

**electricity
north west**

Bringing energy to your door



Lancashire County Council Scrutiny Committee

Tuesday 5th March 2019

Stay connected...



www.enwl.co.uk



Introduction to Electricity North West



The role we play in supporting Lancashire

- Investment
- Customer service



Supporting strategic projects and low carbon technologies



Discussion and working together

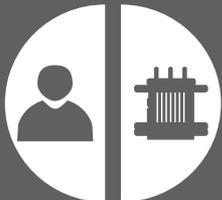
Introduction to Electricity North West

Helen Norris



A bit about us - our story 1948 - 2010



					
1948	1990	1995	2000	2007	2010
Nationalisation	Privatisation	Takeover	Sale	Takeover	Acquisition
		North West Water takeover of Norweb	Norweb supply business sold	United Utilities Electricity sold to private investors	United Utilities Electricity Services acquired
North West Electricity Board	Norweb	United Utilities	United Utilities	United Utilities Electricity Services	Electricity North West

Who we serve



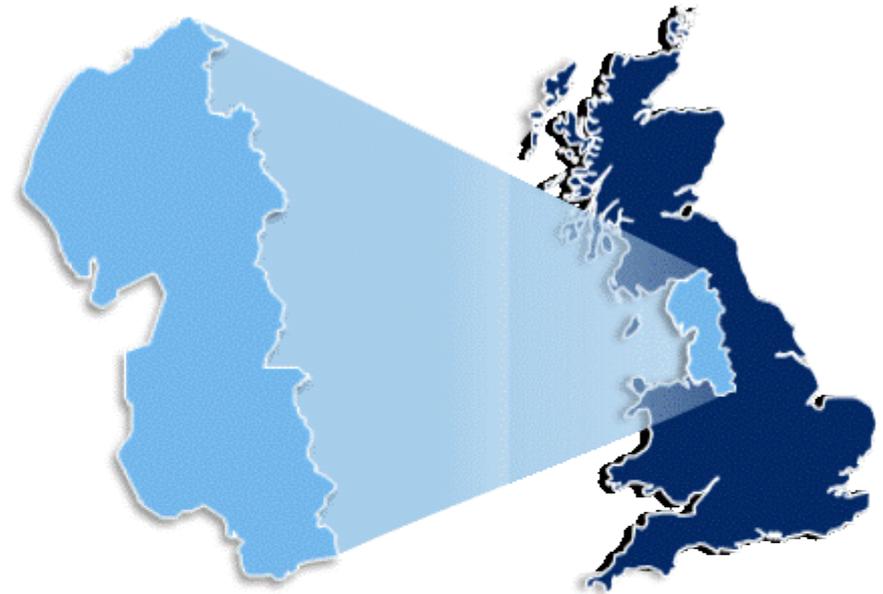
4.9 million



2.4 million



25 terawatt
hours



£12 billion of network assets

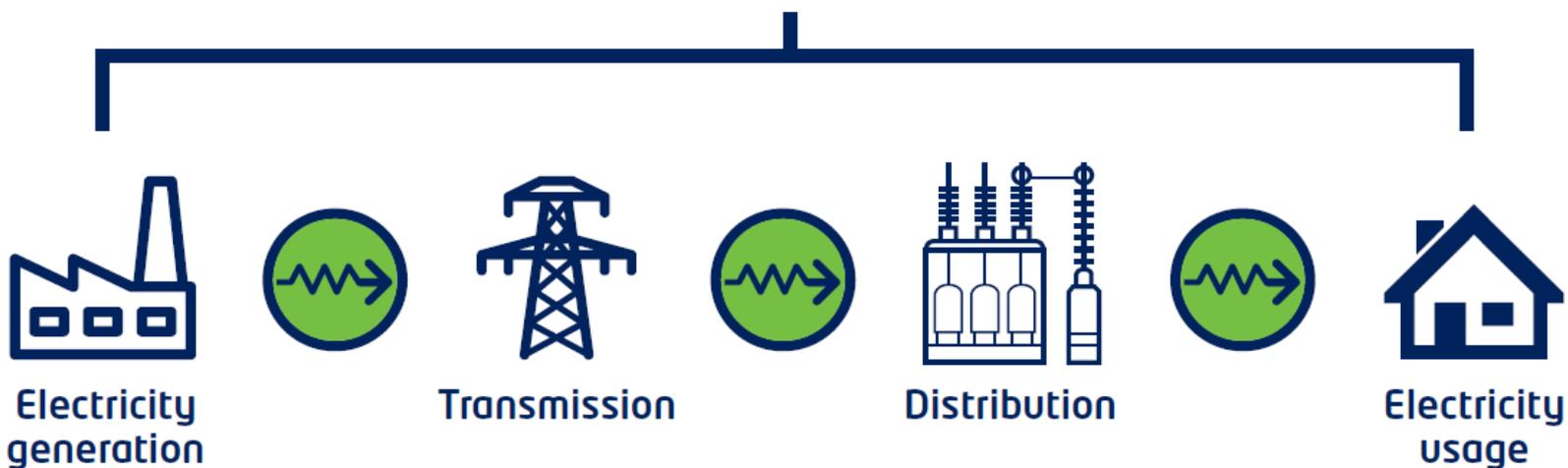
56 000 km of network ● 96 bulk supply substations
363 primary substations ● 33 000 transformers

Our role is changing ...



