

Reference

Call for Evidence on the Electricity Distribution Business Plans for RIIO-2

Date

07 February 2022

Cadent Gas Limited

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Steven McMahon,
Deputy Director - Electricity Distribution Network Price Controls
Office of Gas and Electricity Markets,
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E14 4PU



Dear Steven

Call for Evidence on the Electricity Distribution Business Plans for RIIO-2

I am writing on behalf of Cadent, responding to Ofgem's Call for Evidence on Distribution Network Operator (DNO) Business Plans for the RIIO-ED2 price control.¹

We are responding to this Call for Evidence as the Electricity Distribution plans highlight important issues that have cross-sectoral implications.

There is significant uncertainty over the precise path the UK will take to achieve Net Zero. To support the energy transition, we recognise that there is a need for increased electrification and potential expansion of existing networks. However, as set out in prominent published scenarios for the future energy system, the precise mix of energy the UK will need is uncertain, with hydrogen, heat networks and Carbon Capture Usage and Storage (CCUS) likely to play important but uncertain roles in meeting Net Zero.²

This uncertainty is particularly true in domestic heating, where 80% of energy customers today use fossil gas in their homes and low carbon solutions are still being developed. Heat pumps are a technology that is available today, but with high upfront costs of purchase, the need to adapt existing consumer behaviours and significant potential for disruption, they are unlikely to be the most suitable choice for all. Significantly, the poorest in society are unlikely to be able to afford either the capital cost of installation or the higher running costs compared to existing energy solutions. Hydrogen-ready boilers which are becoming available, would be more familiar to customers and have the potential to be cheaper and less disruptive for households currently connected to the gas grid today.³ Heat networks, whether fuelled using electricity or hydrogen, could also be key in serving areas of higher energy demand such as urban city centres.

Ofgem has a duty to protect both electricity *and* gas customers so that they are able to support the energy transition at an affordable cost. Given uncertainty over potential solutions in heat, it is important that whole-systems approaches are systematically and consistently adopted by energy networks and that approaches to approving investments preserve optionality. This is vital, so

¹ DNOs who have submitted plans are: Electricity North West (ENWL), Northern Powergrid (NPG), Scottish Power Energy Networks (SPEN), Scottish and Southern Electricity Networks (SSEN), Western Power Distribution (WPD) and UK Power Networks (UKPN)

² For example, those set out by Ofgem for DNOs to use as the basis for network planning from the Climate Change Committee and National Grid ESO

³ For more information see Cadent's *Green Print: Future Heat for Everyone* report

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customers have choice in what solutions they adopt, do not make ill-informed decisions they subsequently regret and avoid the risk of paying for unnecessary investments.

Having reviewed each of the DNOs plans with this in mind, we have identified three areas where we consider further consideration and action is needed from Ofgem. In particular, to ensure:

- planning scenarios adopted and investments approved preserve optionality for customers;
- consistent approaches to whole-systems energy planning are utilised – involving both electricity and gas networks; and
- funding for strategic/anticipatory investment balances the need to protect customer affordability with the need to support investment at pace as uncertainties are resolved.

Below we have set out our views on these issues in further detail to support their inclusion as topics for discussion at Ofgem's forthcoming Open Hearings.

Planning scenarios adopted and investments approved must preserve optionality for customers

Our review of DNO plans has shown the majority have assumed high-electrification scenarios as the basis for their investment planning. Whilst we accept that greater electrification is necessary to deliver Net Zero, we think it is important that Ofgem seek greater understanding of:

- *how alternative scenarios to Net Zero have been considered* – so there is consistency across DNOs and with Gas Distribution Networks (GDNs) in the analysis of the likelihood of different pathways and which may best meet customer needs; and
- *how adaptable chosen scenarios are to different pathways* – to minimise the risks that alternative pathways, particularly in domestic heat, are closed off and unnecessary investments are 'sunk', which increases the overall costs of the transition.

In its Business Plan Guidance, Ofgem recognised DNOs would need to balance the required increase in demand on their networks to accommodate greater uptake of low-carbon technologies with continued uncertainty over the path to Net Zero. Practically this would involve taking a balanced approach to future scenarios, with clear evidence for how assumptions aligned with regional aspirations and national targets and clear consideration of the right pace to bring forward spending.

