nationalgrid

Network Innovation Allowance (NIA) Annual Summary

2022/23

Electricity Distribution

nationalgrid.co.uk

Contents

About us

We bring energy to life for 25 million customers across the South West of England, South Wales, the West Midlands and East Midlands.

Our 6,500-strong team ensures the safe and reliable supply of electricity for an area of 55,500km stretching from the Isles of Scilly to Cardiff to Lincolnshire.

Our network of overhead lines, underground cables and substations transforms power from the 400,000 volts supplied by National Grid Electricity Transmission to the 230 volts which provides essential power to homes and businesses.

Through our innovation work, we are adapting to the rapid changes in our network by developing novel ways of operating our assets, trialling smart technologies and finding new ways of enabling all our customers to participate in the energy transition.

Our Vision

To be at the heart of a clean, fair and affordable energy future.

Welcome to our Innovation Annual Summary 2022/23

The work we do in Innovation makes a real difference to our customers everyday. Our ground breaking innovation projects are unlocking new ways of supporting a low carbon future for all. We are leading an energy revolution.

Over the next 30 years, the electricity networks of the UK will need to deliver unprecedented change. We are at the heart of a huge transition, and it is happening now.

We believe that net zero can be achieved with cheaper and more resilient outcomes for customers but to achieve this we'll be challenging the status quo, innovating and rolling out new ways of working.

We have generated significant learning across our focus areas, such as studying the impact of extreme weather events on the network in the 'Assessment of Climate Change Event Likelihood Embedded in Risk Assessment Targeting Electricity Distribution' (ACCELERATED) project and in project 'Smart Meter Innovations and Test Network' (SMITN), we have trialled methods to allow Distribution Network Operator's greater insights into the Low Voltage network using smart meter data.

To effectively implement our innovation programme and, as evidenced through the first ever call for ideas for the Strategic Innovation Fund, we continue to work with a wide selection of project partners ranging from universities and small to medium-sized enterprises all the way through to large multinational corporations.

We have a number of Network Innovation Allowance projects where we work collaboratively with third parties including our 2022 award winning 'Take Charge' project which was launched in conjunction with the UK's largest motorway services operator, Moto, and aims to make rapid charging at motorway service stations easier for both service station operators and customers.

We also evidence examples of how we are introducing the benefits of the Network Innovation Allowance programme into our operations. For example, we are now funding an operational model for Low Voltage pre-fault operations and making our compact 'Take Charge' primary substation available to others.

The world around us is changing fast, our Innovation team are a creative and collaborative collection of engineers pioneering new solutions in our sector and ensuring we roll out huge benefits to all of our customers, bringing energy to life.

Alison Sleightholm
Regulation and Corporate Director

Executive summary

Our culture is one of working with stakeholders to find solutions to ensure we are efficient and meet the huge challenge of net zero. This report contains not just a summary of all of our NIA Activity within 1 April 2022 to 31 March 2023 but also some great examples of what we are doing to ensure we are at the forefront of the energy transition.

National Grid is continuing to deliver a wide portfolio of low carbon projects through the NIA to bring significant benefits to our customers via a timely and agile process which is responsive to new developments. We also support other research, development and demonstration projects, which fall outside the scope of the innovation mechanisms.

We continue developing commercial models and technical solutions that facilitate customer choice in a cost effective way, whilst at the same time managing the impact on the networks.

We have a number of projects which have produced significant learning. Active Creosote Extraction (ACE), is an environmental focused innovation project which is trialling a new method to remove creosote from wood poles resulting in significant carbon emissions savings and taking a significant step to net zero.

Also, we have generated significant learning from Smart Meter Innovations and Test Network (SMITN) on how we can use smart meter data to help populate missing data, or find incorrect data relating to our Low Voltage (LV) Network. This includes identifying the particular LV feeder and phase to which a customer is connected and whether photovoltaic panels are present at a property.

We remain committed to continuing and increasing our third party involvement within our innovation programme, to enable project outcomes to be taken through to business as usual quickly and effectively.