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**We kept the
lights on for our
customers.**

Our role is changing ...



electricity north west

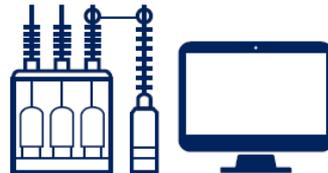
Bringing energy to your door



Electricity generation



Transmission



Distribution & network management



Electricity usage



Consumer renewables

Our customers need cleaner, greener energy to enable a low carbon future in the North West.



Distributed generation



Electricity storage



Demand side response



EVs & heat pumps

How we see our role in this changing environment



OUR PURPOSE

Together we have the energy to transform our communities

OUR PRINCIPLES

We are **SWITCHED-ON**

MIND SET

We are **SWITCHED ON** to our colleagues, customers and the world around us

We are **ADAPTABLE**

SKILL SET

We are **ADAPTABLE**, always looking for better ways to get things done

We take **PRIDE**

HEART SET

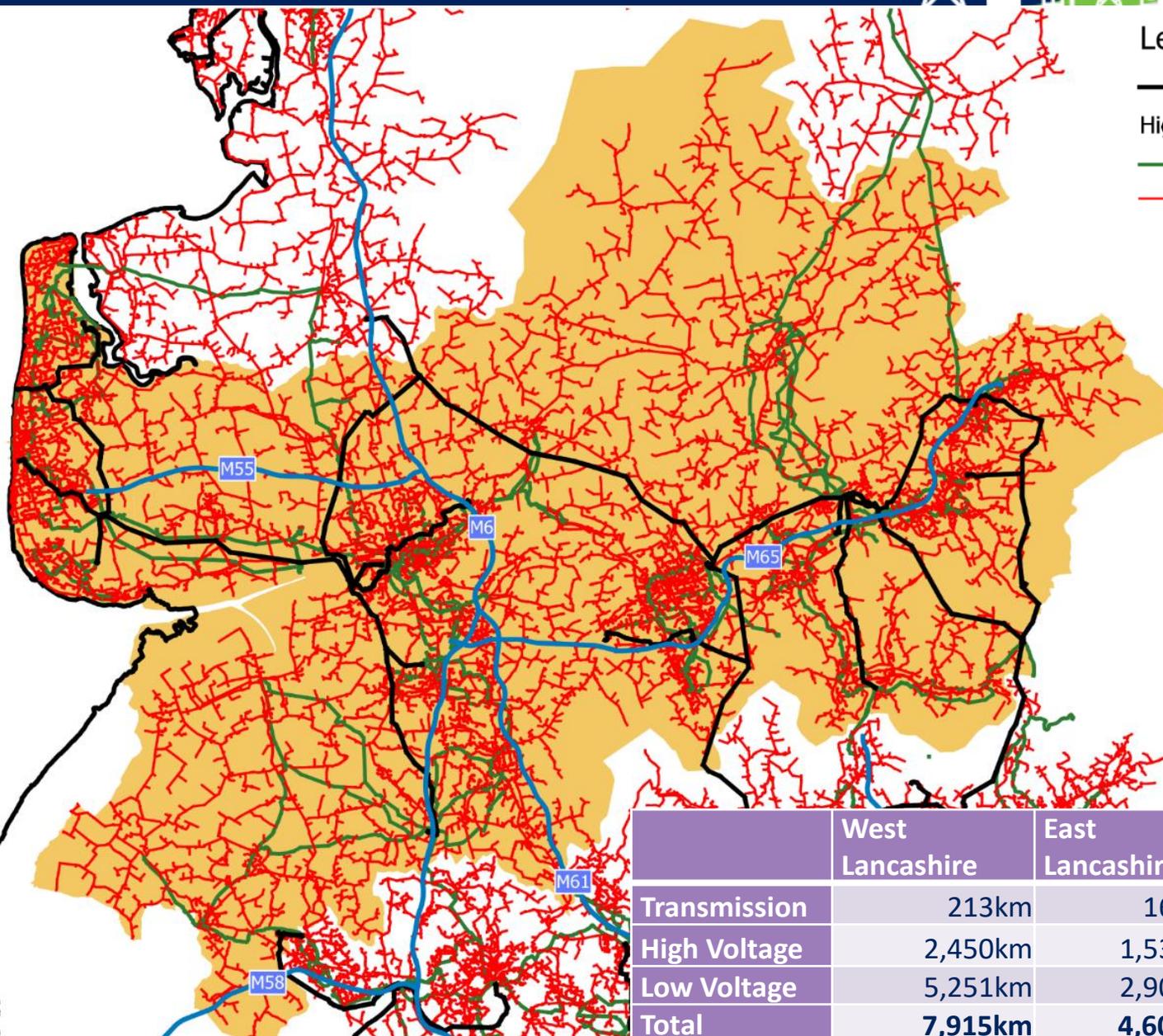
We take **PRIDE** in all we do because it matters to people's lives

Investing in Lancashire

Jonathan Booth



This is what the Lancashire network looks like...



