

BEAMA Response

Reviewing the benefits of the Low Carbon networks Fund and the governance of the Network Innovation Competition and the Network Innovation Allowance.

Introduction

BEAMA is the leading trade association that represents manufacturers of electrical infrastructure products and systems from transmission through distribution to environmental systems and services in the built environment.

BEAMA represent over 200 companies in the UK supply chain, and due to our cross sector coverage (High to low voltage network infrastructure, and downstream of the meter for domestic and commercial premises), we take a strong interest in the innovation stimulus for the market. A large proportion of BEAMA members have direct experience through involvement in LCNF projects and are keen to pursue work under the NIC and NIA.

BEAMA are also leads on one of the working groups within WS9 under the DECC Ofgem Smart Grid forum. WS9 focuses on outlining supply chain barriers in the market and have recently presented an extensive piece of work to the forum, outlining results from industry surveys and case study reviews. This provides evidence in support of the comments we also relay in our answers below. We therefore encourage Ofgem and the independent evaluator to consider this work, alongside WS6 outputs, and DS2030 which provides significant justification for areas that require further work in the market.

Summary of BEAMA response below

BEAMA do view the LCN Fund as a success in the UK, and we are experiencing how this is helping to facilitate potential trade links internationally with UK companies. However, we need to maintain the momentum of this significant work, and there are changes that need to be made to the process through which projects are implemented under NIC and NIA in light of our learning.

Barriers do exist for UK SMEs to engage with this stimulus and given the export potential in the market it is a great shame to still see these in place. Ofgem should address how the level of risk taken on by SMEs can be reduced.

BEAMA members involved in new project bids under NIC have reported on the limitation this process, and associated criteria, places on innovation. In



a number of cases the projects are being moulded by the planning process and not by the needs of the market or viable innovations. We are arguably implementing more development projects, than innovation projects. In light of this BEAMA would like to raise a fundamental question around how the UK treat innovation. The work of WS9 has reviewed a number of case studies in other countries that are experiencing success in Business As Usual implementation of new technologies. In most cases these case study provide examples of countries that have a far more open process to innovation and are willing to accept a higher level of risk that that project may fail. Learning from those failures in a number of cases has been incredible beneficial to the market.

Overall BEAMA support the need to continue the innovation stimulus. The FPSA project initial findings have outlined the importance of NIA and NIC in the promotion of trialling new technologies and approaches at small scales before grid wide BAU expansion. They state that this de-risks the system operability challenges of new technologies that we would otherwise undoubtedly experience, both technically and in terms of operation and maintenance. BEAMA fully support this as justification to continue the stimulus and promote further innovation in DNOs day to day business practice, recognising the significant challenges FPSA and the DS 2030 project have highlighted in the market.

Review of NIC and NIA governance arrangements

1. Should we change the NIC and NIA Criteria? If so how and why?

It is assumed in many cases that technology or applications cannot be trialled twice. Therefore, a technology that may have been proven commercially but not viable 5 years ago may warrant trial again due to changes in market environments (price, demand etc). Furthermore 5 years is a long time for technological development and therefore applications can warrant new trials in light of this, and learning from failed innovation projects. This is by definition how innovation should work. But it is the view of BEAMA that this may not be accepted under the current criteria set out under the NIC and NIA stimulus.

2. Should we give more of an indication of where we consider innovation is required or is that inappropriate?

BEAMA support the need to maintain the NIC and NIA process as open as possible with regards to new innovative ideas coming forward from

suppliers in the market. Having said that we are aware that there are some key topics that will require further investigation. These include:

- Communication networks for DNOs - the testing and implementation of communication infrastructures that could be rolled out nationally will be a big challenge. Here there is opportunity to use the NIC and NIA as a way to bring in new skills from other sectors, including the telecoms industry.
- Links to smart metering – as rollout commences can we utilise the smart metering infrastructure to develop more advanced trials for DSR / communication networks?
- Data management - the smart network system and communications being developed will create an unprecedented level of data for DNOs to securely handle. Again we could use the NIC and NIA as a means to bring in expertise from other sectors to test viable systems for this.

3. Should the focus of the NIC and NIA be broader and cover the broader energy system?

It is very evident that the challenges facing the networks today are issues that can only be addressed through system wide applications. There is also a significant lack of skills at a system engineering level in the market and therefore the NIC and NIA could be used as a way to build up this skills set in the market. BEAMA would be supportive of broader energy system projects that incorporate partners across the sector - transmission, distribution, heat networks etc. This could build on the work the Catapult and IET are developing as part of the FPSA project for DECC, drawing on the key functional changes that may be required for the energy system.