We welcome Ofgem's decision to retain innovation funding in the form of the NIA for the first three years of RIIO-ED2 and look forward to clarity on the arrangements for the remainder of the ED2 period.

This report contains a summary of all our NIA activity within the period from 1 April 2022 to 31 March 2023 for the four licence areas of National Grid Electricity Distribution: South West, South Wales, East and West Midlands. This report has been produced in accordance with the Regulatory Instructions and Guidance (RIGs) issued by Ofgem.

Innovation in numbers

24
active NIA projects

£4.8m
invested in NIA projects

9
new projects registered

2
awards won

13
dissemination events

10
Pipeline projects

53
project partners

20,292
Innovation website hits

73
ideas recieved

6 days
average days to respond to a project idea

£80m
invested in Innovation **to date**

120
projects delivered **to date**

Our Innovation Strategy

Our Innovation Strategy presents the focus areas and values of our innovation team, which are shaped by the challenges of the industry and our ethos as a company.

Our Innovation Strategy was originally produced as part of the RIIO-ED1 business plan and has since been reviewed, updated and re-issued annually to reflect changing external factors, business priorities and to incorporate learning from the previous 12 months.

The document applies to all four NGED distribution licences of West Midlands, East Midlands, South Wales and South West.

The Innovation Strategy looks at the long term development of our distribution assets, network operations and customer service caused by changing system and customer needs.

The strategy looks through to 2035 and provides more detail on the shorter term priorities, requirements and proposed initiatives.

We're now revising our Innovation Strategy, to make sure it's more in line with the current price control period and our organisational purposes and ambitions.

We're looking to publish this later in 2023.

Our values

One of our goals is to be a main contributor to decarbonisation and we aim to achieve that by having a portfolio of projects that is focusing on the right areas.

To deliver our projects successfully, collaboration is a crucial part of how we innovate. We are always looking for new partnerships with organisations and individuals that share the same passion and values as we do, so that we can achieve excellence together.

We are committed to delivering value for money to our customers and utilisng our innovation funding in the most effective manner.

We have internal governance processes in place to ensure that we achieve that through the way that we create, manage and deliver our projects.

Our focus areas

Through our innovation work we aim to find the most efficient ways of addressing the technical challenges of the future electricity network while at the same time, keeping electricity affordable for everyone.

As part of this, we want to understand how we can best support our customers and our communities so that no one is left behind in the energy transition.

To achieve this, our projects are shaped around the key priority areas of decarbonisation and net zero, heat and transport, data, communities and consumer vulnerability.

We are a team of engineers dedicated to identifying problems, finding solutions and trialling them.

Everything we do evolves around contributing to decarbonisation, achieving excellence and providing value for money to our customers.

We recognise collaboration is essential to find solutions for all of our customers.

You can view our full Innovation Strategy here **nationalgrid.co.uk/innovation**

Our Innovation Programme

Network Innovation Allowance (NIA) Projects	Start Date	End Date
Automatic Location of Arc-faults through Remote Monitoring (ALARM)	September 2019	May 2022
System HILP Event Demand Disconnection (SHEDD)	May 2020	May 2022
Peak Heat	February 2021	May 2022
Overhead Line Power Pointer	December 2018	June 2022
Electric Nation – PoweredUp	January 2020	July 2022
Arc-Aid	February 2020	August 2022
Energy Planning Integrated with Councils (EPIC)	February 2021	December 2022
Take Charge	April 2020	January 2023
Approach for Long-term Planning Accounting for Carbon Assessment (ALPACA)	January 2022	March 2023
Assessment of Climate Change Event Likelihood Embedded in Risk Assessment Targeting Electricity Distribution (ACCELERATED)	January 2022	March 2023
Generating Additional Markets for Mature Access to Flexibility (GAMMA Flex)	June 2022	March 2023
Solving Intelligent LV – Evaluating Responsive Smart Management to Increase Total Headroom (SILVERSMITH)	June 2022	May 2023
ANM – Balancing Coordination Demonstration (ABCD)	June 2022	May 2023
Q-Flex	September 2022	June 2023
Network Event and Alarm Transparency (NEAT)	October 2020	June 2023
Flexible Operation of Water Networks Enabling Response Services (FLOWERS)	January 2022	July 2023
Demand Forecasting Encapsulating Domestic Efficiency Retrofits (DEFENDER)	March 2022	July 2023
Smart Meter Innovations and Test Network (SMITN)	March 2022	July 2023
Hydrogen Economy: Reassessing Approaches to Connecting Large Electrolyser Sites (HERACLES)	April 2022	July 2023
Vulnerability and Energy Networks, Identification and Consumption Evaluation (VENICE)	July 2021	August 2023
Active Creosote Extraction (ACE)	November 2021	November 2023
Pre-Fix	October 2021	January 2024
Coordinated Operational Methodology for Managing and Accessing Network Distributed Energy Resources (COMMANDER)	October 2022	January 2024
Running Cool	June 2022	March 2024

