Blue Light

Simplifying the connections process and improving visibility of connections requirements for UK Power Networks and the emergency services

NHS East of England Ambulance Service NHS Trust

UK Power Networks Delivering your electricity

LFB LONDON FIRE BRIGADE

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Blue Light Project Objectives

Blue Light aims to enable UK Power Networks to assist emergency services with their electrification efforts, by simplifying the connections process and improving visibility of connections requirements

Assist emergency services in making more informed decisions regarding their electrification plans for their entire estates

Reduce the time taken and resources required to approve connections applications

Provide UK Power Networks Network Planning team with an improved view of expected connections requirements for emergency services

Problem Statement

- Ambitious Net Zero Targets
- Unique Operational Constraints
- Scale & Complexity
- Rising Connection Workload
- Systemic Impact
- Public & Political Visibility
- Risks of Inaction

Insights from user testing

I came across Adam [connections team] in a conference and have already had **5 surgeries to gather information about my sites**. We still need a few more before I may be able to consider an application. I would imagine this **tool would have mitigated the need for a number of those**.

Seven Force Police Strategic Collaboration

Decarbonisation is currently a requirement, but unfunded. It is understood that there needs to be a big shift in approach from higher levels of decision makers. **If this comes soon then there will be a wave of money, deadlines, etc.**

Sussex and Surrey Police

There are a range of maturities across organisations, but it seems data preparation and **DNO connection applications are a weakness for all levels of maturity**, so the tool is a good opportunity to provide support.

NHS England

Having everything in one place [in the portfolio aggregation view] is useful for rollout planning, access to funding and **putting a business case together to gather internal support.**

South Coast Ambulance Service

Most conversations around **solar is around it being an opportunity to reduce grid consumption and maybe the connection required**, not sell to the grid. Flexibility is also discussed to help backup supplies and so need to be able to look at that on the tool.

Seven Force Police Strategic Collaboration

We **often don't need an exact quote** because an estimate of the range of costs will help us **get interest and support internally**. It also gives us a view of what may need to be applied for later.

NHS Kent

All ambulance sites in the south coast are being **considered for solar generation**, so functionality to include this modelling would be useful.

South Coast Ambulance Service

Blue Light – Phase 1 Engagement Outputs

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Work Package 3: Essex Police

May 2025

Table 7. EV specifications for Essex Police vehicles

Vehicle Segment	EV model	Battery capacity (kWh)	Max. AC charge rate (kW)	Max. DC charge rate (kW)
Executive car	BMW I5	81	22	205
Large car	Hyundai Iconiq 6	77	11	233
Large commercial SUV	Volvo EX90	111	11	250
Large van	Ford E-Transit	68	11	115
Large van - (>3.5t GVW)	Iveco eDaily	111	22	80
Medium car	Volkswagen ID.3	77	11	125
Medium MPV	Citroen e-Berlingo (XL)	50	11	100
Medium van	Vauxhall Vivaro-e	75	11	100
Midsized commercial SUV	Maxus T90 EV	89	11	80
Midsized SUV	Volkswagen ID.4	77	11	125
Motorcycle	Energica Experia	22.5	3	24
Rigid Truck - 2 axles (18t GVW)	Volvo FL Electric	565	43	150
Rigid Truck - 2 axles (7.5t GVW)	Fuso eCanter	116	22	104
Small car	Vauxhall Corsa-e	50	11	100
Small van	Peugeot e-Partner	50	11	100

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Work Package 3: London Fire Brigade

May 2025

Table 8. EV specifications for LFB's emergency response vehicles

Vehicle type	Battery capacity (kWh)	Max. charge rate (kW)
Platform HGV	350	350
Car	70	100
Fire rescue unit HGV	350	350
Pumping appliance 4x4	150	150
Pumping appliance HGV	350	350
Specialist HGV	300	350
Specialist HGV + Moffett	300	350
Specialist Van	150	150
Standard Van	90	150

Key Challenges Blue Light Will Address

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The Challenges			
Connection requirements are complex, expensive, and constrained	**Optioneering requires considerable support**	**Connections planning requires a consolidated approach**	**There is uncertainty around resiliency planning**
What are we aiming to do?			
Demystify early-stage, site specific, connection applications and project planning	Enable the prioritisation and planning of a portfolio of sites and improve network planning	Identify and support collaboration opportunities for wider portfolio optimisation	Improve resiliency strategy design and promote demand management
How can we do it?			
Provide up-front access to information, data and use cases	Design and facilitate a 2-way exchange of portfolio / regional level data	Develop the knowledge, and align the goals, of different emergency service organisations and teams	Identify suitable demand management solutions and electricity resilience requirements

