ICP & IDNO Incentive on Connections Engagement Workshop

5 February 2020

Stay connected...

www.enwl.co.uk

Domestic Arrangements

- Don’t forget to sign in!
- No Fire Alarms planned
- Emergency Assembly Point
- WCs
- Mobile Phones

Agenda

electricity north west
Bringing energy to your door

- Welcome & Introduction
- ICE 2019-20 Update
- GIS Update
- Policy Updates
- Connecting Electric Vehicles & Heatpumps
- Acceptance & Energisation Process

Lunch & Networking 12:15 – 13:00

- Ofgem Significant Code Review Update
- Transition to DSO
- Flexible Services
- Flexible Connections
- Shaping our 2020-21 ICE Workplan
- Question & Answer Session

Wrap up & Close 3pm

Meet the Team

Mark Williamson

Energy Solutions Director

Mark is a chartered engineer with over 30 years experience in the electricity supply industry. He is responsible for all new connections to our network in the North West of England. In addition, via our ENWL Construction and Maintenance Ltd division provides control, operation, maintenance and construction services for customer's with private high and low voltage networks.

Hannah Sharratt

Connections Stakeholder Engagement and Regulation Manager

Hannah has over 20 years experience in the Utility industry, mostly in programme and project management roles. Hannah's current role focuses on our Connections stakeholder engagement.

Mike Doward

Charging Methodology Manager

Mike has over 30 years working in the electrical industry in a variety of roles. He joined ENWL in 2013 assisting private customers to control and operate their private HV systems until 2017 when he joined the Regulation and Compliance section of Energy Solutions. His current role is Connections Charging Manager which looks after the charging aspects of connections and any compliance issues.

Peter Twomey

Planning Policy Manager

Peter joined Electricity North West in 1998 and has held a number of roles since then, mainly in the area of design and planning. His current role is Planning Policy Manager, with responsibility for network design policy at all voltages. Prior to joining Electricity North West, he spent several years in the nuclear power industry.

Meet the team

Jonathan Cropper

Delivery Manager

Jonathan joined Electricity North West in 2015 following a 20 year career in IT. He has worked as a delivery manager in Business Connections since joining and is responsible for the design, construction and Energisation of schemes across Lancashire.

Brian Hoy

Head of Market Regulation

Brian has over 30 years of experience working in the electricity industry.
He has an engineering background but has worked in the regulatory aspects of new connections for a number of years. Brian represents Electricity North West on connections related matters and leads a number of national industry groups.

Keith Evans

Smart Grid Engineer

Keith has recently taken over as the DSO Transition and Smart Grid Engineering Manager. Through this role he is responsible for guiding the business through the evolution to enhanced Distribution System Operation, which is a key element of ENWs vision of leading the North West to becoming a net Zero Carbon economy.

Chris Fox

Head of Business Connections

Chris Fox, Head of Business Connections, leads a fantastic team of over 60 engineers and technicians. His team help serve our customers by finding great solutions that help them develop and grow their business throughout the north west of England.

Meet the Team

Ami Mathieson

ICE Manager

Ami joined Electricity North West 9 years ago; she has spent that time primarily within the Customer directorate. Her current role is to support the Connections Stakeholder Engagement & Regulation Manager in the successful delivery of the Incentive on Connections Engagement strategy and aims.

John Carlisle

Delivery Programme Manager

John is the Delivery Programme Manager for our Grid and Primary Connections team. is an Incorporated Engineer with the Institute of Engineering and Technology (IET) and a Registered member of the Association of Project Management (APM). John and his team are responsible for the delivery of all new connections on the 33KV and 132KV networks, inclusive of all demand and generation projects.

Alan Kemp

Design Engineer

Working within the Business Connections team, Alan's role is centred around the appraisal of Independent Connection Provider's design submissions associated with extensions to Electricity North West's distribution network; where necessary communicating with the ICP to achieve a design which is compliant with our policies.

.

Simeon Knights

Land Rights and Consent Manager

Simeon has been working on the Land Rights and Consents team for over 15 years. His team is responsible for the acquisition of all land rights, including all statutory, planning and environmental consents necessary for the development, maintenance and protection of the electricity distribution system on private land, involving overhead lines, underground cables and substations.

What do we want from you today?

- One word – **Feedback!**
- Use the feedback forms and give us your honest opinion
- Contact me, the ICE team or your usual contacts in ENWL at any time to give us feedback
- **Mark.Williamson@enwl.co.uk**
- **ice@enwl.co.uk**

Incentive on Connections Engagement 2019-20 Update

Hannah Sharratt

electricity north west

Bringing energy to your door

Stay connected...

www.enwl.co.uk

ICE 2019-20 Workplan Performance

ICE Workplans are available here

➢ We will engage with our stakeholders to review and improve our communication processes with ICP / IDNOs	✓ New process implemented & improved clarity in contact information to improve communications.
➢ We will offer engagement opportunities by establishing direct communication routes for land rights and consents enquiries as well as the provision of regular bespoke legal updates	✓ Direct communication routes available and publicised in regular project documentation.
➢ Engage with stakeholders on the flexible services we offer, presenting at a minimum of 2 workshops.	✓ Consultation completed. ✓ 2 workshop presentations provided.
➢ Brief stakeholders on proposed changes to charges in Ofgem's Significant Code Review.	✓ Presented at 2 workshops and 1 webinar, with a further webinar planned on 6th February.
➢ Engage with stakeholders on any changes to our approach to A&D fees.	✓ Update provided at workshop. No changes to current approach planned.
➢ We will improve the level of information available on our website and within stakeholder meetings for Electric Vehicle Charging point connections	✓ New websites available ✓ Policy webinar hosted and published ✓ FAQ and further information published

ICE 2019-20 Workplan Performance

➢ We will improve access to our Geographical Information System	✓ New access to GIS functionality to be delivered early 2020-21, aim to provide preview for key stakeholders in 2019-20
➢ We will improve access and presentation of information on available thermal capacity and fault level on our network	✓ Enhanced Heatmap Tool now available with improved geographical view
➢ We will provide training opportunities to support the Self determination of Point of Connections.	✓ 1 training session provided ✓ 1 planned in March
➢ We will publicise the range of flexible connections we offer.	✓ Presentation at workshop ✓ Options discussed during quoting process, where applicable

Network Management System (NMS) Update

Why?

Improved functionality in NMS requires ‘pre-built’ drawings. This change would impact ICPs, particularly for LV works. Stakeholder engagement and the trial would provide valuable insights and learning prior to roll-out to all ICPs.

Our new Network Management System is needed to cater for future network requirements & transition to DSO

Our Commitment	Update
➢ Engage with stakeholders on the impact of our new Network Management System (NMS), reviewing the process for pre-construction drawings and communicate any changes.	○ Presentation and discussion in September Workshop ○ Trial planned for ICP’s post Go Live before full roll out ○ Update in February Workshop: impact to ICPs minimised

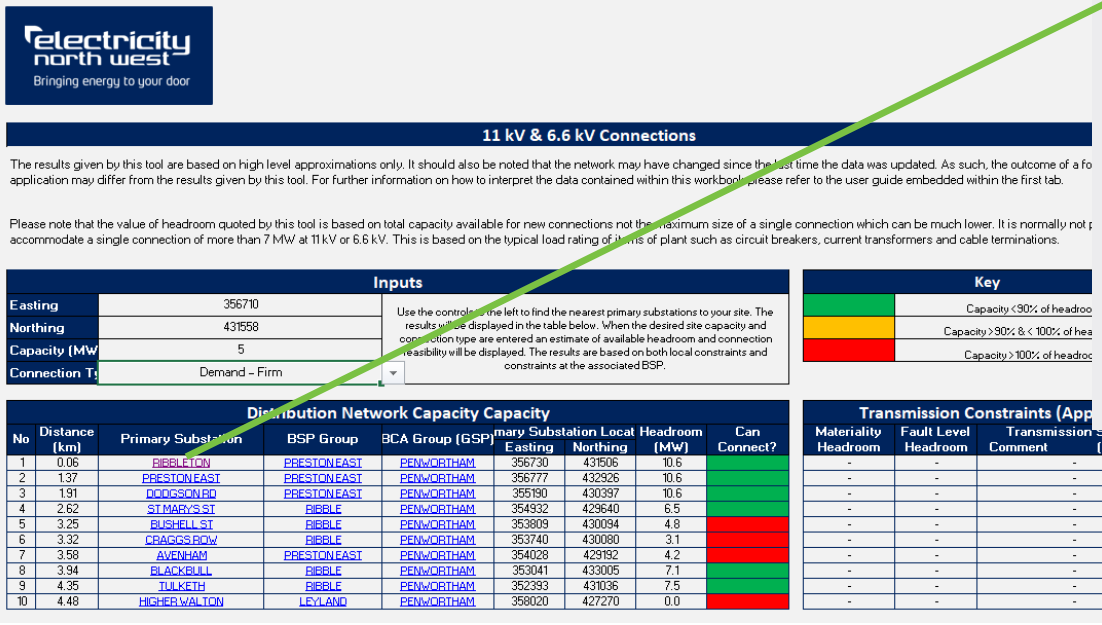
Network Management System (NMS) Update

LV		HV	
Potential impact	Provision of ‘Pre-built’ drawings Booking outage in advance Inform Control Room at energisation	Potential impact	Provision of ‘Pre-built’ drawings, including phased delivery details
Following further review & impact assessment, LV works can now be captured post energisation CURRENT AS LAID PROCESS WILL SATISFY REQUIREMENTS		CURRENT DESIGN APPROVAL, OUTAGE & AS LAID PROCESS COVERS MOST REQUIREMENTS – VISIBILITY OF PHASED DELIVERY PLANS STILL REQUIRED	

NO REAL IMPACT
Trial not required

Enhanced Heatmap Tool

- New improved geographical view using Google maps
  - Full Google map functionality
  - Substation details, including network capacity
- Click on the Substation in excel to take you to the map location



electricity north west
Bringing energy to your door

11 kV & 6.6 kV Connections

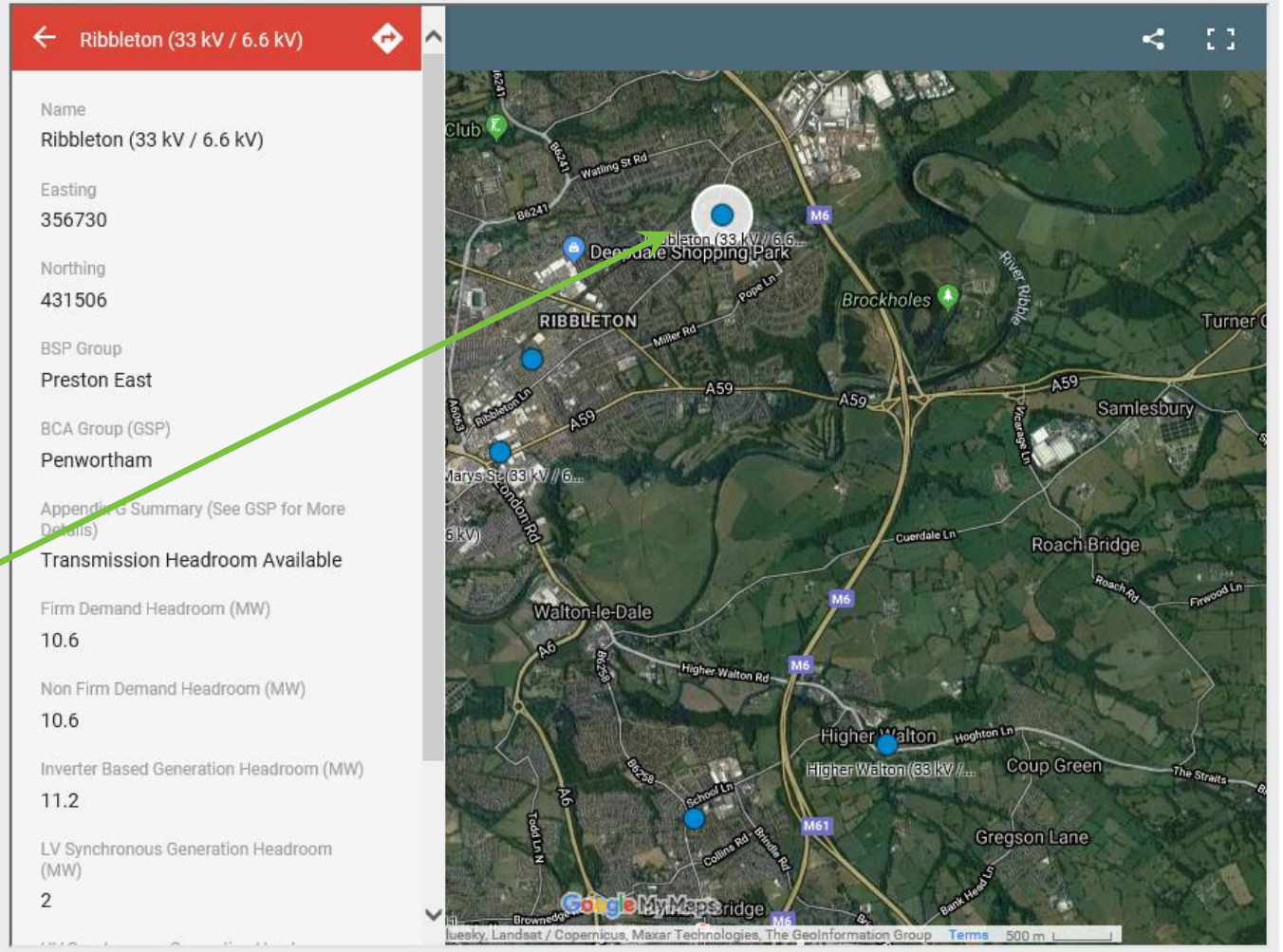
The results given by this tool are based on high level approximations only. It should also be noted that the network may have changed since the last time the data was updated. As such, the outcome of a fo application may differ from the results given by this tool. For further information on how to interpret the data contained within this workbook please refer to the user guide embedded within the first tab.