Our Innovation Programme

Network Innovation Competition (NIC) Projects	Start Date	End Date
EQUINOX (Equitable Novel Exchange)	March 2022	December 2025

Strategic Innovation Fund (SIF) Projects	Phase	End Date
EV Respond	Discovery Phase	July 2023
Shifting Currents	Discovery Phase	July 2023
PIONEER (Proportional Investment of Networks in Energy Efficiency Retrofit)	Discovery Phase	July 2023
PRIDE (Planning Regional Infrastructure in a Digital Environment)	Discovery Phase	July 2023
TEED (Tyseley Environmental Enterprise District)	Discovery Phase	July 2023

Internally Funded - Research and Development	Start Date	End Date
Research and Development of Market Structures (REDMAST)	January 2022	August 2022
Reliability Threat Assessment	November 2021	March 2023

You can read more on all our projects at **nationalgrid.co.uk** or read more on the Strategic Innovation Fund and Network Innovation Allowance (**page 22**).

Our NIA highlights

Implementation

Take Charge

The Take Charge project has specified, designed, tested and trialled a brand-new standardised package solution for delivering rapid Electric Vehicle charging capacity to Motorway Service Area's (MSA).

Take Charge has successfully demonstrated that a compact substation for providing rapid electric vehicle charging capacity is cheaper to build, faster to install, more space efficient and delivers what our customers require.

Through our dissemination activities, Motorway Service Area (MSA) operators have welcomed the new approach, stating that it will help accelerate the connection process and provide a cost effective solution for their rapid EV charging requirements.

As such, we have already started to prepare for further implementations as part of Business as Usual. The modular approach for the design of the Compact Connection Solution (CCS) means that these further implementations can be planned with relatively low risk as the components can be redistributed to any site should sites become unavailable or capacity requirements change.

We are currently coordinating with MSA operators to discuss sites for new CCS installations and are using the output from our site selection and system capacity optimisation reports to help identify the sites where capacity is required, and where it could be easily deployed.

Through disseminating the success of Take Charge across the wider business, it has been recognised that the CCS could also provide benefits for other applications. For example, the compact footprint and 'plug and play' nature would help accelerate connections and upgrades across our Extra High Voltage/High Voltage network.

Therefore, work is currently underway to develop a CCS that would provide a 'firm supply' (i.e. fully compliant with the requirements of the reliability standard engineering document, Engineering Recommendation P2).

Take Charge won the Disruptor Award at the Utility Week Awards, 2022.

Project highlights

Active Creosote Extraction (ACE)

ACE is an environmental-based innovation project aligning with decarbonisation and net zero.

We are facing a big environmental challenge with how to dispose of old poles. Burning one tonne of wood is as polluting as a Ford Transit van driving 17,500km.

Since 2017, we have burned 3,311 tonnes of wood poles, which is like driving a Ford Transit van for 34,259,897km - the same as going to the moon and back 44 times.

This project aims to find a better solution by repurposing the wood poles instead of the current high temperate burning process. It will reduce carbon emissions during disposal and also recycle the carbon generated during the extraction process.

