- High voltage transmission system in England and Wales
- 99.999% reliability

System Operator GB (and offshore)

- Operator of the electricity transmission networks in Great Britain and offshore
- Facilitate competition via non-discriminatory connections

Interconnectors

- Anglo/French interconnector
- BritNed (being built)

3 •Anglo-Belgium (proposed)

Gas Transmission



Transmission System Operator across GB

- High pressure gas mains across GB and daily balancing.

Grain LNG

- Phase 1 operational
- Phase 2 commissioned in Oct 2008 = 12% of gas demand
- Phase 3 (proposed) = 18% of gas demand

LNG Storage

Gas Distribution



Gas Distribution System Operator

- “One big network”
- 82,000 miles
- 11 million end users
- £2.6bn investment planned 2008-13

National Grid Metering

- 18m meters
- Leading gas metering competition
- Smart metering trails

Blue-NG JV

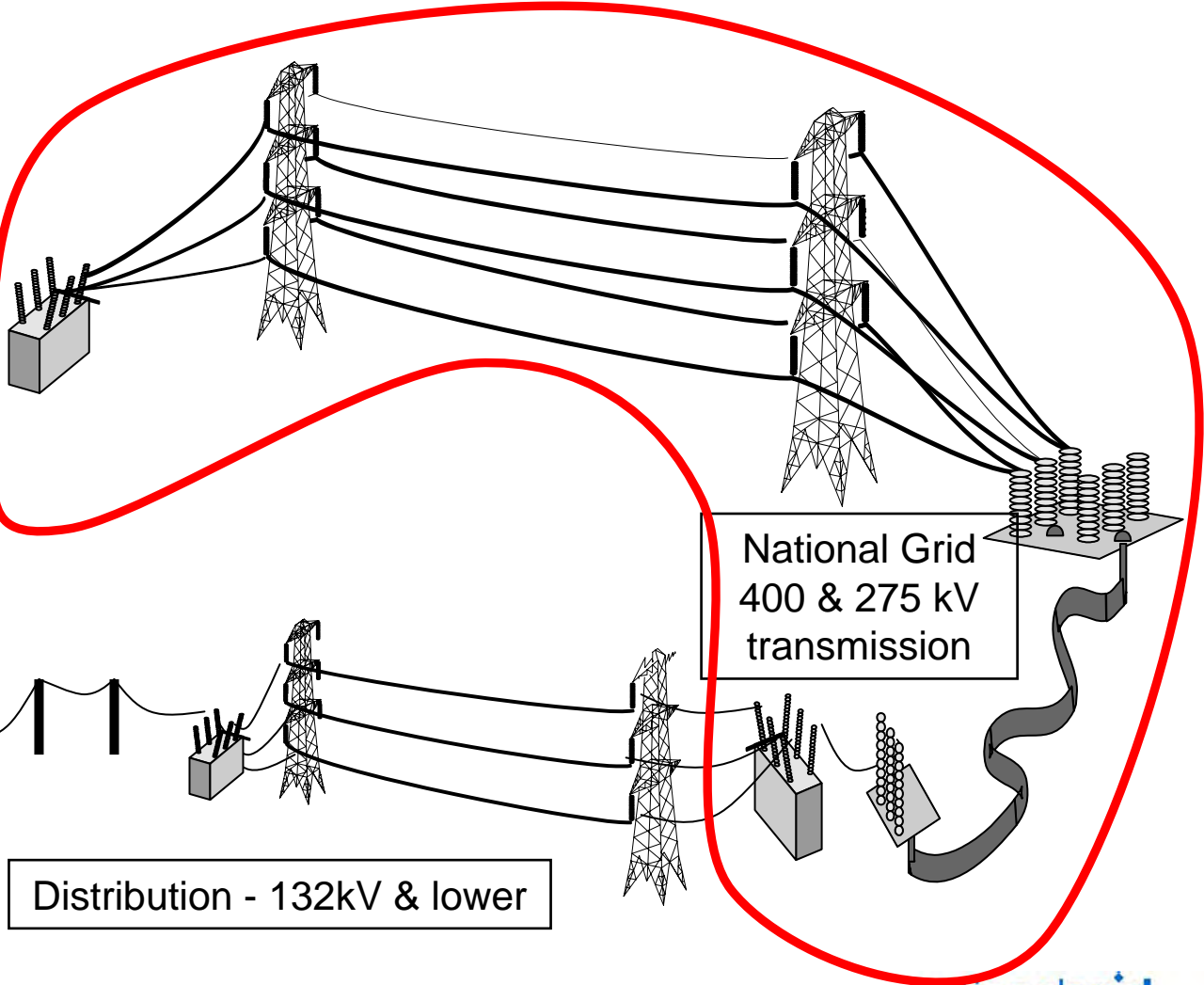
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The power of action.

