#CollectiveFuture

Insights: Helping SMEs to access the energy industry

ENERGY INNOVATION CENTRE

CATAPULT
Energy Systems
“Network companies have improved their innovation, which is significant progress. However there is great potential to go further. Our challenge to the companies is to build on this progress and become high-level innovators, while delivering more for less. Involving third parties in the projects will help network companies take this next step.”

Jonathan Brearley
Senior Partner, Networks
Ofgem
1st December 2016
Foreword

Energy Systems Catapult

Paul Jordan, Head of Business Development

One of the most important remits we have at the Energy Systems Catapult is to support British industry to unleash innovation and exploit the opportunities of the global energy revolution. And we need to work in increasing numbers - and increasingly closely - with SMEs (small and medium sized enterprises) in the smart energy systems area of the energy sector. New ideas need to be developed, tested and adopted into the ever-evolving energy marketplace.

Getting SMEs involved in doing this is vital if we’re to access the full capacity of UK talent and innovation. This involves overcoming some serious challenges. While there is considerable innovation activity in smart energy systems within the UK, it’s still rare for new technology-based products and services to actually get to market – particularly from start-ups, but even from established, medium-sized companies.

Our aim is to help remove any roadblocks and to improve the landscape for SMEs.

Working in collaboration with the Energy Innovation Centre to undertake this study is our first step. The study has gathered invaluable insight and engagement and we are now in a fantastic position to be able to move forward and build upon these foundations. We haven’t got all the answers yet but can now start to address and further investigate these challenges.

We will look to foster improved links between SMEs and the supply chain, enhance collaboration and boost knowledge exchange. We also intend to develop specific programmes to help support SMEs and ensure SMEs can be assisted through our existing major programmes, such as Smart Systems and Heat and Future Power System Architecture.

Ultimately by understanding the needs of SMEs, we can improve the innovation process to help them access the new opportunities the evolving energy market is creating and get the tools, partners and information needed to successfully commercialise their innovation.

To find out more about our work with SMEs visit us at es.catapult.org.uk or follow us @EnergySysCat.
The Energy Innovation Centre (EIC) in collaboration with the Energy Systems Catapult has commissioned a report on behalf of the EIC’s industry network partners, the aim of which is to shine the spotlight on network relationships with third party innovators, particularly SMEs and highlight where there are opportunities for improvement.

In recent years, there has been a real step change in the UK networks’ approach to embracing innovation and visible signs that industry collaboration addressing energy challenges is increasing.

The introduction of RIIO (Revenue = Incentives + Innovation + Outputs) - and with it NIC (Network Innovation Competition) and NIA (Network Innovation Allowance) funding - has had an extremely positive effect.

It has fuelled progress in terms of embedding innovation cultures, enabling collaboration and creating opportunities for third parties to engage with both the gas and electricity distribution networks.

Looking forward to the next price control period, it is critical that we future proof the progress made so far, while still aiming for the sky with our innovation ambitions.

This study is the first step in an action plan to create stronger relationships between third party SMEs with innovative ideas and technologies, and the energy networks that benefit from them.

Our intention is that these insights will help us to reach a point where collaborations between gas and electricity networks and third parties can thrive. A point where we see a greater number of SME innovations breaking through into business as usual (BAU) within the networks, and at a much quicker pace.

Realising this ambition will ultimately help to put energy customers front and centre of each network business and benefit UK plc.
Introduction

Purpose

The UK energy system is facing unprecedented change. The creation of new ideas and the introduction of new innovations to the sector is vital if we are to drive our industry forward.

Maximising improvements means forging close links between innovators and the energy networks.

EIC and Energy Systems Catapult are working with energy networks to build closer relationships with SME innovators in order to drive forward collaborative innovation in our sector. Strengthening these relationships and identifying the blockers and barriers to innovation adoption will be intrinsic to the transformation of our energy system.

In January 2017, specialist research company, Renuma, was commissioned to survey EIC’s innovator community about their experiences of engaging with the gas and electricity networks. EIC’s network partners were also asked about their experience of working with innovators.

EIC industry partners participating in this study
Vision
The vision for the research was to generate a deep understanding of the relationships between these parties and provide valuable insights into the challenges and opportunities of network engagement with third party innovators.