- Legend**
- Transmission (132kV) Cables
 - High Voltage Cables
 - 33kV/25kV Cables
 - 11kV/6.6kV Cables

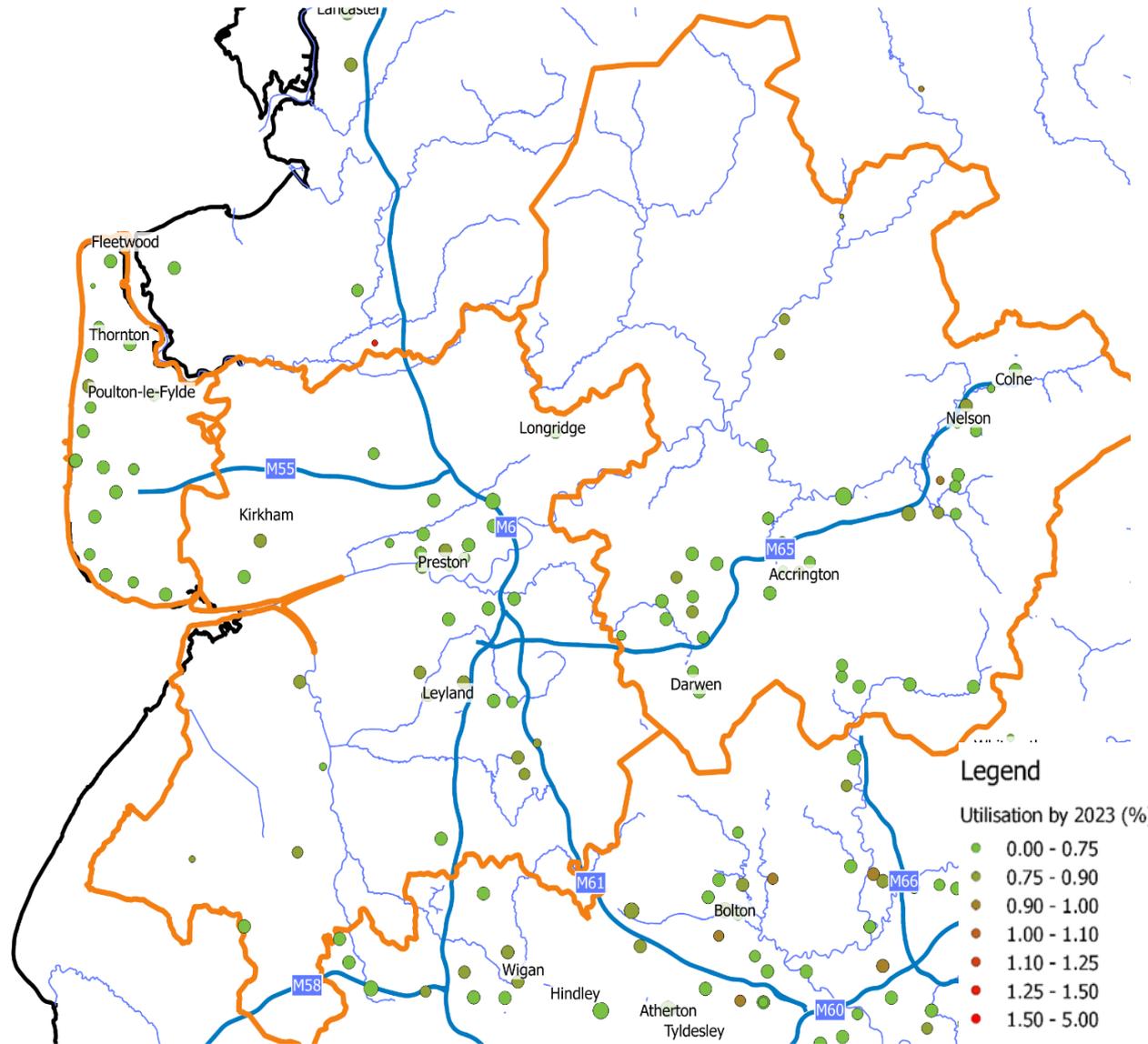
The orange area highlights our operational boundaries for Lancashire

	West Lancashire	East Lancashire	Lancashire Operational Area
Transmission	213km	169km	383km
High Voltage	2,450km	1,535km	3,985km
Low Voltage	5,251km	2,903km	8,154km
Total	7,915km	4,606km	12,522km

What makes up the network?



