

14th March 2019

RIIO Team
Ofgem
10 South Colonnade
Canary Wharf
London
E14 4U

Dear Sirs,

RIIO2 Sector Specific Methodology Consultation

Please find attached the IGEM response to your consultation regarding information pertaining to the gas networks' RIIO-2 Business Plans.

Our response is based upon your proposals set out in the RIIO-2 Sector Specific Methodology and the RIIO-2 Business Plans Draft Guidance Document.

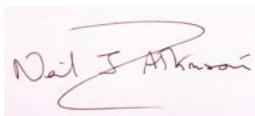
IGEM has not commented on all aspects of the consultation. We have, however, focused upon three key areas, specifically:

Section 5 on Enabling whole system solutions
Section 6 on Workforce Resilience
Section 8 on Driving Innovation and efficiency through competition.

We hope you will find our comments valuable and constructive. We would also be pleased to expand on anything that you feel requires further clarification.

May I also thank you for the contributions from Ofgem staff to our efforts and workshops as we worked to prepare our response.

Yours sincerely,



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About IGEM

The Institution of Gas Engineers & Managers, IGEM, is the professional engineering institution that works to advance gas engineering in all its forms for public benefit. We do so by supporting individuals and businesses working in the global gas industry.

Our first core role is to encourage the highest standards of professional competence amongst individuals working in the industry.

We help individuals stay up to date by delivering technical training. We support industry through the development of technical standards that are recognised around the world. We share knowledge and expertise amongst our members and the wider gas industry. We work across sectors to demonstrate the innovation taking place in the industry through networking events and conferences.

We are licensed by the Engineering Council to award the professional titles Chartered Engineer, Incorporated Engineer and Engineering Technician and support individuals to become professionally registered engineers.

Our second core role is to create and disseminate to the profession knowledge about gas engineering and development of technologies relating to the profession. Working with stakeholders from across the sector we seek to demonstrate how the gas industry will help to decarbonise the energy sector and represent the views of our members to inform and influence future energy policy.

In support of the organisations that design, install and maintain gas transmission, distribution and utilisation infrastructure, IGEM produces a large range of Technical Standards. These are recognised as trusted industry Standards, used to assist in compliance with national legislation and official approved codes of practice and guidance. The Standards are drafted by expert Panels representing a cross section of the relevant parts of the gas industry. Regulatory bodies such as HSE, Ofgem and Gas Safe Register contribute as appropriate to the drafting process. The drafts are issued to the industry and other stakeholders for review and comment prior to publication. The professional status of IGEM ensures its standards reflect the best possible levels of safety, practice and quality within reasonable cost.

IGEM also facilitates seminars, conferences and other events, to help maintain the high level of engineering competence and capability that has been a hallmark of the UK gas industry for decades.

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IGEM response approach

The IGEM response is concentrated on the questions from the RIIO-2 Sector Methodology related to our areas of expertise and focus. These are primarily covered by Sections 5 on Enabling whole system solutions, Section 6 on workforce resilience and Section 8 on Driving Innovation and efficiency through competition.

As a professional engineering institution that represents the views of its members, our response is in part informed based on feedback and input from the transmission and gas distribution networks. In addition IGEM also held a workshop with the gas industry supply chain, particularly focusing on Innovation. We would like to acknowledge the input received from James Veaney of Ofgem to help facilitate this workshop. The participants who have contributed to this consultation are detailed in Appendix 1. No individuals have been attributed and all comments are the collective view from our members.

IGEM has also participated in several workshops and working groups organised by Ofgem and the Energy Networks Association in order to help inform our response.

IGEM recognises that the transmission and distribution companies together with some of the supply chain will be making their own individual responses to this consultation. We also recognise that their views may be collectively represented via their appropriate trade bodies such as Energy Networks Association (for the transmission and distribution networks) and The Energy and Utilities Alliance (for the networks and wider supply chain).

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Executive summary

The gas and electricity networks are essential to the functioning of society and our economy. The integration of these networks over the coming years is crucial to helping deliver the whole systems energy system of the future. We believe that the overall package of recommendations needs to address this area more holistically in order to achieve the full and effective delivery of benefits to energy consumers.

Generally, we support the headline principles including many of the proposals in the consultation document and the objectives that Ofgem is trying to achieve. In particular we welcome the appreciation that gas networks will play a critical role during the energy transition.

However, we express some - concerns with the overall package of recommendations and would also question some of the rationale and decision made that have resulted in these.

As it stands the RIIO-2 package will result in a significant reduction to networks cost allowances and other revenues with a potential to significantly reduce their ability to fund their core regulatory obligations. A key issue we would highlight is that it would appear Ofgem intends to ensure that the level of rewards available to networks during RIIO-2 will be lower than ever before. We are, therefore, concerned that some of the proposals seek to address perceived issues of the current price control period. The proposals also look to limit and lower network returns in the short term. We believe these should conversely be designed to enable and incentivise the investment and innovation required to facilitate the required continued transformation of the energy sector - not just the RIIO-2 period but also beyond. We await to see how this is reflected in the networks business plans and the potential impact on services to customers over the RIIO 2 period.

