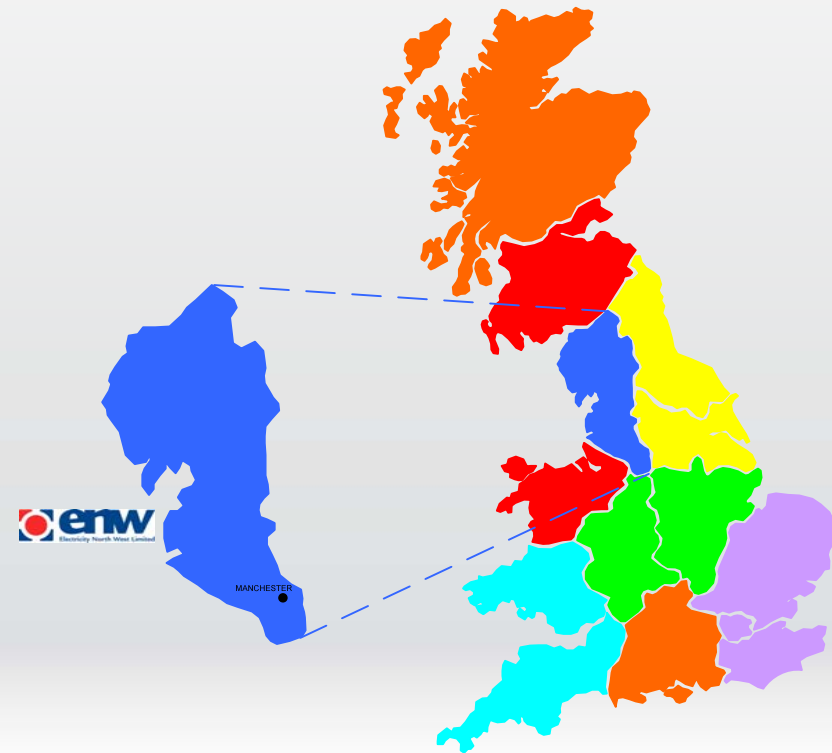


Ian Povey

Infrastructure & Service Development Manager

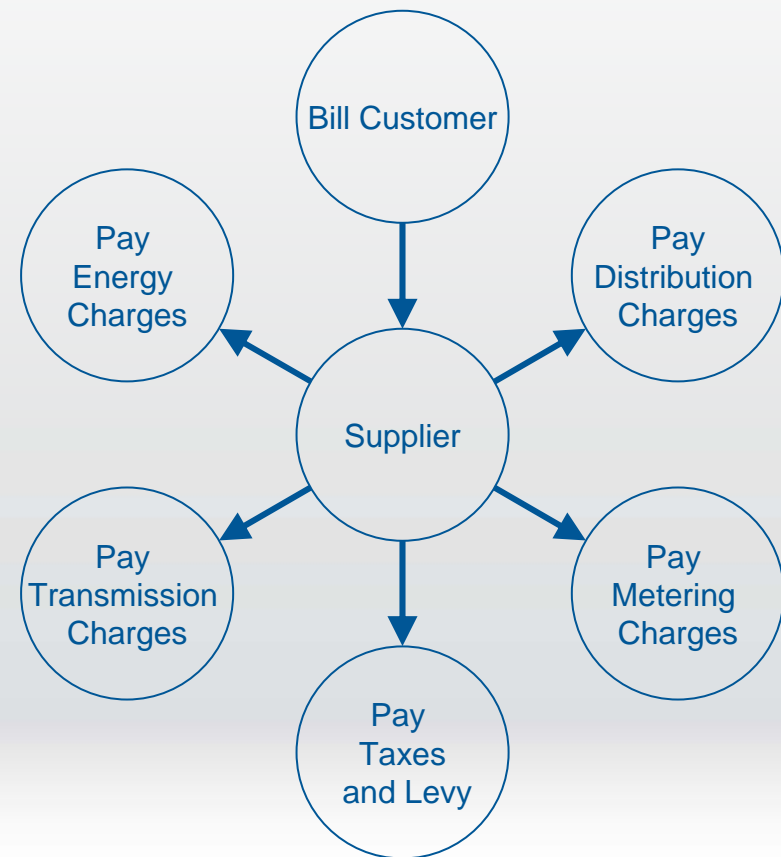
# Electricity North West

- 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

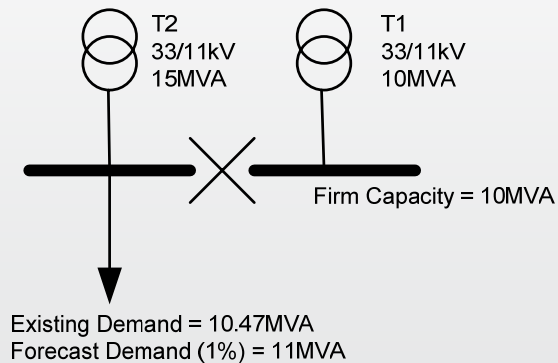
- Supplier Hub principle
- DNO contact with Suppliers is limited
- DNO contact with end users is limited