4. Can we improve the process for deciding on which projects to approve and if so, how?

There is a strong emphasis and requirement for the supplier of equipment for projects going to tender under the NIC to prove the BAU case at point of submission. While we can understand the spirit behind this objective (to bring innovation into BAU), we also agree strongly that this is not the way to incentivise innovative projects that will benefit the network and customer. From the experience of BEAMA members in bidding for NIC projects this is proving challenging and as a result a number of legitimate innovation projects are not getting funding. Arguably if a business case can already be proven, the infrastructure in question could be justified as BAU already, and is by definition not innovative.

It is our understanding that this is seriously affecting the ability for projects to come to fruition.

A suggestion would be for Ofgem to review how many projects are starting at this stage in ED1 under the NIC, compared to the number of projects that were initiated at the same stage for the LCNF fund. It is assumed far less under NIC.

A further suggestion would be to make this requirement mandatory at the end of a project. This is already required to some degree under LCNF. However, what we propose here is a more thorough business case that can be shared with all DNOs, and in theory picked up by others for direct BAU implementation (we would therefore assume this considers any changes required to procurement practices, implementation frameworks etc). SGAM is an effective tool to help with this.

A key limitation of the projects that can be implemented under NIC and NIA, is the limitation to only proceed with projects that would be permissible under the existing regulatory framework. This restricts the level of innovation from a technical and commercial perspective that could otherwise proceed and would be beneficial to the DNOs and / or customers.

5. How can we improve participation in the NIC?

The issues identified above are all driving projects to be moulded around the demands of the submission phase, rather than designing innovative projects that may benefit DNOs and / or customers.

Participation from the supply chain, specifically SMEs, in NIC projects is significantly limited by the red tape attached to project licence conditions etc.

In particular there is evidence (Ref work undertaken by WS9) of the scale of risk SMEs have to take on as part of a project (examples provided from previous LCNF projects). This risk in a lot of cases is not proportionate to the size of the company that could be involved, and therefore favours the involvement of larger companies, likely to already be active suppliers into the DNOs BAU procurement. This risk is reputational, and financial. Alleviating the risk SMEs would have to take on as part of a project would help encourage more of the SME community to take leading roles, benefiting the UK market overall. BEAMA recognise there are a lot of highly innovative SMEs in the market today that could benefit from involvement in NIC and NIA projects, in doing so we would be supporting the potential for export from the UK also.



The interpretation of the governance does not appear to be uniform and this is evident in the treatment of background and foreground IP in the project. Businesses are in most cases expected to encumber their IP in participating in an NIA project.

In a number of cases BEAMA members have had issues with the treatment of 'relevant' foreground IP that might be developed during the project. The guidelines suggest that if such IP is within a commercial product then it is not 'relevant' provided that the commercial product can be purchased after the project. This is crucial, because if this is not applied, the IP is 'relevant' and DNOs get a free licence to this IP. But the DNOs think that they own the Foreground IP, or have some joint ownership of it because they funded the NIA project. This means companies are not free to incorporate the foreground IP into their products and hence state that it is not 'relevant'.

Therefore IP is never 'clean' and separable. An example would be a supplier providing a monitor to capture fault waveforms, and then run a project with a DNO to test it on their network, the supplier will inevitably be able to improve the monitor as a result of the project. The DNO will claim some ownership of the improvement to the IP as they funded the trial, and then the supplier will be in a position where they have to negotiate a licence with the DNO to sell the improved product. Suppliers cannot make these improvements (innovations) to their products without a real network to develop and test on. Therefore the NIC and NIA is key in developing the right products for DNOs and innovation in the supply chain.

However, this is a huge overhead to have to negotiate a licence with a DNO, entirely out of proportion to a NIA project. There is little appreciation in the criteria set out in NIA and NIC governance of what this entails for a supplier in the market. Most SMEs will not have the experience to develop this, or the resource. This is therefore a significant barrier for SME involvement in projects and it is our understanding that it is limiting the number of projects coming to fruition under NIC and NIA.

One way to avoid this is to scope project such that suppliers of products can have it clearly stated that they don't develop any foreground IP, and claim it all as background IP. They are just testing and qualifying it. This is happening in a number of cases already, but it's a significant obstacle to scoping out NIA projects in particular. Even having done this in some cases suppliers will be asked to provide a guaranteed 'discount' of sale of any products to the DNO that funds the NIA project.

It is our view this is affecting the development of projects and innovation in the market. BEAMA have raised these concerns before in previous consultation when RIIO was being introduced.