We are broadly supportive of the overarching approach of moving to three key outcome themes and agree with the three broad headings. We would question as to whether value for money should be included within these themes as opposed to being part of the business plan incentives.

Within a shorter 5 year price control period there must also be a fair balance between customer benefit and network reward for delivering the stakeholder led outcomes. There is currently an annual totex sharing mechanism and to constrain network rewards further by changing Outputs targets annually (dynamic targets), we think would lead to an unbalanced risk and reward outcome for networks over a shorter 5 year period.

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In terms of the regulatory period, we believe that a longer regulation period would be better in order to better suit planning for investment, as well as for training and for innovation. We do note that this point is not asked about within this methodology consultation.

Enabling whole system solutions

Whilst we welcome Ofgem's clarification on the scope of whole energy systems, we believe that the scope is too narrow and as such limits some of whole systems considerations that may be applied to the gas network.

We would encourage Ofgem to recognise that there are different priorities for electricity and gas networks. Whilst we acknowledge that utilities companies serving electricity and gas consumers are covered by separate legislation, this does not allow for a whole system approach when it comes to driving innovation and collaboration within the whole energy system. Ensuring whole system approaches are effective can bring major benefits to both existing and future consumers. Therefore we would suggest this could be a key area for incentives that rewards progress in this area. We would propose that Ofgem keeps this area open for the development of new incentives across sectors where they can support delivery of consumer value.

For gas networks it is important to establish the route to decarbonisation and focusing on whole system solutions. We acknowledge that for electricity networks there is an immediate regulatory challenge to define the interactions between networks and system operators. However, it is important to also recognise that the scale of the challenge will change by an order of magnitude according to whether the heat and transport are going to be decarbonised through decarbonised electricity or decarbonised gas networks.

Accordingly, whilst we support the approach to whole system solutions we also would encourage Ofgem to maintain the focus on the more pressing challenge of supporting the identification of the least cost decarbonisation pathway.

Working on the basis that whole systems and decarbonisation need to work in tandem we support the proposals that Ofgem is putting forward in the sector specific annex for gas distribution. However we think these policies are in themselves insufficient as they do not appropriately address either the challenge of discrete projects or encourage appropriate levels of responsiveness to change.

The framework must also promote affordable, secure, and sustainable network services for homes and business. Where appropriate, the regulated networks can then provide independent services to support vulnerable customers and

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communities. We look forward to working with the Ofgem RIIO-2 team and other interested parties as the framework develops and as the sector specific methodologies are consulted upon.

It is our view that RIIO-1 has worked, and that it has delivered strong consumer benefits - improved safety, improved customer service, and improved efficiency. This is supported by the recently published Ofgem Annual Review of RIIO-1 for both the gas transmission and distribution networks.

We believe that RIIO-1 has been a positive 'win-win' where there has been increased efficiency through process improvements and innovation and these improvements have benefited both the networks and the customer. For every process innovation or efficiency improvement achieved by RIIO-GD1, the net benefit to the consumer exceeds the net benefit to the network before the end of RIIO-GD2. The consumer carries on benefiting from that efficiency improvement for its lifetime.

We encourage Ofgem to recognise mutual benefit and to support strong incentives that drive efficiency and innovation as they will continue to improve customer outcomes. As it stands there is a risk that the regulatory structure proposed in the Sector Specific Methodology will not deliver this; rather the proposed structure risks stifling ambition by focusing on penalties rather than incentivising better consumer outcomes.

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Ensuring future resilience

Workforce resilience is a key issue for networks and we welcome the recognition of this within the consultation documents. We agree it is up to the industry, working collaboratively, to deliver a workforce strategy as part of the business plan submission. We expect funding for efficient and necessary costs that will support future resilience. Ofgem highlights the requirement for collaboration between networks and, as stated throughout this response, we support a collaborative approach that delivers customer benefits across the whole of GB. We fully support the Energy and Utility Skills response to this consultation - and, in particular, support the key recommendations and principles set out in the consultation paper as follows:

- Inclusion of workforce resilience as a formal requirement of RIIO-2 business plans
- That the workforce strategy element of companies' Business Plans not only covers the RIIO-2 period, but extends out further to consider workforce resilience over the longer term, including for the direct workforce and supply chains (reflecting the level of work the network companies plan to outsource)
- The expectation that these plans will lead to a future workforce which better reflects the diversity of the communities they serve, skills development, increased productivity and the advanced technology skills required to support the energy system transition
- Efficient and evidenced costs for workforce resilience being funded by Ofgem as part of the RIIO-2 revenue allowances
- Ofgem awareness of the increasing challenge for network companies in accessing the specialist technical/engineering skills they need to develop, construct, maintain and operate their networks and recognition that recruitment and retention of the right skills needed by the sector is an increasingly challenging endeavor.

IGEM as the professional engineering institution that supports the needs of the whole gas sector is committed to supporting Energy & Utility Skills, the networks and the wider supply chain in addressing the workforce resilience challenge. IGEM will also continue to influence standards of training, will continue to engage around the quality of apprenticeships in the sector and, working with stakeholders continue to focus on competence and the registration of professional engineers and technicians. We also advise that there will be a need, within the period of RIIO-2, to upgrade technicians and engineers knowledge of and competence to handle future decarbonized gases such as hydrogen.

