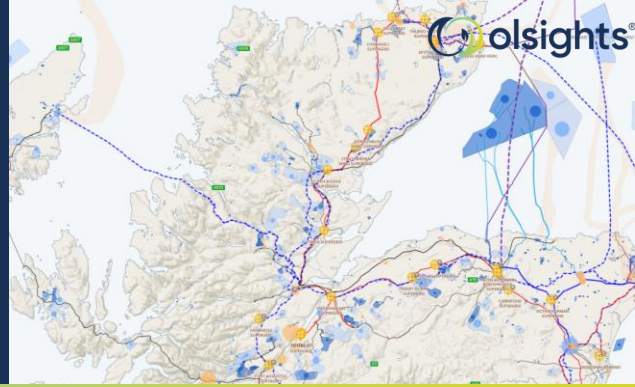


REACT

A Spatial Decision Intelligence Platform for Grid Planning

Enabling risk-based decisions on what grid capacity will actually connect



LEAD NETWORK PARTNER



DEV PARTNER (FRONT-END)



DEV PARTNER (DIGITAL MODEL)



The Challenge

The transmission network connections process remains complex, fragmented, and slow, creating significant challenges for developers and network operators.

Decision-making is constrained by fragmented and incomplete data, leading to:

- Limited visibility of project delivery
- Lack of clarity on where projects will connect
- Poor understanding of regional capacity constraints

This results in:

- Inefficient use of network capacity
- Suboptimal project siting
- Delays to investment decisions

A more integrated and predictive approach to grid planning is required – one that reflects not just connection queues, but the likelihood of project delivery and area-wide impact.

REACT enables stakeholders to move beyond static analysis towards real-time, scenario-driven decision-making.

The REACT project, initially funded through Ofgem's Strategic Innovation Fund (SIF) and subsequently the Network innovation Allowance (NIA), has evolved from an initial spatial planning concept into a live, interactive visual decision-support platform used to inform real-world grid planning decisions.

What REACT Enables

Integrating network, generation, storage and policy data into one decision environment

identifying which projects are most likely to connect using risk-based scoring

Identifying in which network zones capacity will be delivered and where reinforcement has greatest impact

Providing a transparent view of constraints, opportunities and trade-offs

Key Innovation -

From Nameplate Capacity → Expected Capacity

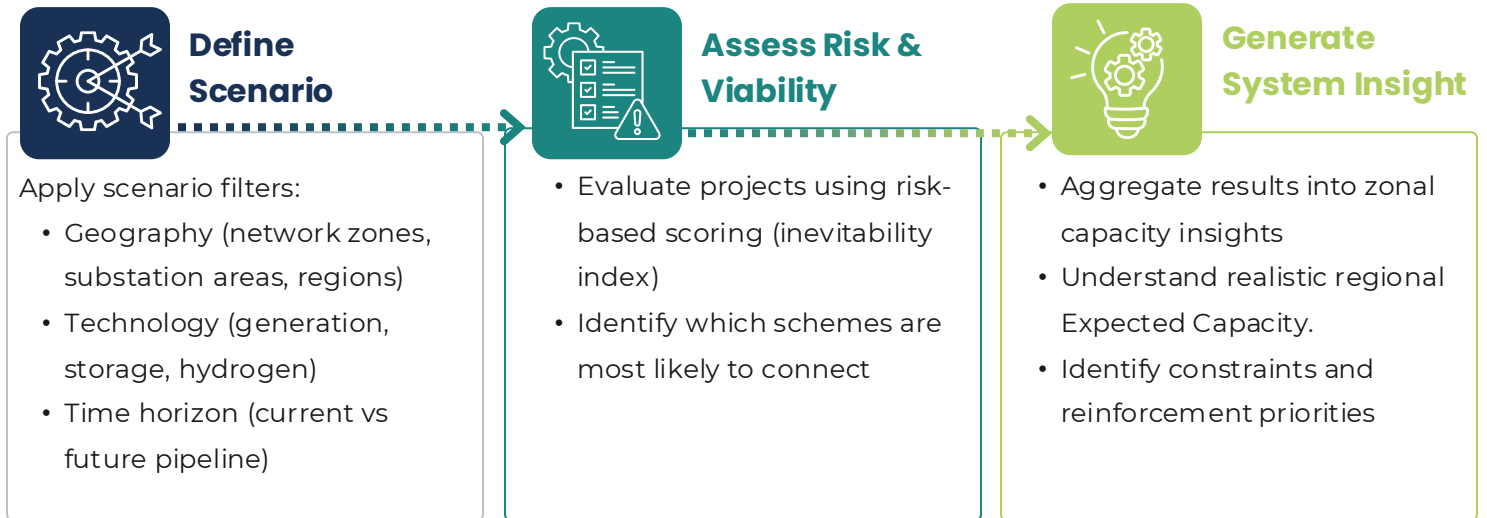
REACT enables planners to estimate what capacity is likely to connect by:

