

Consultation Response

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Encouraging innovation in regulated utilities

The Energy and Utilities Alliance (EUA) provides a leading industry voice helping shape the future policy direction within the sector. Using its wealth of expertise and over 100 years of experience, it acts to further the best interests of its members and the wider community in working towards a sustainable, energy secure and efficient future. EUA has seven organisational divisions - Utility Networks, the Heating and Hotwater Industry Council (HHIC), the Industrial & Commercial Energy Association (ICOM), the Hot Water Association (HWA), the Manufacturers' Association of Radiators and Convectors (MARC) the Natural Gas Vehicles Network (NGV Network) and the Manufacturers of Equipment for Heat Networks Association (MEHNA).

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1. What barriers, if any, are there to the development and implementation of innovative technologies and methods in the utilities sectors?

Costs and Risk of Trials

New technologies and methods invariably require testing and proving. The cost of developing ideas, including trials and pilots, has to be balanced against the requirement to carry out the normal day-to-day work and not take undue risk with the operational running of the network. The potential benefits of successful innovation need to be measured against the cost of a development failing to provide tangible benefits and potential network disruption.

Costs of extensive trials can be prohibitive, and can lead to a rush to implement innovations before comprehensive and objective analysis of results can be undertaken.

Potential barriers also include the tangible price of failure; both in terms of rescaling after a failed pilot scheme or project, the additional burden of replacing failed work, and also the fact that a failed project might result in no further funding or innovation reward, or detriment to the network service level. The small scale of trials can lead to perceived high unit rates of delivery, whereas more extensive trials offer better benchmarking.

Contractual Cycles

Not surprisingly, regulatory cycles have an impact on contracting relationships. Since investment in 'game-changing innovation' typically pays back over a longer period of time, why would a contractor invest heavily at the end of a contract cycle? The nature of regulatory cycles means we should expect more innovation at the start of regulatory cycles and less at the end.

The type of contract relationship also promotes or discourages innovation. For example, a contract let as a traditional Schedule of Rates tends to discourage risk-taking and stifles the desire to challenge existing working models. An alliance or more collaborative contract is far more likely to seek out innovations to benefit a shared goal or revised target cost to deliver.

In many ways this is a matter of incentive. Network operators can expect an incentive for their innovations, but there is no established model to reward such outputs from their supply chain or contractors. Access to financial benefits could be shared across those who invest and take the risk in their development; this should not be just limited to a share in any cost benefits or efficiencies gained from the innovation.

Culture

Cultural barriers to innovation exist in any 'old asset heavy industry'. They are somewhat inherent in and part of the profile of the key participants in that industry. The control exerted by the owners over their assets and the way they have historically managed their supply chain makes the implementation of innovative technologies a real challenge.

Organisations working in the utility sector are learning the importance of innovation; not just from a traditional engineering point of view (such as finding ways to install cables or pipes more efficiently), but also from a customer perspective. Historically, UK utility companies have tended to be relatively slow to embrace innovative new ideas but more recently we have witnessed a realisation by some companies that paying lip service to innovation is not enough.

The rate of change in today's world is increasing exponentially, and this is causing profound changes to people's expectations, such as how much disruption they will tolerate, the information they expect to access (how and when), and the quality of service they expect to receive. So the first barrier that needs to be overcome is a positive acknowledgement that for utility companies to have a chance of meeting customer expectations now and in the future, innovation must be embraced, in all its forms. Since innovation can take many forms, we must really 'open our minds' to new ideas – new methods and technologies.

Inward-Looking Perspective

Another barrier is the natural tendency for UK utility companies to focus only on what they know; in the sector they are familiar with – i.e. the UK utilities environment. This clearly limits the innovations they will uncover and, not surprisingly, causes a bias towards engineering innovations. The utility companies need assistance to research and stimulate innovation from other sectors too; both from other industries and from across the world.

Legacy Issues

It may be difficult to predict or guarantee exactly how long a new measure or component will last. This increases an amount of risk in underwriting the work done. For example, in replacing an existing item of work which carries a 25 year guarantee, those working on the innovative process need to be confident that they are not storing themselves problems for ten years down the line.

Accessibility

Many areas of work are either restricted or mission-critical, and the dilemma exists about where to conduct a trial so that, if failure takes place, it will not result in catastrophe. There are also issues around how the innovator might link to other stakeholders such as local authorities to enable universal buy-in to the concept.

2. What are the best way(s) for utility regulators to further promote innovation in their sectors, while ensuring the interests of consumers (present and future) are protected?

We suggest a good way of doing this is to encourage utility companies to build collaborative and long-term relationships. This will help to remove barriers and encourage collaborations through a culture of mutual support, leading to shared risk and success.

We recommend that the regulator creates incentives that help to encourage or direct the utility companies to incentivise non-regulated operators and suppliers. At the moment there is very little incentive for contractors to risk time and resources in developing innovative solutions for current industry challenges. If contractors are incentivised, they will take more of a leading role in driving change and improvement.