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Driving Innovation and efficiency through competition

The RIIO framework rightly puts innovation at the heart of what network companies need do. We broadly support the framework decisions to retain a stimulus package. We also support the strategic use of a future national innovation competition to focus on key national challenges – such as the future of heat, although we should be considering wider decarbonisation opportunities across all areas.

To support the UK and regional Governments' industrial strategies and clean growth ambitions, it is critical that networks continue to contribute as collaborative partnerships to develop and deliver solutions that will be necessary – especially for the vulnerable, fuel poor and for the industry.

The NIA is a flexible and practicable mechanism to allow a range of third parties to help industry develop a range of “technology readiness level” (TRL) innovations for today and tomorrow's challenges. Removal of this allowance may limit the sectors ability to efficiently secure much needed input to the energy challenges we face.

It is very important to recognise that, by its very nature, there is an inherent risk in the innovation process. Not all projects will achieve full technical and commercial readiness. We respectfully believe there is a need for Ofgem to fully take this into account in its approach to incentives.

From our various sessions with Ofgem and the supply chain it was evident that greater analysis of the success and benefits of projects undertaken under RIIO-1 is needed in order to fully understand the actual scale of the benefits delivered for consumers. In addition, it was recognised that there is further work to be done in order to fully implement successful innovations to be implemented across all networks, to embedding projects as BAU and to help realise the benefits to the maximum.

One area of concern amongst the supply chain was the lack of standardisation of operating procedures, standards and acceptance criteria amongst the gas networks. It was felt that in order to maximise the benefits this was an area that should be addressed, post consultation but prior to the business plan submissions, in order for successful RIIO-1 projects to be fully realised in the business plans and by all networks. It was identified that there was a role for IGEM, as well as some of the other industry bodies, to work with all parties to help facilitate a solution to this. Success would support the drive of innovation projects through to BAU and, ultimately, maximise benefit to the consumer.

In summary, the regulatory framework must continue to incentivise regulated networks to effectively deliver the innovation and efficiency investments and

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services that underpin the key national and regional policy requirements.

Collaboration

Across the gas networks there has historically been a strong sense of collaboration and sharing best practice in order to promote safety and secure better customer outcomes. All of the networks have regularly visited, and hosted visits from, other networks to share best practice on innovation, safety, consumer's services and asset management. IGEM has also sought to promote collaboration and sharing of best practice through our own conference and events programme as well as regular articles in our members' publication Gas International (Gi).

Over GD1, it is notable that all customer satisfaction scores now exceed the best performer at the start of GD1. We do not think this would be the case within a competitive environment. Whilst we recognise Ofgem's desire for competition, we encourage Ofgem to recognise that such a desire risks reducing or ending collaboration. This will be detrimental to all consumers.

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Specific question responses

CSQ2. Do you agree with our proposed three new output categories?

While we broadly support the output categories suggested, we advise a note of caution that the consolidation of specific outputs into more general, broader categories has the risk of reducing focus on previous (GD1) objectives. Generally, Ofgem should make sure the holistic approach does not reduce standards.

CSQ3. Are there any other outcomes currently not captured within the three output categories which we should consider including?

Yes, value for money is a key outcome and is missing. We recognize, however, that this is dealt with through the business plan and cost assessment process with key input provided by the networks' stakeholders, the Ofgem Consumer Challenge Group (CCG) and the various Customer Engagement Groups (CEG).

CSQ8. Do you feel we have defined the problem correctly?

The significant evolution of the energy system will continue and the role of the gas distribution network within that system means that the RIIO framework does need to be capable of supporting the energy evolution. As coal generation for electricity is phased out; and nuclear generation is delayed, we must ensure we have resilience to support the welcome increase in renewable electricity generation. That resilience is being provided by the gas network.

We welcome some of the Ofgem focus on whole systems development but we must ensure this thinking and way forward is truly "whole energy systems" and not just a systems focus on electricity transmission and distribution.

The pace of change is relentless. It should be noted, and strongly recognized, that the gas networks have played a significant, but largely unseen role in facilitating the decarbonisation of electricity by connecting flexible gas generation plants to the distribution network.

As we move towards a more integrated energy system, supplied from a diverse range of renewable sources, the need to ensure a coordinated approach towards investment, operation and the impact this has, not only on consumers but also on other sectors such as transport. This is increasingly important. The whole system approach to this is key in delivering solutions that support decarbonisation, ensure security of supply, and are the most beneficial in terms of cost to consumers.

It is important to recognise that there are different requirements for the electricity

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and gas networks. For the gas network, the decarbonisation pathway remains uncertain with several elements under active research and consideration. Significant efforts are underway to provide the evidence base and deliver the required clarity.

It will be important to improve that clarity whilst defining how whole system trade-offs may materialise in future price controls, while recognizing that delivering the national decarbonisation targets through the gas networks remains the most credible, minimal disruptive, least regret and viable option.

