

RIIO-2 Framework Consultation

1. 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 six 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) and the Natural Gas Vehicles Network (NGV Network).
2. The Energy and Utilities Alliance (EUA) is a company limited by guarantee and registered in England. Company number: 10461234, VAT number: 254 3805 07, registered address: Camden House, 201 Warwick Road, Kenilworth, Warwickshire, CV8 1TH.

Q1. How can we enhance these models and strengthen the role of stakeholders in providing input and challenge to company plans?

3. EUA supports the proposals laid out by Ofgem to strengthen the role of stakeholders within the RIIO process. We believe that network companies will act quickly to ensure consumer boards are established and functioning.
4. However Ofgem will need to provide a greater level of detail on who should be on the group, the skillsets that will be required especially what parameters will be used for assessment and evaluation. The boards need to be proportionate and have clear guidelines on what areas of the business plan and operations they are there to scrutinise. We believe that

the set up should be ensuring the Customer Engagement Group is representative and the areas of expertise expand across both domestic and non-domestic customers/stakeholders.

5. The sooner the details are laid out the sooner the network companies can start to establish these groups, even ahead of 2021.
6. Another point our members raised was on the level of training that should be provided and how this will be assessed. Some of the issues that will be presented to these new boards will be complex and will require some level of advanced understanding of the regulatory framework and of the day to day operations of a network company. We acknowledge that a lot of this will be provided by the networks when setting up the boards. But we would like to know if Ofgem have any parameters set out on what this should entail and also what it should not entail in order to ensure an impartial view is maintained.
7. As a number of our members are part of the network's supply chain, there was interest to know if these boards will focus purely on domestic customers or on wider stakeholders as well. We would welcome some additional clarity on this point as technically stakeholders in the supply chain are also the network's customers and would benefit from having a place to discuss and scrutinise the networks business plans.
8. EUA is therefore fully supportive of the proposals laid out by Ofgem, but would welcome some more detail on the proposals and a timeline for this.
9. With regards to the open forum this needs to be proportionate and appropriate. Further detail on how and when open hearings would be used would be needed for a full response. Our members are not adverse to this proposal as long as it is used for discussions where an open forum will be of benefit and not if it is used as a punitive measure to force change.

10. Consideration needs to be given to:
- The reasons/factors that need to be met in order to proceed to an open hearing
 - The handling and publication of confidential information – would there be in option to proceed in private?
 - The order of proceedings
 - Would Ofgem Chair the hearing, or would the Chair be independent?
 - Would there be the opportunity to bring areas of contention between companies, Chairs of various groups and Ofgem to open hearings?
11. We welcome working with Ofgem on clarifying and developing on these points.

Q2. Do you agree with our preferred position to set the price control for a five-year period, but with the flexibility to set some allowances over a longer period, if companies can present a compelling justification, such as on innovation or efficiency grounds?

12. EUA would agree with a five year price control period. Our members believe that an eight year period with a number of break points and reviews would not help simplify the process and would introduce instability and risk. Therefore a fixed five year period is simpler and we believe it would be more effective.
13. A number of our member companies have stated that commercial contracts often have a three year contract period. We also do not believe that this would adversely affect training and apprenticeships.
14. Network companies in gas distribution already work with long term thinking in mind as they are developing the network for future uses such as the iron mains replacement programme and the potential repurposing of the grid for hydrogen. Ofgem should recognise that Mains Replacement will be a key deliverable in RIIO-2 and price controls beyond that.

15. Eight years may have encouraged more diverse innovation programmes, and there is a risk that five years may curtail some innovation initiatives. However because we are only half way through the first eight year price control there is no counterfactual to help evidence this claim. So on balance a fixed five year is the most practical.

Q3. In what ways can the price control framework be an effective enabler or barrier to the delivery of whole system outcomes?

