electricity north west

Bringing energy to your door

Northern Energy Overview
The Challenges and Opportunities

DataCentres North 14 February 2017

Tony McEntee

Head of Commercial Innovation

Stay connected...

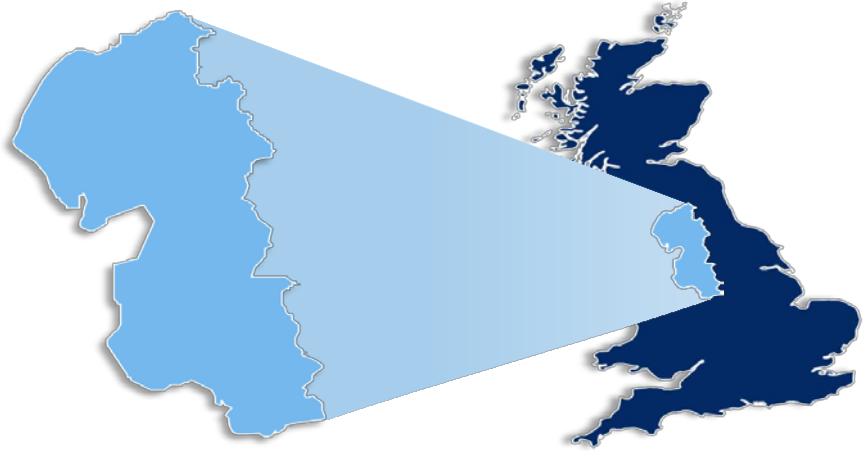
www.enwl.co.uk

Introducing Electricity North West

4.9 million

2.4 million

25 terawatt hours



£12 billion of network assets

56 000 km of network ● 96 bulk supply substations

363 primary substations ● 33 000 transformers

Why energy industry needs to change

Strategic Context – keep worrying about the trilemma

- 5th carbon budget commits UK to 57% reduction from 2027 to 2032
  - Huge progress in decarbonising power
  - Limited progress in decarbonising homes

- Affordability of Energy is a key Social and Political topic

- Security of Supply concerns increase as our lives become ever more “Electrically Dependent”

Change Drivers for DNOs

Penetration of DG and storage ahead of forecast

Set to increase as innovation lowers cost to connect and panel/ turbine prices fall

ENW >1GW/month

Flexible LCTs – electric cars and heat pumps will increase demand and flexibility

Tesla hot spot

20 x 120kW chargers equivalent to 4 super stores

New relationships & markets forming

Roll out of commercial based capacity solutions such as C_2C, ANM

Distribution System Operators

CLASS crossing market boundaries

Stakeholders challenge DNOs to play larger role in delivering environmental and social benefits

RIIO Outputs point to key questions

- Under RIIO-ED1 DNOs continue to deliver strong performance in Safety and Reliability
- Is there more to do to satisfy customers wishing to connect their own generation and as their use of the network changes?
- Could DNOs have a bigger role to play in delivering Social and Environmental challenges?

Change Enabler: P2 on a page

Objectives	Include losses in intervention standard	Incorporate new technology eg battery storage	Engage stakeholders	Review CBA for security (N-1 > N-0.25)
Status at Sept 2016	Economic and technical analysis shows that capacity based resilience in current standard is **inefficient** **Resilience = capacity, automation, operational standards, operational response and HILP** Stakeholder consultation completed and shows they do not support the economically rational outcome ie reduce capacity resilience Next stage will stress the benefits delivered by inclusion of automation, HILP, outages and losses. Phase 2 – standard drafting pending			
Risks and opportunities	P2/6 unaffordable Connection costs and NLRE unit costs would increase LR would decline in volume but increase in unit cost Additional investment required for HILP, losses and automation Importance of resilience			

Non-Traditional Business Models

Ofgem identified the following Non-Traditional Business Models

- Local Services
  - Community
  - Municipal
  - Housing Association
- Bundled Services
  - Energy Services Companies
  - Multi-service providers
  - Market Services
- Customer Participation
  - Peer-to-Peer
  - Demand side flexibility
  - Prosumers
  - Next generation intermediaries

New Market Mechanisms Challenge

- Connections and Customer Service Outputs require additional capacity to be provided affordably
- Technical Innovation enables networks to be operated in new ways with dynamic control
- Commercial Innovation enables new services to be provided and new markets could emerge
- What is the role of a Distribution System Operator

Potential DSO Activities

- Forecasting and Capacity (sufficiency) planning
- Point of Connect determination
- Structure and appointment of capacity charges
- Commissioning of physical capacity construction
- Capacity Market Operation