The proposed approach in the consultation document goes some way to define the challenge that energy companies and consumers face to deliver an interlinked energy system that meets their needs. The complexity of this challenge should not be underestimated. The narrow definition of power and transport for example is perhaps too simplistic. Demand requirements from Electric Vehicles (EVs) are uncertain, not in the networks control or fully visible. If trends in the capacity market are to continue, any ramp up in EV take-up could have a very significant impacts on the gas networks. We believe there is an opportunity to broaden the scope and considerations for a whole system solution.

It is worth recording, based on statistics from BEIS, that contributions to emissions across total energy are circa:

- 27% Transport
- 37% Heat
- 36% Electricity and other

The energy bill to consumers and industry is also made up of heat, power and transport costs. Therefore, if we are to decarbonise the energy system and provide resilience at lowest cost for customers it is crucial to consider “whole systems” in the context of heat, power and transport.

The gas network is a vital asset that is transporting over 80% of GB energy on a peak winter’s day. The network also provides the flexibility and critical storage capacity – especially at peak. Gas therefore efficiently delivers a very significant contribution to low cost, low carbon energy for business and domestic customers.

CSQ9. What views do you have on our proposed approach to adopt a narrow focus for whole systems in the RIIO-2 price control, as set out above?

There needs to be a broader focus on whole systems development. We acknowledge this will take time.

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The key point is not to start with one vector, e.g. electricity and then try to back solve for other sectors – e.g. heat and transport. Such an approach, in our view, is potentially flawed and will lead to significant lost opportunity and likely sub optimal solutions, given the interlinkages we are experiencing and outlined above.

To date, there has been an historic preference to look at electricity decarbonisation at the expense of understanding the whole energy system challenges and potential benefits and contributions that decarbonisation can bring. IGEM are leading a project on the Future Gas Systems Architecture encompassing the whole energy system and how the future gas system will interlink with the Future Power Systems Architecture developed by IET and the Energy Systems Catapult to ultimately provide a coherent and holistic view of a Future Energy System Architecture.

We welcome the emergence of the National Infrastructure Commission and welcomed its assessment that highlighted the need to focus on heat, power and transport. There is also a growing demand from local cities and regions to understand regional energy systems and roadmaps.

The role of the gas network and the variations of flows of energy from generation to homes and business is not well understood. Many still do not understand the scale of energy (80% on a peak winters) that is transported through the gas network.

We acknowledge that Ofgem needs to translate the complex the energy challenge into efficient investments across both the gas and electricity networks. This itself is the challenge.

As the key professional engineering institution operating within the gas sector, IGEM is continuously engaging Ofgem, BEIS and regional governments, Climate Change Committee, HSE, the gas networks and their representative body, the Energy Networks Association, the wider supply chain that use our system. IGEM will continue to provide independent thought leadership and contribute to the generation and dissemination of robust evidence that we will support making the right investments to support the key energy system outcomes required.

CSQ10. Where might there be benefits through adopting a broader scope for some mechanisms? Please provide evidence?

We think that there are multiple points where a broader scope could have benefits for the consumer overall, for example through greater alignment with the heating and the transport sector. For gas distribution companies these examples are in their infancy and, whilst there have been some interesting NIA and NIC projects

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during RIIO-GD1, these concepts need to be encouraged and de-risked through iterative exploration. A narrow definition of whole systems risks putting in place a conceptual ring that inadvertently excludes projects. It is important that such projects are encouraged to progress, either through a whole systems discretionary mechanism or through innovation funding.

CSQ17. Are there any sector specific whole system barriers or unlocked benefits, and if so, any sector-specific price control mechanisms to address these?

- Changes under the Gas Safety (Management) Regulations (GSMR) and the Gas (Calculation of Thermal Energy) Regulations (CoTER) are required to bring benefits to UK customers and enable decarbonisation solutions to be developed. IGEM in conjunction HSE and the gas networks are working collaboratively to help lead and develop these changes.
- Changes to billing arrangements, by redefinition of billing zones, would reduce both capital and operating costs to biomethane producers, which could be funded under the discretionary mechanism described above.
- It should be recognised that progressing these two critical changes to legislation take a lot of time and resource, first in the preparation of the evidence base for the change, but secondly in instigating the change to move it from the status quo to a better customer outcome. The wide social benefit of this should be recognised in the network responsiveness incentive.

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Workforce resilience

We are pleased that Ofgem recognise the importance of this subject. IGEM firmly believes workforce resilience must be embedded as an explicit requirement in the final RIIO2 approach, within Business Plans.

We would like to see workforce sustainability and skills investment suitably funded in RIIO-2 so that the industry can meet the continuing challenges presented by our sector's aging and changing workforce, the increasing competition for the skills we need, and maintaining an effective contractor strategy. All this, of course, to ensure we can sustain the appropriate skills and resources necessary in the workforce, including, supply chain, and to assure the continued safe operation of the gas network assets.

Given that workforce sustainability is an issue that extends beyond RIIO-2 and given the time lags associated with the training and apprenticeship programmes, we encourage Ofgem to take a long-term approach, taking appropriate account the competition for labour from other markets and infrastructure projects over and beyond the RIIO-2 period and into RIIO-3.

IGEM, working with other key skills stakeholders, including EUS, can impact on raising awareness of the competence required by engineers and technicians within the sector. IGEM would suggest that measurement of the numbers of apprentices completing gas sector Trailblazer apprenticeships, as well as measuring the numbers enrolled as Eng Tech, IEng, CEng professional registrants could be useful trackers and easy to implement.