Electricity from generator to distributor



Generation



Distribution - 132kV & lower

Overview – Electricity in Wales

Total demand in Wales is approximately 4.08GW and demand is expected to slowly rise over the next 7 years at an average of 1 ¼% a year. However demand growth going forward could be affected by increased energy efficiency, the impact of high fuel prices and the severity of the economic downturn.

At present generation capacity in Wales is 7.7GW of conventional, nuclear and pump storage capacity.

We estimate new generation that has applied to connect to National Grid will add:

- ◆ 4 GW Gas fired power stations
- ◆ 0.5 GW Interconnections
- ◆ 0.35 GW Bio-fuel
- ◆ 2.24 GW Wind

So by 2016, our forecasts suggest that the contracted generation position in Wales could be a total of 14.8GW.

Existing Transmission System - Wales



North Wales

This part of the National Grid network originally grew around the connections for Wylfa.

Generation Projects that have applied to connect to National Grid

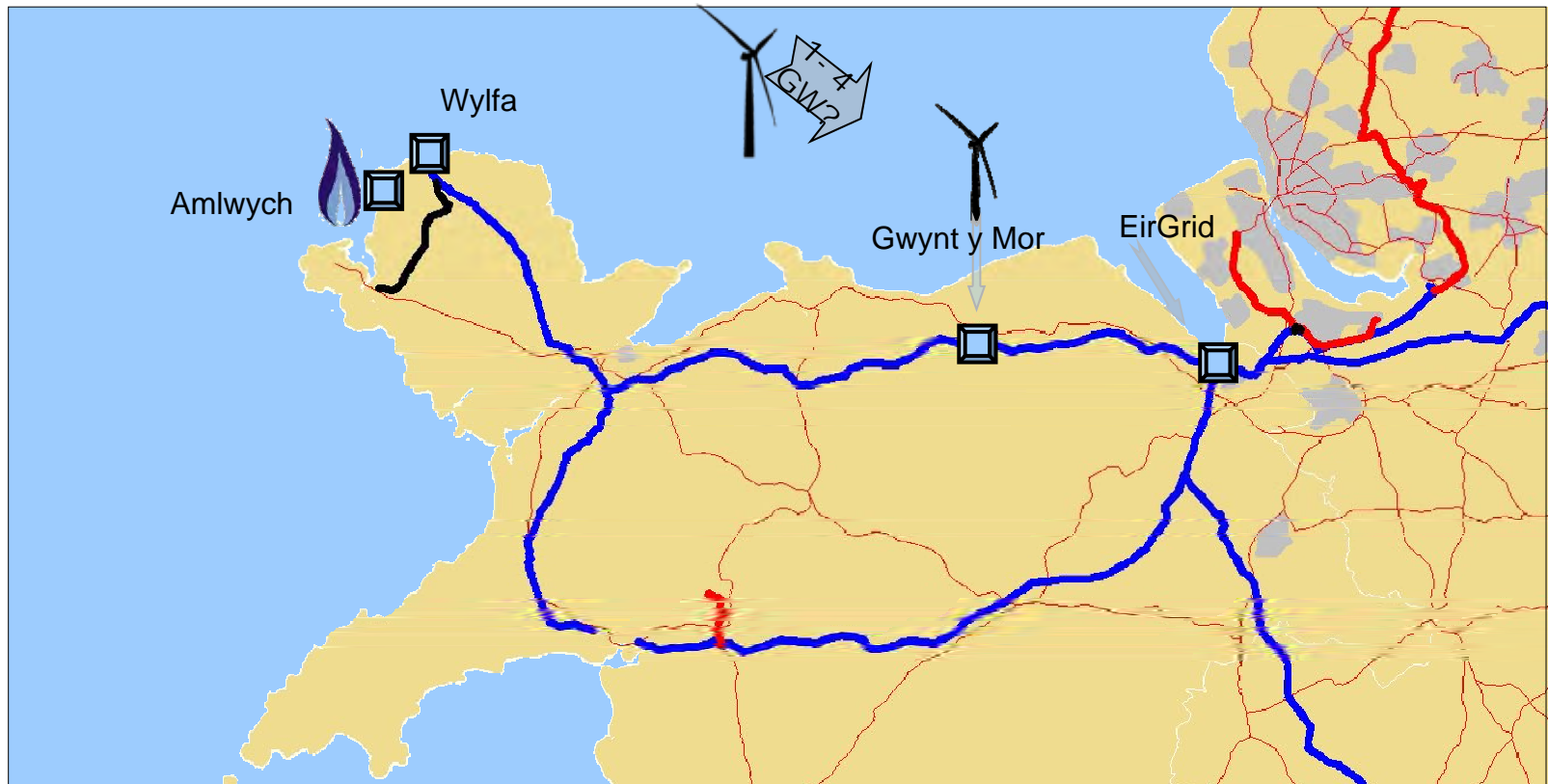
Gwynt Y Mor Offshore Wind Farm – Npower Renewables 735MW offshore
Windfarm connecting to new substation at St Asaph, North Wales adjacent to existing National Grid line.