Please note that the value of headroom quoted by this tool is based on total capacity available for new connections not the maximum size of a single connection which can be much lower. It is normally not p accommodate a single connection of more than 7 MW at 11 kV or 6.6 kV. This is based on the typical load rating of items of plant such as circuit breakers, current transformers and cable terminations.

Inputs		
Easting	356710	Use the controls to the left to find the nearest primary substations to your site. The results will be displayed in the table below. When the desired site capacity and connection type are entered an estimate of available headroom and connection feasibility will be displayed. The results are based on both local constraints and constraints at the associated BSP.
Northing	431558	
Capacity (MW	5	
Connection Ty	Demand – Firm	

Key	
	Capacity <90% of headroo
	Capacity >90% & < 100% of hea
	Capacity >100% of headroc

Distribution Network Capacity Capacity									Transmission Constraints (App			
No	Distance (km)	Primary Substation	BSP Group	BCA Group (GSP)	mary Substation Locat Easting	Northing	Headroom (MW)	Can Connect?	Materiality Headroom	Fault Level Headroom	Transmission System Comment	(see tab 6
1	0.06	RIBBLETON	PRESTON EAST	PENWORTHAM	356730	431506	10.6		-	-	-	
2	1.37	PRESTON EAST	PRESTON EAST	PENWORTHAM	356777	432926	10.6		-	-	-	
3	1.91	DODGSON RD	PRESTON EAST	PENWORTHAM	355190	430397	10.6		-	-	-	
4	2.62	ST MARYS ST	RIBBLE	PENWORTHAM	354932	429640	6.5		-	-	-	
5	3.25	BUSHELL ST	RIBBLE	PENWORTHAM	353809	430094	4.8		-	-	-	
6	3.32	CRAGGS ROW	RIBBLE	PENWORTHAM	353740	430080	3.1		-	-	-	
7	3.58	AVENHAM	PRESTON EAST	PENWORTHAM	354028	429192	4.2		-	-	-	
8	3.94	BLACKBULL	RIBBLE	PENWORTHAM	353041	433005	7.1		-	-	-	
9	4.35	TULKETH	RIBBLE	PENWORTHAM	352393	431036	7.5		-	-	-	
10	4.48	HIGHER WALTON	LEYLAND	PENWORTHAM	358020	427270	0.0		-	-	-	



[Link to our Heatmap Tool]

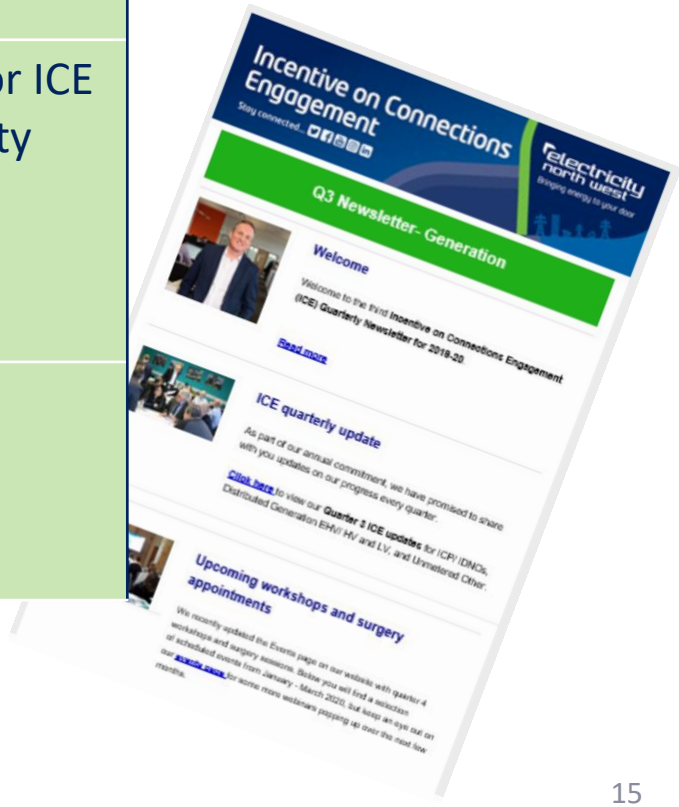
ICE 2019-20 Workplan Performance

➢ We aim to outperform the regulatory standard by providing LV quotes within 11 working days compared to the guaranteed standard of 15 working days	✓ Currently providing LV quotes within 9 working days on average
➢ We aim to outperform the regulatory standard by providing HV quotes within 15 working days compared to the guaranteed standard of 20 working days	✓ Currently providing HV quotes within 13 working days on average
➢ We aim to outperform the regulatory standard by providing Design Approval responses within 8 working days compared to the guaranteed standard of 10 working days	✓ Currently providing Design Approval responses within 8 working days on average
➢ We aim to outperform the regulatory standard by providing an average 7 working day time to connect for LV jobs, compared to the guaranteed standard of 10 working days	✓ Current time to connect for LV work is within 6 working days on average
➢ We aim to outperform the regulatory standard by providing an average 15 working day time to connect for HV jobs, compared to the guaranteed standard of 20 working days	✓ Current time to connect for HV work is within 13 working days on average

ICE 2019-20 Workplan Performance

- Business As Usual commitments

➢ We will continue to offer opportunities for stakeholders to engage with us.	✓September workshop provided ✓February workshop ✓Multiple webinars made available to ICPs & IDNO's, including topics on EV, Ofgem Charging Review, G99 & G98
➢ We will continue to communicate with our stakeholders by issuing regular updates on ICE Commitments, Policy and Health & Safety updates to registered stakeholders	✓Quarterly updates and newsletters published for ICE ✓Updates published for Policy and Health & Safety ✓All updates available on our website
➢We will continue to provide stakeholders with opportunities to receive detailed briefings on policy changes	✓Presentations at 2 workshops ✓Low Carbon Technology webinar ✓Further webinars possible as required



electricity north west

Bringing energy to your door

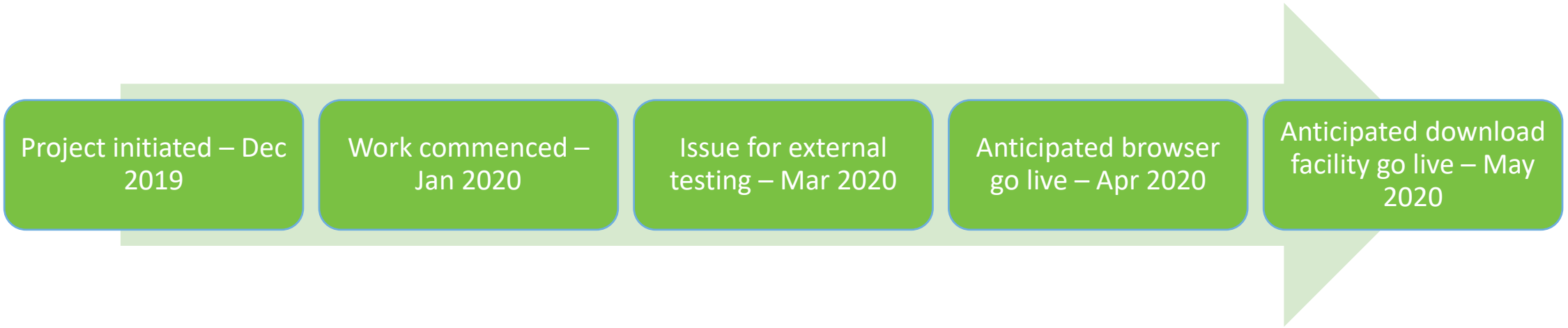
Geographical Information System (GIS)

Mike Doward

Proposed Offering

- Web based application
- Better access arrangements – 24/7
- Update period more frequent – improved time delay from site data appearing in GIS system
- Simple Browser or Download for your own GIS software
- More information displayed on asset attributes

Timeline



Proposed Views

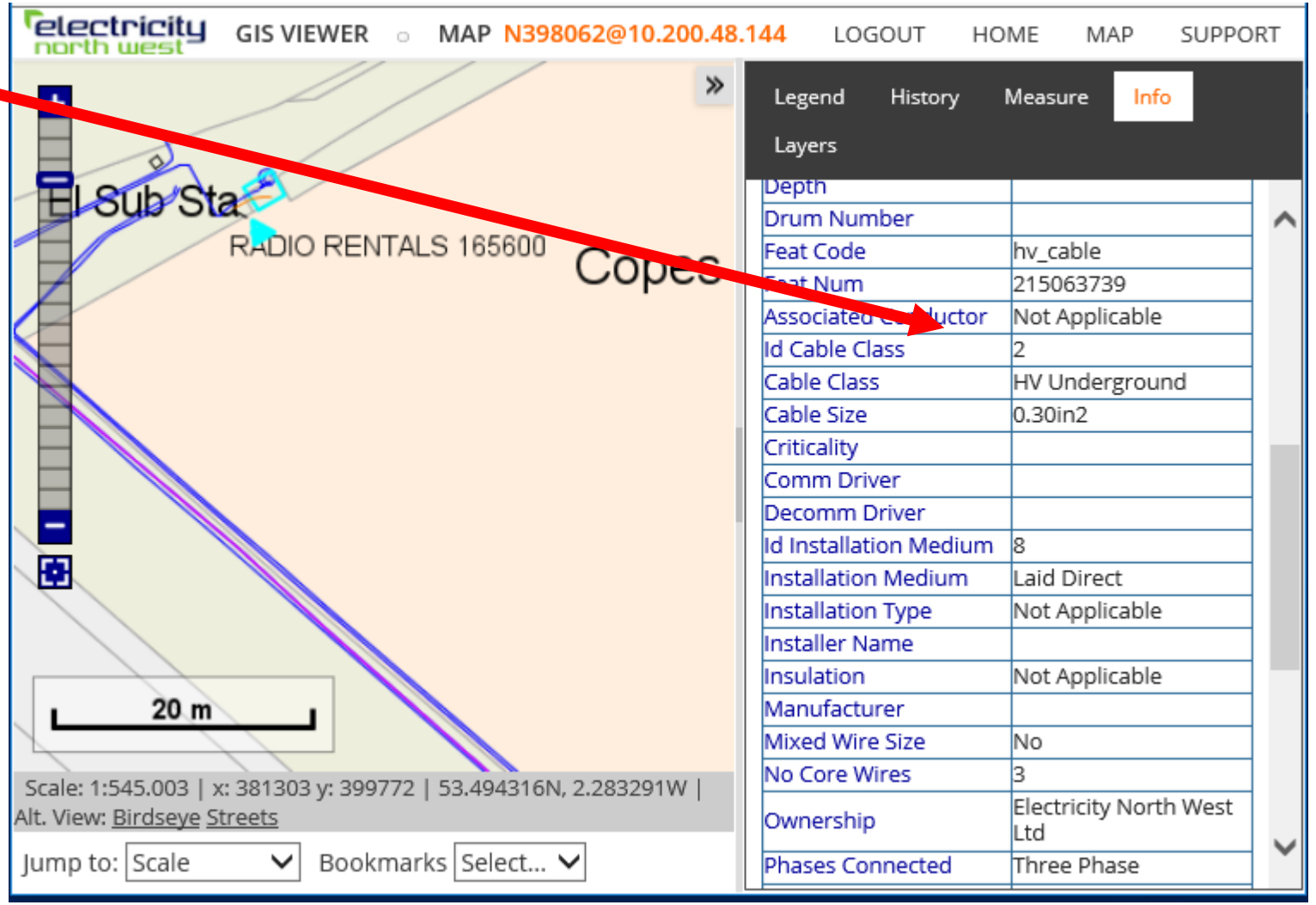
- Proposed home view

Proposed Views

- Better definition of assets
- More detailed asset information
- Interactive map