Ultimately, this will enable network partners to put actions in place to strengthen relationships with stakeholders, increase the pace at which innovation is adopted, and increase value to both customer and networks through innovation adoption.

Methodology
Independent research consultancy, Renuma, specialises in the analysis and improvement of group-to-group relationships.

For the purposes of this study, Renuma applied a proven methodology to drill in to the complexities of the SME/network relationships driving innovation.

A group of 1,441 SMEs from EIC’s global innovator community were invited to complete a survey about their engagement with the gas and electricity network operators.

Of the 1,441 SMEs contacted, 81% were based in the UK and the remaining 19% were located around the world.

In Numbers
157 SMEs responded to the survey
78% were UK based
44% employ less than 10 people

Size and age of SMEs responding to the engagement survey. The number of employees and the length of time in business were self-reported by companies as part of the survey.
Outcomes

Whilst Renuma found that the relationships between innovators and EIC’s network partners are currently satisfactory, the outcomes from this study will enable network partners to develop stronger relationships with stakeholders and will drive improvement to networks, SMEs, customers and UK plc.

**Networks**
- Demonstrates commitment to strengthening existing relationships with stakeholders.
- More effective stakeholder engagement generates insights to inform how the networks plan and run their businesses.
- Enables networks to implement better processes and methods of working that ultimately improves the effectiveness of the innovation process, further embedding a culture of innovation within those networks.

**SMEs**
- Facilitates transparency so SMEs can feedback their concerns to networks.
- Improves the innovation process and potentially leads to greater network collaboration.
- Supports SME business growth and makes it easier to work with the networks.

**Customers**
- Driving more innovations into BAU enables better service from networks for UK energy customers.
- Contributes to addressing challenges around energy future - security of supply and affordability.

**UK plc**
- Stronger relationships and better mutual understanding between networks and SMEs means more innovations/products are adopted into BAU, creating more business for UK companies and strengthening the supply chain.
SME perspectives: Where we are today

Key Findings

1. SMEs offer a wealth of expertise to industry

a) Gas

b) Electricity

c) Renewables

d) Other

The number of SMEs in each sector with capability in several sector specific services. Some of these services are shared between sectors.

The most successful SMEs were those that engaged across multiple sectors (gas, electricity and renewables), providing infrastructure support.
Key Findings

2. Energy networks are already engaging with a diverse SME community

Overall, 80% of SMEs had engaged with at least one DNO (distribution network operator) or one GDN (gas distribution network).

Around a quarter of SMEs had engaged with more than five of the networks included in this study.

SMEs in the electricity sector have the highest levels of engagement (88%).

SMEs in the renewables sector had the lowest levels of traction with the networks (75%).
Key Findings

SMEs of all sizes are collaborating successfully with networks across sectors

SMEs engaging with DNOs

- 5 (16%) engaged with 1 network
- 6 (19%) engaged with 2 networks
- 9 (28%) engaged with 3 networks
- 12 (37%) engaged with 4-5 networks
- 7 (26%) engaged with >5 networks

SMEs engaging with GDNs

- 3 (16%) engaged with 1 network
- 5 (26%) engaged with 2 networks
- 8 (42%) engaged with 3 networks
- 7 (34%) engaged with 4-5 networks
- 6 (30%) engaged with >5 networks

SMEs engaging with both DNOs and GDNs

- 7 (10%) engaged with 1 network
- 6 (10%) engaged with 2 networks
- 12 (20%) engaged with 3 networks
- 34 (58%) engaged with 4-5 networks
- 7 (12%) engaged with >5 networks

Key Findings

75%+
Over three quarters of SMEs engaged with both GDNs and DNOs had interacted with at least four of the network operators.

100+
Larger SMEs (more than 100 employees) are more likely to be engaged with both DNOs and GDNs than smaller ones.

100
Size does not guarantee engagement - around a quarter of SMEs not engaged with networks had at least 100 employees.

The proportion of SMEs in each sector that had engaged with networks. SME engagement is subdivided by the number of networks engaged.
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## Key Findings

### 4. Initial engagement is likely to lead to collaboration

**76%**

Around 76% of SMEs, who were engaged with networks, were successful in winning work with them.