So far we've learnt that 50% of a redundant wood pole can be salvaged by removing the outer layer for treatment. The inside of the pole is mostly safe and not harmful and our studies have found that gravity affects where creosote accumulates, with the highest concentration found towards the bottom of the poles.

Also, when the wood is fractured, creosote can penetrate deeper and deeper sections of the poles tend to have higher levels of creosote, likely because they are protected from the environment.

If proven successful, this project will take a significant step to net zero and will produce a plan which will expand this process to a commercial scale.

Incinerating one tonne of wood is equivalent to the emissions produced by a Ford Transit van driving 17,500km

Project highlights

Assessment of Climate Change Event Likelihood Embedded in Risk Assessment Targeting Electricity Distribution (ACCELERATED)

Climate change is expected to result in changes to the patterns of weather experienced around the world. In the UK, we are expecting an increase in the number and severity of storms.

We recognise that weather and climate change can directly affect our objective of providing a safe, reliable and efficient electricity supply to our customers.

Severe storms with high wind speeds can damage our overhead network directly by carrying more windbourne debris. Climate change is also expected to bring intense periods of rainfall, which can trigger faults. The ACCELERATED project analysed past weather data to understand how climate change impacts the distribution network.

The outputs from ACCELERATED have identified at-risk hotspots so that design, reinforcement and maintenance activities are considered with the future of climate change. Customers across all of our four licence areas will be able to benefit most with reduced interruption to the service and reduced maintenance and recovery cost.

The climate change impact assessment procedure, developed during the project, established guidance for adopting the climate change impact assessment as part of our day-to-day activities and strategic planning.

The procedure's main goal is to outline a consistent and strong approach to assess the impact of climate change, it also provides details of the analytical approaches developed along with applications.

The internal teams recognised to adopt the analysis will be encouraged to review and adopt the procedure developed. In addition, the internal policy teams will evaluate the analysis for meeting mandatory reporting requirements in the future, while identifying areas for development and potentially intergrating the ACCELERATED outputs into our Climate Resilience Strategy.

Project highlights

Demand Forecasting Encapsulating Domestic Energy Retrofits (DEFENDER)

To avoid dependence on fossil fuels, domestic buildings must change to incorporate low carbon heating, smart tariffs, and energy efficiency measures such as insulation.

To achieve net zero in their own homes, we understand our customers will want to switch to low carbon heating systems, such as heat pumps, and we will need to adapt to meet this increased demand.

We were unable to anticipate how changes to the energy efficiency of homes, from measures such as loft or floor insulation, would affect this. We were also unsure as to whether we could save customer network costs by promoting or even investing in energy efficiency.

The DEFENDER project developed software (the 'Glow Simulator') which can calculate the energy demand from heat pumps and other low carbon heating for many different types of houses, depending on their energy efficiency.

We utilised this software to calculate how energy demand growth from heat pumps might change, depending on how efficient the homes on our network become. We also used it to tell us whether we could benefit our customers by getting involved in energy efficiency retrofit.

We learned that energy efficiency would result in small differences in energy demand in 2030 and 2050, depending on how widespread it becomes. We also learned that this small difference means that the National Grid cannot work on energy efficiency alone, but needs to come together with other players to make retrofit worthwhile to our customers.

The Glow Simulator is open source and available to anyone who is interested in learning more about energy efficiency and low carbon heating.

Technical learning points

Flexible Operation of Water Networks Enabling Response Services (FLOWERS)

The FLOWERS project carried out a feasibility study of the capacity of South West Water's drinking water and wastewater networks to embed flexibility within their operational processes. Specifically, it investigated the capability to adjust the timing and control of operations in response to signals from the electricity network.

The electricity demand shifted to different times of the day and could fulfil several use cases: reducing peak demand in constrained network areas, reducing the carbon intensity of water utility demand and reducing the need for curtailment of renewable generation.

The results of this investigation concluded that on South West Water's network, there is between 18 and 34 MW of potential flexible demand, this is estimated at a potential value of around £5,000 per hour at the current, most common, flexibility product rate.

