neara

Neara Platform
Overview Presentation

> The **lack of grid capacity** is threatening Britain's ambitious target of decarbonising the electricity system by 2035 on the path to becoming a **net zero emissions economy by 2050**

Climate Change Committee

> About **600 projects** with combined capacity of **176GW** are in the queue in England and Wales, against **64GW of connected capacity** with waiting times of up to **20 years** to be connected to the grid
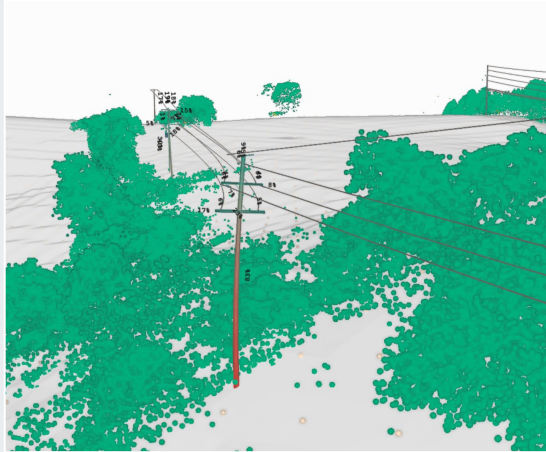
national**grid**

> Daily Constraint Costs have risen to about **£62mn a day** totaling **£ 1,96bn GBP a year** in 2022
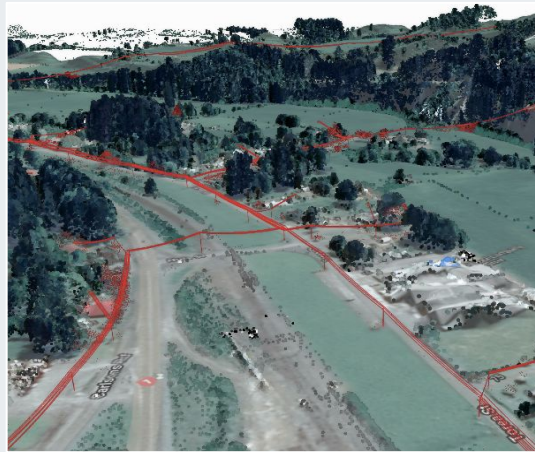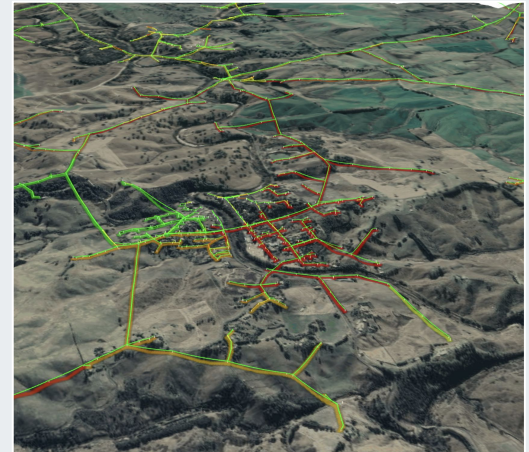
FT

What is Neara?

Neara is an **enterprise SaaS platform** that delivers a **true digital model for utility networks,** performing **complex engineering–grade analysis, automatically,** and at **whole-of-network scale**

Engineering grade analysis at the individual asset level

High-fidelity, automatic and dynamic asset mapping

Engineering grade analysis at whole-of-network scale

We remove the historic trade–off between accuracy and speed for network design and analysis

Total network length under management on Neara

930k

km

*...equivalent to **23x the circumference of the Earth***

Total network area under management on Neara

1.7m

square km

*...larger than the **area of California and Texas combined***

Total number of assets under management on Neara

7.9m

assets

*...covering **distribution, sub–transmission and transmission structures***

4

How does the **platform** work?