CSQ27. Where companies include a sustainable workforce strategy as part of their business plans, what measures do you think could be established to hold companies to account for delivering these plans, without distorting optimal resourcing decisions?

We recognise that it is important for the sustainable workforce strategy to be appropriately set out and funded within the business plan, and that as a result companies should be held to account for delivering these plans.

As a result, we would be keen to ensure detailed workforce plans that identify the critical roles and the number of people that we will need to recruit to fill those roles given expectation in staff turnover, retirements and changing working time practices. This will form the basis of a detailed training requirement that can be filled from internal development, apprenticeships, trainees and graduates. Each of these can be monetised.

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In terms of measurable outputs, it is important that companies are able to maintain appropriate flexibility to manage their recruitment in the most appropriate way according to the characteristics of the local labour force. As such, we would encourage a series of measurable attributes (graduate training programmes, apprenticeships etc) and to recognise that the definition of those attributes needs to remain reasonably responsive to the different labour characteristics - plenty of graduates and apprenticeships may have had previous careers and be reskilling.

We support the recommendations made by Energy and Utilities Skills, in particular their offer of assistance of the National Skills Academy for Power (NSAP) group - post consultation, but before business plans submissions - to help better define possible extraneous factors, build routes to evidence and look at industry working to agree the optimum mechanisms for price setting.

Ofgem's proposal that while some of these workforce resilience issues are within the control of network companies, the more extraneous factors could potentially create uncertainties that are more difficult to plan for and manage. Where these extraneous factors introduce risks that companies cannot manage themselves, these should be explained with supporting evidence. Uncertainty in this area could be addressed through indexation of Real Price Effects (RPEs)

We also recommend that Ofgem request the National Infrastructure Commission to include labour market resilience in its Resilience Study Scoping Consultation (closes 1 April 2019) on infrastructure resilience, so that Ofgem and the energy sector becomes increasing assisted by central and devolved government policy in this area. The review was initially commissioned by the Chancellor. Energy & Utility Skills has already responded to the consultation calling for this, and referring them to the workforce resilience requirements of the RIIO-2 consultation.

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Driving innovation and efficiency through competition

The RIIO framework rightly puts innovation at the heart of what network companies do. To support the UK and regional Governments' industrial strategies and clean growth ambitions, it is critical that networks continue to contribute, through collaborative partnerships, to develop and deliver solutions that will be essential – especially for the vulnerable, fuel poor and industry.

The NIA is a flexible and practicable mechanism to allow a range of third parties to help industry develop a range of “technology readiness level” (TRLs) innovations for today and tomorrow's challenges. Removal of this allowance may limit the sectors ability to efficiently secure much needed input to the energy challenges we face.

It is also important to recognise that by its very nature there is an inherent risk in innovation projects. Not all projects may achieve full technical and commercial readiness. There is a need for Ofgem to fully understand and appreciate this fact within its approach.

From our various stakeholder sessions with Ofgem and with the supply chain, it was evident that greater analysis of the success and benefits of projects undertaken under RIIO-1 is needed in order to fully realise the benefits for consumers.

In our consultation with the supply chain there was consensus for greater collaboration and co-ordination across the networks in order to take some of the innovation projects from RIIO-1 to BAU within RIIO-2 business plans. However, it was noted that there are potential barriers in place that need to be addressed post consultation, but prior to submission, of the RIIO-2 business plans.

In particular, consideration needs to be given towards a more unified approach to standards, codes of practice and new innovation approvals amongst the networks in order to roll out innovations from one network to another more smoothly and quickly for the benefit of consumers. It is believed that the industry fragmentation has resulted in some duplication in terms of project adoption.

It is also believed that the timescales for a Totex approach are out of line with a move towards innovation transitioning to business as usual. There is major concern amongst the supply chain that the ToTex approach may/could stifle the flow of cash for RIIO to supply chain. The reduction in the funding period also limits ROI of innovation given adoption limitations/blockers.

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BAU will likely not accommodate full engagement with the industry as a whole and may only benefit existing BAU suppliers only.

Clause 8.16 is perceived as a big risk to the supply chain. It states that Ofgem expects companies to fund lower risk operational and maintenance innovation projects as BAU. Totex incentive will ensure that companies will continue to share the benefits of these innovations. Any allowed funding for BAU innovation which is not subsequently rolled out will be recovered as part of close out for RIIO-2.

It is recommended that an improved governance mechanism is needed in order to fully evaluate both the technical and commercial viabilities of projects and that appropriate industry experts should be included within this process. IGEM believes it may have a role to play in providing technical expertise.

CSQ44. Do you agree with our proposals to encourage more innovation as BAU?

We do not agree with your proposals to encourage more innovation as BAU, as we do not think that they will deliver the stated aim.

We believe that Innovation stimulated through NIA and NIC has provided significant customer benefits through the course of RIIO-1. These benefits would not have been realised in the absence of a funding or support mechanism.