- Applying risk-based scoring (Inevitability Index)
- Accounting for delivery uncertainty and policy constraints
- Aggregating project likelihood into system-level insight

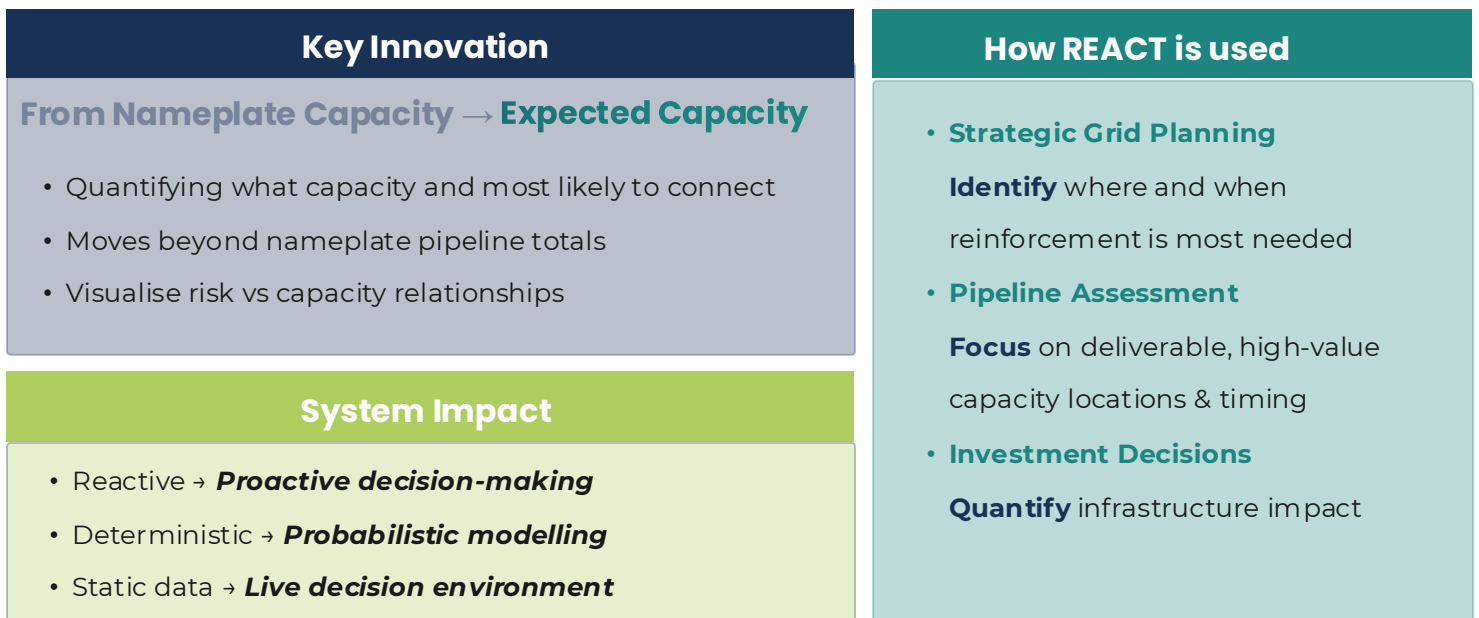
From weeks to minutes
faster, data-driven
decision insights