1. Ingest, clean and unify **data**

- GIS
- LiDAR
- EAM/SAP
- Asset library
  (e.g. pole and conductor specs)
- CAD drawings
- Inspection & satellite imagery
- IoT/sensor data

Auto generate

2. Build an engineering–grade **Digital Network Model**

Edit/Update

Deliver solutions

3. Unlock Solutions

- Network Design & Construction
- Vegetation Management
- Clearance Analysis
- Storm, Flood and Wildfire Management
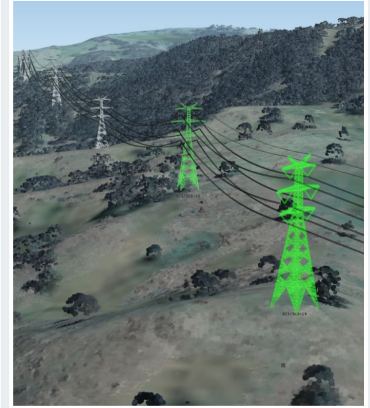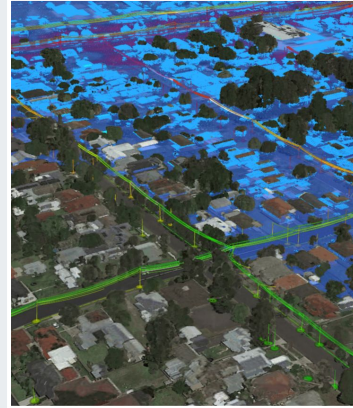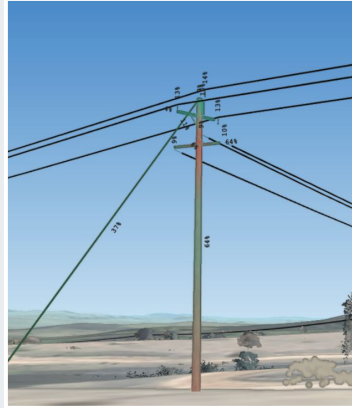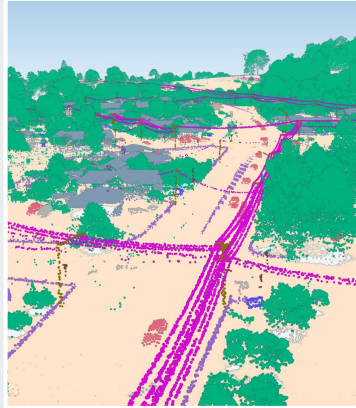- Line Rerating/ Network Capacity Optimization
- Transmission Design & Optimization
- and more...

Our platform delivers solutions across five key themes ...

1 **LiDAR Classification & Reconciliation**
Automate spatial insights

~30x faster with **99% accuracy**

2 **Network Digitization**
Accelerate asset delivery

85%+ time savings in design efficiency

3 **Network Health & Reliability**
Maximize asset performance

>$5m annual savings vs. manual inspections

4 **Weather Resilience & Grid Hardening**
Protect your customers

~5x more cost-effective risk identification

5 **Renewable Energy & Decarbonization**
Deliver a cleaner future

Accelerated renewable energy integration

…including solutions that can directly support your current and future operations

1 LiDAR Classification & Reconciliation	2 Network Digitization	3 Network Health & Reliability	4 Weather Resilience & Grid Hardening	5 Renewable Energy & Decarbonization
Automate spatial insights	*Accelerate asset delivery*	*Maximize asset performance*	*Protect your customers*	*Deliver a cleaner future*
Automated LiDAR Classification	Network Design & Construction	Asset Health Management	Wildfire Management	Transmission Design & Route Optimization
Vectorisation & Insights	LiDAR & GIS Reconciliation	Vegetation Management	Storm Management	Network Capacity Optimization
		Dynamic Line Rating	Flood Management	Interconnection Request Management
		Clearance Analysis	Snow/Ice Management	

7

— **Exclusive**

How AI unlocked capacity across NSW's energy grid

Colin Packham *Energy and resources reporter*

Updated Feb 22, 2023 – 5.13pm, first published at 2.58pm

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Digital modelling has revealed parts of Essential Energy's distribution network – one of Australia's largest – can transport twice as much electricity as previously thought, in a development that could help Australia negotiate a tricky energy transition.

