

**electricity
north west**

Bringing energy to your door



Lancashire County Council Scrutiny Committee

Tuesday 5th March 2019

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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




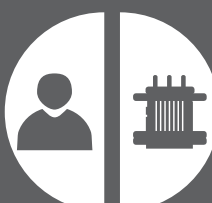

Introduction to Electricity North West

Helen Norris



A bit about us - our story 1948 - 2010



	NORWEB				
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



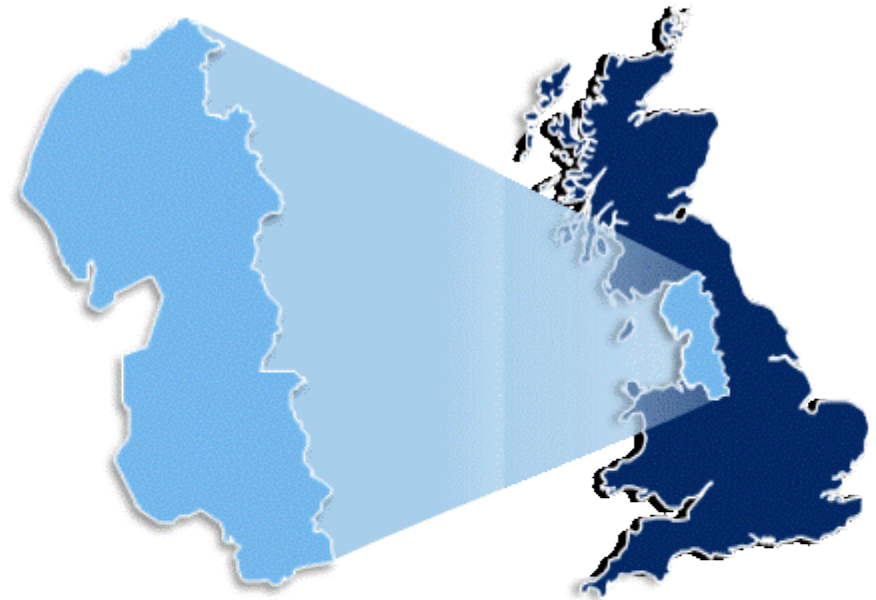
4.9 million



2.4 million



25 terawatt
hours



£12 billion of network assets

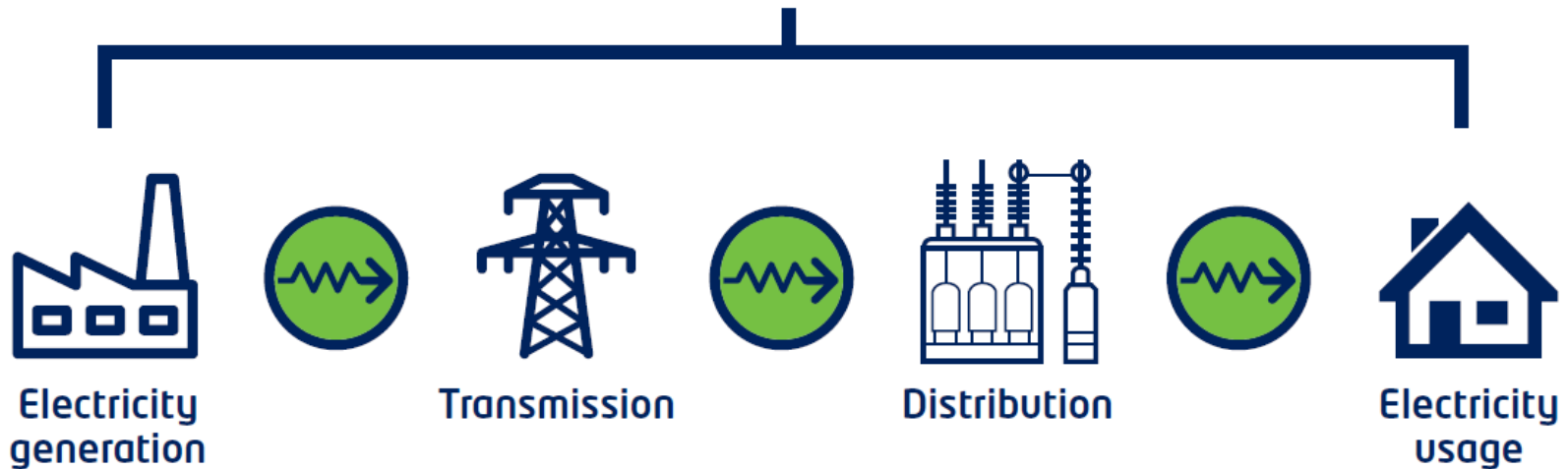
56 000 km of network ● 96 bulk supply substations
363 primary substations ● 33 000 transformers

