

DESIGN FORUM | 20 MAY 2026

Powerco Neara implementation and design

PAUL SMITH & JULIAN HEATH | 2026





Where we started

Taking a collaborative future focus to how we approach design – working smarter, not harder

Vision for design at Powerco

For design to be a one-stop-shop to utilise the design-house philosophy where our contractors form a wider part of our design team.

Powerco, design and Contract 25 Programme

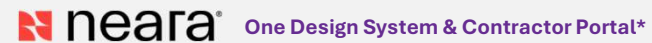
Powerco's Distribution Design Team designs and reviews the Powerco overhead, underground and ground mount equipment across the network. We also manage and maintain the overhead and underground design standards and all standard drawings related to the overhead network. Contract 25 introduced us to working with more contractors across New Zealand, and it was an opportunity to make improvements, to start off in the direction as we mean to go, in the design space.

Our starting point

Powerco has been using Neara since 2020 to utilise our LiDAR data for vegetation management. We use it to identify violations and high-risk trees out of zone and programme cost modelling. Our Engineering and Reliability Team also carry out conductor modelling to identify sags out of tolerance, ECP34 breaches and associated defects. These combined have found root causes on some of our worst performing feeders.

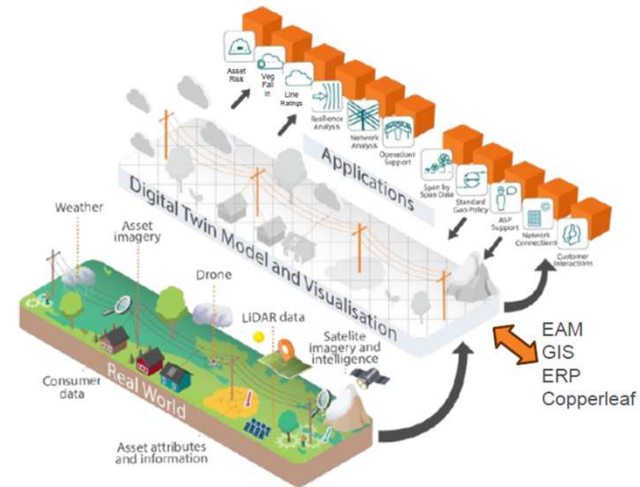
Coldnet was our main overhead (OH) only design tool but it was facing end of life challenges and failing to meet our design needs. It's not a modern tool, it's not cloud based, and the ability to collaborate with our contractors was very manual and clunky.

We trialled the Design Instance and found it to be a more modern tool for designing overhead lines and we saw an opportunity where Powerco could leverage this to work smarter and more efficiently.

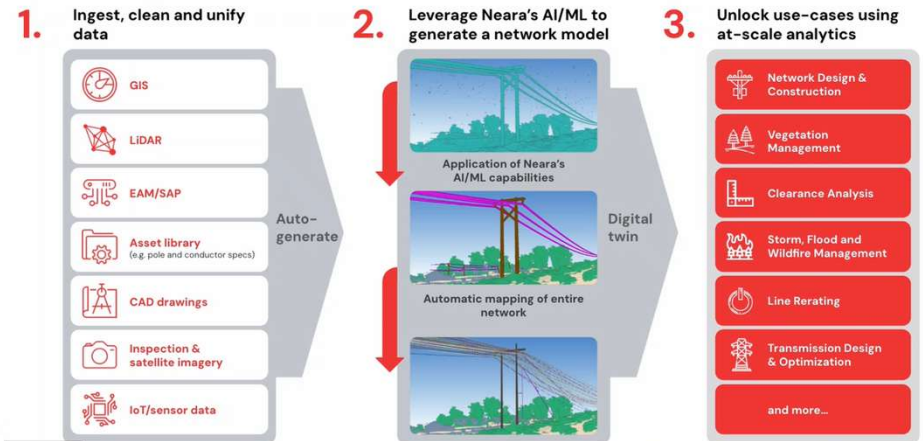


What is a Neara physical digital twin network model?

