

Record number of innovation ideas

In late November 2019, some of the brightest minds from the electricity industry, and from further afield, descended on the NEC in Birmingham for two days to work collaboratively with ESO experts on the critical future challenges facing the electricity system. Our Open Innovation event launched in early October with an open call for ideas to help us tackle our key strategic priorities of Digital Transformation, System Stability and Whole Electricity System – we had a fantastic response receiving a total of 87 submissions.

Eleven of the best ideas were taken forward to the two-day event where the proponents had the chance to work with ESO experts, as well as some of our DNO colleagues, to further develop their initial concepts into full innovation project proposals which were then pitched for funding on the second day.

A judging panel comprising Kayte O'Neill, Director of Strategy & Regulation at ESO; Carolina Tortora, Head of Innovation Strategy at ESO; Jonathan Berry, Innovation Manager at WPD; Ian Cooper, Innovation Manager at UK Power Networks; and Rajni Nair from Citizens Advice listened to the pitches and asked detailed questions about feasibility, costs and consumer benefits.

We were delighted to announce that we awarded full unconditional funding to four project ideas, with three other ideas needing some further work to achieve final funding approval. These projects will cost ~£1.7m to deliver, however ESO will only need to fund ~£1m of this due to our collaboration with UKPN, WPD and SSEN. These seven projects are:

1. Working with the Smith Institute, the Alan Turing Institute and TNEI to apply advanced modelling and machine learning methods to model the impact of uncertainty in Control Room decision making
2. Partnering with WPD to explore coordinated Active Network Management (ANM) schemes to reduce costs of balancing and improve security of supply, working with WSP, Cornwall Insights and Complete Strategy
3. Working with TNEI to test probabilistic modelling of system stability in our economic assessment and planning process, greatly reducing the time it takes to run the process thus allowing us to do much more granular assessments
4. Partnering with WPD to revisit our approach to the Low Frequency Demand Disconnection (LFDD) scheme to consider the Value of Lost Load (VOLL), potentially reducing economic impact and reducing the number of disconnected customers. Again, we will be working with WSP, Cornwall Insights and Complete Strategy.
5. We decided that 4D Heat, looking at how electric heating might be used to solve transmission and distribution constraints in Scotland, needed more work to clarify consumer benefits and impacts (e.g. comfort levels) before we approve funding. We will be working with SSEN, who are looking to partner on this project, as well as with Delta EE, Passiv Systems and Everoze, to finalise this Cost Benefit Analysis over the coming weeks.

6. A project with Edinburgh University, looking at automating Outage Planning to reduce delayed outages for our Customers, were asked to consult with UKPN to ensure we build on previous work. We will then be moving forward in partnership with WPD.
7. Finally, a team from the University of Southampton wants to explore how Vehicle to Grid (V2G) could provide fault ride through services to the grid. Each of ESO, UKPN and WPD loved this project idea, but would like to see the scope reshaped slightly before we approve funding.

Over 40 representatives attended the event from academia, consulting, technology and software firms and other networks. Feedback has been fantastic, with remarks on how open and collaborative the approach was, and how unique it was to get such access to ESO and DNO experts. You can read Carolina's blog, published in [Current News](#) and hear Jonathan Berry's feedback on [video](#) at the event.

This was our annual big bang event, but we are always open for business. If you have any ideas that you think could help us operate the system more economically, efficiently, or competitively contact the Innovation Team at box.SO.Innovation@nationalgrid.com to see if your idea can become realised!



Carolina Tortora, Head of Innovation Strategy, poses a question to a presenter



Sorcha Schnittger from SSE presents her team's proposal