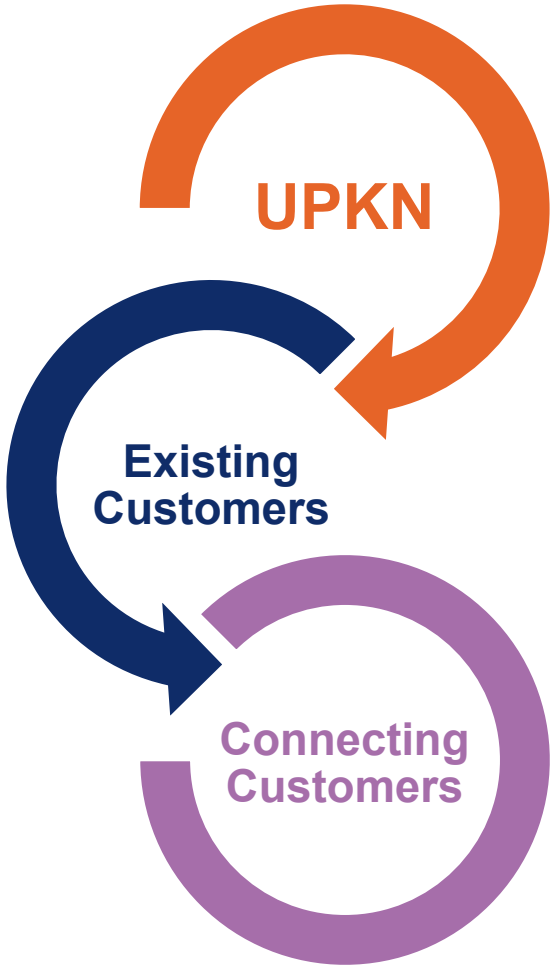
Designing the solution - Users, Epics and Use Cases

1. Understanding the current site	• Provide basic site information frequently requested from UK Power Networks • Establish the current headroom available at the site
2. Decarbonisation requirements and connection options	• Assist users in estimating their EV Fleet requirements and required infrastructure

3. Portfolio Aggregation	• Provide an aggregate view for users across all sites, in both a:
	  • **List View:** Including details of the connection costs, site owner, and other quantitative data points
	  • **Map View:** A more graphic view to highlight the location and proximity of sites.

4. Road Mapping and Resilience	• Assist users in establishing a deployment roadmap, optimised for cost efficiency and meeting their targets
5. UKPN visibility and collaboration facilitation	• Provide visibility to UK Power Networks of Emergency Services activities on the tool and decarbonisation journey maturity • Coordinate collaboration between emergency services organisation

Benefits

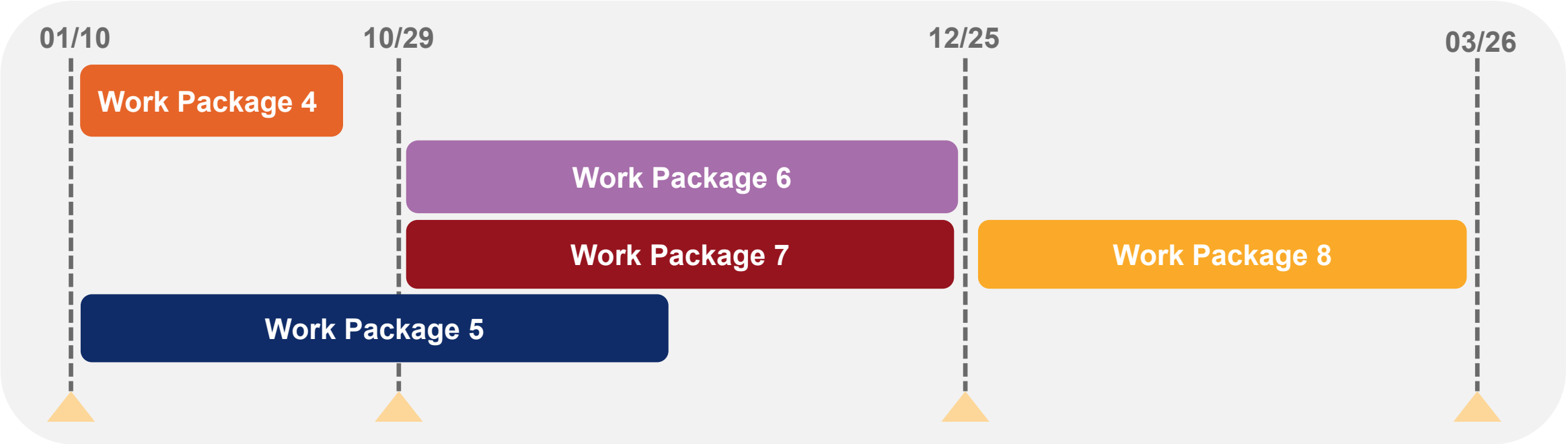


Through streamlining the connection application process and reducing the number of applications per connection sites, less resource will be needed to approve new connections.