- Neara digital twin: a physics-enabled, structural, mechanical engineering grade 3D interactive digital model of the network, reflecting:
 - GIS data: to identify structures, boundaries, points of interests.
 - Lidar data: to build an accurate 3D representation of reality.
 - Powerco pole top photography library.
 - It then integrates technical properties such as CAD drawings, design specifications and material information to inform you of the dimensions and physical properties of the network components in the digital twin.
- Digital twin is linked to a flexible mechanical 'analytics engine' which takes the digital twin from being a visual replica of assets to being an accurate representation of how assets will perform mechanically.
- Adding sensor information to a digital twin enables frequent re-modelling of assets based on local conditions, essentially converting a static digital twin into a dynamic one.












How do we build your network digital twin?





Business Case for Neara

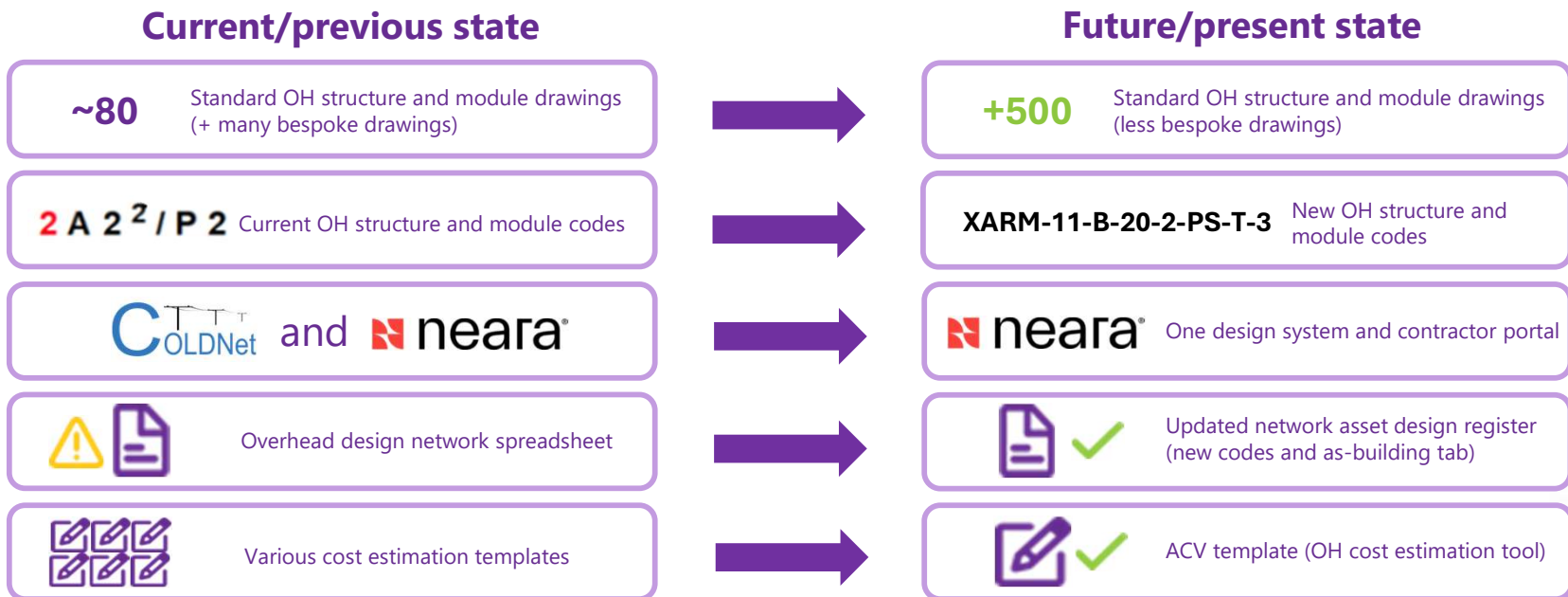
Advantages of Neara for Powerco

Time savings		We found Neara to be 22% - 75% faster than Coldnet.
Risk identification		Rapid network risk identification: For the entire network, ~10x faster risk identification (eg conductor clashing) is possible.
Cost-effective risk identification		Compared to manual inspection methods, ~5x reduced spend on risk identification .
Improved emergency response and network remediation speed		Rapidly assess areas of network and assets impacted by natural disasters and enable faster planning and faster restoration of power for communities.
Increased design efficiency and collaboration		Increased design collaboration and efficiency when producing, reviewing, and redesigning network design on Neara
One tool for OH and UG		UG and OH designing undertaken within the same system, which Coldnet can't do.
Optimise OPEX spend		Optimise OPEX spend on physical asset inspections from using Neara's platform instead of physical inspections
