

electricity
north west

Bringing energy to your door



DSO – Our vision

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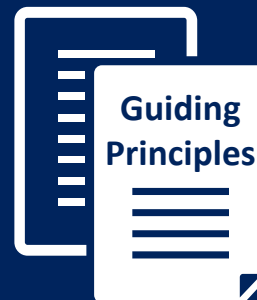
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Drivers for change



Approach to change



DSO functions



ENWL capability and
roadmap

Change drivers towards DSO



Penetration of DG and storage ahead of forecast

Set to increase as Innovation lowers the costs to connect and panel/turbine prices continue to fall

ENW >1GW/month



Flexible LCTs - electric cars & heat pumps will increase demand

Tesla hot spot
20 x 120kW chargers equivalent to 4 super stores



Roll out of commercial solutions such as C₂C

CLASS crossing market boundaries
DSO based balancing benefits could exceed £10B



Network balancing using commercial instruments complex

DNO business model RAV based and commercial solutions potentially compromised

- EU & UK Codes establish DSO function
- DSO offers considerable benefits to customers
- We need your input to guide our vision



We plan for EV growth and feed all forecasts (building, EVs, heat etc) into our investment plans



Where we need to increase capacity we are funded to do so

If capacity is driven by a connection application we are obligated to charge some or all of the costs

Reinforcement costs are bourn by customers in the region

Modest (£50-100m) reinforcement prior to 2023 more (£150-200m) to 2030 if high EV uptake

Diversity of location, flexible connection and timing of EV charging is key to keep costs down

Two key success factors; smart charging strategy and co-ordinated spatial planning

Smart charging has additional significant commercial opportunities

Guiding principles



In an uncertain world we need a direction of travel that is supported by our stakeholders

Forecasting

No regrets

We don't need to know everything
Agree what is definitely needed and make that happen

Customer pay for networks and should be central to solving any problems

Open access

Responsive & flexible

Stay close to our regional stakeholder's needs, listen and act

What do we think a DSO should do?



System coordination

whole system planning, operation and optimisation to minimise losses & manage constraints

Network Operation

Maintain a safe and secure system
Manage potential conflicts to support whole system optimisation
Respond to customer needs

Investment Planning

Identify capacity requirements and secure the most efficient means of capacity provision to customers

Network Access

Provide access and connection options to meet customer requirements and system needs efficiently

System defence and restoration

Enhance whole system security through provision of local and regional flexible services

Service/market facilitation

Develop local network service markets to enable DER access to wider services for whole system efficiency

Service Provision

Access services on behalf of others, or provide services to others to maximise whole system efficiency, and protects competition

Charging

Sets DUoS prices
Determines PoC



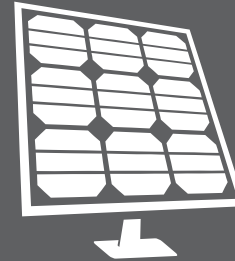
“Build relationships and enhance service to customers”



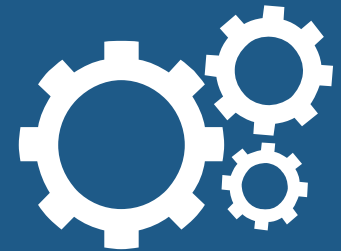
Recruited a
community and
local energy
manager
Held stakeholder
events



Electricity North
West Community
and Local Energy
Strategy



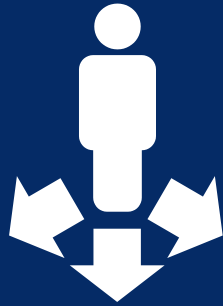
Provide technical
expertise to the
delivery of
community led low
carbon projects



Support the
development of
new innovation
projects in our
region



The energy markets have significant revenue potential for flexible customers



But these markets can be complex and we need to simplify entry requirements – one of the roles of DSO is to help customers into market



Ultimately this will reduce bills for customers and reduce CO₂ emissions



We've outlined some of the changes and functions of the DSO – now we want your views ...

What they said they want from us



Lobby Ofgem for fairness towards community energy
Search for practical models for supporting community/local energy
Look at how generation / supply can link to and support other energy policy areas eg fuel poverty and energy efficiency



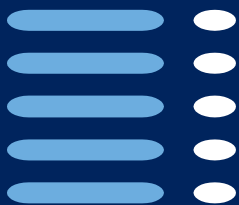
Dedicated personnel
Encourage engagement / awareness of energy
More links to education
Empathy



Fair pricing regime for rural and urban charging and network access
Fairness “rural proofing” reflecting small and dispersed populations



The potential of energy efficiency



Engaging with customers can influence them to change their behaviour

Low intrusive energy efficiency measures

Whole system analysis which allows targeted approach to energy efficiency

Future CBA models to establish costs and benefits (including wider societal benefits) of energy efficiency v other network solutions

Benefits:

- Deferred reinforcement
- Reduced carbon
- Reduced network and energy costs for customers

DSO transition map



- Flexible connections
- Flexibility services
- Targeted ANM rollout

Current

2017 - 2018

- Wider ANM rollout
- TSO-DSO interface
- Regional needs/heat maps

- Full DSO split?
- DSO commercial operations are core business capability
- Active system management

2024 - 2030

2019 - 2023

- Investment in DSO
- Full ANM & DER services
- Network visibility/online PoC



“
Using flexible network customers autonomously and in real-time to increase the utilisation of network assets without breaching operational limits, thereby reducing the need for reinforcement, speeding up connections and reducing costs
”

Developing strategy

Management of network constraints

Control and manage network equipment to minimise requirement for reinforcement

Monitoring and responding to triggers on the network in real time

Minimal manual involvement

Embedded with central network control



What we have

Improved data
quality &
connectivity
Control room
graphics

Trouble
management system
integrated to
customer

System analysis
tools (load flow and
fault level)
Improved network
automation

C2C, CLASS,
Respond enabled
Smart meter
integration

Future functionality

Distributed Energy
Resource
Management (DER)

Full ANM
Auto DER
TO interface
balancing
Industry data flows
Look ahead
capability

Capacity mapping
Forecasting
Automated PoC
Stack management
Contract
management & CI

Sentinel integration
Control room
automation