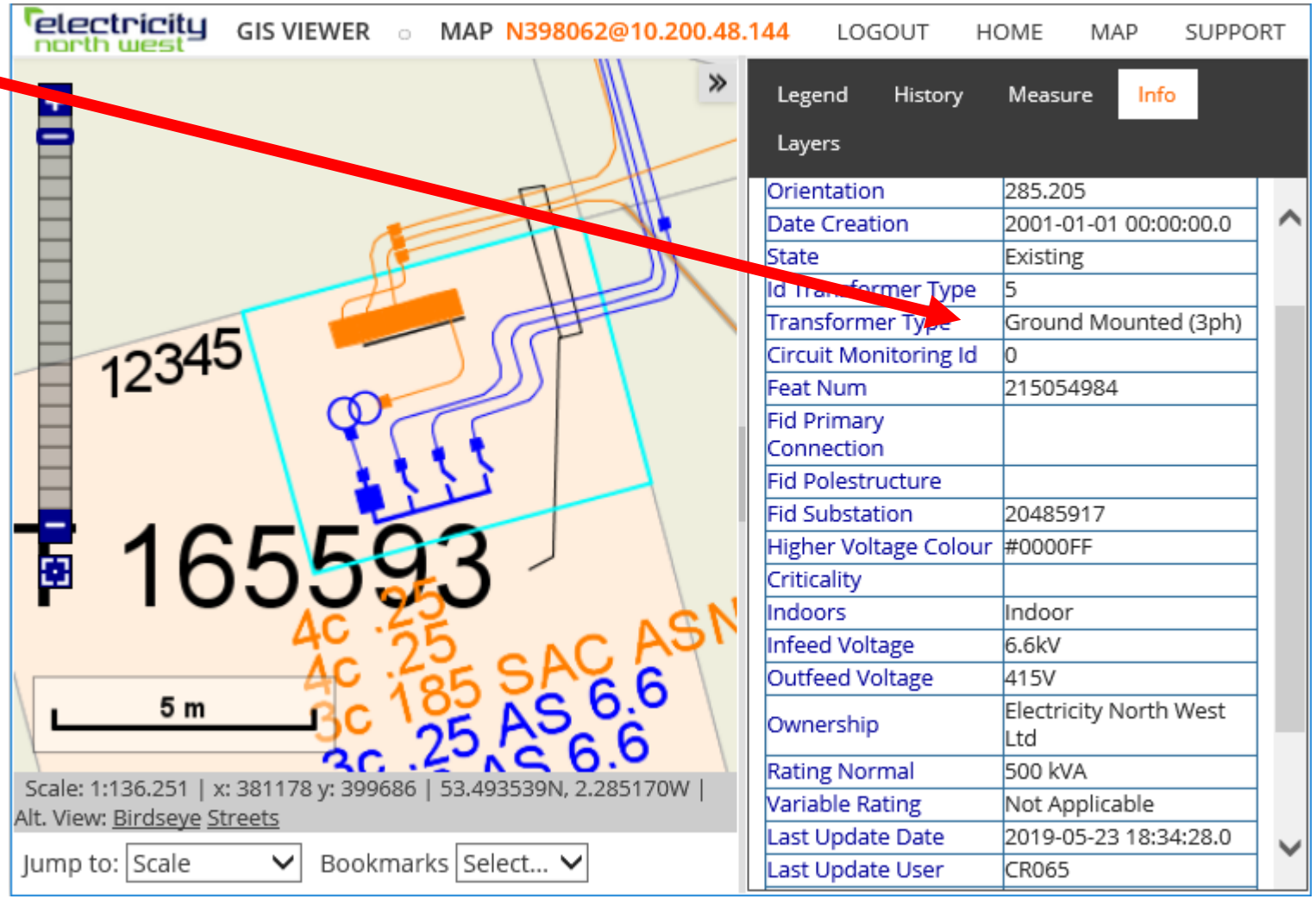
Proposed Views

- Improved cable asset data



Proposed Views

- Improved plant asset data



Orientation	285.205
Date Creation	2001-01-01 00:00:00.0
State	Existing
Id Transformer Type	5
Transformer Type	Ground Mounted (3ph)
Circuit Monitoring Id	0
Feat Num	215054984
Fid Primary Connection	
Fid Polestructure	
Fid Substation	20485917
Higher Voltage Colour	#0000FF
Criticality	
Indoors	Indoor
Infeed Voltage	6.6kV
Outfeed Voltage	415V
Ownership	Electricity North West Ltd
Rating Normal	500 kVA
Variable Rating	Not Applicable
Last Update Date	2019-05-23 18:34:28.0
Last Update User	CR065

Proposed Offering

We need your help

- External testing – Anticipated March 2020
  - Feedback on look/feel/content of browser
  - Anticipated to be no more than a few hours over a 3 day period

- How do you envisage using the GIS information?
  - viewing on browser

  or

  - download asset information for use in your own systems?

- If you would like to volunteer to participate in the testing please email ICE@enwl.co.uk

Questions?

Questions & Answers?

electricity north west

Bringing energy to your door

Policy Update

Mike Doward

Stay connected...

www.enwl.co.uk

Policy Updates

- Forthcoming Changes
  - CP258 Connection of Industrial & Commercial Customers
  - ES215 New Connections of up to 1500kVA Capacity
  - Description of change
    - The option to provide connections using a LV air circuit breaker has been removed. Ganged ways should be used to provide LV connections between 300 to 1000kVA
  - Reason for change
    - Connections using LV ACBs are extremely uncommon. This means there is a very small population of LV ACBs owned by ENWL, leading to issues with maintenance and fault repair/replacement. It is proposed to standardise LV connections to ganged ways from a LV board

- Changes Oct-Dec
  - CP411 Pt1N LV Cable Jointing Manual – revised for new Sicame joint kits. Plus further information on minimum PPE required
  - CP614 Authorisation - Sections 9 and 10 added to show process for Withdrawal of Authorisation and Route back to Re-Authorisation. Appendix F5 added, Route back to Re-Authorisation form

electricity north west

Bringing energy to your door

Disconnections

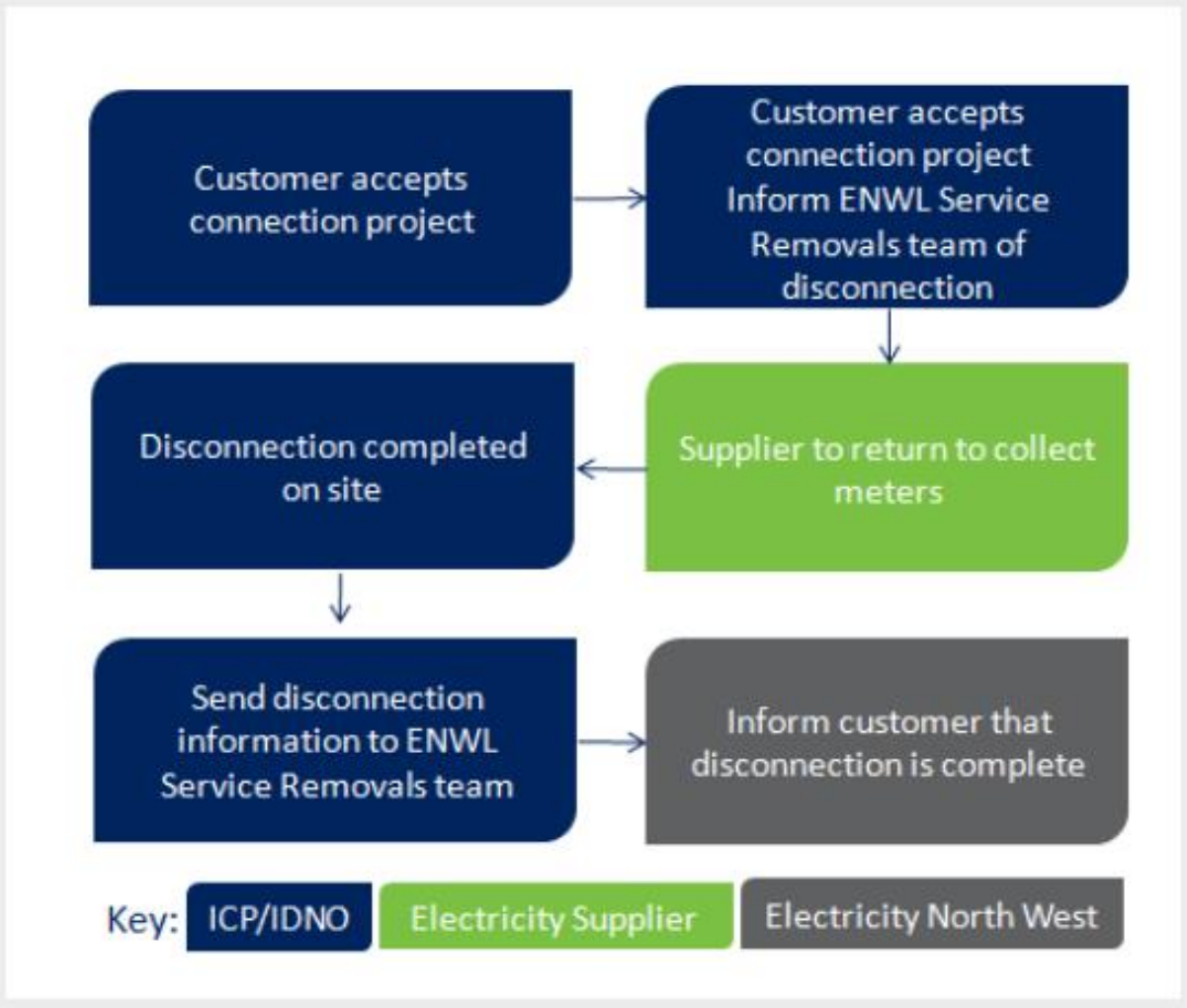
Mike Doward

Stay connected...

www.enwl.co.uk

Current Process

- In 2017 ENWL allowed disconnections associated with a connection to be completed by ICPs
- ICPs can undertake LV disconnections where the property would be re-connected in some form e.g. single phase disconnection and three phase upgrade
- Disconnection/s need to be submitted with connection application/design



Next Steps

- Look at allowing ICPs to carry out further disconnection activities
- Applies to LV temporary supplies
  - Undertake trial to gain learning
  - Trial being undertaken by three ICPs who have expressed a recent interest in disconnections
  - 6 month duration – subject to sufficient examples being undertook
  - Looking for feedback to the impact on ENWL obligations
- Explore any potential learning
- Confirm no impact to regulatory obligations
- Subject to successful trial extend disconnections of temporary LV supplies to all ICPs
  - Monitor and review compliance with new processes

Obligations under the MRA/BSC

Register disconnection	Service Level Agreement = 2 working days	D0262 Dataflow
Notify Supplier of acceptance	Service Level Agreement = 5 working days	D0352 Dataflow
Time for Supplier/MOP to record in systems	No meter – Service Level Agreement = 5 working days	
Time for Supplier/MOP to record in systems	Single meter – Service Level Agreement = 10 working days	
Time for Supplier/MOP to record in systems	Multiple meters– Service Level Agreement = 25 working days	
	Carry out disconnection	
Notify Supplier of change of energisation	Service Level Agreement = 2 working days	D0215 Dataflow
	Issue Disconnection Confirmation Letter	

Questions?

Questions & Answers?

Electric Vehicle & Heat Pump Connections

Peter Twomey

electricity north west

Bringing energy to your door

Stay connected...

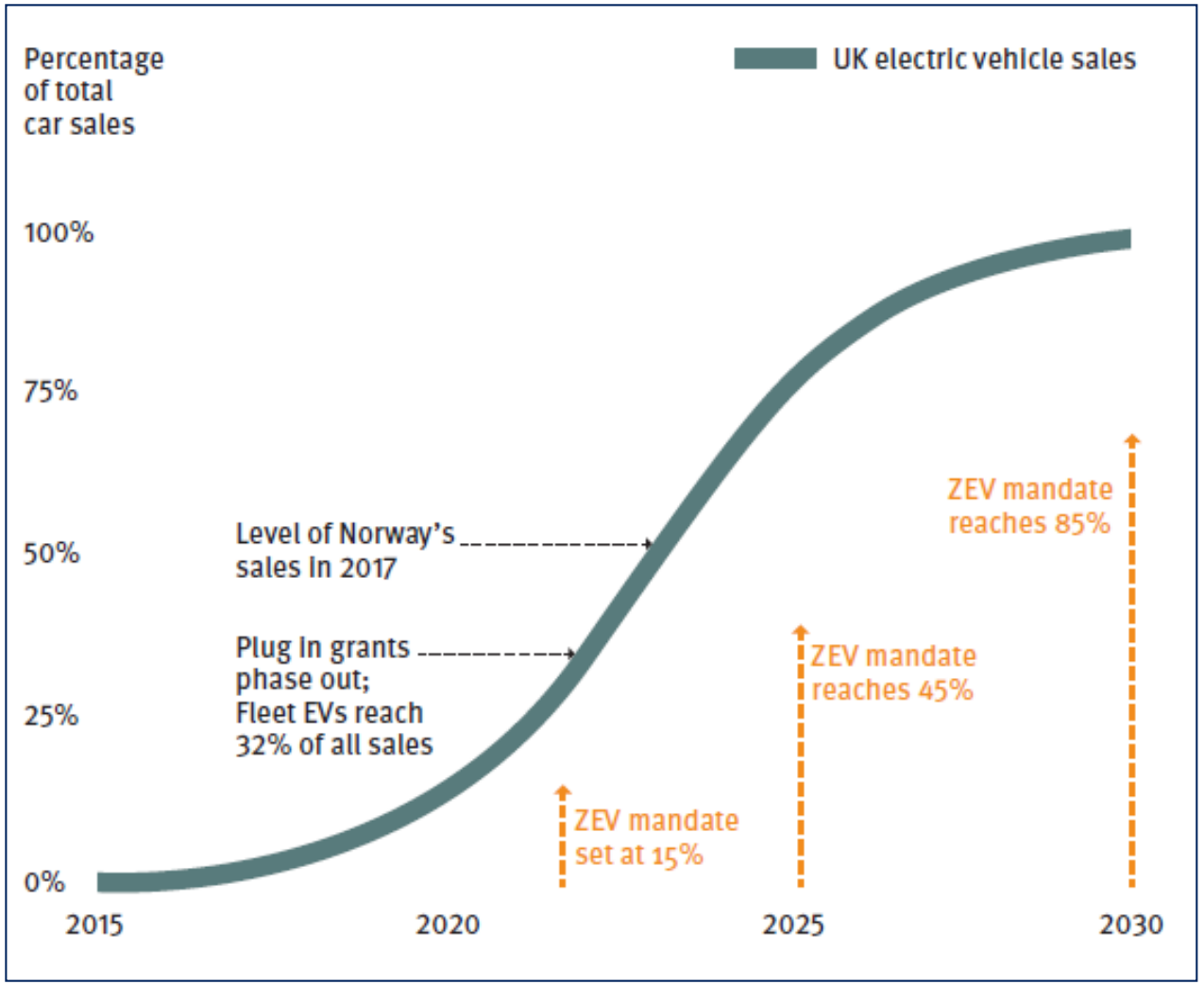
www.enwl.co.uk

Contents

- Background
- Domestic EV & HP
- Public EV with aggregate load >75A
- Some early lessons learnt
- Website
- Electricity North West policy
- Q&A