This will in turn result in lower cost for UK Power Networks which will translate into reduced bills for existing customers.

For the connecting customers, as the tool will identify the exact amount of capacity needed, connecting customers (and UK Power Networks) will neither underestimate nor overestimate the necessary improvements they need which will allow them to receive a quote that exactly meets their requirements at the lowest cost.

Phase 2 Scope



WP 4 – Wireframe Creation and Iteration

WP 5 – Additional Ambulance Research

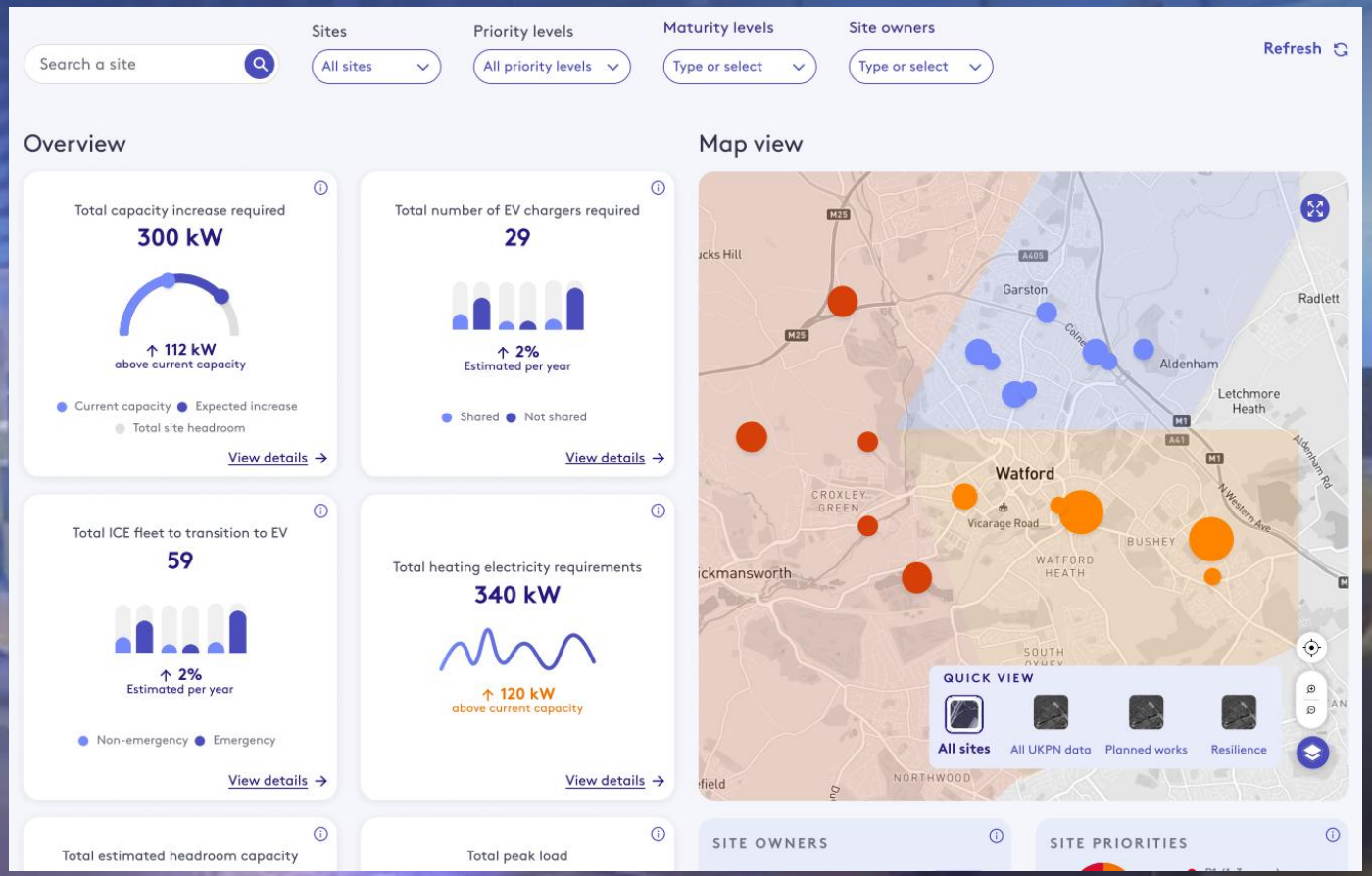
WP 6 – Testing & Engagement

WP 7 – Solution Specification Creation

WP 8 – Tool Build

Key Challenges Blue Light Will Address

1. Build Wire Frames
2. Complete Ambulance report
3. Engage Stakeholders
4. Test and Validate Wireframes
5. Build the Tool



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THANK YOU