It is essential to have a discretionary mechanism, similar to NIA, to support the development of energy transition solutions. It will not be possible to deliver the decarbonisation options set out by both UK and regional governments without this. We recognise Ofgem's desire to shift innovation to BAU for efficiency type projects, but we need to recognise the impact that changes to the innovation stimulus would have on the types of project undertaken. We understand the logic to transition more innovation to BAU, but this would need an additional mechanism to reflect risk /reward of operating in a short price control period. In general, a 5-year price control does not support significant speculative investment to allow for any risk recovery, and benefits from innovation carried out in GD1 will already be baked into network proposals. As such, a BAU innovation model will effectively eliminate funding of lower TRL R&D type projects, focusing on what is deliverable in the short term with rapid payback. There would need to be an incentive to continue to innovate as the price control progresses, with an ever-shortening payback period.

The proposal will also impact on partnership arrangements and risk. While the innovation stimulus within GD1 focused on the nurture of micro and small medium enterprises, the nature of engagement will change. It will also affect the

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innovation 'enabling process' for distribution and transmission efficiency projects, i.e. feasibility studies which often resulted in a high value NIA & NIC projects (such as robotics).

There is a potential for high TRL innovation, in relation to operational efficiency, becoming BAU, provided an appropriate mechanism is in place to recognise the risk/reward. If benchmarking of performance of networks for risk and reward is employed, there is a risk that the current 'shared learning and collaboration' between networks will reduce in order to maintain competitive advantage.

We recognise that the regulator wishes to avoid a culture of endless research for the sake of claiming funding to pay for it. We also acknowledge that there is a delicate balance between the two extremes of too much reward for research and too little impact of not producing BAU results. IGEM suggests that one particular area that can be particularly incentivised by the regulator is to introduce measures to encourage companies to share and adopt innovations more quickly. Once any one operator has proven a technology or methodology to deliver benefits, the barriers of "not invented here" bias, or the tendency to keep developments in house should be discouraged by having a system which promotes the spread of knowledge and rewards or subsidises its rapid adoption across the sector. This is particularly important across the networks which can be further encouraged by removing those barriers to approval of new techniques and products that currently exist between the gas networks.

CSQ45. Do you agree with our proposals to remove the IRM for RIIO-2?

We agree with this proposal. The IRM in our view did not provide flexibility for smaller scale rollout of decarbonisation solutions. This was an issue with the design of the IRM rather than the objective it intended to deliver.

CSQ46. Do you agree with our proposals to introduce a new network innovation funding pot, in place of the Network Innovation Competition, that will have a sharper focus on strategic energy system transition challenges?

We agree that a mechanism to facilitate decarbonisation and energy system transition projects is essential. This will give a focus on the strategic challenges that networks will face in the light of the uncertainty with government policy around heat and decarbonisation.

We believe it is also essential to maintain discretionary funding similar to NIA to carry out early stage feasibility and small-scale demonstration to meet whole system and decarbonisation challenges.

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Innovation has been a major success of the RIIO-GD1 period. It has changed business processes to create efficiency savings to the benefit of customers and companies, it has promoted social and environmental benefits and it has enhanced the safety of both our workforces and the public.

Going forward in RIIO-GD2 we recognise the challenge of decarbonisation of heat is probably the most pressing challenge for the UK energy system. As such we support the proposed focus on the energy system transition challenge, and the need to work with third parties in addressing this challenge. This challenge though is not just about large pilot projects and demonstration projects, a focus has to remain on safety and customer acceptability. For these reasons the gas networks have agreed a decarbonisation pathway that sets out the stages for moving towards a full decarbonised gas network. These are stages that largely need to happen in parallel and each may demonstrate that this pathway is not appropriate and needs to be changed.

One of the main reasons we believe some sort of funding assistance is required is the relationship which networks have with innovation versus reaching their existing obligations. Networks are driven to meet their targets, and tend to put really strong people on this to ensure they meet operational commitments, Because of this, they can be unwilling to take the pain of removing those people from delivering their network obligations and into research projects.

One of the principal barriers to innovation being accepted as BAU is the difficulty of getting an innovation which has been accepted as BAU in one region to be accepted and adopted by the rest of the UK. The GDN acceptance process needs to be streamlined and perhaps moderated by a third party which can showcase the new developments and provide assistance for rolling out their implementation. This will help to eliminate the unintentional effects of “not invented here” bias. While we recognise that the regulator wants to avoid a culture of on-going research without seeing return on its investment, there should still be a mechanism in place which enables resources to be aimed away from regulatory targets towards innovation. The majority of new ideas do not come into fruition, but we still believe there should be at least a safe space for blue-sky research, which can generate unexpected results in the right circumstances. Companies should be allowed to fail in the development of an idea without losing their business in the process. We support a concept of gateways which act as checks and monitors to progress, to enable an innovation to be funded in life-cycle phases.

CSQ47. Do you have any views on our proposals for raising innovation funds?

We see this proposal as acceptable, concurrent with the existing arrangements for

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GD1. Where a whole system solution is proposed the costs need to be reflected across both gas and electricity consumers and what they pay eg as in the case of gas transmission shrinkage versus electricity shrinkage.