Background

- UK Government law - zero carbon by 2050
- Petrol & diesel vehicles phased out by 2035
- Electric Vehicles are critical to achieving these targets
  - forecast increased uptake
  - Similar uptake paths for electrification of heat
- Electricity North West has a key role
  - Enable economic connections



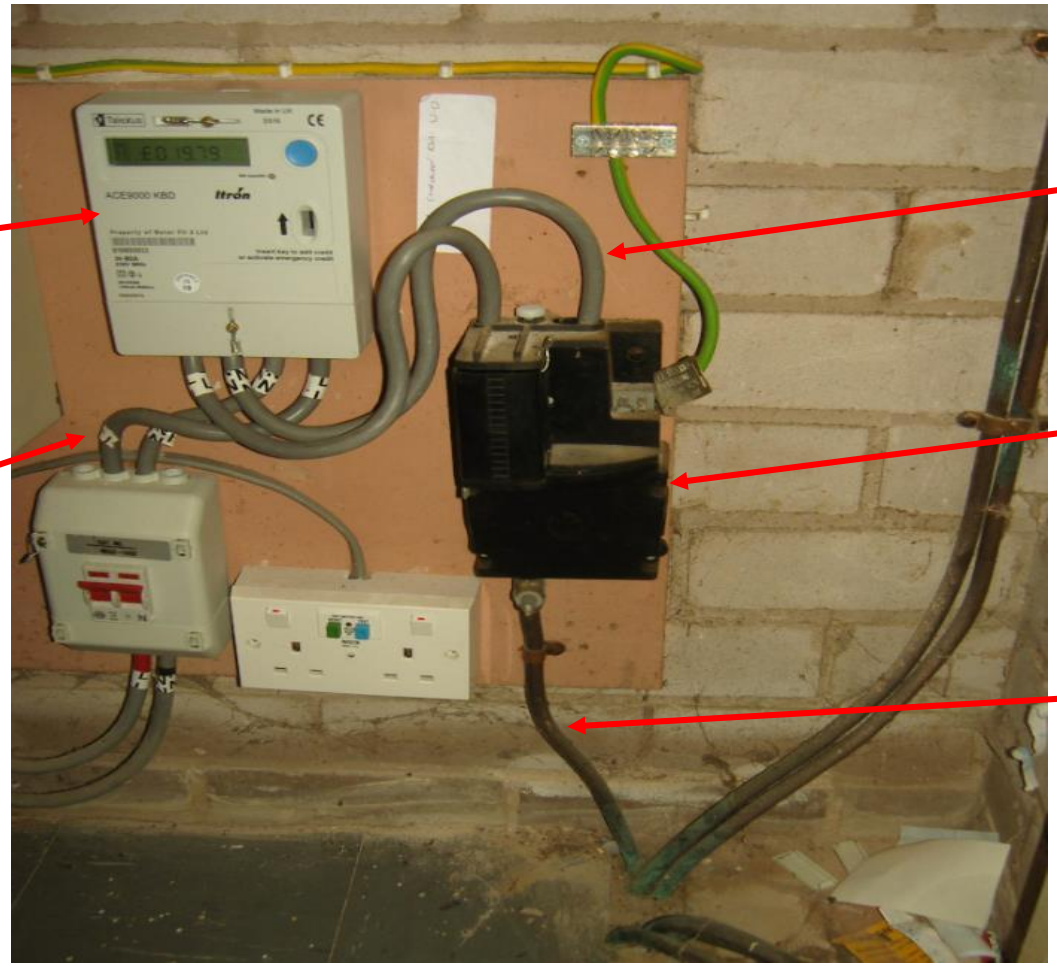
Forecasts for the North West available in our Distribution future electricity scenarios documents

Domestic EV & HP Connections

- Follow the ENA connection process for Electric Vehicles and Heat Pumps
- Installer assesses service capacity:
  - **Connect & notify** ENWL if total domestic demand inc EV is less than 60A
  - **Apply to connect** if total demand is more than 60A or service rating inadequate
- Multiple applications – use diversity values in EREC P5
- ENA website http://www.energynetworks.org/electricity/futures/electric-vehicles-and-heat-pumps.html

ENA Domestic Connection Process (1)

- Typical service termination



Meter
(supplier)

Tails to
consumer unit
(customer)

Meter tails
(Supplier)

Cut out
(ENWL)

Service cable
(ENWL)

ENA Domestic Connection Process (2)

- Installer makes initial assessment:

- Unknown cut out rating?
- Safety concerns?
- Other identified issues?
- Looped service?
- Maximum demand exceeds cut out rating?
- Maximum demand >60A per phase (whole current metering)?

Yes → Apply to connect

connectionapplications@enwl.co.uk

ENA Domestic Connection Process (3)

- For EV only installation:

- DC Output?
- AC Input > 60A per phase (whole current)?
- AC Input >30% MIC (CT Metered)?

Yes → Apply to connect

connectionapplications@enwl.co.uk

No → Connect and notify ENWL

G98Notifications@enwl.co.uk

ENA Domestic Connection Process (4)

- Heat Pump installation

- Heat Pump under a single controller?
- Total HP AC Input <32A?
- Is HP listed in ENA online register?
- Is HP classed as ‘connect & notify’?

Yes → Connect and notify ENWL

G98Notifications@enwl.co.uk

No ↓

Apply to connect

connectionapplications@enwl.co.uk

Public EV with aggregate demand >75A

- High capacity EV Charge points for public & customer use
- Known to be potentially disturbing load – power quality assessment (G5/4)
- Emissions data required
  - Harmonic current emissions for 2nd to 50th harmonic
- Stage 1 assessment is a desktop with PASS / FAIL outcome
- Failures may progress to Stage 2 – site measurements required
- ENWL can undertake measurements and study for a fee
- Alternatively the connectee may request an alternative PoC that passes Stage 1
- Diversities described in ES230 Connection of Low Carbon Technologies

Some early lessons learnt

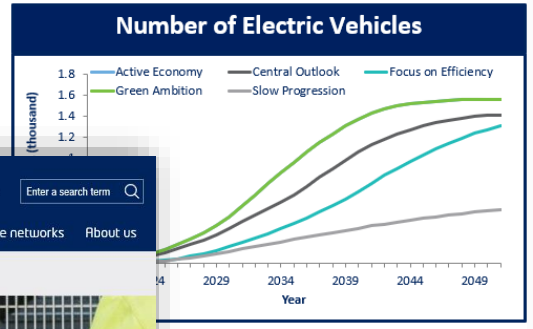
- Ensure Heat Pump electrical input is used (not thermal output)

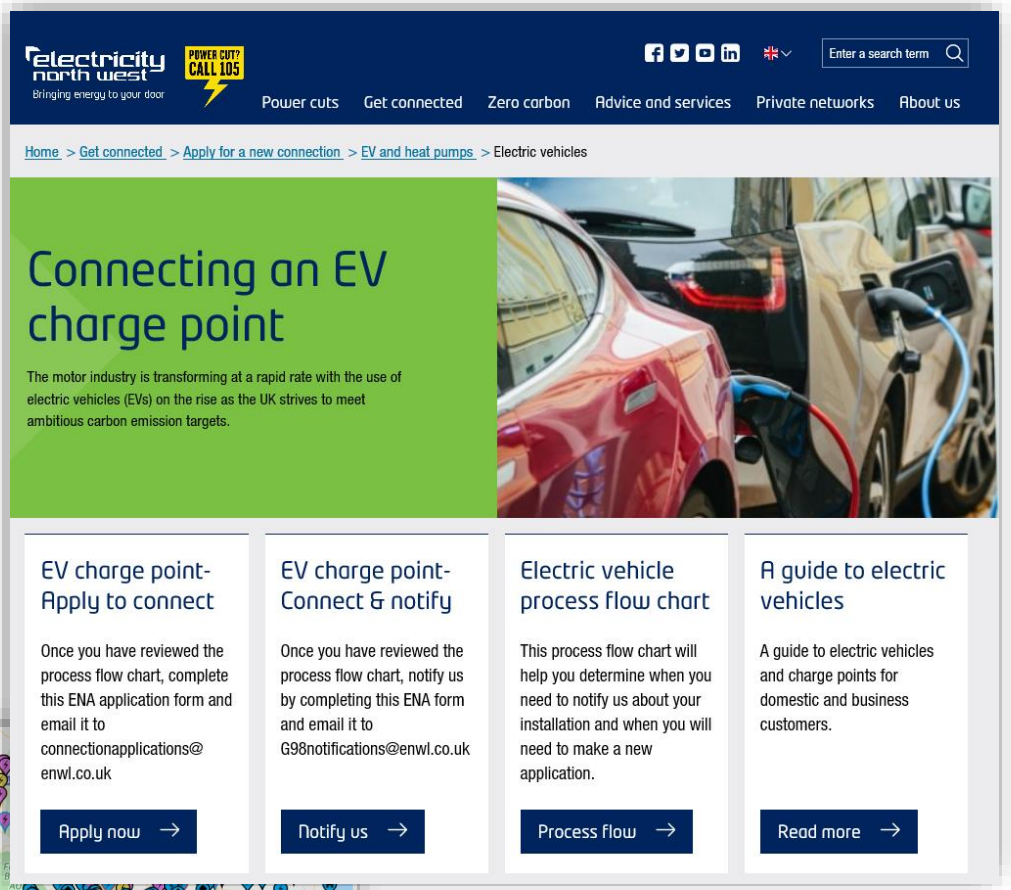
- ENWL Policy is to remove any looped services – advise customer

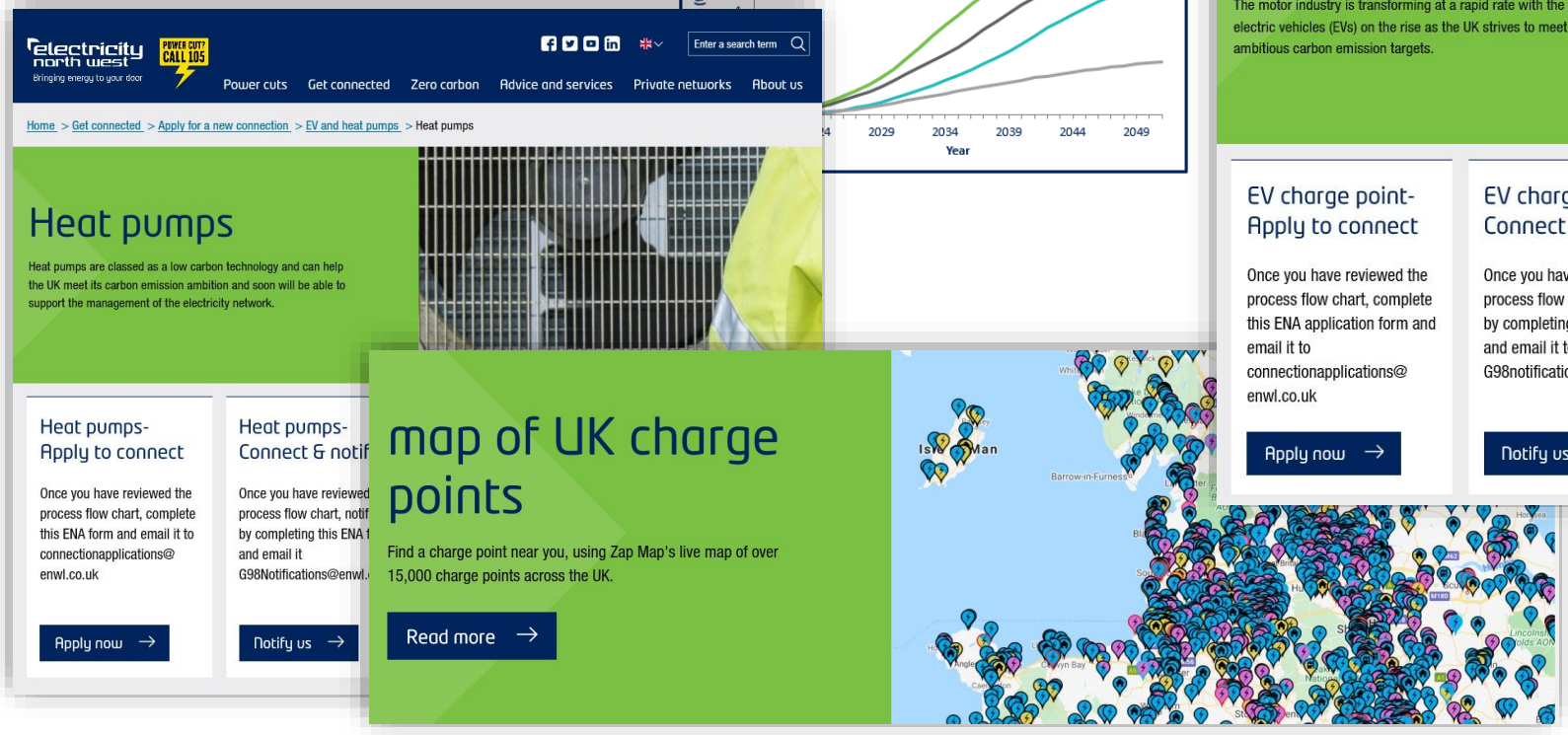
- Rural areas are more likely to require reinforcement to connect high capacity devices.
    - Locations close to our substations are better than locations at the end of long cables