- Cables (Underground and Overground)
- Substations
 - Grid Supply Points
 - Bulk Supply Points
 - Primary Sub-Stations
 - Secondary Sub-Stations
- Towers
- Telecommunications Network
- Control Room
- Other Infrastructure

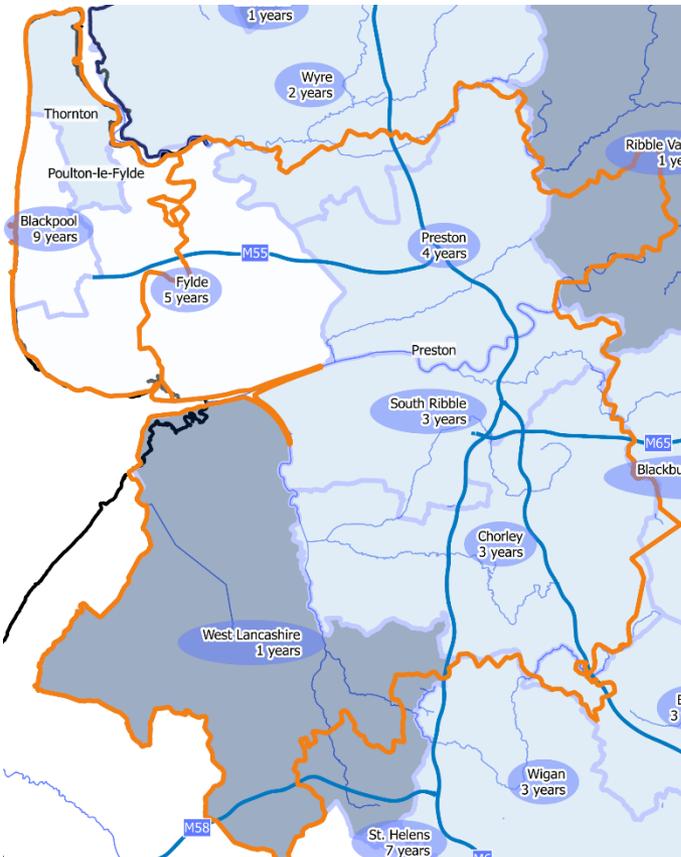


Network Performance – Reliability (Average Time Between Faults)



- One measure of reliability is the average duration between power cuts which indicates the frequency of faults in each area.

West Lancashire



In Lancashire as a whole, the average time you can expect to go between experiencing a power cut is 3.3 years.

East Lancashire

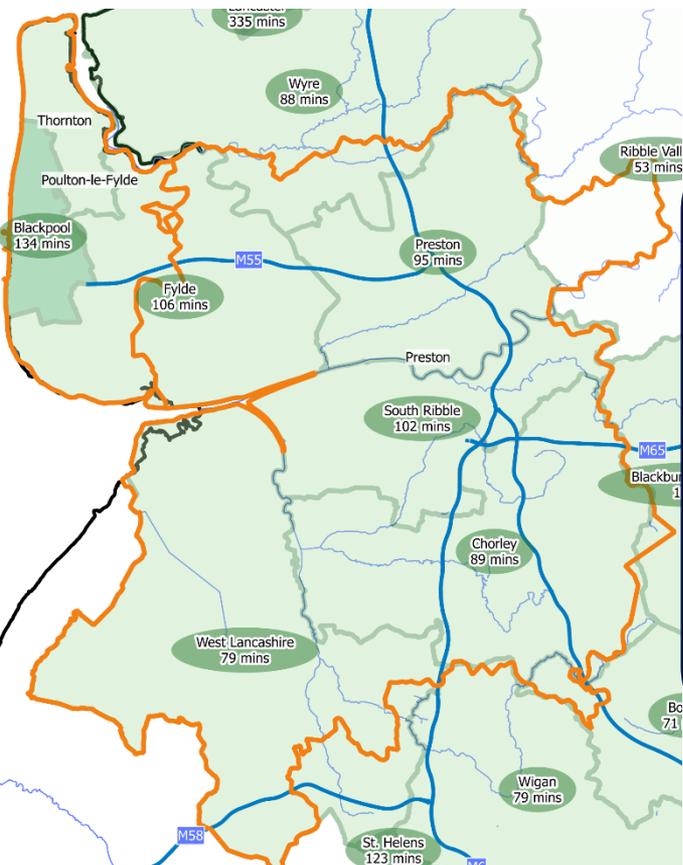


Local performance – Reliability (Average Supply Interruption Duration)