CSQ48. Do you think there is a continued need for the NIA within RIIO-2? In consultation responses, we would welcome information about what projects NIA may be used to fund, why these could not be funded through totex allowances and what the benefits of these projects would be.

Yes. A clear requirement from all stakeholder engagement is to develop and fund research and demonstration projects to support options for decarbonisation and the energy system transition. All such projects are outside the BAU scope. This would align with the emerging policy decisions from the UK and devolved governments, where further evidence to support decisions on the decarbonisation of energy are required by the mid 2020's. In our view a discretionary mechanism, similar to NIA, is required for us to support emerging and new technologies for the benefit of our stakeholders and customers.

We would also support the inclusion of consumer vulnerability as an innovation criteria within the NIA.

CSQ49. If we were to retain the NIA, what measures could be introduced to better track the benefits delivered?

We recognise, as stated by some networks, that it is rare for a new technology to be directly traceable, this is because they are rarely direct substitutes within an existing process. Robotics is one instance where the new method directly replaces conventional and can be quantified more accurately.

It is important to balance the tracking of innovation performance, the cost of developing robust management reporting frameworks, the practicalities of increasing reporting burdens on people in the field and the scale of data management.

CSQ50. Do you agree with our proposals for electricity distribution companies prior to the commencement of RIIO-ED2?

We agree that the appropriate mechanisms should be in place for electricity distribution companies to continue to participate in collaborative projects where the benefits, particularly for whole system solutions, can be developed and funded across gas and electricity consumers. This should be tempered by a clear understanding of where the benefits will be realised, and an appropriate cost

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allocation to gas or power customers.

We welcome collaboration across all sectors and if there is customer benefit by cross sector collaboration despite the timings of the RIIO ED2 Price control, we would support mechanisms that support engagement

CSQ60. Do you agree with the criteria we have set out for assessing who should run competitions? Based on these criteria, which institution do you consider is best placed to run early and late competitions?

Ofgem would not be independent to this process (they are an interested party)
We feel that no 3rd party would provide appropriate solutions - there would always be a bias towards lowest cost, without consideration for quality / outputs / service and other regulatory requirements (e.g. HSE).

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GD2 Sector Specific Consultation Questions

GDQ11. How should we incentivise the GDNs to improve the targeting of the FPNES?

A FPNES that turn connections into a means of affordable heating, fuel poor households must also be given access to funding for a first time central heating system to address the needs of the most deprived. Targeting based on EPC Banding, deprived areas, fuel poverty, vulnerability of customers and SAP rating. targeting by geographical location based on data sets and socioeconomic markers or indicators such as Indices of Multiple Deprivation should be encouraged.

GDQ12. How can we ensure that the FPNES is better coordinated with other funding sources to provide a whole house solution for the household?

We believe networks could help drive a more consistent, government-led programme. Funding should be made available to GDN's to help drive better efficient building stocks, to reduce demand and to advise on, assess and install appropriate in-house measures should be adopted. This could be delivered through the development and funding of a national body.

Deliver an environmentally sustainable network

We broadly support the observations set out in this section. We would however, like place a greater focus on the benefits that have been delivered for consumers as a result of the RIIO-GD1 process. Not only have customer services improved dramatically, but network companies have changed culturally and delivered much greater efficiency benefits than anticipated.

Customers have shared these efficiency benefits during RIIO-GD1 and will fully capture the majority of these benefits going forward into RIIO-GD2 and beyond. It is important to recognise that for an efficiency saving delivered at the very outset of RIIO-GD1, the benefit to the consumer will have exceeded the benefit to the network within the RIIO-GD2 period.

IGEM understands that the networks are disappointed by the apparent lack of ambition in both the sector specific methodology and in the gas annex. - the focus appears to be placed on penalties rather than incentives. Furthermore the aspirational objectives set out for RIIO-GD2 by Ofgem do not go far enough.

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As a general observation we encourage Ofgem to be as transparent as possible in their expectations for the RIIO-GD2 price control. Network companies do want to be ambitious and to deliver the expectations of their stakeholders. To do so they need to have appropriate incentives and to know that the ambition will be rewarded in an appropriate manner. The current proposals indicate that Ofgem are looking to move towards rate-of-return regulation in all but name.

Decarbonisation of heat

We appreciate the uncertainty surrounding the decarbonisation of heat and the proposals that Ofgem is putting forward regarding low and no regrets heat decarbonisation projects, innovation projects and policy based re-opener mechanisms. Whilst these are certainly important we also consider them to be insufficient. This is because we don't think that the proposals appropriately address either the challenge of discrete projects or encourage appropriate levels of responsiveness to change: -

The first, the challenge of discrete projects, addresses the issue that whilst we can identify projects at the start of the business plan that support whole systems and decarbonisation approaches, given the short business planning period and the length of the time horizon out to 2026, important projects may not be identified in time or may not be formulated nor developed to an appropriate standard to be included in the business plan. Such projects should be enabled to progress in a timely manner. For these projects we propose a discretionary roll-out mechanism that supports the delivery of decarbonisation and whole systems projects.

The second, responsiveness to change, relates to the responsiveness of network companies to make adjustment to existing processes and procedures to enable greater volumes of decarbonisation. It is our view, given the criticality of decarbonisation, it is important to incentivise good practice separately. This good practice should extend across both decarbonisation and whole systems recognising that there is more that as networks we can do to become more responsive to changing technology and use patterns on our network.