New website pages

- We are improving our website to make connecting low carbon technology, including Electric Vehicles & Heatpumps easier.
  - Dedicated web pages
  - Clear signposting to application forms
  - Clear guidance on process
  - Background information







Electricity North West policy for EV connections

- A new policy document covering the connection of Low Carbon Technologies:
  - ES230 – Connection of LCTs (Click here)
- Other relevant documents:
  - EPD283 LV Network Design – ENWL website (Click here)
  - EREC G5/4 Harmonic Voltage distortion – Distribution Code Website (Click here)
  - ENA LCT Connection process – ENA Website (Click here)
  - MOCOPA Guidance – service termination issues (Click here)

Questions?

Questions & Answers?

electricity north west

Bringing energy to your door

Acceptance and Energisation Process Overview

Jonathan Cropper

Stay connected...

www.enwl.co.uk

Acceptance Process

Within 6 months receipt of your Point of Connection offer

- Return your signed acceptance
- Payment
- We will engage the Strategic Planning team

Within 30 days of Acceptance

- Submit your completed Design Submission Pack

Within 10 days receipt of the Design Submission Pack

- Your design will be reviewed and either approved or rejected

Benefits of the Acceptance Process

Receipt of signed Acceptance and Payment will:

- Secure your POC
- Assign you a Construction Coordinator
- Engage the Strategic Planning team

The Strategic Planning team then:

- Provide you with valuable information for you Design Submission Pack
  - Earthing requirements
  - Protection settings
  - Harmonic assessments
  - Fault level studies

Benefits of the Acceptance Process Continued

The Design Submission Pack will assist us to:

- Approve your design in the shortest timescale

An approved design will allow us to:

- Issue you the appropriate Connection Agreements
  - Master Adoption Agreement (MAA)
  - Bilateral Connection Agreement (BCA)
  - Bilateral Adoption Agreement (BAA)
  - Standard Connection Agreement (SCA)
  - Bespoke Connection Agreement (BesCA)

LV Energisation Process

10 working days before your energisation date return your completed:

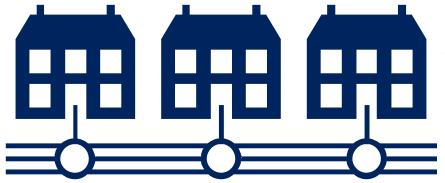
- LV Live Jointing Request Form
- Approved Site Boundary Drawings showing plots to be energised

Your Constructor will:

- Confirm your energisation date by Signing and Returning your Live Jointing Request Form
- Provide you with a Data Management SATS number

5 working days before your energisation date provide us with:

- Legal Consents
- Signed Connection Agreements
- Whereabouts



HV Energisation Process

20 working days before your energisation date return your completed:

- HV Energisation Request Form
- Test Results
- Pre-Laid Drawings

Your Constructor will:

- Confirm your energisation date
- Provide you with a Data Management SATS number

5 working days before your energisation date provide us with:

- Legal Consents
- Signed Connection Agreements
- Whereabouts

Following Energisation

Within 48 hours after energisation return your:

- As-Laid Drawings of the jointing positions
  - In the required format
  - Preferably on the ENWL As-Laid form
  - Quoting the Data Management SATS number
- Exit Live Jointing Regime form (LV only)
- ENWL Completion Certificate (LV only)

Your Constructor will:

- Review the As-Laid drawings
- Sign and return the Exit Live Jointing Regime form (LV only)
- Send the As-Laid to the Data Management team

References

- NERS Requirements Document
- ENA Competition in Connections Code of Practice
- Ofgem RIIO-ED1 Regulatory Instructions and Guidance: Annex G – Connections
- ENWL Policies and Procedures
- ENWL Competition in Connections website

Contacts

Competition in Connections – Design Submission
- cic@enwl.co.uk

Connection Contracts
- contracts@enwl.co.uk

Asset Adoption – Energisation Requests
- assetadoption@enwl.co.uk

Contracts Manager
- Jonathan Cropper
  - jonathan.cropper@enwl.co.uk
  - Mobile 07471 142 170

Lunch

electricity north west

Bringing energy to your door

Ofgem Significant Code Review

Brian Hoy

Stay connected...

www.enwl.co.uk

Recap - What is a Significant Code Review?

- **A Significant Code Review (SCR)** allows Ofgem to initiate wide ranging and holistic change and to implement reform of a code based issue.

- The are two SCRs with regard to charging

  - The ***Access SCR*** which is looking at Access rights and 'Forward-Looking Charges'; and
  - The ***Targeted Charging Review*** (TCR) which looked at how 'residual' network charges should be set. This is now in the implementation phase

- This presentation will cover the scope and timelines of the Access SCR and the potential impacts

- We have a webinar on 6 February at 10am if you are interested in more details - register here)

What is the Access SCR?

- **Objective of Access Significant Code Review (SCR):** to ensure electricity networks are used efficiently and flexibly, reflecting users' needs and allowing consumers to benefit from new technologies and services while avoiding unnecessary costs on energy bills in general**.**
  - **Access arrangements** - the nature of users' access to the electricity networks (for example, when users can import/export electricity and how much) and how these rights are allocated:
  - **Forward-looking charges** –the type of ongoing electricity network charges which signal to users how their actions can ether increase or decrease network costs in the future
- **Scope:**
  - Review of the definition and choice of transmission and distribution access rights
  - Wide-ranging review of Distribution Use of System (DUoS) network charges
  - Review of distribution connection charging boundary
  - Focussed review of Transmission Network Use of System (TNUoS) charges

Ofgem's approach

- Ofgem's focus this year is on developing and assessing a long-list of options. They are sharing their thinking through two working papers:
  - 1st working paper – published September 2019
    - An initial overview and assessment of options for access rights, better locational DUoS signals and charge design.
    - The links between access, charging and procurement of flexibility.
  - 2nd working paper – published December 2019
    - Distribution connection charging
    - Small user treatment
    - Focused transmission charging reforms
- A shortlist of options will be assessed in further detail this year, with consultation on their draft SCR conclusions in summer 2020

- Further information on the reviews can be found at
  - http://www.chargingfutures.com/charging-reforms/access-forward-looking-charges/proposed-changes-and-potential-impacts/
  - https://www.ofgem.gov.uk/electricity/transmission-networks/charging/reform-network-access-and-forward-looking-charges

Ofgem's Access and Forward Looking Charging SCR

1ST Working Paper – September 2019

electricity north west
Bringing energy to your door

Reform of access rights - recap

- **Network access rights define the nature of users' access to the network and the capacity they can use** (eg how much they can import or export, when and for how long, and whether their access is to be interrupted and what happens if it is).

- It should benefit all network users if we can make better use of capacity and allocate it in a smarter way.

Potential Impacts of Access Right Changes

- **For IDNOs**
  - Will probably need to reflect arrangements in their agreements with customers
- **For ICPs**
  - Probably not significantly affected
- **For Distributed Generation and Demand Customers**
  - Potentially impact existing rights but could introduce more flexible options

Forward Looking Charges - Better Locational DUoS Charges

Treatment of EHV costs for HV/LV customers

All the way model
HV and LV connected customers are charged based on a generic allocative/ultra long-run model per DNO region, while EHV connected customers have highly locational incremental charges

HV/LV baseline

Pancaking/layering
HV and LV connected customers face equivalent charges for EHV costs as EHV connected customers, and then additional charge for HV/LV costs

Extent of locational granularity for HV/LV customers

Extent of variation

Varying by secondary substation/secondary groupings

Varying by primary substation/primary groupings

DNO region charges

Basis for variation

Urban/rural or population density archetypes

Cost of existing network assets

Extent of spare capacity

Reflecting dominant flows

?

Potential Impacts of Forward-Looking Charges Changes

- **For IDNOs**
  - Will probably need to reflect arrangements in their charges to customers
- **For ICPs**
  - Probably not significantly affected
- **For Distributed Generation and Demand Customers**
  - Potentially impact existing charges with greater variability between locations and very different charging structures.
  - However suppliers unlikely to be required to pass the DUoS Charges on directly to customers

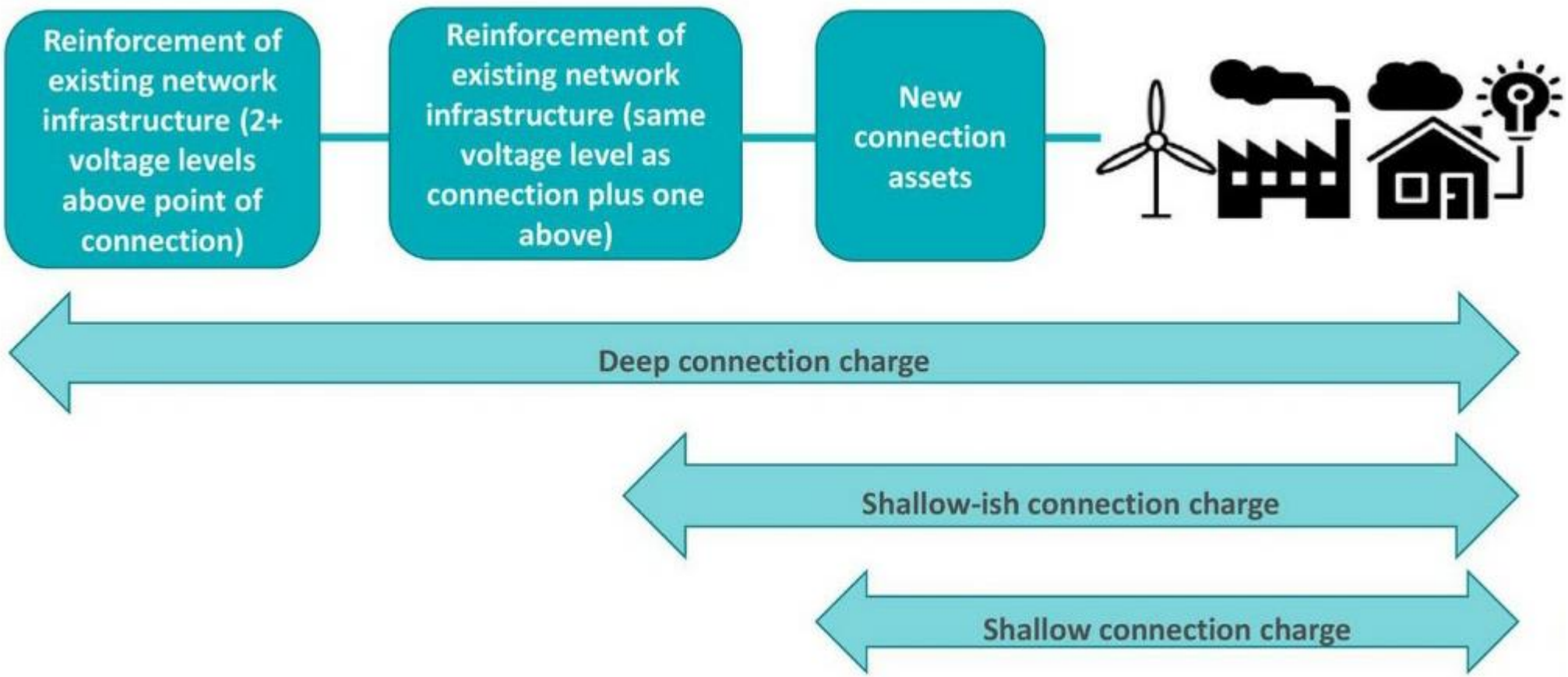
Ofgem's Access and Forward Looking Charging SCR

2nd Working Paper December 2019

electricity north west
Bringing energy to your door

What is the ‘connections boundary’?