Essential Energy has partnered with tech company Neara, which uses artificial intelligence and machine learning, to create an interactive three-dimensional model of its network, which covers nearly 900,000 homes and businesses.

Network Capacity Optimization: Dynamic & Static line rating
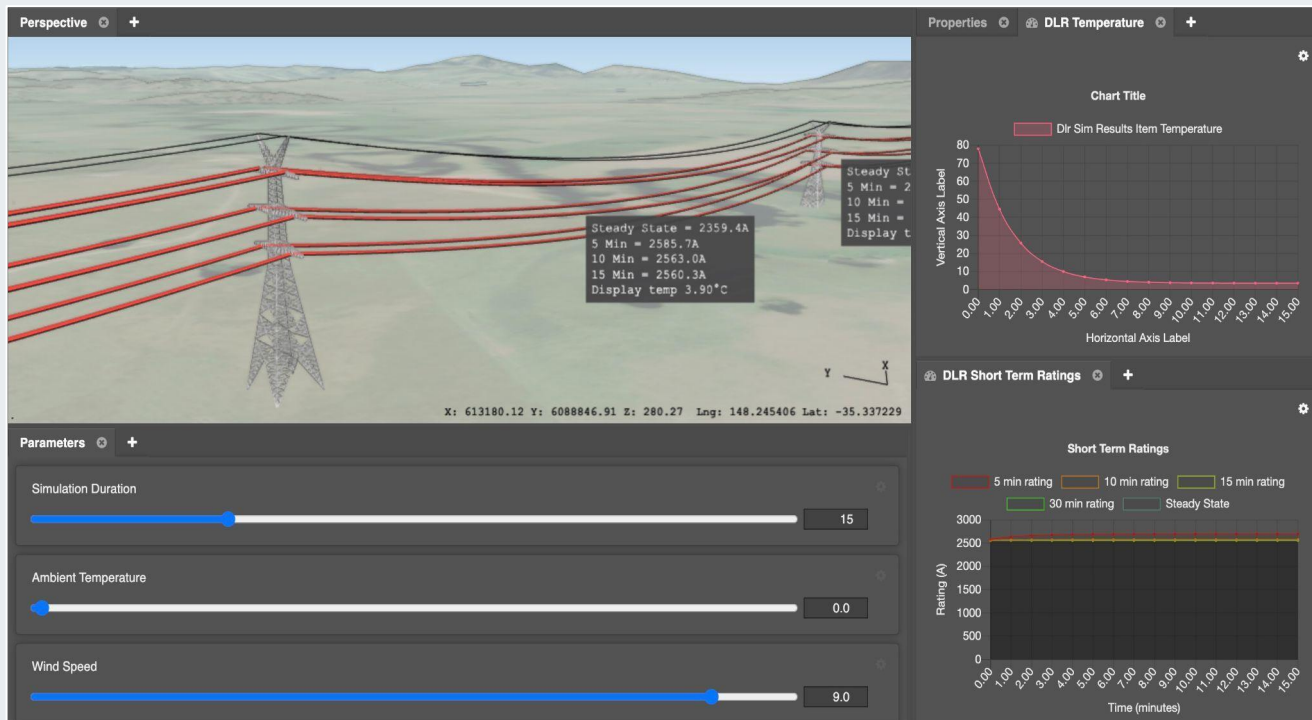*Unlocking existing network capacity in transmission*

Problem

Building new transmission is **necessary but slow** – how can I **maximize the capacity of my existing network** to enable faster connection of renewables and decarbonization?

Solution

Use Neara to **perform dynamic line rating on your transmission network,** and identify the **maximum capacity** for various operating conditions.