Our role is changing ...



electricity
north west

Bringing energy to your door



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

Our role is changing ...



electricity north west

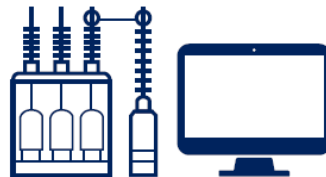
Bringing energy to your door



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



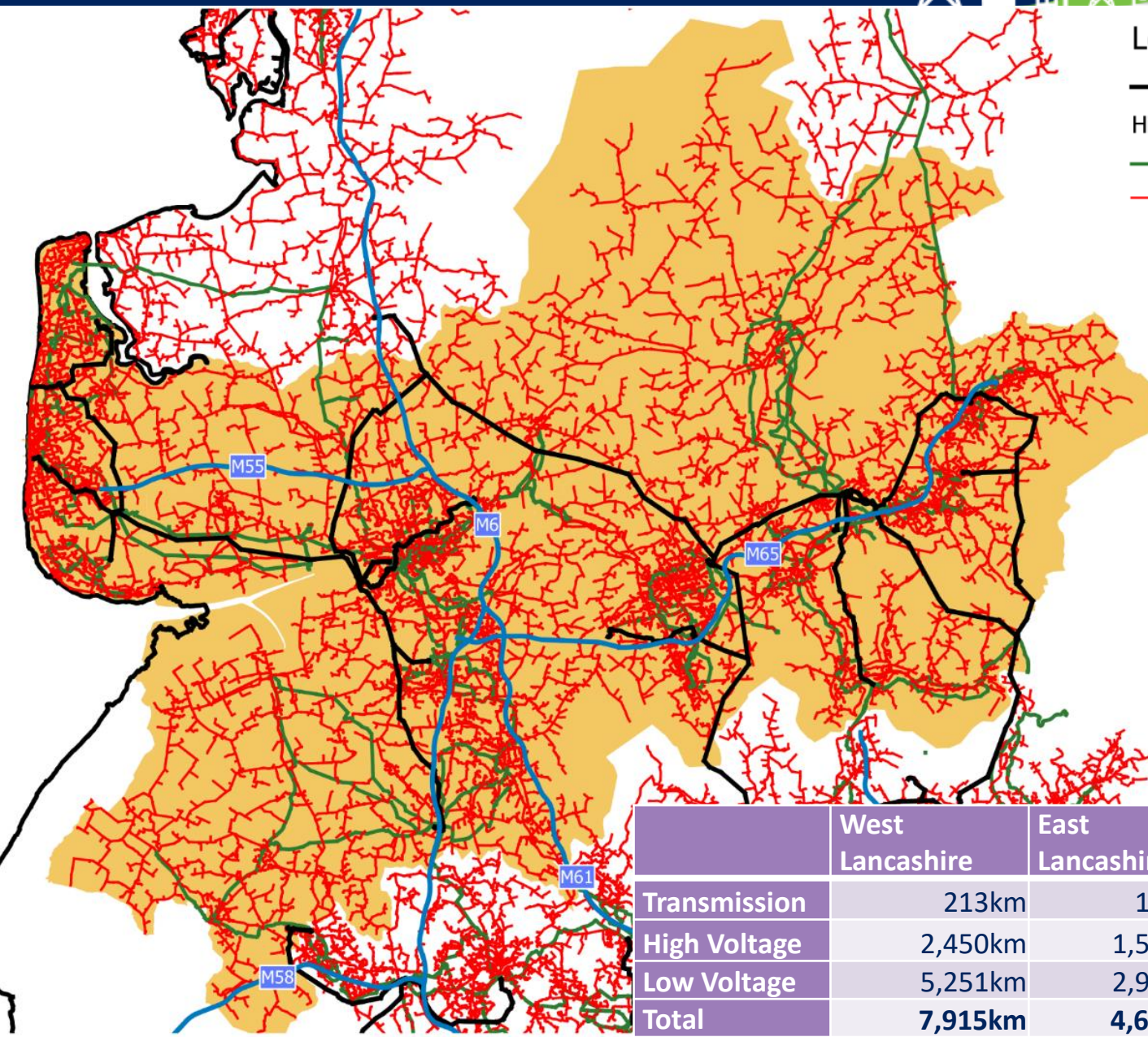
This is what the Lancashire network looks like...