When connecting to the network there can be different kinds of assets required to make the connection. The ‘connections boundary’ describes the assets that the customer has to pay for.



How does it work now and what are the issues?

Transmission

- **Shallow connection boundary**
- Pay for new connecting assets up front or over time
- TOs must fund any necessary reinforcement via RIIO allowances or the ESO could actively manage the constraints through flex markets
- To protect against TOs undertaking reinforcement that is not then used, users provide securities against them cancelling their projects ('user commitment')

Distribution

- **Shallow-ish connection boundary**
- Pay upfront for new connecting assets and a share of any necessary reinforcement of the upstream network
- Can lead to high connection charges and might reduce incentives for DNOs to invest strategically, **but** provides a locational signal
- Protects wider consumers from the risk of stranded or under used infrastructure

Potential problems with these arrangements

- The difference between arrangements may be distorting investment decisions or competition between projects
- The connection arrangements could be creating barriers to entry for some users (eg upfront cost) and slow down connections of new technologies like distributed generation and EV charging infrastructure

What options are Ofgem considering?

Shallow-ish connection boundary

current arrangements

Shallower

still recovering some reinforcement costs through connection charges, but less than now

Shallow

no longer recovering any reinforcement costs through connection charges

Alternative payment arrangements

it might be possible to combine alternative payment terms such as payment over time with any of the other options

Small users options

Access SCR would consider as a priority area:

- Better defined access rights and greater choice for small users,
- Distribution use of system charging reform and reforms to the distribution connection boundary
- Potential protections to mitigate the potential adverse impacts of the reforms

Small user's workstream will consider:

- Whether **adaptations** to options may be needed to enable **domestic and microbusiness** consumers to **engage with and benefit from** new access and charging arrangements.
- This includes considering **whether any protections may be needed** for certain groups.

Overview of options

Charging options

Considering whether any limits on the level of locational or temporal granularity or degree of change in dynamic signals may be appropriate for specific types of small user demand

Access options

Considering whether any limits should apply on the choice of access option or level for specific groups of small users, for some or all demand, including a potential core access level option

Wider retail provisions

Considering the role for principles-based obligations or other retail market provisions, including possible approaches to engaging with consumers in relation to any new arrangements

Focused review of Transmission Network Charges

Focused review of transmission network charging covers:

Transmission network charging design for demand users

Transmission network charging design for Distributed Generation

The ‘reference node’

Current arrangements

	Transmission access rights	Wider locational transmission charges	Local circuit charges
Transmission-connected generation	Explicitly agreed access right	Receives credits or pays charges, based on agreed capacity	Pay charge where relevant
Distribution-connected generation >100MW	Explicitly agreed access right	Receives credits or pays charges, based on agreed capacity	Do not pay charge even where relevant
Distribution-connected generation <100MW	Generally not explicitly agreed right, unless have BEGA	Receives credits but charges capped at zero, charges as inverse demand	Do not pay charge even where relevant

Ofgem concerned that these difference could be distorting competition and leading to higher system costs for users

Potential Impacts of 2nd Working Paper Issues

- **For IDNOs**
  - Implementing different DUoS tariffs into their tariffs to suppliers
- **For ICPs**
  - Connection Charging, potentially a move to a much shallower connection boundary with more costs treated as general reinforcement, therefore lower connection costs
- **For Distributed Generation and Demand Customers**
  - Potentially impacts existing charges generally through the supplier but with lower connection costs

Significant Code Review Timetable and Summary

Key Milestones

- The reviews are likely to result in major changes to the charging and access arrangements for customers
- Aim is to finalise the proposals mod 2021 in time for DNO RIIO-ED2 Business Plan Submissions
- Reviews are still at an early stage and impacts not yet clear
- Further updates will be provided as further information becomes available.

Questions?

electricity north west

Bringing energy to your door

DSO Transition

Keith Evans

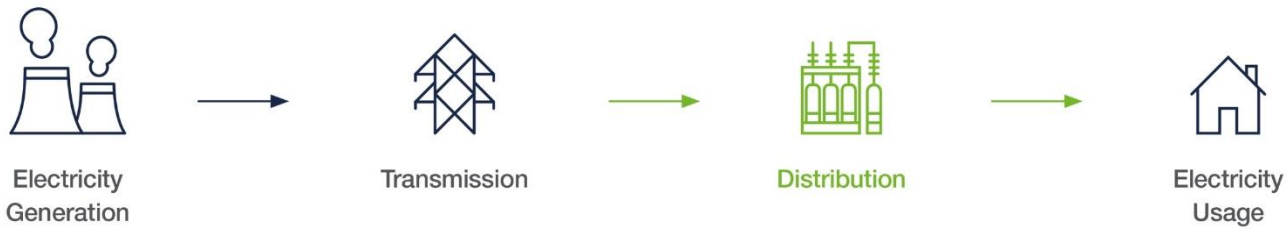
Stay connected...

www.enwl.co.uk

Increasing network complexity

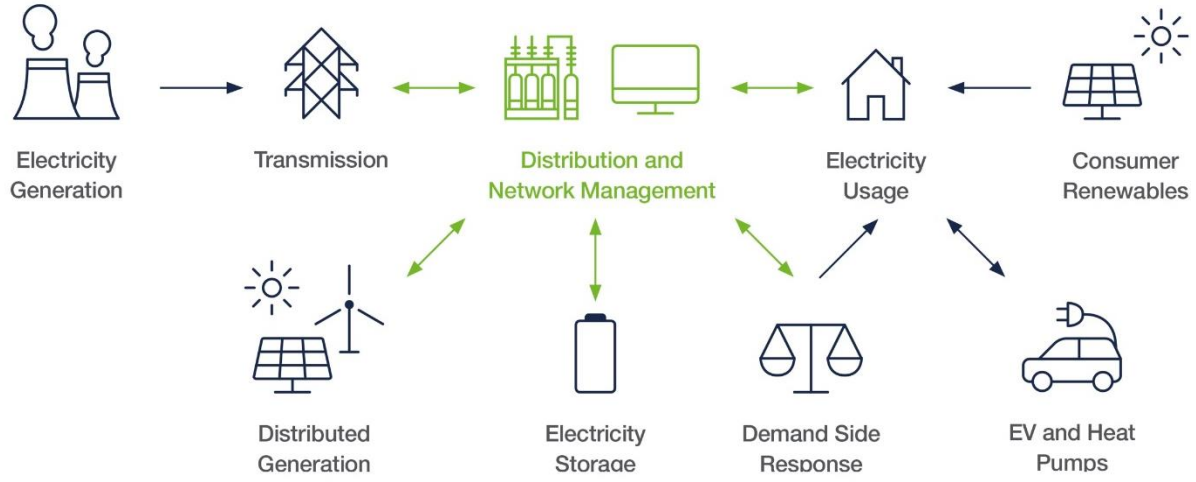
Historically controlling single directional flows

- 18 connections to National Grid transmission network.
- 6 connections to other DNOs



As a DSO controlling bi directional flows

- 18 connections to National Grid transmission network.
- 6 connections to other DNOs
- Hundreds of connections to IDNOs
- Tens of thousands of customer connections



Distribution System Operation

- A large quantity of the ICE and business change program plans for 2018 & 2019 have been associated with the transition to enhancement of Distribution System Operation functionality within ENWL.

- Distribution System Operation can be segregated into a range of functions, some are inherently the responsibility of the DNO to deliver, however many are already widely open to competition and market participation.

- Some of the DSO functions were already part of the role of a DNO and will be enhanced, whilst some are completely new.

- We believe that DNOs should retain responsibility for all DSO functions which preserve the system security and are directly liked to the licence obligation of:

  "Permit the development, maintenance, and operation of an efficient, co-ordinated, and economical system for the distribution of electricity;" (licence condition 21)

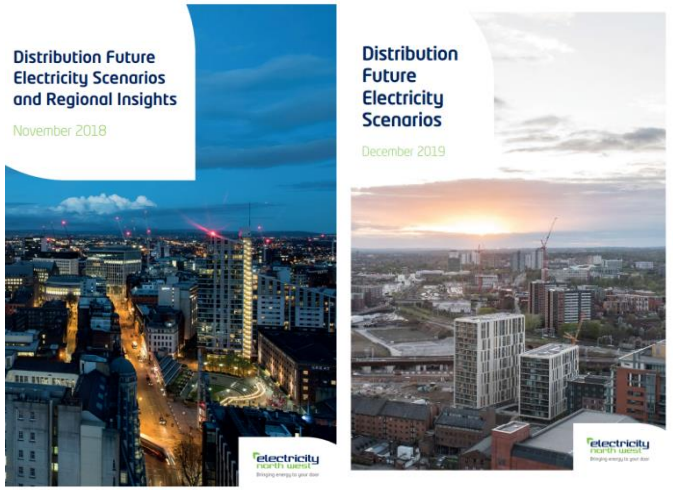
Benefits of DSO transition

Improved customer experience	• Improved customer experience though sharing of best practice within the ENA Open Networks project
Efficiency savings	• Increase utilisation of networks assets allowing for efficiency savings
Whole system investment	• Improved whole system investment decisions through closer working relationships with other network providers
Low carbon economy	• Facilitating the transition to a low carbon economy.
Increased flexibility	• Allowing all customers the ability, independent of size, to participate in energy trading and balancing
Increased productivity	• Increased productivity as a result of developing new modelling tools, implementing new systems, and improved automation

What have we done to date

Distribution Future Electricity Scenarios Documents

- 2 years of DFES publications
- 2019 FES includes data workbook https://www.enwl.co.uk/get-connected/network-information/dfes/



Requests of Flexible Services

- 14 Requirements published
- 5 Tenders undertaken
- 52MW asked for

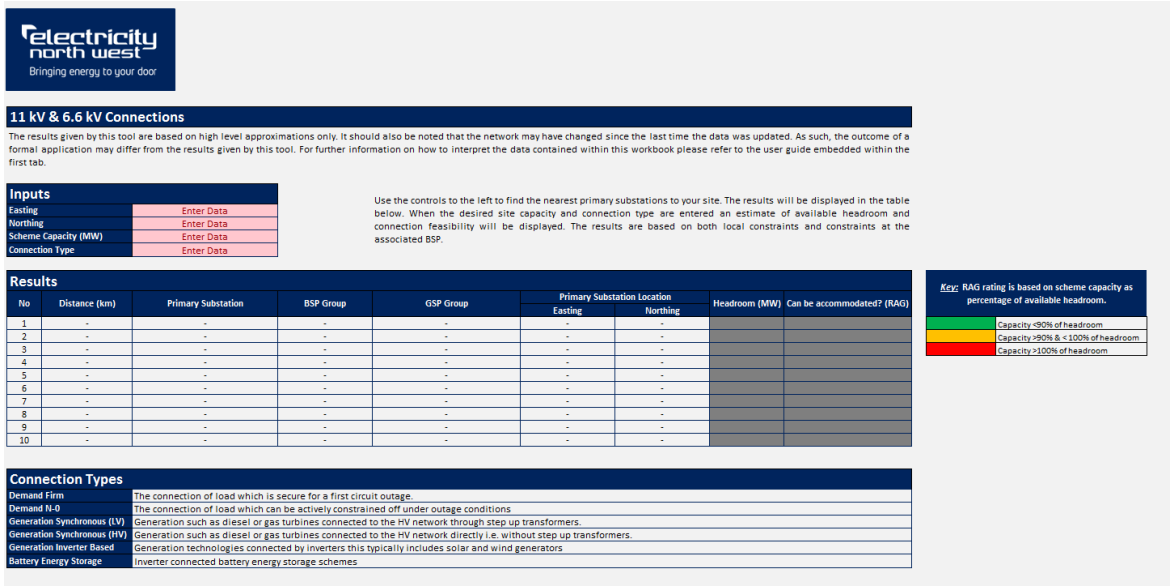
https://www.enwl.co.uk/get-connected/network-information/flexible-services/

What have we done to date

Heat Mapping Tool

- In 2018 we published the new improved heat mapping tool.
- Tool is updated monthly
- Enables developers to assess the level of capacity that might be available for new connections to our network.

  https://www.enwl.co.uk/get-connected/network-information/heatmap-tool/



electricity north west
Bringing energy to your door

11 kV & 6.6 kV Connections

The results given by this tool are based on high level approximations only. It should also be noted that the network may have changed since the last time the data was updated. As such, the outcome of a formal application may differ from the results given by this tool. For further information on how to interpret the data contained within this workbook please refer to the user guide embedded within the first tab.

Inputs	
Easting	Enter Data
Northing	Enter Data
Scheme Capacity (MW)	Enter Data
Connection Type	Enter Data

Use the controls to the left to find the nearest primary substations to your site. The results will be displayed in the table below. When the desired site capacity and connection type are entered an estimate of available headroom and connection feasibility will be displayed. The results are based on both local constraints and constraints at the associated BSP.