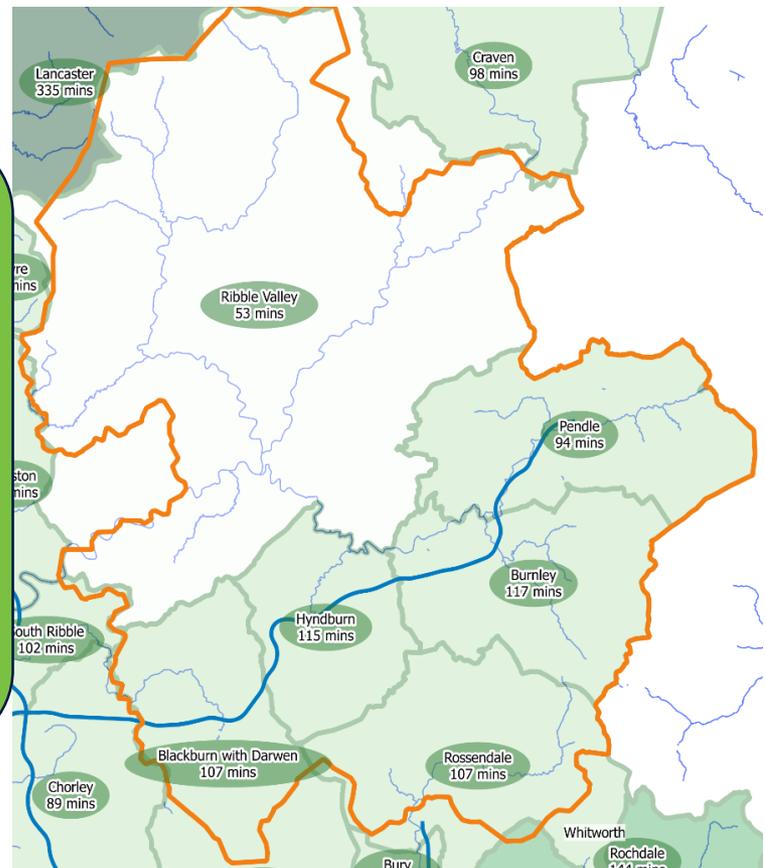
- We also measure reliability by the length of time you can expect to be off supply when a fault does occur – also known as Average Supply Interruption Duration (ASID)

West Lancashire



In Lancashire as a whole, the average supply interruption duration (ASID) is 101 minutes (1hr 41 mins)