Legend

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

The orange area highlights our operational boundaries for Lancashire

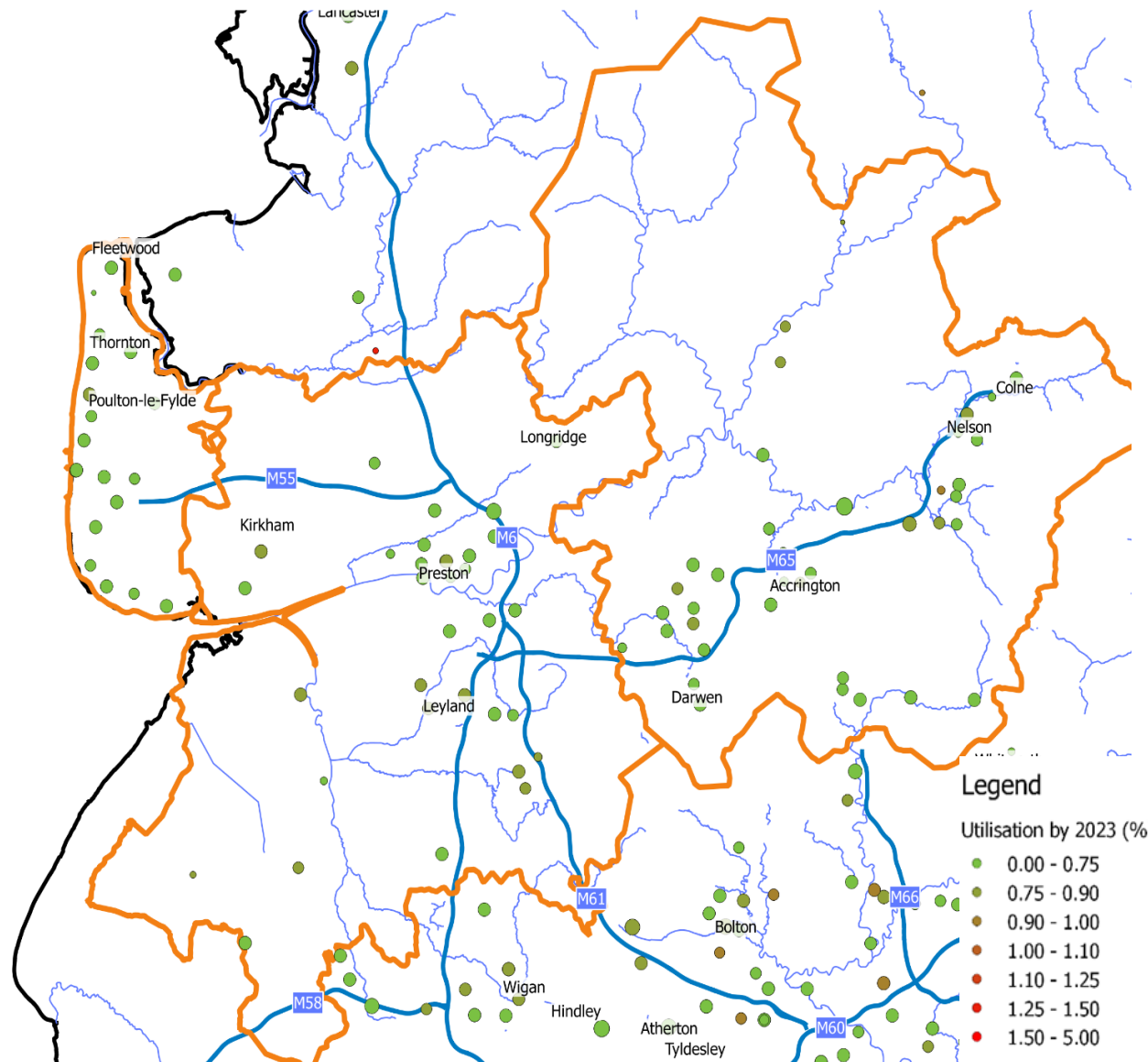


	West Lancashire	East Lancashire	Lancashire Operational Area
Transmission	213km	169km	383km
