

This document outlines ELEXON's response to the Energy Network Association's second consultation on the Electricity Network Innovation Strategy

Originally submitted via Google Docs survey on 15 December by Justin Andrews, Head of Design Authority, ELEXON

The views expressed in this response are those of ELEXON Ltd, and do not seek to represent those of the BSC Panel or Parties to the BSC.

Did you participate in the first Electricity Networks Innovation Strategy consultation? *

Yes

Are you happy to be named as a contributor as a person or an organization? *

Yes

Would you like your responses to be anonymised? *

No

1: Electricity industry innovation context

Which technology or trend do you think will have the most profound impact on the network operators?

It will be Electric Vehicles (both as demand and generation), 2nd will be battery storage. They will have greatest ability to change the way energy is used and produced by the end consumer. Whilst they may present challenges for the energy system, both distribution and transmission they also present the solution as well. With a 'smarter' control of distributed demand/generation this will save (or prevent further increases in) investment costs.

Section 3.1: Introduction to network innovation

Do you think this section highlights the purpose and objectives of the funding initiatives described?

Yes

Do you think there are any additional innovation funding initiatives which should be captured?

No

Section 3.2: Analysis of innovation projects conducted to date

Do you think we have adequately captured the innovation activity which has been delivered to date?

Yes

Do you think this analysis is reflective of the volume/value of innovation activity within each category to date?

Yes

If not – which innovation activity do you believe has not been captured/is not represented and why?

Do you agree with the high-level analysis of the gaps?

Yes

Do you see any major gaps in addition to the ones identified, or conversely, do you feel these gaps are being address elsewhere?

There should be more promotion of projects on customer/ stakeholder focus and technology innovation as these should deliver the most benefits

Section 3.3: Observations

Do you think that there are additional areas for further innovation that should be highlighted?

There should always be more identification of the commercial benefits of the innovation and the value to the end consumer

Section 4.2: Our strategy for each innovation theme

Theme #1: Network improvements and system operability

Please rate the future innovation opportunities by importance

	1 (Least important)	2	3	4	5	6	7	8	9	10 (Most important)
Improve network resilience to avoid unplanned power outages (particularly moving towards the low carbon world)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve demand and generation forecasting, and network planning processes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve asset management processes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maximise the value and capacity of existing assets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Optimise cross-sector coordination between DNOs, TNOs and SO, as well as licensees from other sectors (e.g., gas) and other countries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Are there any missing?

No

Do you agree with the assessment of the level of innovation activity across the listed categories?

Yes

If not - how would you assess the level of innovation activity across the listed categories?

Do you agree with the assessment of the future innovation opportunity across the listed categories?

Yes

If not - how would you assess the future innovation opportunity across the listed categories?

Do you agree with the required innovation effort across the listed categories?

Yes

If not - how would you assess required innovation effort across the listed categories?

Do you have any comments on the timeline of innovation activities?

Do you foresee any external influence or policy changes that would change the timeline of when the challenges will need to be addressed?

Theme #2: Transition to a low-carbon future

Please rate the future innovation opportunities by importance

	1 (least important)	2	3	4	5	6	7	8	9	10 (most important)
Create value from the introduction of smart meters and work collectively to deliver the wider public policy and public interest benefits from data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Efficiently facilitate the adoption of low carbon technologies supporting the electrification of heat and transport	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enable flexibility in the GB low carbon transition (e.g., increasing role of demand side response)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilitate the transition from DNO to DSO, enabling the provision of new platforms, market participants and value streams	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop advanced whole energy system planning and forecasting methodologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Are there any missing?

Do you agree with the assessment of the level of innovation activity across the listed categories?

Yes

If not - how would you assess the level of innovation activity across the listed categories?

Do you agree with the assessment of the future innovation opportunity across the listed categories?

Yes

If not - how would you assess the future innovation opportunity across the listed categories?

Do you agree with the required innovation effort across the listed categories?

Yes

If not - how would you assess required innovation effort across the listed categories?

Do you have any comments on the timeline of innovation activities?

Do you foresee any external influence or policy changes that would change the timeline of when the challenges will need to be addressed?

The recent Statement by Dermot Nolan on regulation needing to be ready for revolution should seek to help bring about the benefits of innovation earlier. we must future enable our systems and markets to unlock the benefits and to do that we must bring about change in a more flexible and responsive manner. We must be able to design, assess and implement change quicker

Theme #3: New technologies and commercial evolution

Please rate the future innovation opportunities by importance

	1 (least important)	2	3	4	5	6	7	8	9	10 (most important)
Extract value from continued growth in web-based, digital-enabled services and new and improved sources of data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maximise cybersecurity and data protection in respect of privacy and commercial sensitivity;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maximise benefits provided by new technologies, with particular focus on network services provided by electric vehicles and energy storage;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilitate the adoption of commercial business models that leverage low carbon technologies;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shape and comply with evolving regulations and standards;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inform the development and ensure compliance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

with new markets and structures that allow greater competition in the energy markets;

Facilitate sharing of services and business functions between DNOs, TNOs, and SO;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leverage cross-sector "smart technology" benefits and lessons.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you agree with the assessment of the level of innovation activity across the listed categories?