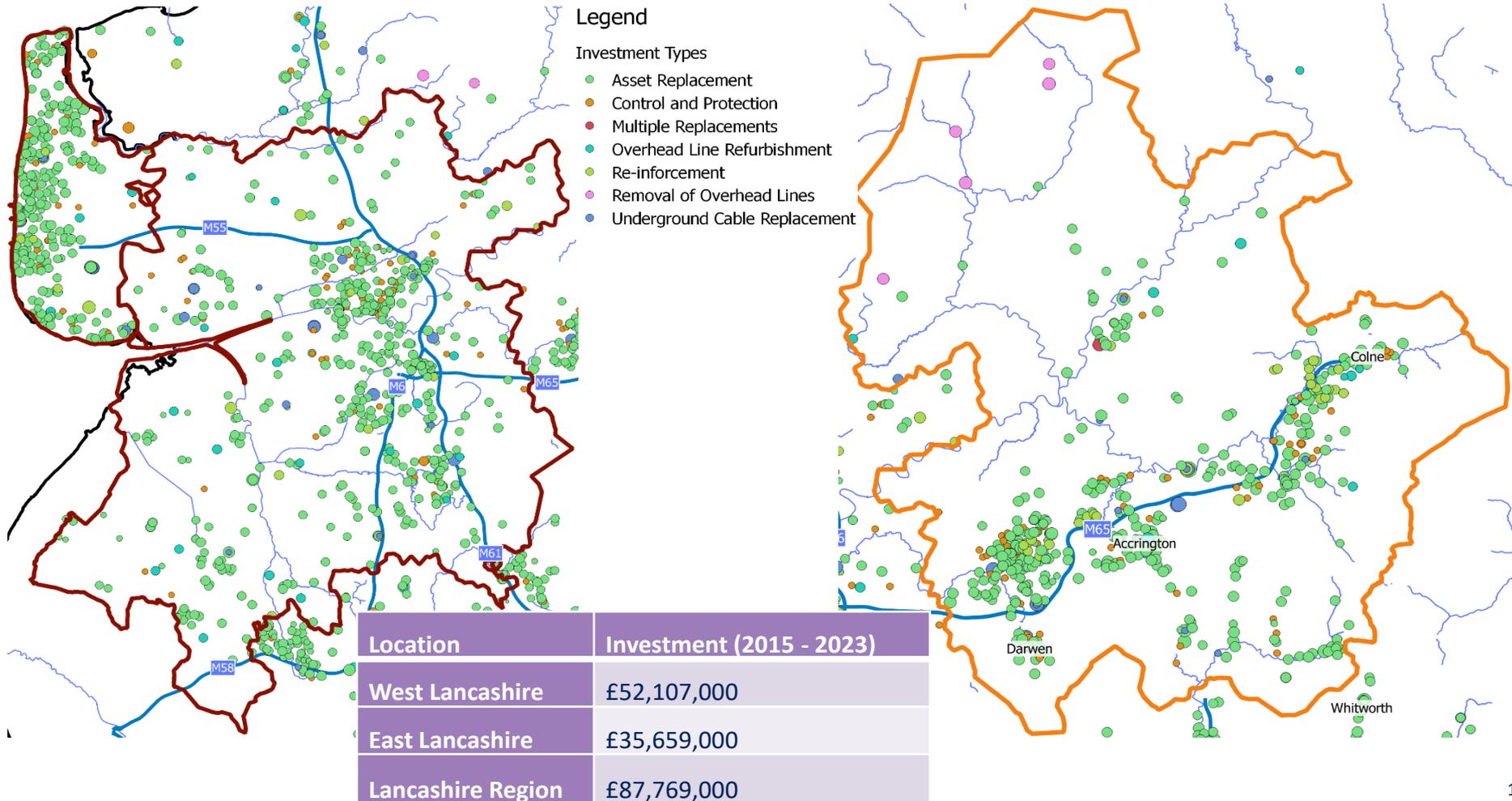
East Lancashire



Local performance - Investment



- Most of our investment is driven by replacing or upgrading existing equipment. Most of this is located near the customers it serves. Changes to the amount of electricity used is also a key driver.



Notable Projects in Lancashire



Scheme	Reason	Cost	Timescale
Padiham 132kV switchgear replacement	The Padiham switchgear was commissioned in 1960 and is approaching the end of its life. The Grid Supply Point supports supplies to approximately 140,082 customers hence is critical for ensuring reliable supplies. This project is being undertaken in conjunction with National Grid, who also have equipment on site.	£9,330,969	Project currently in design. Planned for completion March 2023.
Protection Refurbishment Programme	Due to the aging of protective and associated control devices, many are either performing poorly, are obsolete or at the end of their useful working life and hence need refurbishing.	£2,473,634	Project planned for completion by end of March 2023.
Avenham Primary Substation Replacement works	The Avenham primary substation supports supplies to over 3,400 customers in the Preston City Centre area. It is equipped with two switchboards, manufactured in 1963 which require intervention and is also at risk for surface water flooding necessitating the replacement of all the plant and installation of flood mitigation measures on site.	£1,709,000	Planned for completion March 2023.
Hanging Bridge Primary Substation Replacement	The Hanging Bridge primary substation switchboard is in poor condition and poses safety problems to operators. Our analysis of the transformer has shown elevated levels of acetylene gas indicating abnormal internal electrical activity that can lead to a fault and in service failure.	£1,414,618	Expected completion by March 2020.
Lytham Grid Transformer Replacement	The transformers at the Lytham site were manufactured in the 1960s and are in need of replacement due to their condition.	£1,248,747	Expected completion by end of March 2022
Burnley Centre Substation Replacement works	Burnley Centre Primary substation supports supplies to 5,130 customers. One of the transformers has shown accelerated degradation of the insulation inside the unit and the switchboard has well documented failures of the mechanisms which pose a safety risk for our staff and increase risk of loss of supplies to our customers.	£1,017,029	Expected completion by end of October 2019
33kV Overhead Lines Refurbishment and Replacement	As part of the inspections on the HL HA HC 33kV circuits it was found that 50 towers were showing corrosion to the steel pylons which require 26 towers replacing and 24 refurbishing. The inspection of the conductor has also shown that that approximately 2.5km of conductor is required to be replaced.	£1,915,065	Expected completion by end of October 2020
Wrightington - Woodfield Road Fluid Filled Cable Replacement	Oil insulated cable has been replaced in these circuits due to their poor performance and potential risk to the environment. Cables of this type are now obsolete and are being replaced with a solid, non-oil insulated cables which are environmentally safer and will provide power to local communities for years to come.	£4,014,445	Completed June 2015

Serving our customers - operations

Jonathan Booth





- Our major depot locations in Lancashire are at Preston and Blackburn
- We directly employ over 600 people in the Lancashire area and many more as contractors
- Operational staff day-to-day functions include:
 - Inspections
 - Maintenance
 - Tree-cutting
 - Replacement works
 - Contractor and council engagements
- Make new connections and accommodate changing load requirements
- Respond to unplanned incidents (e.g. faults)
- Planned interruptions (e.g. maintenance, connections etc)
- Prepare for and respond to major events (e.g. Storms)





PSI Winter working 2018-19 guidance

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Winter banding from 1 December to 28 February



The hours of darkness will be avoided



A standard PSI to be no more than 6.5hrs long between 9am - 3.30pm



No PSIs permitted on ANY Friday in December



No customer to be impacted by more than one PSI during Winter



No customer shutdowns between 22 December - 2 January

Developed to support our vulnerable customers

Following this guidance will help us to deliver great CSAT performance

**POWER CUT?
CALL 105**

Stay connected...      www.enwl.co.uk 0800 195 41 41

Storm Planning & Local Incident Centres



- We have pre-determined plans to cover different severities of incident:
 - Increasing staffing numbers
 - Operational planning
 - Specific responsibilities for our leaders
 - Co-ordination of our communications channels through social media, local press, internal communications and more
 - Decisions over whether we open local incident centres (LICs).
- The local incident centres for Lancashire are based in Blackburn and Kendal - they serve as a storm response co-ordination hub.