**83%**

83% of SMEs engaged with both GDNs and DNOs were successful at winning work with the networks.

**41%**

41% were successful at winning work with both sectors.

The proportion of SMEs engaged with each network type going on to win work as a result of engagement, showing with which network types this work was completed.
5. Key Findings

Networks are adopting SME innovations into business as usual but there is still work to be done.

Just over half of SMEs (57%) reported some level of adoption by the networks.

Between engagement and adoption there is a 49% drop, meaning only half of those SMEs engaged with networks have had an innovation adopted.

The smallest SMEs have the lowest rates of adoption following a project with the networks.

Adoption of innovation is likely to involve closer or more long-term involvement between SMEs and networks than non-adoption.

Adoption of innovations at scale can be challenging for SMEs.

Adoption does not seem to be a predictor of a close relationship between both parties.

The proportion of SMEs working with networks that report having an innovation adopted, split by whether they have engaged with DNO, GDN or both.

Engagement rates, work rates and innovation adoption rates by size of SME.
6. Network innovation funding is critical to SMEs engaging with this sector

Key Findings

- 32% of SMEs had received some form of innovation funding.
- 13% engaged with networks.
- 3% worked following engagement.
- 7% innovation adoption.
- 8% was referenced as a source of funding more frequently than Network Innovation Competition (NIC) funding (3%).
- SME innovators are accessing a wide variety of innovation funding sources.
SME perspectives: Where we need to get to

1. Connecting with the right people
SME innovators want access to individual experts within each network operator who are responsible for adoption of specific innovations.

2. Funding
Whilst NIA and NIC funding has had a significant impact on bringing ideas to market, SMEs need further information about the funding available to them and more clarity on the terms of this funding.

3. Embracing disruptive innovation
SMEs want to see networks embracing disruptive innovation.

4. Procurement
Innovators need a more flexible procurement process that better suits smaller companies.

5. Terms & conditions
Innovators want to see less onerous network operator terms and conditions especially around intellectual property (IP) and insurance terms.

6. Testing & demonstration
Innovators want support to test their innovations and demonstrate them in real world scenarios.

7. Measuring innovation success
Measuring innovation success needs to look beyond short term financial return. Real innovation may take time to reap benefits so consideration should be given to measuring success in different ways.

8. Clarity around industry problems
Innovators are seeking clarity around the issues faced by industry.

9. Pace
Pace of engagement and technology adoption are among the areas for improvement most frequently cited. Innovations fail and companies go out of businesses if projects take too long to implement.

10. Business as usual (BAU)
Better understanding of the transfer process into BAU and innovator requirements will give rise to greater adoption of innovations by networks.

Clear expectations need to be set around project outputs and agreed technical success criteria is vital.
How are we going to get there?

Our action plan

EIC and Energy Systems Catapult are committed to improving the landscape for SMEs to engage with the networks and guiding them through the maze of getting their innovations into business as usual for the energy networks.

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<th>Hosting targeted SME events</th>
<th>Educating SMEs on energy industry engagement</th>
<th>Creating conversations between networks and innovative SMEs</th>
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<td>Delivering an ongoing programme of EIC showcase events that provide a platform for SMEs to introduce their technologies to networks regularly throughout the year.</td>
<td>Facilitating practical workshops and guidance to educate SMEs around the challenges of engaging with the energy industry; from regulation to funding to procurement. Advising SMEs on what they can expect as they progress through their network innovation journey.</td>
<td>Inviting relevant SMEs to participate in discussions with industry to explore network specific challenges and potential solutions.</td>
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<th>Nurturing stronger connections</th>
<th>Addressing systemic issues with regulators and networks</th>
<th>Evaluating progress through future studies</th>
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<td>Using the EIC digital platform (the EIC Hub) as a place to assess SME capabilities against network requirements.</td>
<td>Working with stakeholders and partners in the long term to address some of the regulatory and systemic barriers supporting SMEs to be successful in the energy industry.</td>
<td>Commissioning a further study after 12 months that will assess progress made and identify any improvements in SME/network engagement.</td>
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