Build an engineering–grade model of your transmission assets.

Integrate live weather or sensor data to refine your inputs.

Network Capacity Optimization: line rerating
Unlocking existing network capacity in distribution

Problem

Network owners have to make **conservative assumptions** about the capacity of their networks which **prevents the connection of renewables**.

Solution

Use Neara to **unlock up to ~2x capacity** in the distribution network by performing line rerating at scale.

Understand the actual line ratings and limits span-by-span level.

Identify how much additional capacity you can safely unlock on your existing network with minimal or no capital spend.
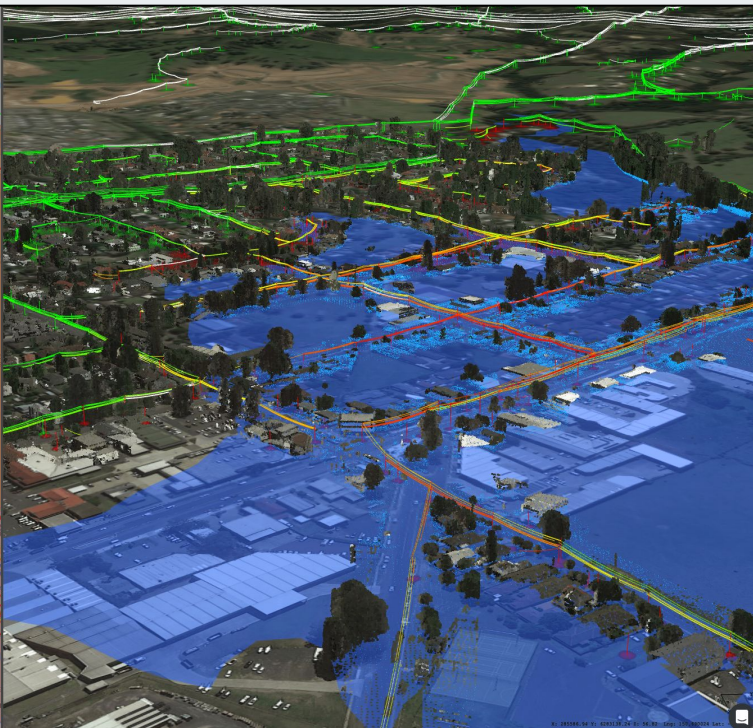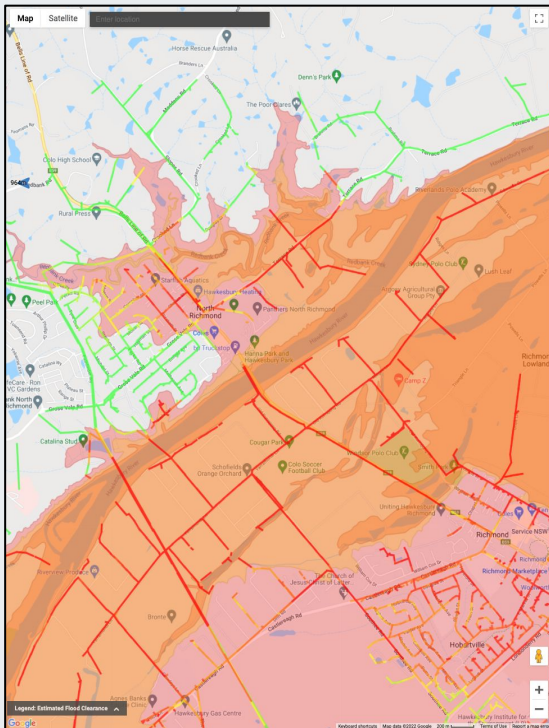
Weather Resilience and Grid Hardening: Flood Management
Supporting flood risk preparedness and response

Flood Management

Problem

How do I efficiently respond to **extreme weather events** and protect both my assets and the community?