LCNF benefits review

6. To what extent do you consider that the LCN Fund has been succeeded?

The learning from LCN Fund projects is an incredible resource for the UK, and as mentioned in the following answers, is also strengthening export opportunities from the UK. The drivers for DNOs to however pick this up and implement as Business as Usual is not yet visible at scale. The supply chain involved in LCNF projects, are expecting a long delay before some of these new technologies will be adopted at scale, and this places further risks on smaller companies, who are unlikely to sustain business during this period. This seems to be partly due to the uptake levels of EVs, heat pumps and PV in some cases.

WS9 in the DECC Ofgem Smart Grid forum have done some extensive work to look at other sectors and case studies within other countries to review how to develop a market for new technologies and deploy smart grids as BAU. One key observation from this work has been around the need to develop a clearer strategy/ plan for the rollout of new technology in order to help unlock private investment into the market and give the supply chain the security they need to sustain the ramp up in demand for new products. The ability to facilitate some investment ahead of need for new connections for example, could help to do this.

In summary we do think LCN Fund has been a success to date, but now we face a task of driving some of the proven technologies into BAU at scale which is currently not evident.

7. To what extent do we need to continue incentivising innovation by the DNOs?

The funding mechanisms, both LCNF, NIA and NIC are highly regarded not only in the UK but across Europe and Internationally. BEAMA lead a number of trade and export missions annually, working closely with UKTI, and the LCNF, NIA and NIA stimulus has certainly gained a lot of interest, especially as the LCNF learning has now been published from many of the projects. This helps to draw attention to the UK market and supply chain for smart grids and strengthens our export potential.

Should we be able to alleviate the barriers for UK SMEs to engage with the NIC and NIA funds, we would make the most of this potential asset and help secure stronger trade links for UK companies.

The work undertaken by the DECC Ofgem Smart Grid forum (DS2030 project, WS6, WS9) is invaluable in this assessment process and any decisions taken to extend the innovation funding mechanisms. Firstly it is

evident that the distribution system and supply side of the market will need to drastically change by 2030. Given the known requirement to adapt to increases in PV, EV charging, Heat pump installations, renewable energy etc, we need to continue to innovate and place the UK at the leading edge of the market place.

What we have discussed in our response has focused on some of the barriers in delivering new projects. A lot of this hinges on existing regulatory frameworks. We therefore need to allow projects to be undertaken that may not be permissible in today's regulatory framework, but potentially provide a commercially viable proposition in a future market – this will help us to understand how our regulatory framework needs to evolve with the changing demands of the system. The Future Power Systems Architecture project, led by DECC, must therefore be commended in pursuing some of these questions. And the NIC and NIA could be key to test some of the assumptions made in this work, and the modelling through projects like DS2030.

So in summary, BEAMA support the continuation of the NIC and NIA and to continue incentivising innovation through other mechanisms, including the Energy Systems Catapult. Early indications to us show a low level of uptake of projects, and underspend in the first 2 years, but we strongly believe this is not a reflection of the lack of innovation in the market and potential, rather the limitations placed on the stimulus through the governance process. We understand the origins of some of these restrictions, and of course the need to protect the consumer, but we can provide examples where this is over burdening the market and significantly limiting innovation in the sector – therefore not benefiting the customer in the long run.

The NIC and NIA criteria and governance therefore needs to be reviewed in light of the learning we have from LCNF and early NIC project bids. If we can remove barriers for SMEs, address some of the regulatory hurdles these projects face, this could be a highly effective mechanism, and also help support the supply chain and export opportunities from the UK.

8. Are there any other issues we need to consider as part of the LCN Fund benefits review?

Examples from LCN Fund projects that are completed demonstrate how at the end of a project equipment is often disconnected and literally un-installed. This can be due to a number of reasons (lack of resource to continue asset management and development of the infrastructure, difficulties in integrating this into surrounding services / assets, existing regulatory requirements). It is felt this is a great shame from an innovation



perspective, as the continuation of proven installations could help drive BAU implementation, but also it seems a waste of money to discard viable systems. If there is a way NIC/ NIA money could be applied to aid this progression, from end of project to full integration with the DNOs BAU system we believe this should be looked at. In some cases we are aware projects have been kept in place, but this has been a difficult task, and so any way Ofgem can help facilitate the continuation of working systems proven during trial phase would be beneficial to the market. Overall as we strive to implement new technologies into BAU after trial, it would seem the removal of them from working systems at the end of the project is counterintuitive.

BEAMA have welcomed the opportunity to comment and share the experiences of our members. We are very happy to provide any assistance we can during the review process and would invite Ofgem and the independent evaluator to contact BEAMA to set up a meeting to talk through the response above.

Contact

Yselkla Farmer

Manager – Emerging Markets

Yselkla.farmer@beama.org.uk

07815903454