Regulators also need to encourage more innovative thinkers to get involved in the UK utility sector. Existing and new suppliers to the sector – typically with more commercial or consultancy cultures – can bring in innovation experts to challenge the in-sector thinking. These suppliers need to be confident of 2 things before they commit time and effort:

- They need to know that their efforts will be seriously and quickly considered by the utility companies; not held up by slow processes based on 'decision-by-committee' cultures, and
- They need to know that they will receive suitable recognition – both financial and reputational – for the innovations; and not have the ideas 'hijacked' by the utility companies.

In short, commercial incentives to demonstrate 'joint' supply chain developments in collaboration should be encouraged.

3. What barriers, if any, are there to innovative sector specific and cross-sector business models?

Best practice adopted in one region may not be shared with other areas due to a lack of co-operation, minimal cross-border mobility of operatives and managers and a culture of commercial sensitivity. Also, the "not invented here" fallacy can lead to a resistance to techniques developed elsewhere.

Innovation from other utility companies may be adopted if the results of trials are irrefutable and hard evidence can be provided to demonstrate tangible benefits. This places an increased onus on those who have conducted the trials to collate and produce a wealth of convincing data to "sell" the project into their sector. Business plans and contracts are based on an understanding of outputs and rates of completion which can be threatened by time-consuming trials which drain resources and may not provide adequate results.

4. How have utility regulators most successfully encouraged innovation in their sectors?

We have no comment to make.

5. What additional tools and expertise, if any, do utility regulators need to respond to technological change and promote innovation in their industries?

Technological change comes from the successful application of technology. Technological advances in themselves do not create change. So the challenge for organisations in the utility sector is to research and stay up-to-date with technological advances, and then skilfully match these advances to the challenges or opportunities faced by the utility companies or their customers.

Our experience is that there are typically 2 audiences for innovation:

- Firstly, there are those who are excited by the latest 'gadgets', the newest technologies and kit. These people tend to stimulate innovation and are more open to the potential of the latest tech; they are important because they generate a buzz about it.
- The more practical audience of individuals who are better at identifying where technology could be transferred and applied; these people tend to be better at running trials, pilots, testing and implementing the technology.

In our view, both groups of people are needed in utilities organisations. Our experience shows that the hardest part is the practical application of the technology. Aside from the financial commitment needed, time and engagement is required from multiple stakeholders to successfully take a potential innovation from 'identification' to 'business as usual'.

We have found a 'fail fast' approach is a good model to follow when trying to implement innovative technology. This adaption of an agile methodology relies on speed as the critical success factor. This works well for technology because it limits financial commitment and capitalises on initial stakeholder enthusiasm. We have found that innovation projects that take longer than a few weeks to reach fruition suffer from disengaged sponsors and 'group resistance'.

We would also suggest that utility regulators look to provide access to a wider forum in information sharing, e.g. between the water and gas utility sectors. Even greater benefits may be achieved through sharing best practice between both regulated and non-regulated sectors. We recommend a universal platform for engaging with non-regulated organisations to ask them what they do. UK utilities are probably some of the best in the world, but what about the rest of the expertise in the UK? For example, how did we build the Olympic Park with such a low accident rate? We believe the construction and engineering sectors would welcome an opportunity to take part and share their excellence.

Looking beyond these regulated areas will enable all talents to bring their expertise to the benefit of the sector. Challenge statements should be produced to enable the regulator to consult with organisations such as the Royal Institute of Chartered Surveyors or the Institute of Civil Engineers to ask what else could be done.

6. To what extent would a statutory duty to promote innovation help regulators focus further on encouraging greater development and adoption of innovation in their sectors?

We believe that the imperative to innovate across the sector should be more explicitly spelled out; clearing the way to allow utility companies and their suppliers freedom to try out more

ideas, and to 'fail fast'. This would pave the way for the wider contracting industry to provide a huge amount of benefit for regulators.

In line with the comment we made about the cost of failure in our response to question 1, it should be recognised that the resources required for development come at a price. If incentives are only rewarded once they arrive at 'business as usual', it will lead to a culture of cautious investment where only projects that are certain of reaching successful completion will be initiated.

7. What other measures might support an innovation duty in helping regulators to focus on encouraging innovation in their sectors?

Suppliers, unencumbered by a legacy of public sector ownership and regulation, can at times be better positioned to identify innovations for the utilities sector. They then need to be given the freedom to apply these innovations to the sector, failing fast if necessary, not hindered by organisational constraints and to share financial incentives. Other ways to encourage innovation are through academia, including university and bursary awards. Competitions could provide targeted training for graduates who can develop solutions to common problems.

Furthermore, cross-party working should be encouraged. Secondments, for example, from gas to water help to share knowledge and identify opportunities. Utility regulators could consider organising knowledge-sharing events such as inviting all parties from across the sector to an international summit. We suspect many great ideas and innovations are being pioneered outside the UK, particularly in the USA at the moment, and inviting companies and organisations to visit the UK to share their thoughts and challenges could provide benefits in terms of rapid innovation application.