Storms Ali and Bronagh (2018)

Serving our customers - customer service

Helen Norris



Serving our customers



- Our contact centre is located in Warrington and deals with all Electricity North West related queries
- We are a multi channel customer contact centre (CCC) open 24/7.



Total contacts	1020
Inbound contacts	720
Outbound Contacts	300



Total contacts	4800
Inbound contacts	4000
Outbound Contacts	800





- We maintain a Priority Service Register (PSR) for vulnerable customers.
- Vulnerabilities are classified as high, medium and low with tailored responses to meet customer's needs
- Nearly 870,000 customers, 1,400,000 registered vulnerabilities, around 25% of households in the region are on our PSR
- 11% of Households in our area are fuel poor

**Over 200,000
Lancashire customers
registered on PSR.**

**Lancashire Customer
Satisfaction Score:
86.9%**

VULNERABLE CUSTOMERS

EXTRA SUPPORT DURING
#POWERCUTS

REGISTER NOW!



Benefits:

- An introductory welcome pack - containing useful information about what to do in the event of a power cut and tailored items from the welfare packs
- Weather warning and update text messages
- Provide a nominated contact who we can also receive updates
- Access to our welfare options
- Telephone number recognition

Learning from the experts



Understanding what our customers need to create the right solutions and support



Compass in Cumbria is a groundbreaking way of linking the Third Sector, Social Care and Health together providing a connected and holistic service for the residents of Cumbria.





- Tell us Once - Industry leading data-sharing trial with United Utilities
- Rising lateral mains (RLM) - Identify higher risk sites
 - >50 customers, over 20 years old, higher than three storeys
 - 524 Buildings - 11 buildings have more than 200 MPANs, 99 have between 200 and 100 and 384 have between 100 and 50



Rising and laterals and the wires within apartment blocks

Connect the intake substation / LV board to the cut-outs in the apartment



Not clear who owns them but we transport electricity through them to meter

Many over 30 years old

Some managed by the building owner but if ownership is unclear Electricity North West has some accountability



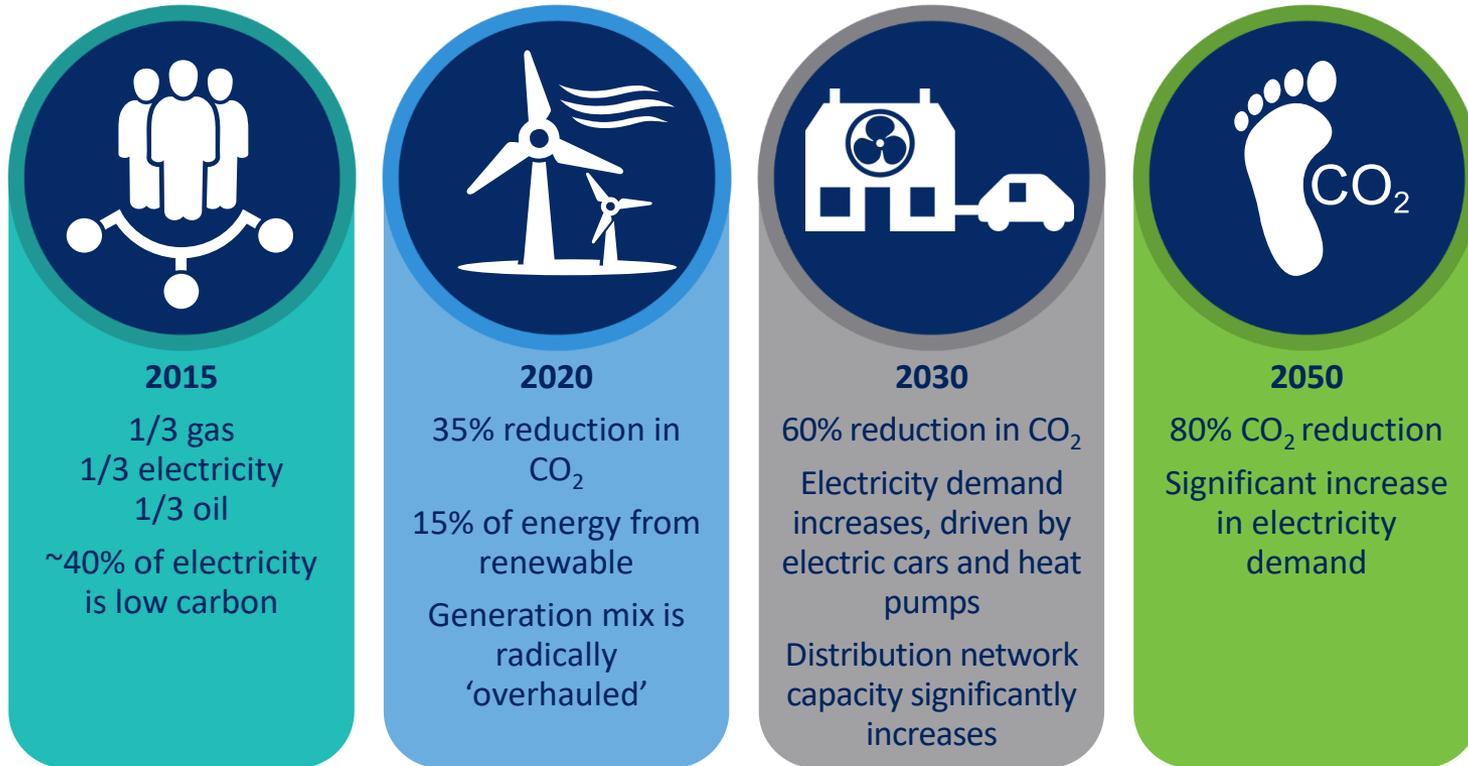
Grenfell was not related to RLM but dramatically shows the consequences of a fire in a large apartment block.