Learning captured from this project shows us that key challenges for long-term flexibility are developing the necessary forecasting capability and ensuring firm electricity supply.

The key challenges for short-term flexibility are obtaining sub-metering data and automating command and control capability of water networks for dispatching flexibility services and validating their delivery. Incentives for embedding operative flexibility could be built into connection agreements for renewable generation at water utility sites.

Month	00:30	01:00	01:30	02:00	02:30	03:00	03:30	04:00	04:30	05:00	05:30	06:00	06:30	07:00	07:30	08:00	08:30	09:00	09:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30	21:00	21:30	22:00	22:30	23:00	23:30	00:00
Jan															43%	6%	4%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	2%	2%	1%	1%	1%	1%	1%	2%	3%	5%	14%							
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Apr																60%	15%	6%	7%	9%	11%	11%	14%	100%	100%	100%								18%	8%	5%	5%	6%	9%	10%	9%	25%						
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Aug																			51%	9%	22%	17%	12%	11%		100%									33%	15%	12%	20%	53%							
Sep																			100%	18%					22%	61%	42%							34%	10%	5%	6%	8%	9%	12%	53%						
Oct																59%	10%	8%	5%	6%	9%	11%	13%	12%	11%	11%	13%	44%	65%	4%	38%	3%	2%	1%	1%	1%	1%	1%	2%	3%	8%	100%						
Nov																98%	13%	14%	8%	7%	8%	9%	10%	9%	6%	5%	11%	34%	31%	36%	26%	7%	3%	1%	1%	1%	2%	2%	3%	6%	25%							
Dec																8%	4%	4%	3%	3%	3%	4%	5%	5%	3%	3%	4%	6%	6%	6%	5%	3%	1%	1%	1%	1%	1%	1%	2%	3%	7%	17%						

Heat map of the proportion of half hourly required flexibility which could be met by two case study sites in the constraint management zone to which they are connected.

Technical learning points

Automatic Location of Faults through Remote Monitoring (ALARM)

ALARM aimed to test the potential for monitoring devices on the Low Voltage (LV) network to inform us of developing localised faults – known as Distance to Fault (DtF).

The project installed 26 Low Voltage (LV) substation monitors within our East Midlands region.

Each monitor captured and retained voltage and current waveforms from the monitored LV feeders when pre-set triggers were activated (e.g. rate of change of voltage or phase current).

Three cycles were acquired – the one before the event, the cycle where the event actually happened and the cycle afterwards.

These captured waveforms were forwarded via a GPRS/mobile data connection to a processing data centre where inductance values for the faulting network were estimated which was then used to establish a distance to fault estimate. The more accurately we can estimate the DtF, the faster we can locate and restore faults on the network, reducing the time customers are without power.

As a result of intellectual property developed on the ALARM NIA project and Northern PowerGrid's Foresight project, we are now starting an internal project which will examine how we scale up the project findings to intervene on our network before faults occur.

The benefits of the ALARM project are:

- Significant increase in the technology readiness of distance to pre-fault technology.
- Contribution to the operational readiness to be able to use distance to pre-fault technology.

Dissemination and events

Dissemination and events

28toZero

To publicise the work that goes into developing such ground-breaking solutions, and to disseminate important learnings, the innovation team held, in June 2022, the Innovation Showcase, titled 28toZero in London at the Institution of Civil Engineers.

28toZero was the innovation team's first in-person event since 2019, and consisted of four engaging dual speaker presentations, a thought provoking panel discussion, and plenty of Question & Answers (Q&As).

Stakeholders from a plethora of backgrounds, including manufacturing, charity and academia, attended the 28toZero event. Guests were encouraged to join in on the discussions relating to our customers and net zero, and were able to submit questions, in real-time, to the speakers and panellists using slido polls, ensuring the event was engaging and inclusive.

Topics included: the value of energy efficiency to distribution network operators and consumers, how vulnerable customers should be protected during the energy transition, an analysis of the existing energy market and its suitability for achieving a fair net zero and flexibility and the decarbonisation of heat.