Pole inspection efficiencies		More efficient pole analysis and inspections, ~2x faster pole analysis and inspections are possible compared to alternative software-based solutions.
Leveraging AI		Leveraging Neara sophisticated AI/Machine Learning.



C25 Neara and design capability project

People often refer to this workstream as Neara implementation but this work stream was much wider than just Neara.





Neara and Design Capability Project

Training and communications were essential

- Delivered 1-day virtual change overview training
- Delivered 3-days of in-person practical Neara training and designing on Powerco's network
- Delivered 3x 1.5 hour training sessions for PMs
- Delivered education sessions across Powerco business (IT and BT, Asset Information, Asset Fleet, Technical Assurance)
- Contractor training co-facilitation with CoEng
- Post-training surveys
- Detailed documentation on Restore and Powerco intranet for self-service
- 15+ hrs of training recordings
- Weekly early life support 1:1 with contractors and Powerco for 2-3 months
- Dedicated 1:1 follow up ACV practical workshops with Contractors
- Industry first – implementing Design Community of Practice



How would you rate the **training you received overall** for the Neara and Design Capability Project? (Including the **virtual and in-person training days**) (1 star = Low; 5 stars = High)

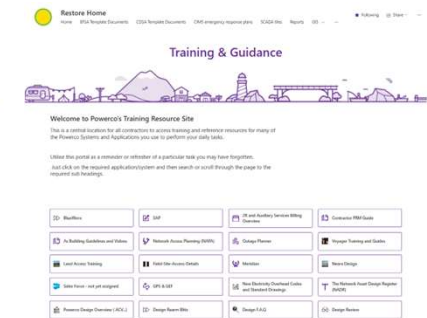


Comments about Contractor Training

- "Good overview"
- "Informative"
- "Plenty of content, all valuable"
- "Very well presented with the slides"
- "One of the best training I've been to"

Comments on change

'This has been the best roll out of change by Powerco, with all of the training, communications, and support provided'



Comments about Restore

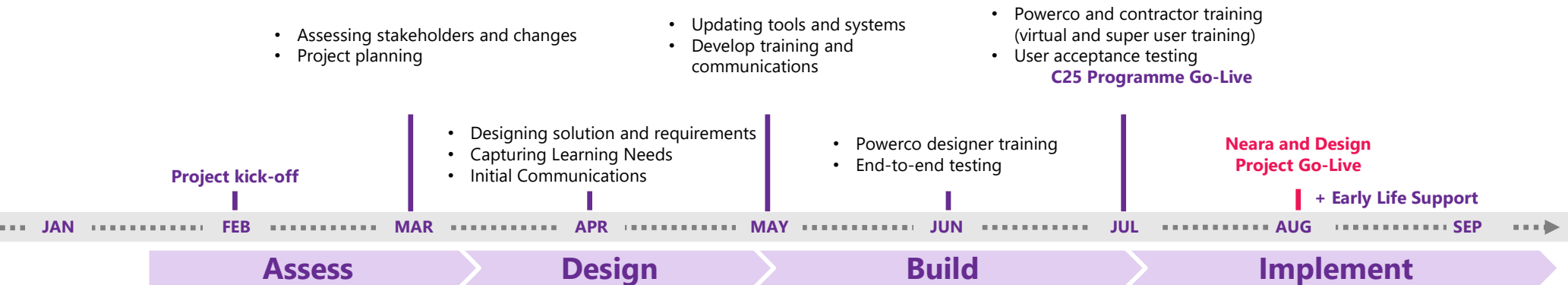
"I don't think that there's been anything that [we've] been asking that hasn't been available there...[Restore] it's a very handy resource."