16. Network companies see whole system outcomes as the future for network companies in this country. There is a need to view energy provision as a holistic system with each complimenting the other.
17. There are already examples of this happening in the UK with the Freedom Project in Wales, the Hydeploy project at Keele University and the Liverpool – Manchester Hydrogen Cluster. All these are exploring how the networks can be used to balance out demand and supply and ensure that consumers are getting the most cost effective energy.
18. The gas grid in particular has expansive storage capacity that is already being used to help balance intermittent renewable electricity generation. And with the coal phase out this is even more critical with gas being required for peaking and maintaining sufficient energy supply to homes.
19. Looking forward we can see a system whereby transport, waste and energy all have to interlink to provide the systems we need for decarbonisation.
20. For example waste will be used to create biomethane which will be injected into the gas distribution network and then not only piped to homes to decarbonise their energy use, but also piped to gas vehicle filling stations

21. The LowCVP¹ found that compared to even the newest diesel Euro VI HGVs, a gas-powered equivalent reduces NO₂ emissions by 74% over a variety of cycles, total NO_x emissions by 41% and particulate emissions by 96%. By looking at the entire picture, we can also identify significant CO₂ savings on a well-to-tank basis. This can be as much as 100 tonnes per vehicle if renewable biomethane is used. Running HGVs on natural gas gives around a 12-15% GHG saving according to the Element Energy study or according to the ETI study, the best case scenario indicates that the potential for emissions savings is very significant at 21-22% for LNG and 26-29% for CNG compared to the diesel reference. When running on biomethane, the Element Energy study quantified the savings at 84%. A recent study by Cadent quantifies the theoretical potential for biomethane at over 100TWh per year, an amount which could cater for the entire HGV fleet.
22. These studies make up a convincing body of evidence about the GHG savings that could be made from encouraging the uptake of gas HGVs.
23. Gas HGVs are already being adopted by many of the UK's largest retailers such as Waitrose and Argos given their emissions reduction credentials combined with excellent driving cycle performance. Meanwhile, there is no credible all-electric alternative and this is unlikely within the next couple of decades. Infrastructure such as catenaries or inductive strips on the road, carry with it significant costs and disruption to other road users.
24. Utilising green gas for heat and transport in turn helps reduce demand for electricity and allows a greater proportion to be generated by renewables. This will help to facilitate the electric car roll out as by ensuring HGVs and buses have a balanced energy supply.
25. EUA fully believes that this will become a reality in the very near future, and in fact a number of these steps are already operating currently.

¹ [Emissions Testing of Gas-Powered Commercial Vehicles](#), Low CVP, January 2017.

26. Ofgem need to ensure that the next price control creates a system to support this whole system approach to ensure that companies are correctly and proportionally remunerated for operating in this way. A formal system ensures that this process becomes frictionless and does not over reward some companies which could dissuade future collaboration. We also do not want an incomplete framework to potentially close down certain options or curtail future developments.
27. This level of whole system approach is still at an early stage and involved bodies that do not normally work together. This is why EUA believes Ofgem need to set an enabling framework that does not become too prescriptive, but instead allows a degree of delivery flexibility. We appreciate that this will not be a simple task and we would welcome a collaborative approach on developing the framework.

Q5. In defining the term 'whole system', what should we focus on for the RIIO-2 period, and what other areas should we consider in the longer-term?

28. EUA believes whole system should focus on how the current energy system can be integrated to ensure that customers get efficient and cost effective energy to their homes. This should also encompass transport and waste.
29. These should be considered now and not at a future date.
30. With regards to longer term, this should be assessed during the next price control once whole system operation is firmly the norm and it is clearer how this system can develop.
31. A meaningful whole system approach must be cross sector and include gas and electricity, and transmission and distribution to maximise the value from all energy networks and deliver the most efficient solutions. A key focus in RIIO-2 will be to ensure networks play a full

role in the delivery of a sustainable energy sector which delivers long-term value for existing and future consumers.