Yes

If not - how would you assess the level of innovation activity across the listed categories?

Do you agree with the assessment of the future innovation opportunity across the listed categories?

Yes

If not - how would you assess the future innovation opportunity across the listed categories?

Do you agree with the required innovation effort across the listed categories?

Yes

If not - how would you assess required innovation effort across the listed categories?

Do you have any comments on the timeline of innovation activities?

N/A

Do you foresee any external influence or policy changes that would change the timeline of when the challenges will need to be addressed?

See earlier answer to Theme #3

Theme #4: Customer and stakeholder focus

Please rate the future innovation opportunities by importance

	1 (least important)	2	3	4	5	6	7	8	9	10 (most important)
Improve the understanding of changing customer needs, particularly in regard to the electrification of heat and transport;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve involvement of customers in the delivery of the innovation work;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Continuously improve customer experience and affordability, and support the fuel-poor;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enable customer choice;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maximise the transparency of information and the quality of accessible data;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Improve employee skills and resources;

Facilitate community energy;

Actively seek collaboration with stakeholders and partners;

Facilitate behavioural change initiatives to promote energy conservation and sustainability.

Do you agree with the assessment of the level of innovation activity across the listed categories?

Yes

If not - how would you assess the level of innovation activity across the listed categories?

Do you agree with the assessment of the future innovation opportunity across the listed categories?

Yes

If not - how would you assess the future innovation opportunity across the listed categories?

Do you agree with the required innovation effort across the listed categories?

Yes

If not - how would you assess required innovation effort across the listed categories?

Do you have any comments on the timeline of innovation activities?

N/A

Do you foresee any external influence or policy changes that would change the timeline of when the challenges will need to be addressed?

See answer to Theme #3

Theme #5: Safety, health and environment

Please rate the future innovation opportunities by importance

	1 (least important)	2	3	4	5	6	7	8	9	10 (most important)
Continuously improve safety and reduce impact on the environment;	()	()	()	()	(X)	()	()	()	()	()
Protect the safety of the public, staff and contractors;	()	()	()	(X)	()	()	()	()	()	()
Reduce the visual and noise impacts of assets.	()	()	(X)	()	()	()	()	()	()	()

Do you agree with the assessment of the level of innovation activity across the listed categories?

Yes

If not - how would you assess the level of innovation activity across the listed categories?

Do you agree with the assessment of the future innovation opportunity across the listed categories?

Yes

If not - how would you assess the future innovation opportunity across the listed categories?

Do you agree with the required innovation effort across the listed categories?

If not - how would you assess required innovation effort across the listed categories?

Do you have any comments on the timeline of innovation activities?

N/A

Do you foresee any external influence or policy changes that would change the timeline of when the challenges will need to be addressed?

N/A

Section 4.3: Areas of focus for future innovation projects

What are your views on our forward-looking innovation themes?

The themes cover all the aspects and the challenge will be to maintain the right momentum on each and ensure cross fertilisation of ideas, work and benefits is managed well.

Section 5: Delivering benefits from innovation

Are there ways in which we can improve the delivery of benefits from innovation?

Keep on ensuring any short term benefits are delivered as well as ensuring any change is going in the right direction of the longer term vision

Section 6: Collaborative innovation

In an ideal world, what do you think the best arrangement for enabling collaboration would look like?

Top down strategy from government, fully joined up with BEIS, then Ofgem as regulator and then across the relevant bodies, industries, and market players

Referring to the contents in Section 6

Are there any other ways in which Network Companies could collaborate with each other more effectively?

Ensure work with iDNOs

Are there any other ways in which Network Companies could collaborate with third parties more effectively?

Ensure work with ESC on FPSA

Do you believe there are additional barriers to network collaboration or have suggestions for how these could be overcome?

N/A

Are there any other ways in which Network Companies could encourage Cross Energy Vector or Cross Sector collaboration?

N/A

How can we improve the level to which third parties are informed about, and involved with, innovation projects?

N/A

How would you like to be involved in innovation with the Network Operators in the future?

yes

Final questions

Does the strategy address the gaps and the challenges facing the industry?

Yes

Are there any additional areas of innovation that should be reinforced? How do they relate to the challenges?

Have the public consultations and stakeholder workshops provided you sufficient opportunities to contribute to the innovation strategy?

Yes

Do you have any additional feedback that did not fit into the structure of this questionnaire?

Would you like to stay involved in future engagements?

Yes

Why do you think this strategy is important to you and the wider UK?

It is all about unlocking the benefits of innovation and technology change to the end consumer and ensuring customer bills are appropriate for the future energy system landscape