How REACT Works: Interactive Planning Workflow

User-driven, real-time analysis of project risk and expected capacity



From project pipelines to real-world decisions



Impact

- **£260M+** potential net benefit to UK consumers
- Improved targeting of high impact network reinforcement
- Reduced risk of inefficient or premature investment

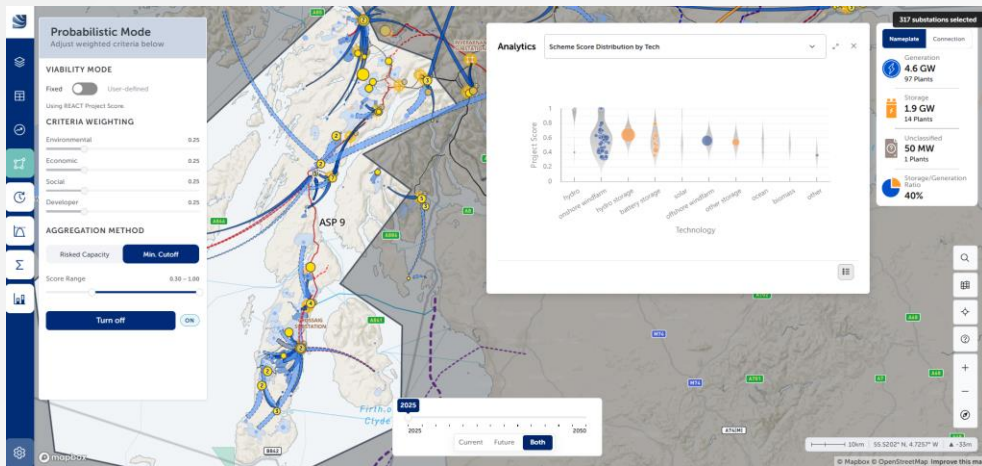
REACT - enabling faster, smarter and more transparent grid planning for the energy transition

REACT Platform in Action

From data to decision-making in a single environment

Interactive planning environment optimising generation, storage and network capacity

Main Spatial Environment



Data Layers

View generation, storage and network infrastructure



Geographic Filters

Filter by zones, substations and areas



Time Slider

Showing pipeline build-up over time



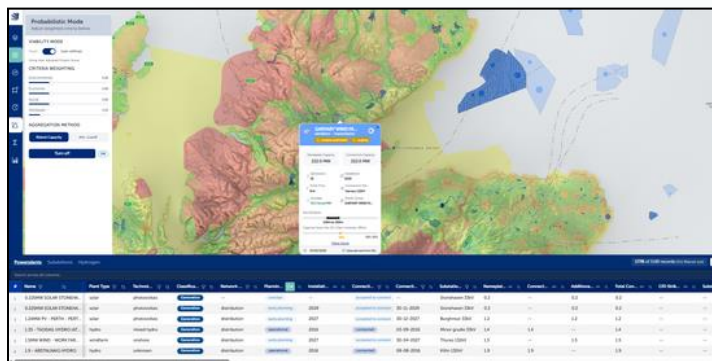
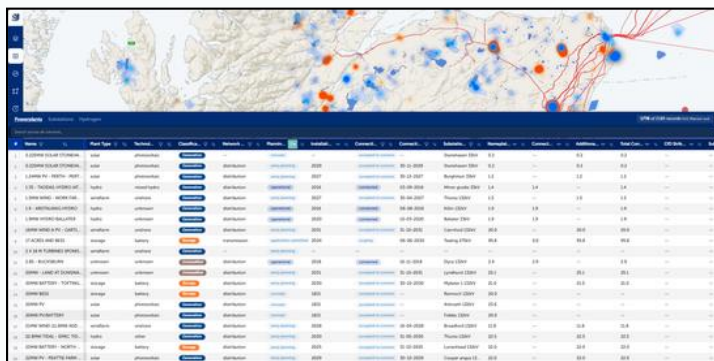
Capacity Totaliser

Summarise generation & storage capacity for selected areas

Live spatial planning environment integrating generation, storage and network infrastructure