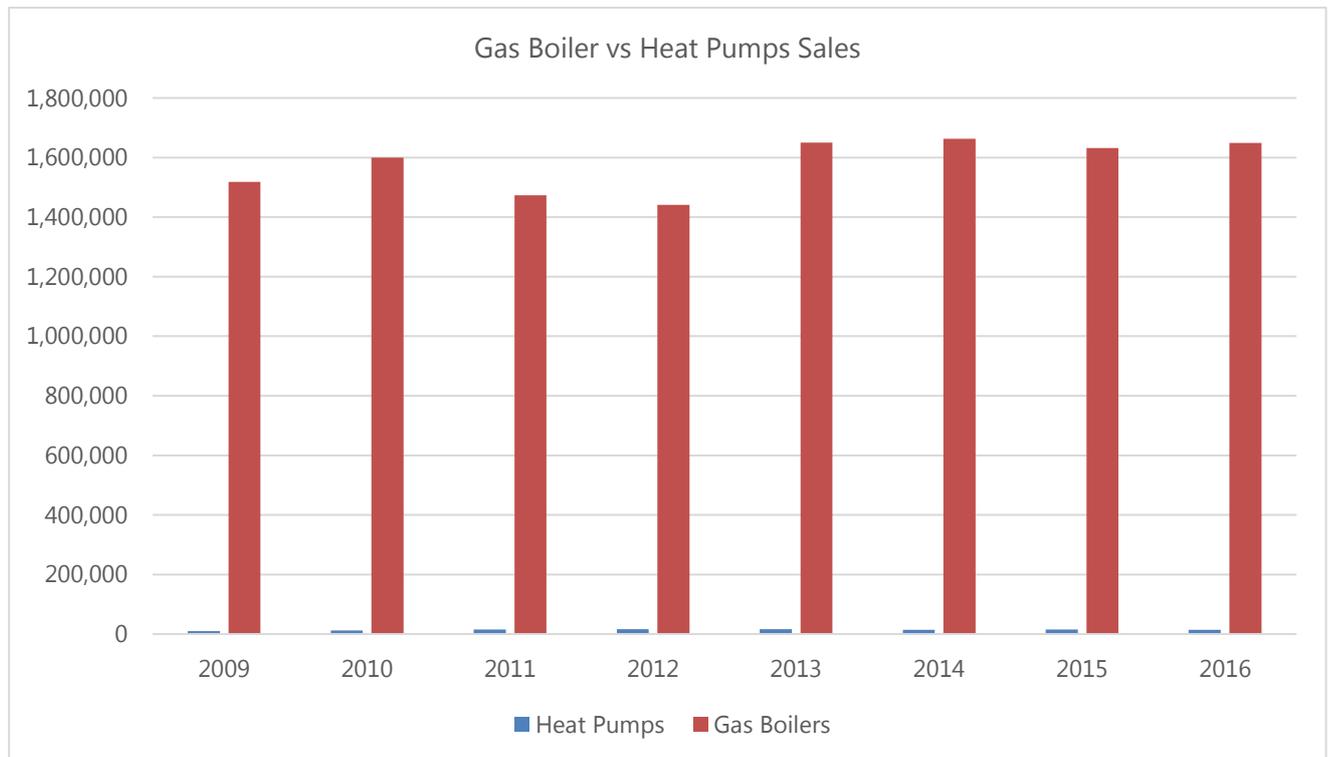
Q9. What options, within the price control, should be considered further to help protect consumers against having to pay for costly assets that may not be needed in the future due to changing demand or technology, while ensuring companies meet the reasonable demands for network capacity in a changing energy system?

32. For the gas distribution networks, EUA does not believe there is a credible decarbonisation pathway that does not include significant need for a fully functional and modern gas network. Therefore there should not be any presumed uncertainty over its future.
33. A future energy system will involve a gas network which will be transporting a low carbon fuel such as green gas or hydrogen which will be the only credible way to decarbonise domestic and commercial heating.
34. The Clean Growth Plan outlined that hydrogen or green gas could be a cost effective way for the future decarbonisation of heat. As a result a number of projects have been initiated looking at how hydrogen could be used for decarbonised heating. Hydrogen requires a modern and invested in gas network. Therefore the gas network should not be seen as having a fixed lifespan.
35. This is further supported by the recent ECO 3 consultation by BEIS which indicates that first time central heating is one of the most cost effective ways to take people out of fuel poverty and they are promoting its take up. This coupled with Ofgem's own fuel poor network extension scheme shows that the number of people connected to the gas grid is growing and not decreasing and so the gas network remains a critical and invaluable part of our energy network.

36. This is further supported by a series of reports that demonstrate this point. Academically it is widely accepted that the gas grid will have an important role to play for decarbonisation.
- Too Hot to Handle
<https://policyexchange.org.uk/publication/too-hot-to-handle/>
 - Future Heat Series Part 2 - Policy for Heat
<http://www.policyconnect.org.uk/cc/research/report-future-heat-series-part-2-policy-heat>
 - 2050 Energy Scenarios
<http://www.energynetworks.org/assets/files/gas/futures/KPMG%20Future%20of%200Gas%20Main%20report%20plus%20appendices%20FINAL.pdf>
 - The future of heating in UK buildings
<https://www.theccc.org.uk/2016/10/13/infographic-the-future-of-heating-in-uk-buildings/>
 - Future Energy Scenarios
<http://fes.nationalgrid.com/media/1253/final-fes-2017-updated-interactive-pdf-44-amended.pdf>
37. The gas pipe network will also be a key function of future non-methane pathways. Therefore even if the network is reutilised in a manner that is not currently its principal use, the need for a safe and modern gas pipe network will be critical.
38. For these reasons, unlike with disruptive electricity systems, the gas system does not have the same uncertainty for its asset and stranding is not a credible risk.
39. RIIO-1 allowed for the continued iron mains replacement programme, this is due to be completed in 2032. This is being delivered in an orderly and cost effective manner, unlike some other mandated energy system upgrades. This is being costed on the basis of a long term depreciation of the gas network as an asset. This also keeps costs to consumers low. The impact of changing the risk profile to require a return on investment on a shorter depreciation term would increase running costs and ultimately would be passed on to