Solution

Simulate flood levels using predictions from BOM or live sensors.

Use Neara to calculate conductor clearance to live flood level.

Extrapolate to entire network to identify and prioritise risk and response.

Problem

Building new transmission is necessary **but is slow and complex** – how can I **accelerate the design and validation process** and **improve stakeholder engagement?**

Solution

Use Neara to **configure, design and optimize** new transmission projects, including running constraint analysis, compliance checks and route optimisation.

Provide an enhanced, visual digital model to support community engagement efforts.

Optimise design efficiency and reduce turnaround time for design iterations.
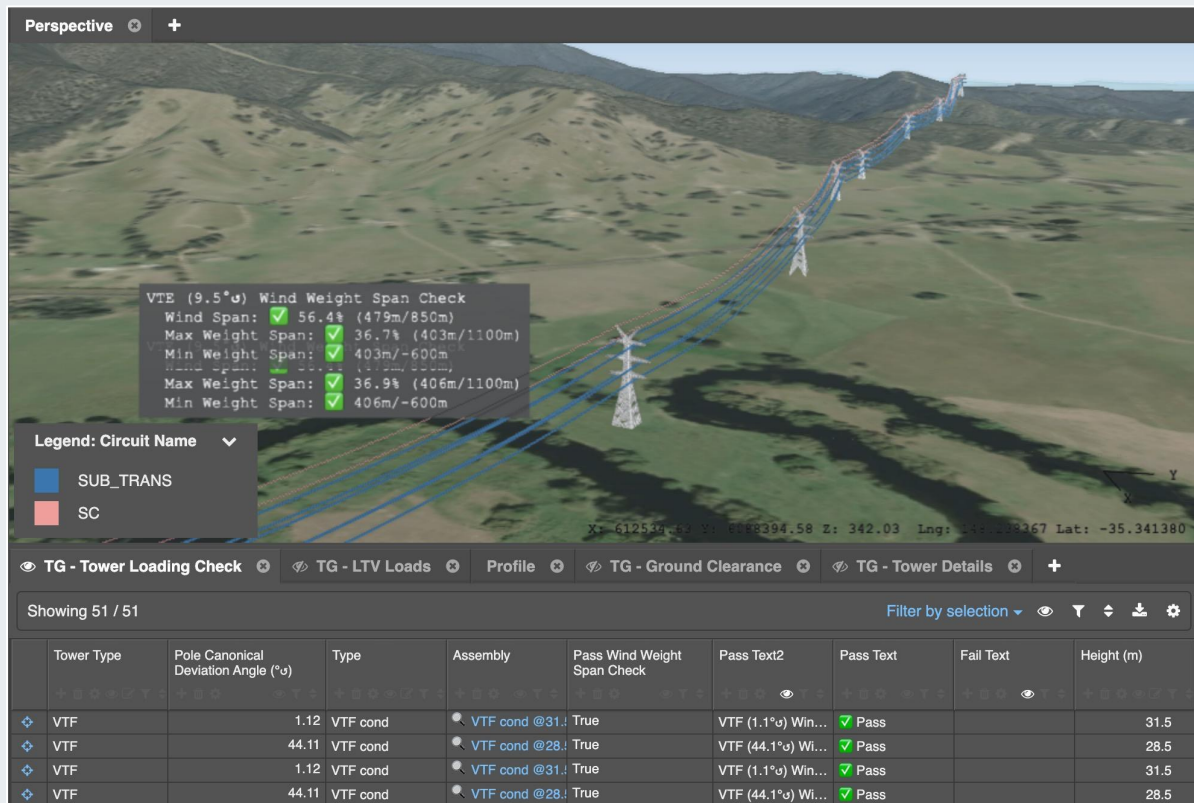
See the Neara platform in action by visiting the links below

Neara Platform: How It Works

Neara: Vegetation Management

Neara: Climate & Weather Resilience

Want to know more? Please reach out to taco@neara.com