Results

No	Distance (km)	Primary Substation	BSP Group	GSP Group	Primary Substation Location		Headroom (MW)	Can be accommodated? (RAG)
					Easting	Northing		
1	-	-	-	-	-	-		
2	-	-	-	-	-	-		
3	-	-	-	-	-	-		
4	-	-	-	-	-	-		
5	-	-	-	-	-	-		
6	-	-	-	-	-	-		
7	-	-	-	-	-	-		
8	-	-	-	-	-	-		
9	-	-	-	-	-	-		
10	-	-	-	-	-	-		

Key: RAG rating is based on scheme capacity as percentage of available headroom.

	Capacity <90% of headroom
	Capacity >90% & < 100% of headroom
	Capacity >100% of headroom

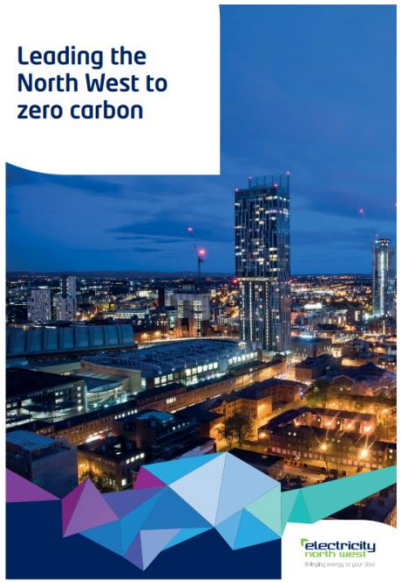
Connection Types

Demand Firm	The connection of load which is secure for a first circuit outage.
Demand N-0	The connection of load which can be actively constrained off under outage conditions
Generation Synchronous (LV)	Generation such as diesel or gas turbines connected to the HV network through step up transformers.
Generation Synchronous (HV)	Generation such as diesel or gas turbines connected to the HV network directly i.e. without step up transformers.
Generation Inverter Based	Generation technologies connected by inverters this typically includes solar and wind generators
Battery Energy Storage	Inverter connected battery energy storage schemes

Carbon Plan

- Publication of the carbon plan in 2019
- Maps out how we intend to reduce emissions 10% year on year.

  https://www.enwl.co.uk/zero-carbon/leading-the-north-west-to-zero-carbon/

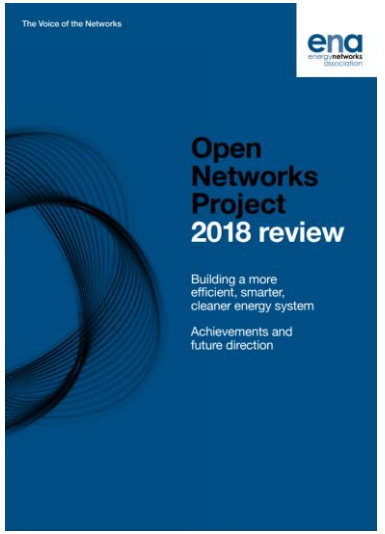


What have we done to date

Open Networks Project

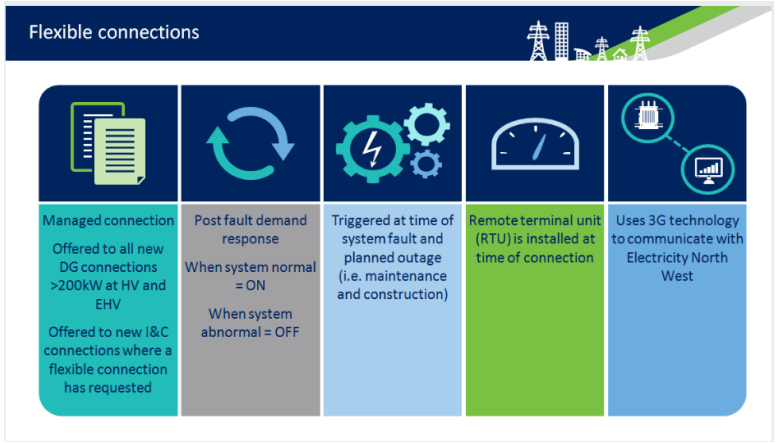
- Worked collaboratively with the other industry members to develop shared processes, identify best practices, and enhance whole system development.
- Consultations on: impact assessment, connection queues, interactivity, and flexible services.

  http://www.energynetworks.org/electricity/futures/open-networks-project/



Flexible Connections

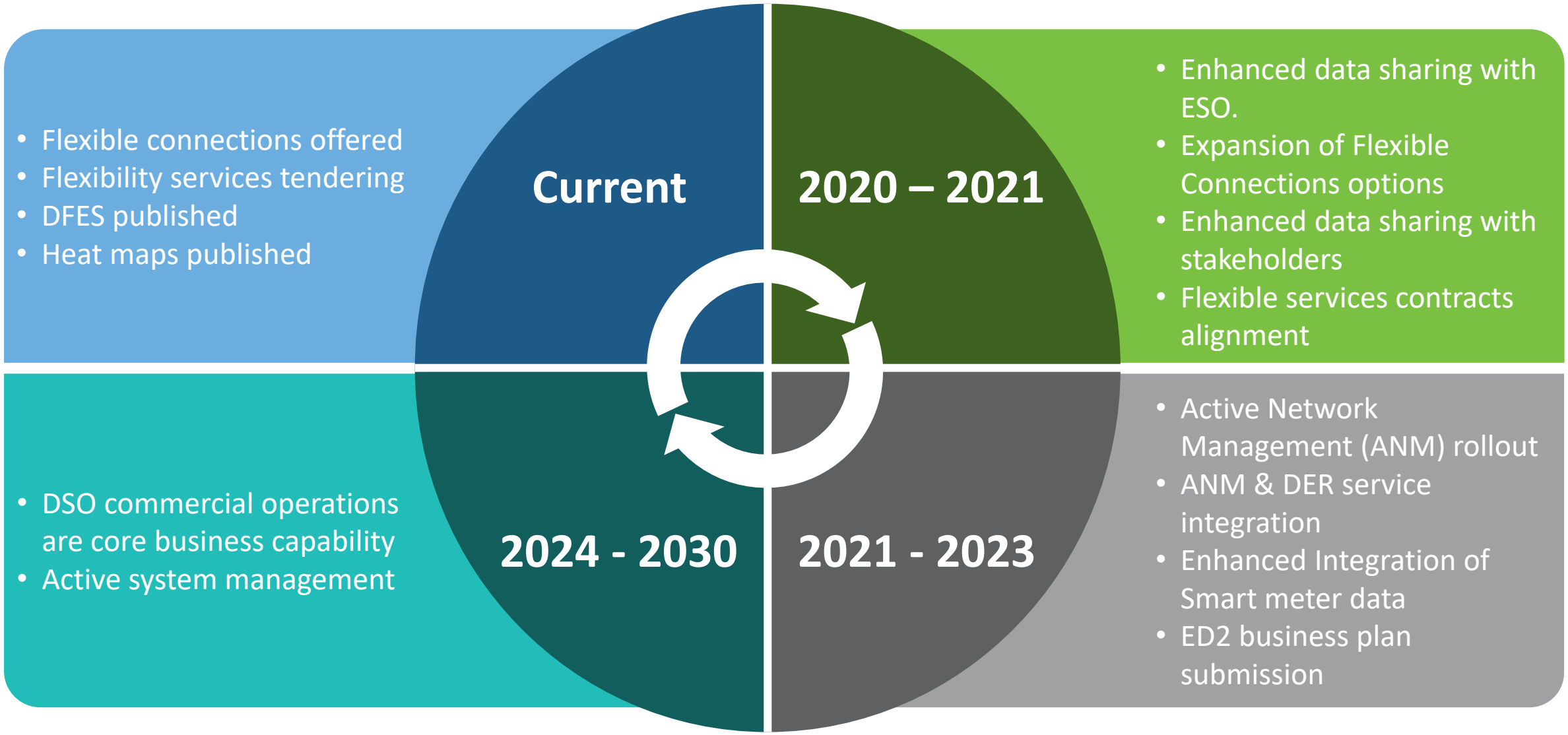
- We offer constrained or flexible connection offers as standard, which means you could benefit from avoiding reinforcement costs and associated timescales for traditional network reinforcement. https://www.enwl.co.uk/get-connected/apply-for-a-new-connection/managed-connections/



Key points for 2020

- Publication of System Wide Resource Register
- Changes to the interactivity process
- Changes to the queue management process
- Alignment of flexible services contracts with other DNOs
- Publication of Digitisation strategy

DSO transition



electricity north west

Bringing energy to your door

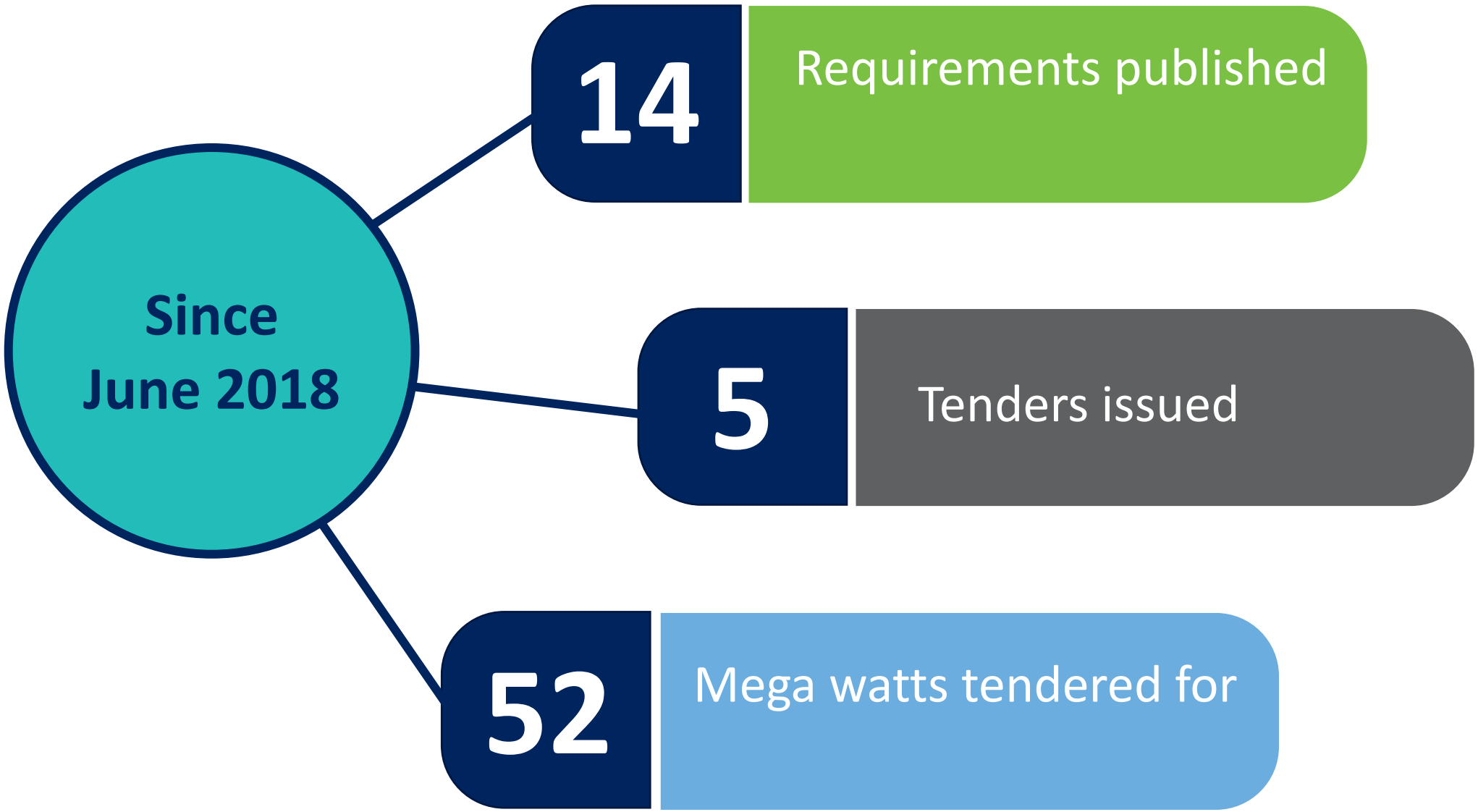
Flexible Services

Keith Evans

Stay connected...

www.enwl.co.uk

Tenders to date



Progress

You said	We did
The minimum size for participation is too high	We reduced the minimum size for directly connected customers to 50kW and aggregated resources to 100kW
The requirement for minute by minute metering is a deterrent	We changed the metering requirement to half-hourly metering
More transparency is needed with documentation	We created the addition information section on our website which includes the template contract and T&Cs
More notice is needed of future requirements	We now sign post our future requirements on our flexibility map on our website
The requirements and associated processes aren't clear	We have extended the clarification window at the beginning of each RfP going forward and have introduced bi-annual workshops