consumers in the form of higher costs. EUA therefore urges Ofgem to ensure that depreciation can be kept as a long term calculation.

40. Through EUA's domestic heating trade association we know that the sale of gas boilers has increased since the start of the first price control period.



41. At the time it was widely believed that gas heating may be phased out and that by the end of the 2010's gas boiler sales would be significantly lower. However as illustrated this is not the case. Other heating products have not gained traction and the RHI for domestic heating has been a widely regarded failure. Therefore there is far less uncertainty now over the future of gas heating. The complexity is that gas heating remains a cheap and reliable option, increasingly difficult to replicate or replace.
42. A recent report prepared by Vivid Economics for BEIS on the International Comparisons of Heating, Cooling and Heat Decarbonisation Policies² found that no country has been able to make a successful move away from the gas grid despite significant policy efforts. Mostly

²https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/699674/050218_International_Comparisons_Study_MainReport_CLEAN.pdf

because it is a cheap and reliable energy source. This is why green gas and hydrogen is being investigated by many, including the Netherlands, Germany and Japan to overcome the decarbonisation dilemma. It would be reckless at this stage to reduce support for the network.

43. The Gas Distribution Networks have informed us that business models at the moment show significant investment into the gas network, demonstrating confidence in its future.

Q10. In light of future challenges such as the decarbonisation of heat, what should be the role of network companies, including SOs, in encouraging a reduction in energy use by consumers in order to reduce future investment in energy networks?

44. EUA does not believe that energy efficiency in itself can be used to reduce future investment in energy networks. There will always be a need to have a well maintained and invested in energy network. Consumers will always need energy at the point of demand, in homes businesses and whilst travelling. Network companies will always have to provide that energy.
45. Energy efficiency allows for a reduction in total demand of energy consumed which can help with reducing the number of power plants needed or for allowing greater renewable generation with back up supply. However it is not clear that this would mean less investment in the energy networks.
46. Interrelated energy networks can be an important tool in reducing overall energy consumption by optimising the energy source being used depending on overall demand.

47. EUA believes that one of the key roles the Gas Distribution Networks (GDNs) can have is through connecting homes to the gas grid. This is also consistent with the ECO 3 consultation document that sees first time central heating systems as a key driver to reducing fuel poverty.
48. Our own analysis has shown that installing gas central heating is key for increased energy efficiency.
49. The type of central heating boiler that a property uses is likely to be a significant factor in determining whether a household is in fuel poverty. Non-gas heating fuels are typically more expensive than gas, so will lead to relatively high heating bills. Given the discrepancy in efficiency between condensing and non-condensing boilers (90% compared with 70%), homes with non-condensing boilers will be more expensive to heat.
50. People living in homes with a non-condensing boilers are 43% more likely to be in fuel poverty than the rest of the population.
51. Homes that aren't connected to the gas grid are commonly heated using electric heaters, oil or LPG central heating. Heating a home using LPG, oil or electricity is typically more expensive than mains gas. As a result, it is to be expected that homes off the gas grid have higher heating bills than similar properties on the gas grid and therefore are more likely to be in fuel poverty than their on grid counterparts.
52. Households without a connection to the gas grid have 1.5 times the risk of being in fuel poverty than those with a mains gas connection.
53. Given the importance of connecting homes to the gas grid EUA believes that the continuation of the fuel poor connection scheme and link up with ECO would be the most effective and appropriate way the GDNs to be involved in energy efficiency. This will also future

proof these homes for future decarbonisation when green gas or hydrogen is used for heating.