EirGrid Interconnector Signed connection agreement with developer to connect HVDC link to the National Grid system at Deeside – new possibility for export capacity in Wales

Canatxx Amlwch on Anglesey 250MW CCGT expected to connect in 2012 between Wylfa and Pentir

Wylfa Nuclear 1670 MW

North Wales



Mid Wales

WAG TAN8 Policy envisaged 500MW, but Renewable Energy Route Map may lead to further enlargement

National Grid has signed contracts to connect approximately 700 MW of renewable generation in Mid Wales to the transmission system .

SP Manweb distribution system unable to accommodate these levels without very significant reinforcement. One new National Grid line at 400 kV to achieve a 'secure connection'.

Challenge to build new infrastructure - currently looking at route selection and environmental impacts of new infrastructure, community engagement and addressing community concerns

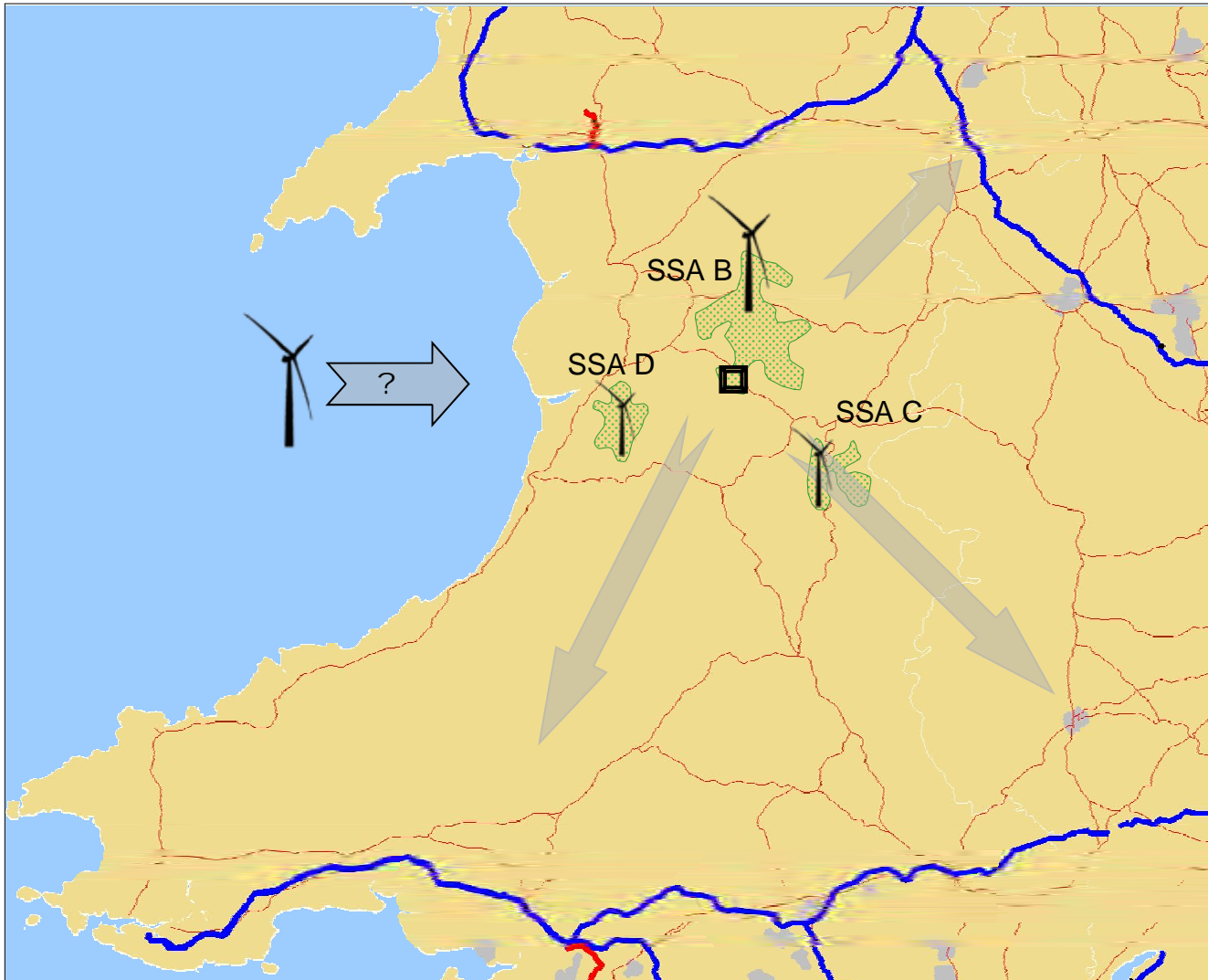
Generation Projects that have applied to connect to National Grid