High Voltage	2,450km	1,535km	3,985km
Low Voltage	5,251km	2,903km	8,154km
Total	7,915km	4,606km	12,522km

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

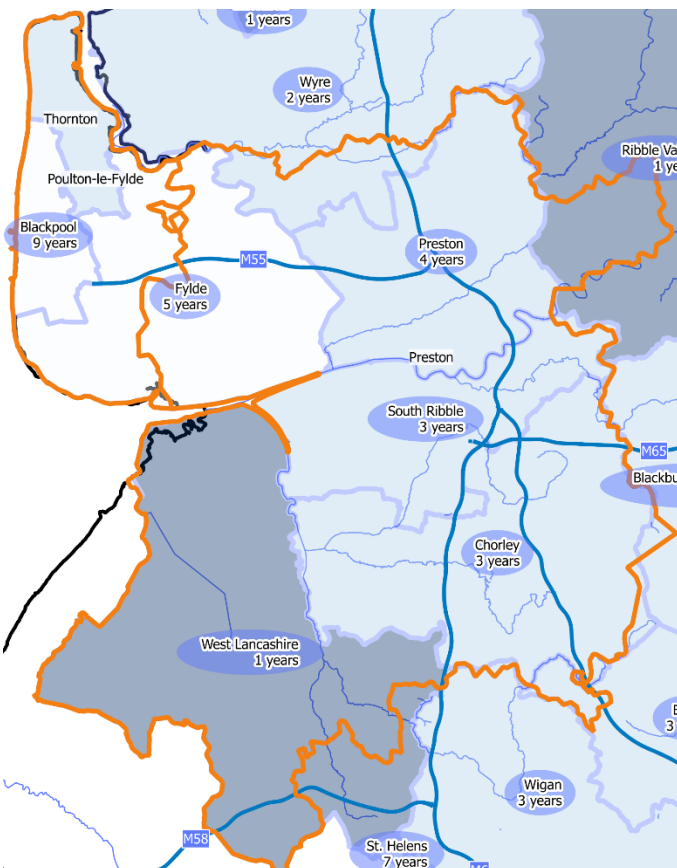


Network Performance – Reliability (Average Time Between Faults)