One of the most important key performance indicators from the 28toZero event was the level of engagement with our NIA content. Over 150 guests registered to attend our industry-leading event – an impressive number given the implications of the Covid-19 pandemic.

During the event, guest participation was encouraged throughout the day. Over 40 of our attendees interacted with us, not just in Q&As, but also using a live poll platform, emphasising the level of involvement our stakeholders continue to have with the innovation team.

Not only did 28toZero benefit stakeholders and the business through dissemination, but it also benefitted customers. For example, after presenting our flagship vulnerability project, Project VENICE, at the event, innovation engineers were approached by an organisation who were able to assist with one of the data challenges that the project had been facing.

Consequently, the organisation is now working on Project VENICE, and meaningful and powerful outputs are being delivered that will inevitably benefit our customers. Our next event, 27toZero will take place later this year.

Dissemination and events

Energy Innovation Summit

The Energy Innovation Summit, also known as The Summit, took place on 28-29 September, 2022 at the SEC in Glasgow. We exhibited at the event to engage in discussions on our 28toZero initiative.

The event was a chance for those who manage, develop and implement innovation initiatives in the energy sector to bring together lessons learned from over 60 UK innovation projects. It demonstrates the value of innovation in every aspect of our energy systems, and helps drive action on the next generation of innovative projects across the sector.

Based on our existing 28toZero campaign, the innovation teams stand featured a model house to highlight that we are bringing energy to life. In addition, we created a 'Road to Net Zero' detailing the key events on the run up to the government date of 2050 for a zero carbon future.

Project Pre-Fix was presented on the 'Resilience and Lessons' panel to discuss recent lessons on Distribution Network Resilience. They discussed how resilient we want our net zero network to be, including what innovation work we are leading on to make this happen.

Also, projects ALPACA and ACCERLERATED were spoken about on the networks and the environment panel to discuss how energy networks play a key role in net zero and speaking about the work we do already and our plans for accelerating progress.

CENEX low carbon vehicle event

The CENEX low carbon vehicle event took place at UTAC Millbrook Proving Ground, Bedfordshire on 7-8 September 2022. 2022 marks the 15th anniversary for Cenex-LCV, the UK's longest established technology showcase and networking event for the low carbon vehicle community.

In 2022, the event welcomed 4,692 attendees and 208 exhibitors. We exhibited across the two days and were on hand to share learning on our electric vehicle project portfolio and future plans for decarbonising transport.