Carnedd Wen Wind Farm - Npower Renewables

Llanbrynmair South Wind Farm – Renewable Energy Systems

Mid-Wales Embedded - SP Manweb

Mid Wales



Connecting renewable energy in Mid Wales

There is significant network infrastructure investment needed to unlock the wind resource in mid Wales.

The existing mid Wales distribution network that is run by SP Manweb is sufficient to supply local customers but not to accept new generation capacity.

As such National Grid, SP Manweb and the wind farm developers along with the support of Ofgem and the Welsh Assembly Government are working cooperatively to understand better the connections and associated grid infrastructure that will be needed.

National Grid will be looking to invest in a new overhead line and substation in Mid Wales and we have just gathered our findings from an extensive scoping study addressing the high level environmental issues applying to a connection in Mid Wales.

There is a Transmission Access Review currently underway. Initiated by Ofgem and DECC to help improve the utilisation of existing transmission assets. This is important but only part of the solution - in the case of Mid Wales we will need to build and invest in new infrastructure to link it to our existing infrastructure.

Consents timeline

Overhead lines

- ◆ Section 37 consents from DECC in accordance with the Electricity Act.
- ◆ Local planning authorities (E&W) key consultees in the process.

Substations

- ◆ Planning permission as part of submission to IPC (or from Powys under normal T&CP procedures)

Target Dates

Aug.'08 – Aug.'09	Assess appropriate connection point to the transmission system
Jan 2009	Engage with National and Regional stakeholders
Aug.'09 – Apr.'11	Public Consultation and E.I.A
Mid 2011	Electricity Act (S.37) Application
Early 2012	Application Determination
May 12 – Oct. 2015	Construction
October 2015	Completion

South Wales

Generation Projects that have applied to connect to National Grid

Port Talbot Wood Chip Power Station – Prenergy Power Limited 350 MW by 2011

RWE Pembroke 2GW development to connect by 2009/10

Rhigos – Nuon UK Limited 299 MW by 2011

Uskmouth – Severn Power 850 MW

Severn Tidal projects

South Wales



Severn Tidal Power

The tidal power scheme would bridge the Severn estuary between South Wales and the South West and would likely require connections into both parts of the system.

Further infrastructure would also be required out of the South West and South Wales to accommodate the possible substantial flows.

Assumption that the barrage would allow connections to Aberthaw on the Welsh side and Hinkley Point on the English side.

We have seconded a person into DECC to work on the feasibility study