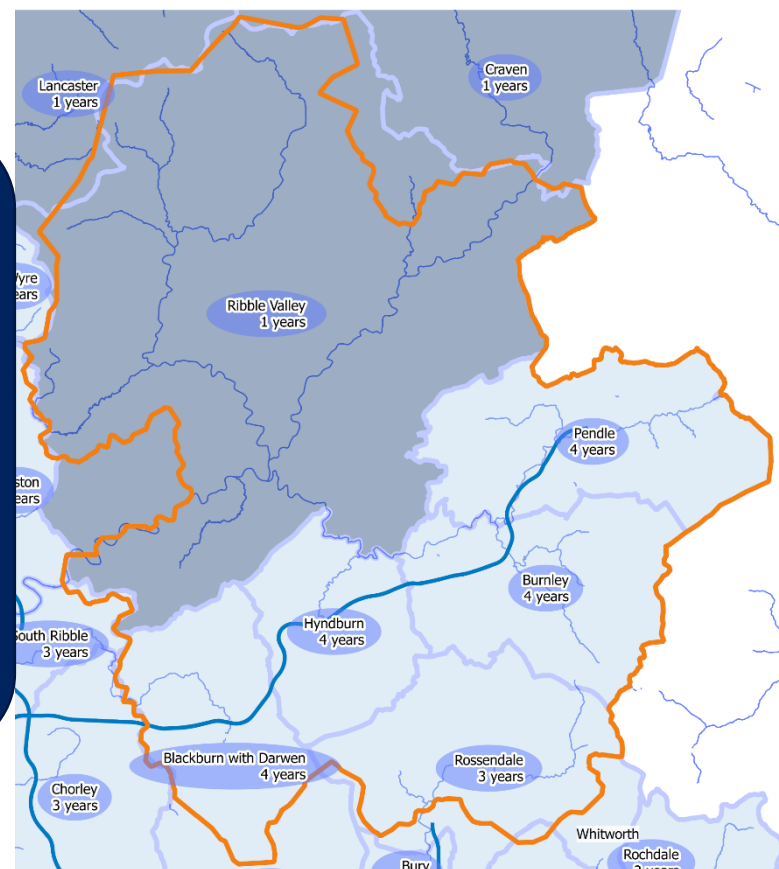
- One measure of reliability is the average duration between power cuts which indicates the frequency of faults in each area.

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

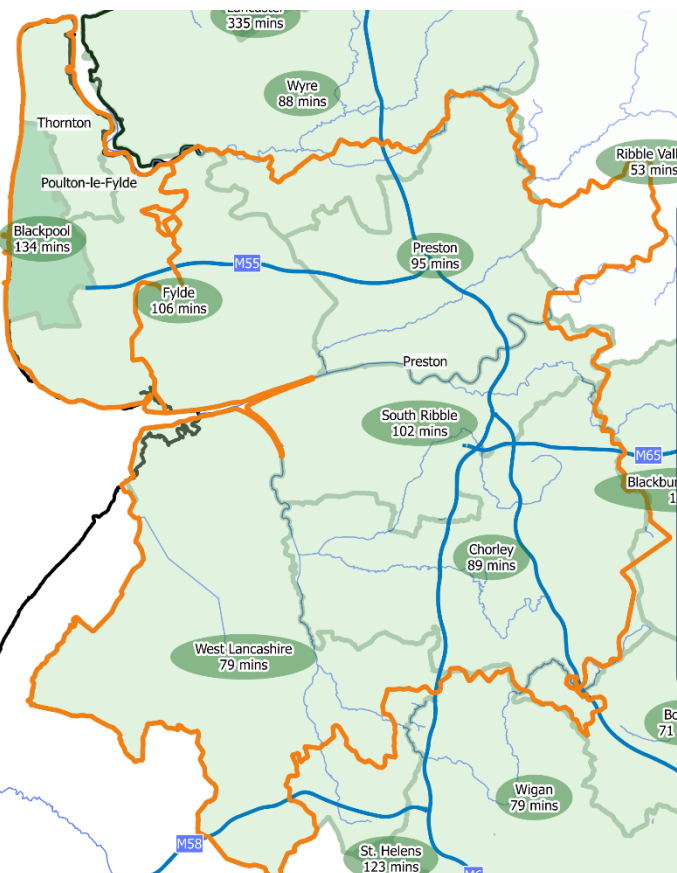


Local performance – Reliability (Average Supply Interruption Duration)