Neara and design capability project

High-level implementation timeline



Implementation considerations

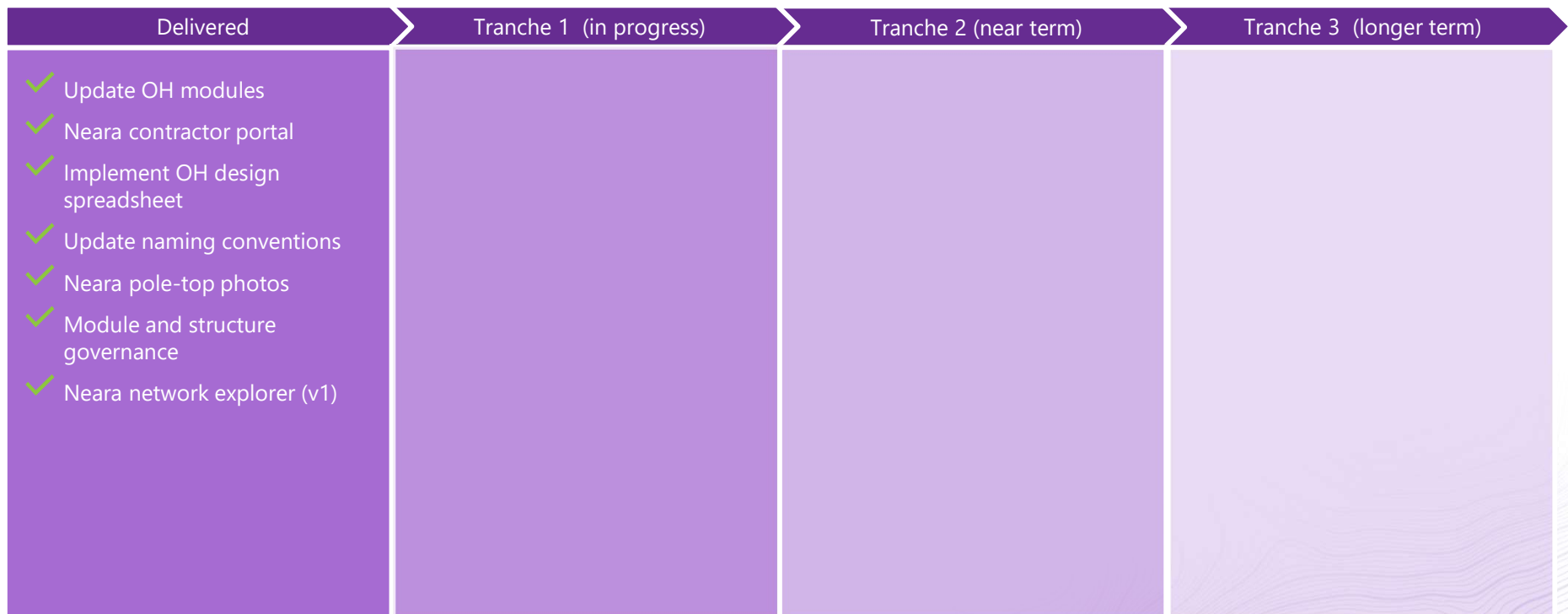
- Contractors to have own Neara accounts.
- Establish a contractor portal for contractors to access Powerco's network and security.
- Enterprise licensing to use across Powerco.
- Neara design exporting functionality to document project designs into the NADR and support pricing and as-building.
- Updating 500 modules and structures in the libraries for Neara, NADR, ACV, As-Building, FME, ArcGIS and SAP.
- Neara and Powerco collaborative training for all designers (Neara training to be done in-person).
- Develop training and support materials for designers (internal and external).





Future view: Powerco Design and Neara

Goal: All designs to be done in Neara





Neara Network Viewer roll out

What is Neara Network Viewer?

Network Viewer is a stripped back, clean and intuitive Neara interface that allows users to easily navigate and find assets in their network.

What information is in it?