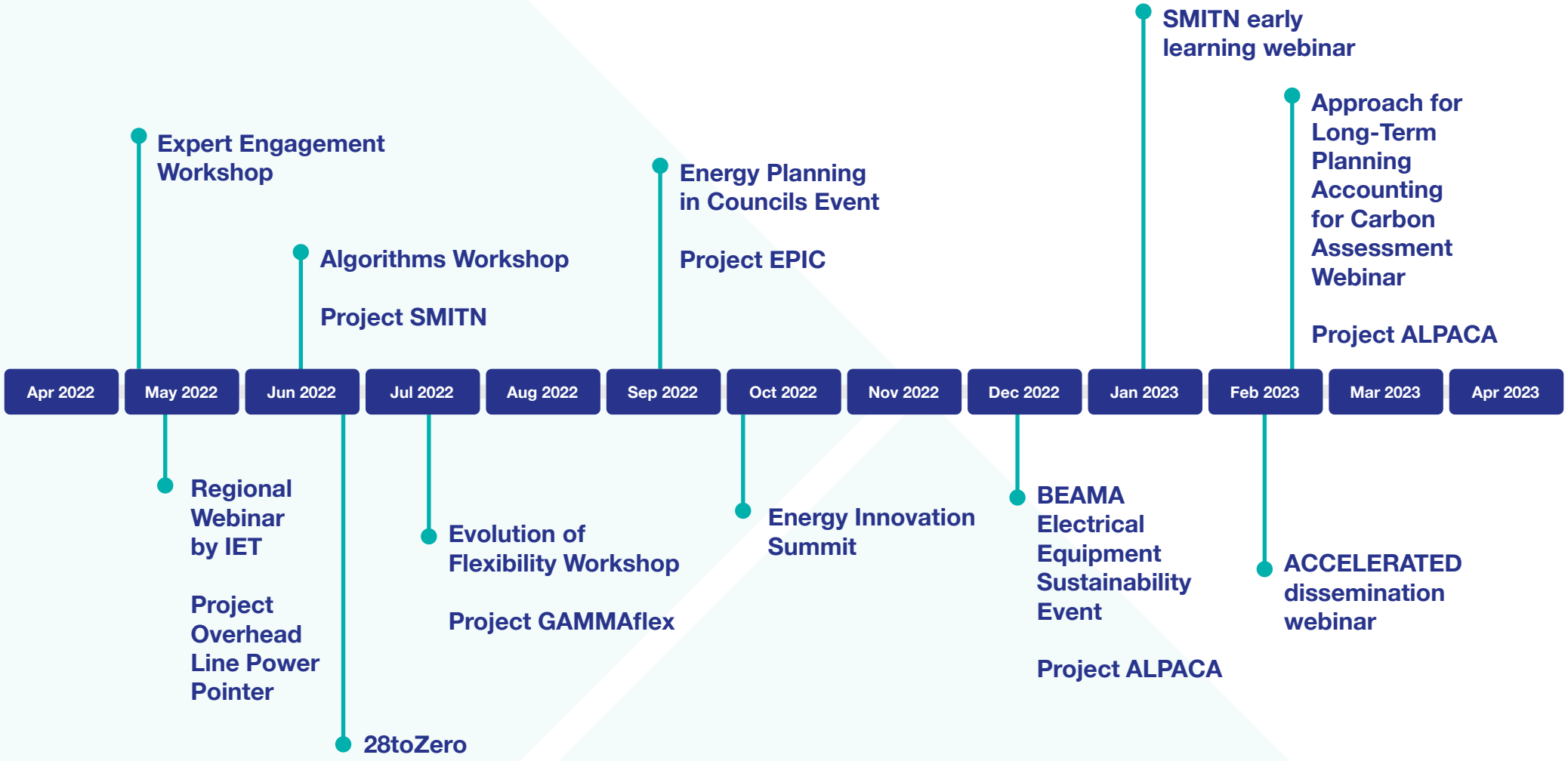
Innovation Manager, Paul Morris, joined an exciting session on improving the customer experience for electric vehicle charging.

During this session, Paul took to the stage to share learnings from our Take Charge project.

This project looked at fast and cost effective solutions to supply rapid charging facilities at motorway service areas, by trialling a new substation solution.

The session was also followed by a Q&A session.

Our events timeline



To stay up-to-date with the latest news from our projects and details of the events we are holding, please visit **nationalgrid.co.uk/innovation/contact-us-and-more**

Other funding mechanisms

Network Innovation Competition

The Network Innovation Competition (NIC) is an annual opportunity for UK electricity network operators to compete for funding for the development and demonstration of new technologies, operating and commercial arrangements.

The NIC is expected to focus on funding larger scale and greater value innovation projects. The NIC is closed to new proposals with the ending of the RIIO-ED1 price control in March 2023.

EQUINOX

EQUINOX is the first NIC project dedicated to addressing the challenges DNOs face with the electrification of heat. The project will develop novel commercial arrangements and supporting technologies that unlock flexibility from residential low carbon heating, while meeting the needs of all consumers, including the fuel poor and vulnerable.

The UK government recently announced a target to reach 600,000 heat pump installations per year by 2028.

Unless new solutions are developed to manage this new load, DNOs will witness a substantial increase in peak demand, triggering significant network reinforcement throughout the later years of RIIO-ED2 and ED3. Currently, limited viable solutions exist for DNOs to unlock the flexibility from residential low carbon heat at scale in a reliable, cost-effective and equitable way.

The Equinox project seeks to demonstrate the benefits available to the network through smart dispatch of heat pump load.