GDQ 26 What are your views on the overall outputs package considered for this output category? (Environmentally sustainable network)

While considering the decarbonisation of heat, we could also consider the true environmental impact of operations. For example, the carbon cost of vehicles and fleet, or the heating and lighting of premises.

An example of this could be the annual CO2 cost of fleet operations. Reducing fuel usage through smarter journey planning, or more environmentally sustainable

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fleet solutions, will deliver savings for the suppliers, but also help to minimise overall carbon footprint. This could be encouraged through incentives for year-on-year improvement.

If the intention is as stated that this is focused on "decarbonisation of the energy system" we don't think the package goes far enough to recognise the role networks are playing in low cost, low carbon heat. We are disappointed that Ofgem are not proposing an incentive for decarbonisation of heat. However we welcome the move to fund well justified projects in addition to the other mechanisms proposed.

Maintain a safe and resilient network

The overarching aims of the GDNs is to continue to operate a network that is both safe and highly reliable. GDNs will ensure their network operates safely by managing the risk of ageing assets whilst also recognising that a degree of uncertainty over the future role of the gas network will remain until policy becomes clearer in terms of the various pathways to decarbonisation in the UK.

Against this background of the current uncertainty around future energy pathways any interventions identified on the network assets during GD2 should reflect this uncertainty and thus be designed to ensure GDNs can continue to operate safely having due regard for asset stranding risk.

We support the introduction of NARMs (Network Output Resilience Metric) which will provide a consistent means of measuring and reporting network investment. NARMs, however, are relative new and developed to allow a common currency of risk across all asset groups. Therefore, we support it use as a measure of how a GDN manages risk on its asset base but may be too early to solely depend upon it as a means of developing a business plan and setting of allowances

We support a view that investment plans should be supported by CBA (Cost Benefit Analysis) and that the outputs from the CBA should be used alongside the outputs from NARMs to assess investment proposals.

GDQ34. For each potential output considered (where relevant):

a) Is it of benefit to consumers, and why? b) How, and at what level should we set targets? (e.g. should these be relative/absolute) c) What are your views on the design of the incentive? (e.g. reward/penalty/size of allowance) d) Where we set out options, what are your views on them and please explain whether there are further options we should consider?"

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We broadly support the outputs package proposed for pipe risk management activities (Repex) and agree that Price Control Deliverables (PCDs) measuring length and volume offer metrics that can be easily understood by customers and stakeholders. Investment in pipe risk management (Repex) is typically the largest expenditure area for GDNs. As such it is important that consumers can easily understand what is being delivered. Outputs defined in terms of length and volume (PCDs) are a clear means of achieving this objective and allow an easy comparison between GDNs

GDQ37. What are your thoughts on our proposals for Tier 1 outputs?

Whilst Tier 1 mains have a mandated minimum length, there are situations scenarios where changing stakeholder requirements may result in a GDN risk trading and replacing more tier 1. We agree that it is very difficult to hit the diameter mix exactly over the 5-year period and fully support tolerance ranges around each of the diameter bands.

GDQ38. Do you think we should set an output for replacing non-PE services?

The existence of data across the industry for metallic services is difficult as limited records exist. The replacement volumes of metallic services are largely driven by what is encountered during mains replacement and services that leak and require repair. As such, volumes are difficult to predict.

GDQ40. What are your thoughts on not including Mains Replacement Level of Risk Removed, GIBs and fractures as output measures for RIIO-GD2?

MRPS level of risk removed cannot be directly linked to investment and does not provide a useful comparator across GDNs. It can also drive networks to complete inefficient repex projects. We therefore support its removal as an output measure.

We also agree to not include output measures for GIBs, fractures and corrossions as there is a significant dependency between cold weather events and these numbers which is highly unpredictable. Fractures and GIBs are good indicators over long periods of time but are not meaningful measures within a year so we support the removal of these as output targets. We do however support continuing to report these numbers.

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GDO43. Do you consider that an output(s) is necessary:

a) for MOB's recording keeping (in the form of a bespoke Price Control Deliverable)? b) for other specific areas of GDN record keeping (if so which areas)? c) to cover GDN record keeping requirements as a whole? "

We recognise the importance of this issue with MOB's and would support the development of appropriate common outputs through Ofgem working groups. We believe that all GDNs would need to undertake a robust assessment of their records around risers.

GTQ18. Do you have any views on how NGGT's can make a contribution to the transition to a low carbon energy system and support the decarbonisation of heat?

Better Gas Quality information and more flexibility with regards to ad-hoc requests for Flex for the distribution networks' power stations and other customers.

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APPENDIX 1 – Supply chain companies who have contributed to this response

Costain plc
DNV GL
Health & Safety Executive
Honeywell
MMI Engineering
Morrison Utility Services
Orbital Gas
Pipeline Integrity Engineers
Premtech Ltd
Progressive Energy Ltd
ProHeat Systems Ltd
Radius Systems Ltd
ROSEN
Steve Vick International
Synthotech Ltd
Thyson Technology