Efficient, whole life network capacity provision

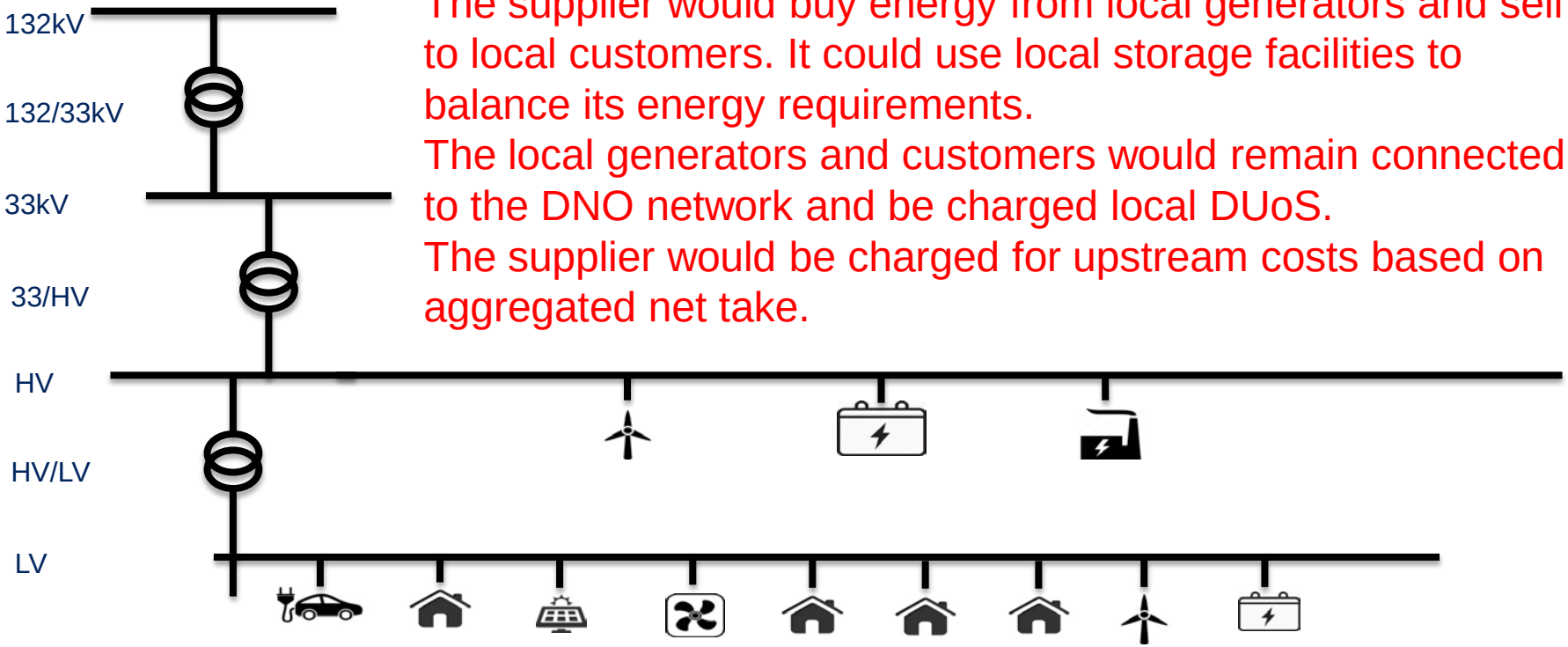
- DNO Capacity: Demand Side Response
- DNO Capacity: Generation Side Response
- DNO Fault Level Contracts
- Support to TSO for Frequency Response
- Support to TSO for Voltage Control
- Support to TSO for Reactive Power

New Market Mechanisms

Principles for Local Energy Schemes

- Customers (Local Demand Customers and Local Generation) to remain connected to the DNO Network
- LES to apply to customer connected to same local network
- Customers to retain their existing MPANs
- Customers to appoint the same supplier
- Customers may opt out and revert to conventional supply
- DUoS charging for the local network to be billed as normal (but with a discounted tariff)
- An ‘upstream’ DUoS tariff to be levied on the supplier to reflect any continued upstream usage
- DNO to be able to contract with the supplier for Demand Side Response

How a Local Energy Scheme could work



The supplier would buy energy from local generators and sell to local customers. It could use local storage facilities to balance its energy requirements.

The local generators and customers would remain connected to the DNO network and be charged local DUoS.

The supplier would be charged for upstream costs based on aggregated net take.