Risk to the residents is evident but also imagine the impact on our business if we failed in our duty of care

Supporting strategic projects and low carbon technologies

Mike Taylor





- Uncertainty in future demand and generation
 - Difficult to predict demand
- More pressure to meet customers' needs at minimum cost
- Historic network cost optimised, expensive and slow to change



“

“

The move to cleaner economic growth is one of the greatest industrial opportunities of our time.

”

”

BEIS Clean Growth strategy

Our role is changing ...



electricity north west

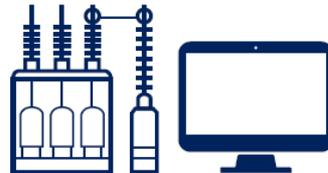
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Transmission



Distribution & network management



Electricity usage



Consumer renewables

Our customers need cleaner, greener energy to enable a low carbon future in the North West.



Distributed generation



Electricity storage



Demand side response



EVs & heat pumps



DECARBONISATION

Electric vehicles

Heat

Distributed generation

Macro-economic drivers with region-wide affect

DSO activity enables decarbonisation

Forecasting

Modelling

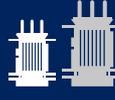
Strategic
Infrastructure

Capacity
Auctions

Capacity
Trading

Innovation to use the network differently and reduce costs



	<p>£10 million project combines proven technology and new commercial contracts to release network capacity</p>	<p>Technical innovation + New commercial contracts</p>   		
 <p>Customer Load Active System Services</p>	<p>£9 million project demonstrates that electricity demand can be managed by controlling voltage without any discernible impacts on customers</p>	 <p>Lower network costs Faster connections</p>	 <p>Lower balancing costs Reduced carbon</p>	 <p>Lower energy costs</p>
	<p>£11.5 million project combines innovative technology with existing assets to make networks and appliances perform more efficiently</p>	 <p>New controllable switching devices stabilise voltage</p>	 <p>Allows us to lower voltage levels</p>	 <p>Networks and appliances work in harmony</p>
	<p>£5.5 million project. The first UK demonstration of an active fault level management solution that avoids traditional network reinforcement</p>	 <p>Faster LCT adoption</p>	 <p>Less disruption</p>	 <p>Lower bills</p>
	<p>A £5.5m project which provides a coordinated approach to managing the temperature of electrical assets in distribution substations</p>	 <p>Improved knowledge of distribution assets</p>	 <p>Avoids early asset replacement</p>	 <p>Releases additional capacity</p>



Last year's Green Summit Pledge :

“We will ensure that Greater Manchester's power network keeps ahead of the region's needs as we all use more electricity to lower our carbon emissions. We will do this by:

- Co-ordinating our network development with spatial planning;*
- Facilitating a capacity market;*
- Innovating in smart grids; and investing in new infrastructure”*

This year's proposed Green Summit key message builds on last year's and aligns to greater Manchester's carbon aspirations.

“We support Greater Manchester's ambition through our Carbon Plan which demonstrates our journey to become near zero carbon by 2038. We are proud to show leadership and help others to save carbon through innovation and investment in energy infrastructure”

Working in partnership to drive strategic change



GMCA			
	Mayors Green Summit	Lower energy costs	EV connections
Manchester Airport			
	Faster LCT adoption	Lower balancing costs Reduced carbon	Lower energy costs
Manchester City Football Club			
	New controllable switching devices stabilise voltage	Allows us to lower voltage levels	Releases additional capacity

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Questions

& Answers

Next steps

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