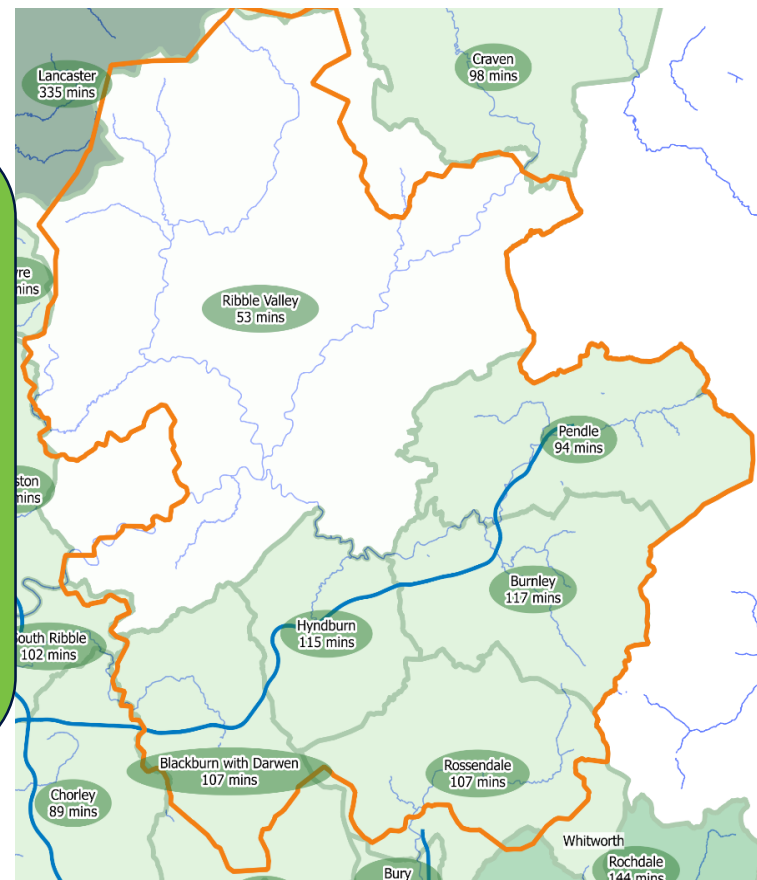
- We also measure reliability by the length of time you can expect to be off supply when a fault does occur – also known as Average Supply Interruption Duration (ASID)