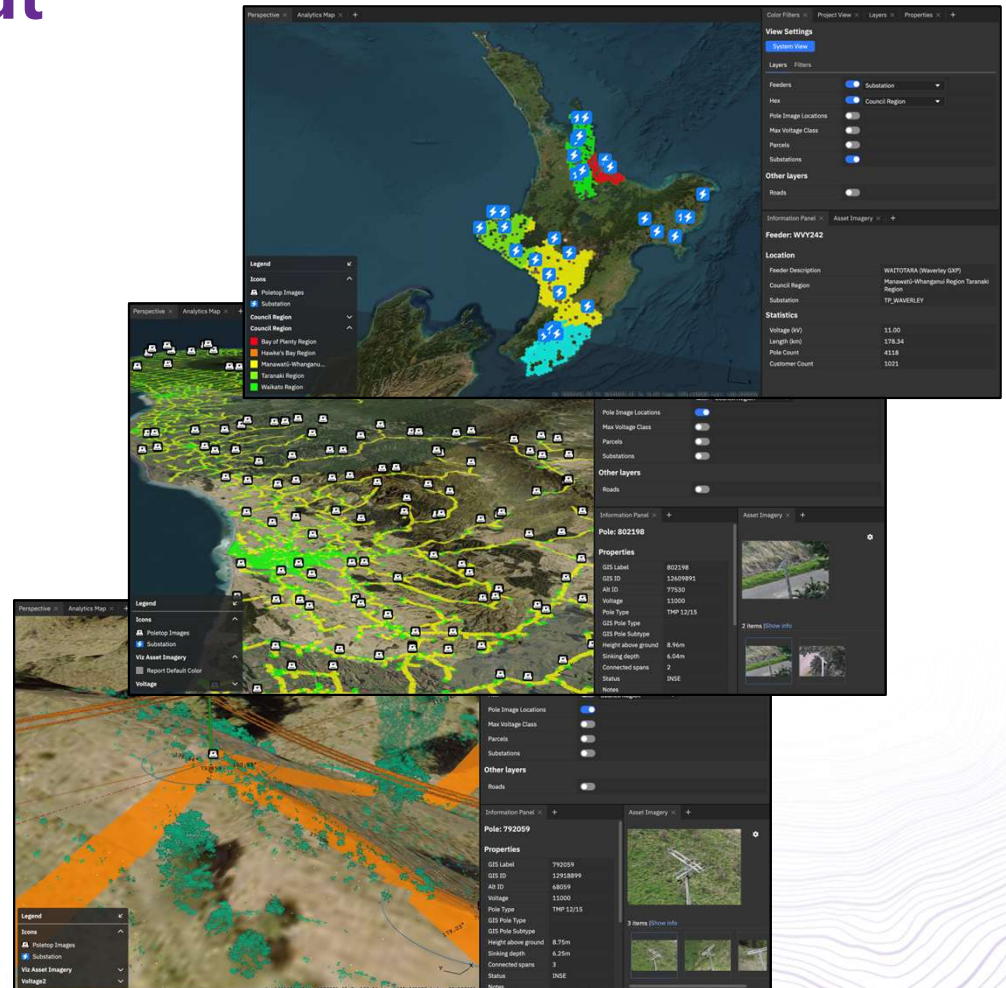
Network viewer contains Powerco's network model, point cloud, GIS, pole-top imagery, and other geo data as relevant.

Clicking on assets will show information including engineering properties and characteristics, clearance measurements, site context, maintenance history, and photos.

Neara Viewer is a 3D, GIS-style tool that allows you to:

- View LiDAR data including ground, vegetation, buildings, structures, and conductors
- Access pole-top photos captured across the Powerco network
- Perform basic clearance measurements (e.g. ground/structure/vegetation)
- Measure LiDAR point-to-point distances (e.g. pole to building, pole to pole, etc.)
- View span, pole and crossarm properties derived from our GIS snapshot and Neara's AI module (where GIS data is missing)
- Search by pole number or navigate by scrolling/zooming – similar to GIS, but in 3D

We believe this 3D network view will be extremely helpful to wider teams for planning, investigation, and general network understanding.



Thank you!
Any Questions?