54. We know that a number of GDNs have undertaken a piece of work which has identified the extent to which increasing the energy efficiency of 'off-gas grid' homes across our regions would reduce the number of households living in fuel poverty within the communities we serve. This work can be broadened to include non-domestic properties, 'on-gas grid' properties and to consider the impact of this approach not only upon reducing fuel poverty but also reducing demand, and therefore investment requirements, on the gas and electricity networks in our regions.
55. EUA members would also welcome the opportunity to further explore the role of GDNs in delivering energy efficiency advice and support alongside relevant local partners.

Q11. Do you agree with our proposal to retain dedicated innovation funding, limited to innovation projects which might not otherwise be delivered under the core RIIO-2 framework?

Q12. Do you agree with our three broad areas of reform: i) increased alignment of funds to support critical issues associated with the energy transition challenges ii) greater coordination with wider public sector innovation funding and support and iii) increased third party engagement (including potentially exploring direct access to RIIO innovation funding)?

Q13. What are the key issues we will need to consider in exploring these options for reform at the sector-specific methodology stage, including:

What the critical issues may be in each sector and how we can mitigate the bias towards certain types of innovation through focusing on these issues?

How we can better coordinate any dedicated RIIO innovation funding with wider public sector funding and support (including Ofgem initiatives such as the Innovation Link and the Regulatory Sandbox)?

How we can enable increased third-party engagement and what could be the potential additional benefits and challenges of providing direct access to third parties in light of the future sources of transformative and disruptive innovation?

Q14. What form could the innovation funding take.

What would be the advantages and disadvantages of various approaches?

Q15. How can we further encourage the transition of innovation to BAU in the RIIO-2 period? How can we develop our approach to the monitoring and reporting of benefits arising from innovation?

56. After analysis of the proposed innovation stimulus outlined within the RIIO-2 consultation framework, EUA supports the need to retain dedicated innovation funding and recognises a number of reasons to justify such an action.
57. EUA represents the supply chain that provides services into the networks. They have told us that removal of the innovation stimulus or a focus purely on future decarbonisation projects would put at risk a large number of skilled jobs. These companies are predominately SME's and the innovation stimulus provides a route to develop products and services that helps secure jobs and maintain these businesses.
58. We also believe that a move away from supporting innovation would be at odds with the current Governments desire to see greater investment in UK companies, particularly those

involved in innovation. The Industrial Strategy White Paper set out an ambition to raise total R&D investment to 2.4% of GDP by 2027³. It also wants to turn exciting ideas into strong commercial products and services. The current Innovation Stimulus is set up to do exactly this.

59. We are aware that BEIS are proposing that the next Energy Company Obligation (ECO) have a dedicated innovation stimulus built in for products that may help reduce costs and improve the functionality of energy efficiency projects. These can be products that are not yet ready for market. BEIS do not seem to be concerned that Energy Companies such as British Gas, should be doing this as 'business as usual'. We therefore are surprised that Ofgem would deviate from this clear direction of supporting innovation, to potentially stop all innovation under RIIO.
60. The industry concern is that under the new proposals only TRL 8 or higher projects will be green lighted. There may be some exceptions for projects that have an outstanding business case, but these will be very small in number. This will also strongly favour larger companies that can afford to spend time getting their innovation to TRL 8 or building a business case. SME's typically don't have the capital to get to this level of project readiness.
61. This is why the current innovation stimulus has been so successful. Around 75% of NIA/NIC participants are SME's and micro SME's.
62. The innovation stimulus has also been successful at encouraging more risky innovation projects that have the potential to deliver significant benefits, but have a level of uncertainty that would prevent them being commissioning in a 'business as usual' situation. The new proposals would almost certainly stop these types of innovation projects. This would be damaging for RIIO process and for Ofgem as these types of investment not only have

³https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf

the potential to bring down costs in a significant manner, they also can help facilitate energy transformation in ways not yet realised.