- Suppliers contract with Generators for the long term provision of electricity
- National Grid contract with Generators for short term delivery of electricity, reserve & ancillary services
- Suppliers 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

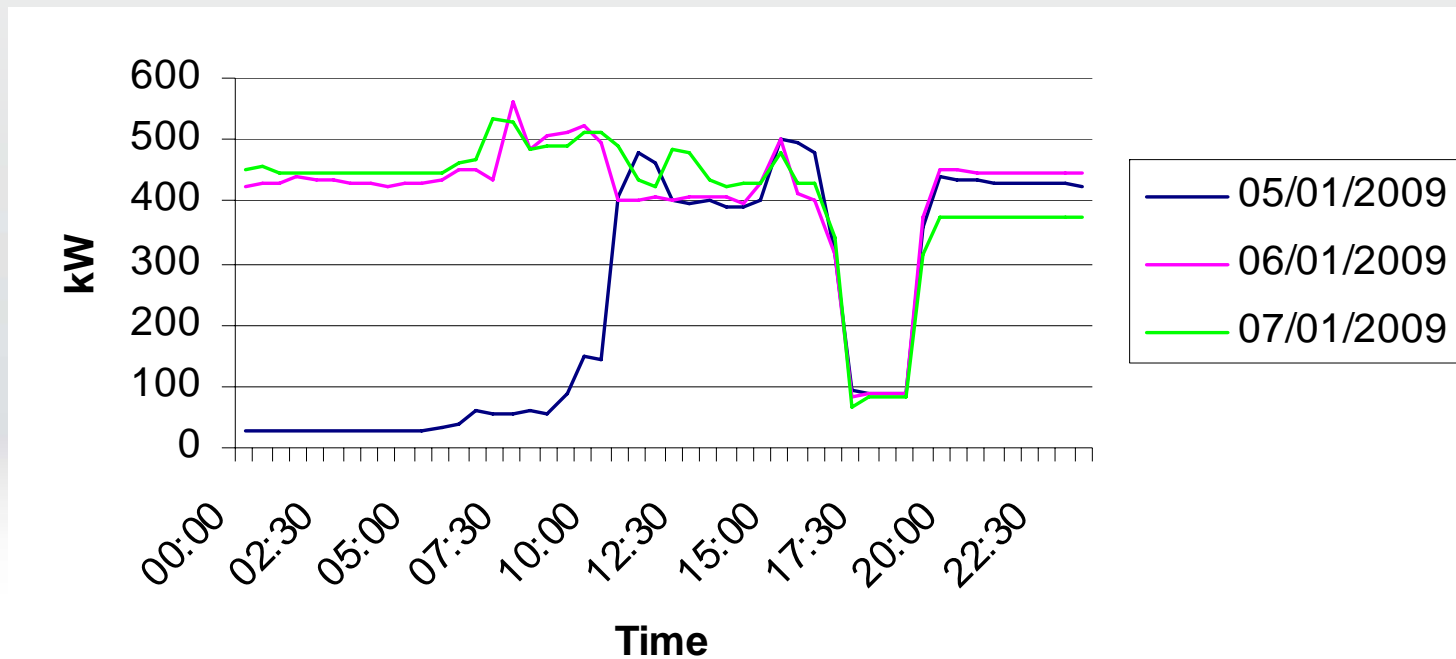
TOTAL = £62k

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