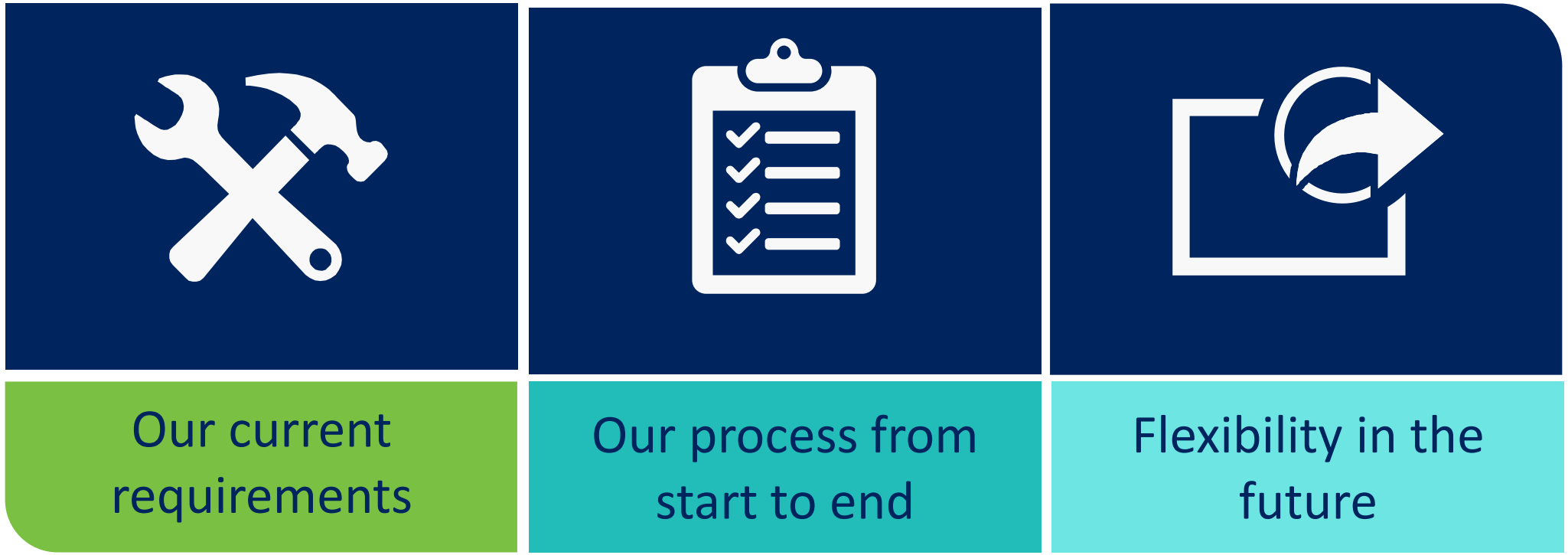
Current requirements

New requirements will be published in Spring

Deadline for submissions was on 13th December

Results of this will be published in March

November workshop



The full slide deck and summary of feedback is available at on our engagement page

Flexibility workshop – feedback

Barriers to Participation

- Geographic
- Price visibility
- Contract length
- Notice period

Additional Information

- HH load profiles
- Technical specification
- Visibility on platforms

Upcoming Workshop

12

March

The event will be held at ‘Leaf’ in Manchester city centre

09:30 – 12:30

You can register for this event through our events page

Please sign up to our distribution list to be notified of the details of this workshop and any future events

Open Networks Project

Feedback from stakeholders from the recent consultation has highlighted the need to make it easier to participate in multiple markets and across distribution network boundaries.

Open Networks are now prioritising consistency between DNO's to facilitate stakeholders and remove barriers to participation.

Good practice guide

- Agreement on level of detail of information to be provided by all DNOs
- Work is ongoing and will continue next year to achieve further consistency across procurement processes and operational parameters

Consistent branding

- March 2020 all DNO's will adopt consistent branding of flexibility products
- Service characteristics of each type of response will be aligned

Standard terms & conditions

- Currently producing a set of standard terms and conditions
- These are to be adopted by all DNO's in March 2020

Flexible Connections Update

Keith Evans

electricity north west

Bringing energy to your door

Stay connected...

www.enwl.co.uk

Flexible Connections Update

- ENWL already offer a range of flexible connections options as BaU:

Export limiting devices

Flexible Connection Solution where automated equipment at the User's site/substation ensures that the User's Agreed Export Capacity is not exceeded.

Available to all generation customers where export capacity is deemed to be an issue or where the site does not wish to export/limited export requirements. Sites should adhere to EREC G100 standards.

Remote Constraint Connection

Flexible Connection Solution where capacity is temporarily reduced (which may be zero) for system abnormal network conditions. These may be distant from the customer's site and are monitored in real-time.

Currently ENWL offers remote constrained connections to all generation sites ≥200kVA in the form of rapid and controlled shutdown procedures.

Intertripped connections

Flexible Connection Solution which will disconnect some/all of the site for a prescribed system abnormal network condition, such as another circuit breaker opening.

Applied within ENWL where a network critical disconnection is required following an abnormal running condition within protection timescales (<1s).

It is not always possible to technically or financially facilitate a flexible connection to all sites. Your designer will be able to advise on a site by site basis.

What we are working on

We are developing:

Timed Capacity Connections - a Flexible Connection Solution where the User manages their import/export level within a prescribed operating schedule agreed within their Connection Agreement.

Active Network Management - a Flexible Connection Solution where distributed control systems continually monitor network parameters and allocate capacity to customers in order that performance remains within limits.

Import Limited Connections -a Flexible Connection Solution where automated equipment at the User's site/substation ensures that the User's Agreed Import Capacity is not exceeded.

Where possible, ENWL has taken the opportunity to trial these technologies. Although these are not currently business as usual, we are happy to discuss the potential for these solutions on a trial basis.

Coffee

Shaping our 2020-21 ICE Workplan

Hannah Sharratt

electricity north west

Bringing energy to your door

Stay connected...

www.enwl.co.uk

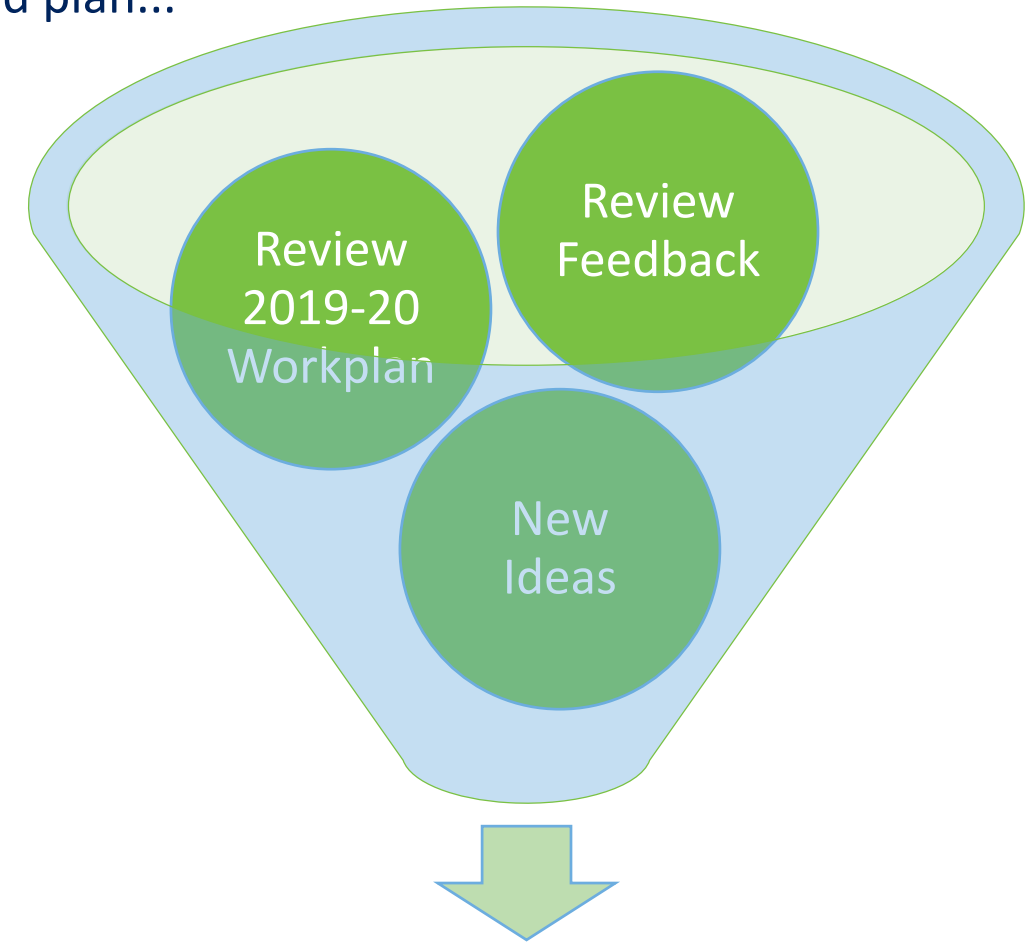
Your Priorities ?

- For each of the following topics, please indicate the level of importance to you
  - 1 = low importance, 5 = extremely important

Competition in Connections	Training & Guidance	Clarity of Customer Responsibilities
Process	Time To Quote	Communications
Land Rights & Consents	Time To Connect	Ease of application
Cost	Pre-application support	Payment Options
Design Approvals	Access to Information	A&D Fees
Flexible Connection Options	Clarity of our Requirements	Other factors, eg Highways, National Rail, BEIS, Local Authorities

Proposed ICP / IDNO Workplan

How we create the proposed plan...

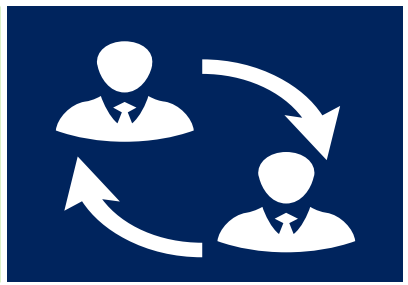


Draft 2020-21 ICE Workplan

2020-21 ICP / IDNO ICE Workplan Development

Gather Ideas & Options:

Draft ICE commitments & actions (Dec / Jan)



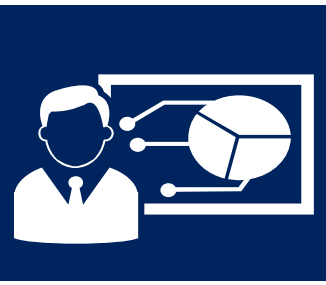
Assessment & Benefits Review:

Discuss potential ICE actions with stakeholders (Jan / Feb)

Assessment & Benefits Review:

Review & respond to feedback

(Feb / Mar)



Confirm:

Test updated ICE actions & KPIs / outputs with stakeholders (Mar/Apr)

Finalise

Publish Workplan

(end Apr)

Internal engagement → External engagement → Act on feedback → External engagement → Finalise & Issue

ICE Commitments League – Ranking exercise

- **Individual activity:** Using the sheets provided, please categorise each proposed ICE commitment.
- **Group activity:** Using the cards provided, please categorise each proposed ICE commitment.
- Please also provide feedback on our proposed actions, and describe how this will benefit you.

	Team	Played	Won	Drawn	Lost	For	Against	GD	Points	Form
1	Liverpool	21	20	1	0	50	14	36	61	W W W W W
2	Manchester City	22	15	2	5	62	25	37	47	W L W W W
3	Leicester City	22	14	3	5	39	22	17	45	L L W W L
4	Chelsea	22	12	3	7	39	29	10	39	W L W D W
5	Manchester United	22	9	7	6	36	25	11	34	L W W L W
6	Sheffield United	22	8	8	6	24	21	3	32	W D L L W
7	Wolverhampton Wanderers	22	7	10	5	31	28	3	31	W W L L D
8	Tottenham Hotspur	22	8	6	8	36	31	5	30	L W D L L
9	Crystal Palace	22	7	8	7	20	24	-4	29	L W D D D
10	Arsenal	22	6	10	6	29	31	-2	28	D D L W D
11	Everton	22	8	6	8	28	28	0	28	D W W L W
12	Southampton	22	8	4	10	27	39	-12	28	W W D W W
13	Newcastle United	22	7	5	10	21	34	-13	26	W L L L D
14	Brighton & Hove Albion	22	6	6	10	25	30	-5	24	L L W D L
15	Burnley	22	7	3	12	24	37	-13	24	W L L L L
16	West Ham United	21	6	4	11	25	33	-8	22	W L L W L
17	Watford	22	5	7	10	20	34	-14	22	W D W W W
18	Aston Villa	22	6	3	13	28	43	-15	21	L W L W L
19	AFC Bournemouth	22	5	5	12	22	42	-20	20	L D L L L
20	Norwich City	22	3	5	14	22	45	-23	14	L L D D L

Into Europe

Mid Table

Relegation Zone

Last updated 16th January 2020 at 17:16

Thank you

Question & Answer Session

Wrap up and Close

Mark Williamson

Stay connected...

www.enwl.co.uk

Wrap Up & Close

- Please give us your honest feedback on the forms provided
- Presentation slides will be available via our website shortly.
- Future events, including webinars are available here
- Don't forget to get in touch with us at ICE@enwl.co.uk
- Thank you for your attendance and have a safe journey home.