Filter and analyse complex project pipelines

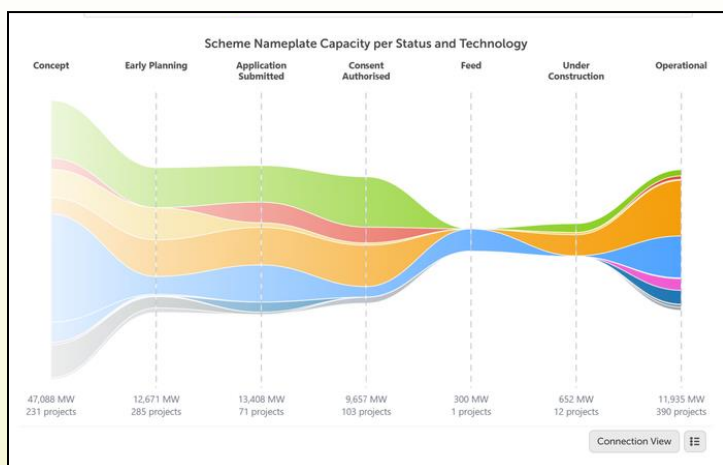
Identify which projects will actually connect



- Filter by technology, capacity, developer & timeline
- Apply geographic constraints (zones, substations, custom areas)
- Link map, table and analytics in real time

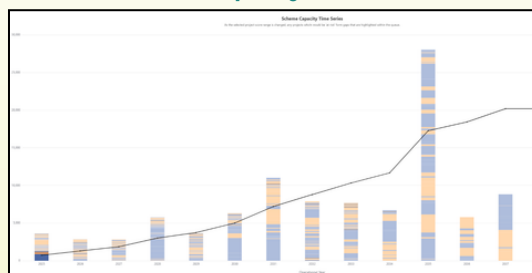
- Apply user-defined weighting criteria
- Generate Inevitability Index scores
- Assess likelihood of successful project delivery

Interactive Analytics



- Visualise capacity build-up over time
- Compare generation vs storage
- Understand substation-level constraints

Scheme Capacity Time Series



Export insights directly into reporting and decision workflows

Enabling informed, data-driven decision-making for the energy transition

Key Impact



£260M+

potential net benefit to UK consumers



Accelerated and more confident decision-making



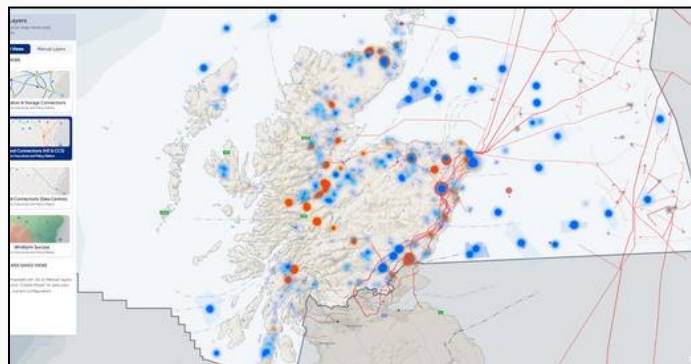
Improved targeting of high-impact reinforcement



Reduced risk of inefficient or premature investment

System Level Benefits

- Improved forecasting of deliverable capacity
- Better alignment between networks, developers, communities and policy
- More transparent and consistent decision-making



Strategic Alignment

REACT supports key UK energy sector reforms and strategic initiatives:



UK Connections Reform



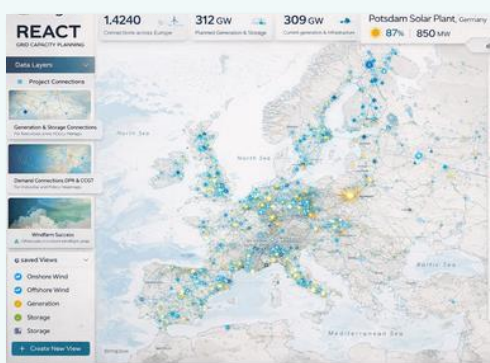
Future Energy Scenarios (FES)



Clean Power 2030



Strategic Spatial Energy Planning (SSEP)



Scaling REACT for the future

REACT is evolving into a scalable planning platform

- Expansion across UK networks, with potential for European deployment
- Integration into operational planning workflows
- Continued development of probabilistic modelling

Enabling smarter and more transparent grid planning
in the UK, Europe and beyond