West Lancashire



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

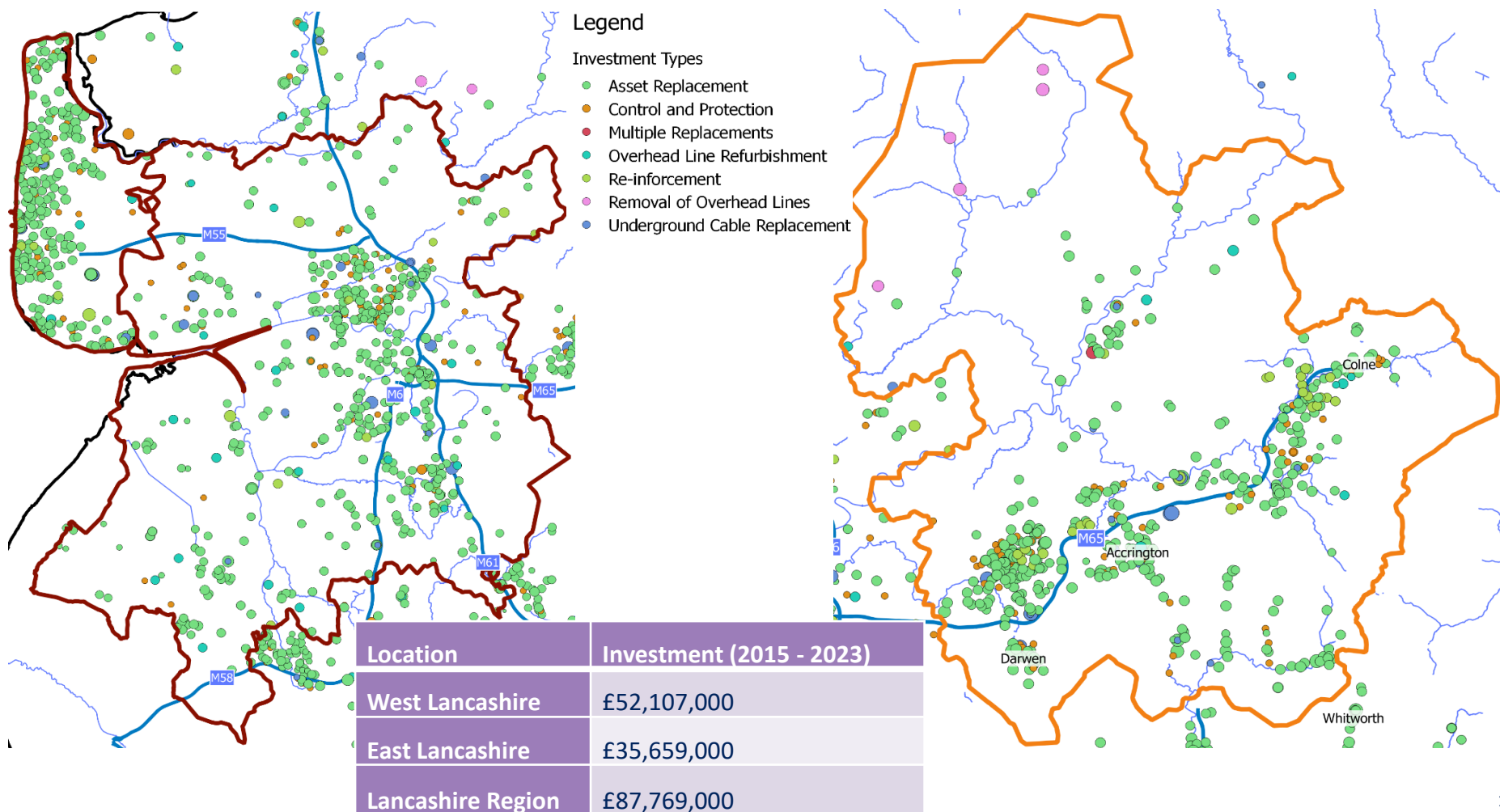
East Lancashire



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



How we Operate in Your Area



- 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

**electricity
north west**
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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**

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- 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.



Serving our customers - customer service

Helen Norris





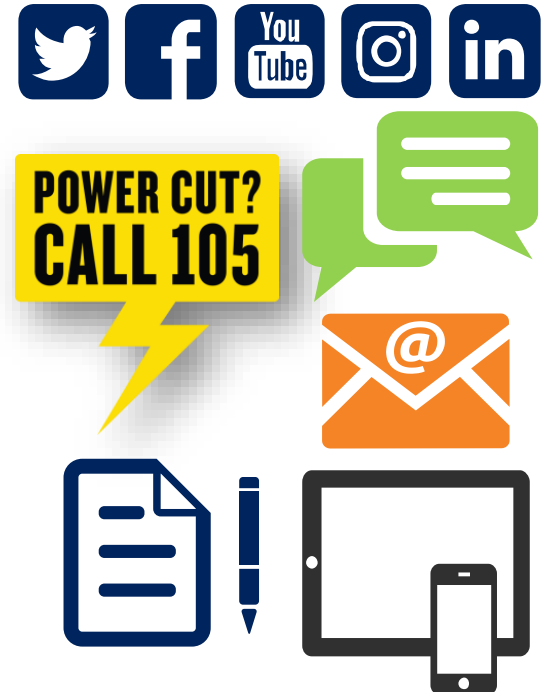
- Our contact centre is located in Warrington and deals with all Electricity North West related queries
- We are a multi channel customer contact centre (CCC) open 24/7.



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!





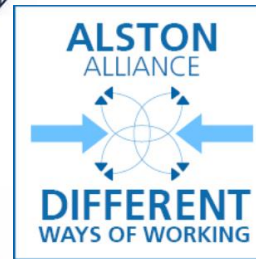
Benefits:

- 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



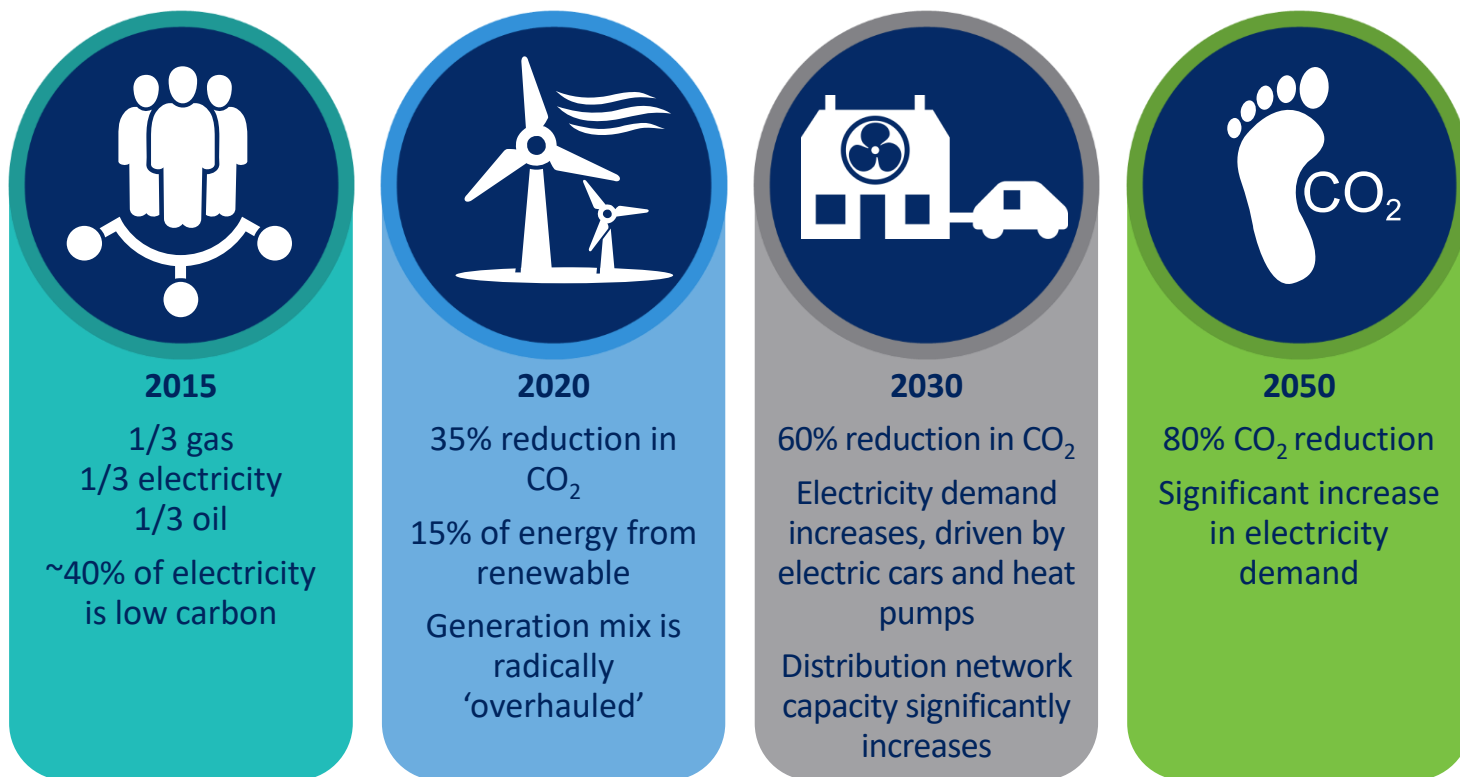
Grenfell was not related to RLM but dramatically shows the consequences of a fire in a large apartment block.

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

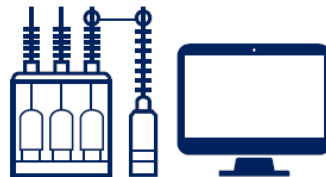
Bringing energy to your door



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



DECARBONISATION

Electric vehicles

Heat

Distributed
generation

Macro-economic drivers with region-wide affect

DSO activity enables decarbonisation

Forecasting

Modelling



















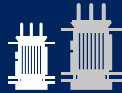

Strategic
Infrastructure

Capacity
Auctions

Capacity
Trading

Innovation to use the network differently and reduce costs



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



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



Questions & Answers

Next steps

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