63. We are aware that the networks will be including specific examples of how the innovation funding has benefitted consumers, costs and service provision under RIIO. If Ofgem wish to speak to the SME's involved in innovations partnership projects with the networks, EUA is keen to facilitate these conversations. We are also encouraging our members to submit responses to this consultation highlighted their own specific experiences and fears if the innovation were removed.
64. We understand that Ofgem are concerned about projects relating to the energy transition. However this is a very narrow definition that will limit innovations to projects that may not be that expansive in nature. Many current innovations will help with the energy transition but not as their primary objective. Robotics projects to simplify and reduce the cost of maintaining and replacing supply pipes ensure that the networks are ready for the energy transition, for example for Green Gas. However they were commissioned to help bring down costs and reduce consumer disruption. There are many other projects delivered in a similar manner. Ofgem's narrow innovation definition will prevent these projects being started which in turn will actually harm the energy transition.
65. Upon review of the Impact Assessment found within the initial proposals for RIIO 1, the reasoning for the original introduction of a dedicated innovation stimulus was to promote research and development (R&D) within the networks that would otherwise be forgone, as stakeholders would deem such endeavours as commercially uncertain.
66. Our belief is that circumstances have not changed and networks still play an important role in facilitating the delivery of the government's low carbon targets.

67. In addition, our members have suggested that limiting innovation to 'business as usual' is not an optimal solution as they feel the fast pace and ever changing landscape of energy alongside the future of energy decarbonisation requires specific funding in order to solve the UK's energy problems. Additionally, small to medium enterprises would not be able to fund such innovation independently. Therefore, a dedicated innovation stimulus is still warranted.
68. The importance of government subsidy when fostering private R&D is a notion widely accepted by academics. Alonso-Borrego (2012) finds that the consensus of recent literature supports a 'crowding in' effect in which government subsidies are complementary to private sector R&D and thus indicate greater levels of private innovation proving further social benefit. A study by Frontier Economics (2014) finds that the lag time between investment in innovation and the rate of return of its benefits is heterogeneous to each investment project, with some projects taking up to 20 years for any benefits to be seen. Our belief is that there has not been a reasonable period of gestation for innovation and more time is required for both private and social benefits to be realised and/or quantified.
69. This would be exacerbated by a move to a five year settlement. The reduced time frame means that if payback or results are not available within that five year period, under 'business as usual' the projects will not be commissioned. This is because getting a sub TRL 8 project to the delivery stage can take around three to four years. With results not expected for a number of years after that.
70. This also explains why the networks have not been able to quantify all the results of their innovation spending. The results are not available yet because four years has not been enough time to accurately quantify the results. The networks are aware though that changes could be made to this process to make reporting better at reflecting the benefits of longer term innovation projects.

71. With respect to the reforms outlined, EUA agrees with the alignment of funds for energy transition challenges. However, we and our members believe that a greater coordination with wider public sector innovation funding may not be optimal nor efficient when attempting to nurture greater innovation. Our belief is that each funding stream has its own individual objectives and political drivers, therefore alignment of different funding streams could become challenging and in turn inhibit innovation. In addition, the highly competitive and data intensive nature of different funding streams could further hamper the uptake of R&D.
72. With regards to third party access, EUA believes that the GDNs do a good job in engaging the supply chain. We have run a number of events to facilitate contact between GDNs and our supply chain member companies. We know that the GDNs themselves have facilitated numerous more events and have active networks of hundreds of companies that they are in partnership with. Therefore we do not believe there is an issue with third party involvement in the RIIO process, and not one that would require radical change to the current operating process.
73. We believe the innovation stimulus has been a real success story for British Industry and for consumers by bringing down costs, reducing disruption and providing better quality products. We strongly urge Ofgem to not abandon this process.
74. With regards to future proposals we believe RIIO 2 should initiate a large cross-sector fund, evolving the NIC, to deliver transformational innovation in decarbonising heat, power and transport. Network funding to support the testing, demonstration and rollout of third party transformational innovations. SME specific allowances, evolving the NIA, to deliver low Technology Readiness Level research and development projects; and Strong Totex and Output Delivery Incentives to reward the transition of non-transformational innovation to business as usual.

75. Finally, EUA believes that reliance on integrating innovation practices through business as usual is not the most economically efficient way in which projects can be achieved, this can only be done through retaining a dedicated innovation stimulus. Further to this, we believe in order for Ofgem to understand the consumer value of projects they should develop a series of assessments to measure the benefit of projects undertaken by GDNs.

Q16. Do you agree with our proposal to extend the role of competition across the sectors (electricity and gas, transmission and distribution)?

76. EUA agrees with the proposals for extending the role of competition. There are opportunities for networks to pitch for work in other energy areas such as GDNs pitching for work that may have traditionally been DNO areas.
77. We support the proposal to extend the role of competition across all sectors where assets are separable, where differing ownership will not bring additional risks to the incumbents licence and where the benefits for customers outweigh the administrative costs, burdens and any risks introduced.