Electricity North West

- One of the 14 DNO Licence holders in Great Britain
- Located in North West England
- Owned by North West Electricity Networks – a consortium of JP Morgan Infrastructure Investment Fund and Colonial First State
- Takes supply from the National Grid and delivers it to 2.3 million customers
- It typically delivers 25,800GWh/year of electricity with a typical peak demand of 4,727MW
Structure Of UK ESI

- Supplier Hub principle
- DNO contact with Suppliers is limited
- DNO contact with end users is limited
- Suppliers contract with Generators for the long term provision of electricity
- National Grid contract with Generators for short term delivery of electricity, reserve & ancillary services
- Suppliers appoint meter operators
- Suppliers contract with end users for their supply of electricity
- Suppliers provide pricing incentives to avoid demand in peak periods
- National Grid contract for emergency DSM
What does DSM mean to DNOs Now?

• DSM considered to be a method of deferring network reinforcement
• DSM has to be considered within the confines of the Regulatory environment
• DSM payments are an opex cost. There needs to be equality treatment of opex and capex expenditure
• Infrastructure not in place to facilitate DSM with domestic customers
• Industrial and commercial customers targeted for DSM
• New contractual arrangements need to be established
• Technical arrangements for delivery to be established
Worked Example

Cost to reinforce = £500k

To defer reinforcement DSM will have to reduce maximum demand by 1MVA

If DNO reinforced then annual return;

- Depreciation (20yr) = £25k
- Return (6.9%) = £30k
- O+M (1.4%) = £7k
- TOTAL = £62k

ie DSM is worth £62/kVA/year

A customer that can contribute 400kVA of DSM would be paid £24.8k/year
Customer Engagement

- Identify Customers with potential to contribute to DSM based on ASC
- Interrogate daily demand profile to understand the magnitude of their contribution
Customer Engagement

- Initial engagement difficult
- Concepts and rewards for participation difficult for even sophisticated energy managers to understand
- Initial customer expectations of payment level far in excess of the likely value to ENW
- Customers have different requirements – a “one-size fits all” commercial offering for DSM is not appropriate
- Raised customer concerns with regard to their supply security
- Some customers saw beyond the simple fiscal business case and recognised the public relations opportunity to be seen as a good corporate citizen
- Some customers saw the opportunity to make use of their standby generation
Commercial Products

Demand Reduction
• Customers reduce demand in advance of peak periods
• Annual retainer paid – following peak period and successful delivery

Fault Response
• Customers reduce demand immediately following fault occurrence
• Annual retainer paid – following peak period and successful delivery if required
• Additional payment if called upon to take action
Options for the Future

• Smart Meters and Smart Grids provide the opportunity to extend DSM techniques to domestic customers
• DSM could form part of a package of services that could be offered as an ancillary service to TSO ie distribution network becomes a Virtual Power Plant (VPP)
• Changing requirements of the distribution network may require greater DSM ie charging of Electric Vehicles
Questions