In addition, the Equinox project seeks to develop a new commercial framework that suppliers and DNO's alike will stack the value benefits to, so that homeowners obtain the full benefit of their flexibility from one source.

- Equinox will run from 2022 to 2025.
- The project's first trial took place between December 2022 and March 2023.
- Over 1,000 households that have heat pumps within National Grid's distribution region will take part over 4 years.
- EQUINOX trials aim to include households from all sectors of society, ensuring that commercial and technical arrangements are designed equitably, and vulnerabilities are taken into consideration.

Strategic Innovation Fund

The primary objective of the Strategic Innovation Fund (SIF) is to facilitate innovation to transform the gas and electricity networks in order to achieve a low carbon future.

Its vision is to identify and support pioneering and inventive projects that can shape the energy networks of the future and accelerate the journey to net zero.

The ultimate goal is to offer an optimal environment for both energy consumers and entrepreneurs. In partnership with Innovate UK, the SIF programme aims to leverage the finest UK and international innovation while aligning with other public innovation funding, serving the interest of network users and customers.

The SIF differs from the NIA in its project funding approach, as it involves a three-stage process: Discovery (for feasibility studies), Alpha (for experimental development), and Beta (for building, operating, and/or demonstrating).

Ofgem serves as the ultimate decision-maker for SIF funding decisions, while network providers are responsible for allocating innovation funding for NIA projects.

During the open call for ideas on the National Grid Electricity Distribution website and social media channels, 42 proposals were received.

Our applications included proposed partnerships with commercial organisations such as large supermarket chains, local authorities and councils, academics, and other distribution and transmission network operators.

We submitted five projects, all of which were accepted.

As part of their funding application for SIF 'Discovery' projects, companies created brief videos. Read on to find out more about our accepted SIF proposals or visit the video links on the next page.

5/5
projects proposals submitted, all 5 accepted

42
proposals received

4 additional projects
collaborated on with WWU Wales And West Utilities and National Grid ESO

Strategic Innovation Fund

EV Respond

EV Respond will investigate methods to restore vulnerable customer supplies during a power cut, by making use of electric vehicles.

The project will consider how this can be managed and coordinated by means of an app, will look at how connections can be carried out, and will consider the benefits/drawbacks when compared to the use of diesel generators.

https://youtu.be/a6i5P0wMq-A

PIONEER (Proportional Investment of Networks in Energy Efficiency Retrofit)

Proportional Investment of Networks in Energy Efficiency Retrofit (PIONEER) aims to develop commercial models by which the DNOs can provide funding for thermal energy efficiency (EE) measures and to demonstrate through pre and post retrofit monitoring the impact these measures have on network loads.

https://youtu.be/ofqyF0KRBOg

PRIDE (Planning Regional Infrastructure in a Digital Environment)

Planning Regional Infrastructure in a Digital Environment (PRIDE) will investigate how we can bring together datasets from a variety of sources on a single platform to support regional planning.

Working with West Midlands Combined Authority and Advanced Infrastructure, PRIDE examines how local decision making could be enabled by a digital twin, and what new supporting models and datasets would be required.

https://youtu.be/mofadzFOsAU

Shifting Currents

Shifting Currents will build on the FLOWERS NIA feasibility study to investigate how to embed flexible operation into water utility assets and develop whole system efficiency.

It aims to develop mechanisms to shift the timing and control of operations to reduce electrical peak demand, lower the carbon costs of water networks and prevent curtailment of renewable generation.

https://youtu.be/g0fx1gxwEvQ

TEED (Tyseley Environmental Enterprise District)

This project is an investigation of how a complex, multi-vector energy system with significant local generation and storage can be developed using a Digital Twin to be optimally resilient and deliver best value to a mixed local community of industry and domestic consumers, alongside ongoing regeneration of the area.

https://youtu.be/fZdsocMRjH4

National Grid Electricity Distribution plc
Avonbank
Feeder Road
Bristol BS2 0TB
United Kingdom

nationalgrid.co.uk

July 2023. BLU7535/PR