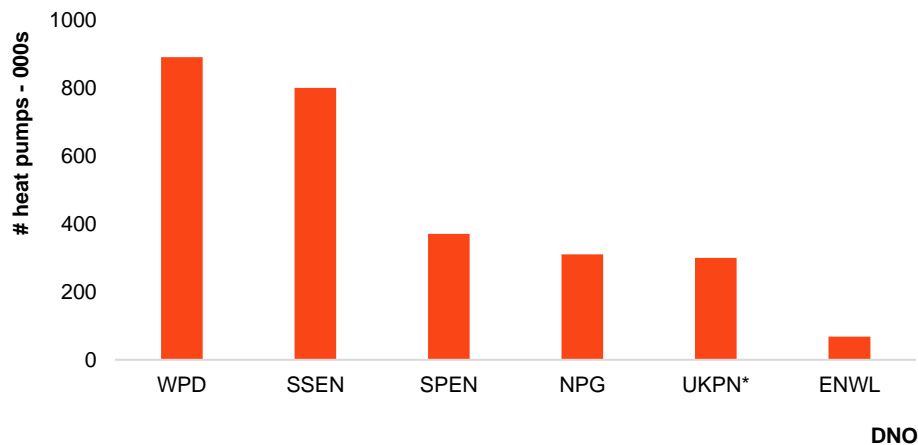
Most DNOs have adopted plans aligned to specific scenarios involving higher levels of electrification.⁴ Consistent with this, most are also now projecting unprecedented increases in the number of heat pump connections to be achieved by the end of RIIO-ED2 (see below). Across companies these equate to just over 2.7mn heat pumps expected throughout the UK in 2028, compared to recent estimates of around c.200-300k today.⁵ As these figures are expressed as a stock to deliver by 2028 it is difficult to interpret how they relate to the Government's stated ambition of achieving 600,000 installs per annum by this date. There is also limited information we could find as to what specific types of homes DNOs expect these heat pumps to be utilised in.

⁴ Ofgem provided information on a range of scenarios to be considered. These comprised of those set out in the Sixth Carbon Budget by the Climate Change Committee and the 2020 Future Energy Scenarios developed by National Grid ESO

⁵ BEIS (2020), "Heat Pump Manufacturing Supply Chain Research Project: Final Report", see here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/943712/heat-pump-manufacturing-supply-chain-research-project-report.pdf



Figure 1: Baseline DNO assumptions – heat pumps connected by the end of RIIO-2 (2028)



Source: DNO ED2 plans

*UKPN figures do not include electrified heat networks

The choice for how to decarbonise home heating is and will be a personal one for every energy customer. It depends on how they each weigh up a number of factors – for example: cost, disruption from installation, reliability and user experience – and what technologies are available. At present, this is complicated by some solutions, such as heat pumps being available to install today and others still being in development.

At this time, where the potential for hydrogen and heat networks at scale represent genuine alternative options for some customers in the near future, we believe customers should be able to make an informed choice between technologies. This is particularly relevant for vulnerable customers where hydrogen-ready boilers and/or heat networks could better meet their needs. As such, it is important Ofgem understands how DNO projections relate to Government targets and considers how adaptable investment plans are to wide-spread use of hydrogen and heat networks to preserve optionality for customers.

In addition, with RIIO-ED2 beginning before a direction on heat is given by Government, Ofgem must recognise that decisions on investment in heat electrification are likely to impact the assessment of the costs and benefits of hydrogen in homes and further electrification. In particular, as any investments made pre-2026 in electricity networks could be considered sunk, relative to future incremental costs to get gas networks hydrogen-ready. As such, it is important Ofgem only funds investments for electrification where there is sufficient certainty of need before a strategic decision on heat is taken.

Consistent approaches to whole-systems energy planning are needed – involving both DNOs and GDNs

All DNOs provide significant and useful information in their plans setting out what approaches they have taken, and intend to take, to involve local stakeholders and parties from other sectors in the development and implementation of their plans. Our review, however, has highlighted a lack of consistency in how approaches have been applied. We are interested to understand how Ofgem will compare the extent to which DNOs have and are intending to engage other stakeholders to ensure the right whole-system outcomes are delivered. In addition it will be important for Ofgem to consider how commitments made to support Local Authorities (LAs) can be harmonised so that they are effective in developing the right investment options to meet customer needs.

Our review showed that DNOs have taken very different approaches in translating views from local bodies and stakeholders into their choice of central planning scenarios. For example, some DNOs have chosen the least cost plan to meet expected stakeholder needs, while others have chosen specific scenarios for localised areas – aggregating these up to form a wider-network view. In addition, with some notable exceptions (such as ENWL who worked with us on Greater



Manchester's decarbonisation pathways) there is limited and differential evidence of engagement with gas networks. We feel this would be a key input for Ofgem to use to compare business plans and assessing the extent to which they can deliver the best whole-system outcomes.

Another clear theme which came across from DNO plans is the recognition of the importance of Local Area Energy Plans (LAEPs) and the limited resources LAs have to support decentralised energy planning. All DNOs commit to dedicating resources and teams to supporting LAs, but in a range of different ways. In addition, while some of these commitments focus on heat, less emphasis is given to potential alternatives or the complementary role GDNs should play. We think it is important Ofgem considers how these commitments can be built on to avoid the risk they create greater complexity for LAs and to ensure LAs can balance the consideration of different solutions for customers in developing their plans.

Funding for strategic/anticipatory investment must balance protecting customer affordability with supporting investment at pace as uncertainties are resolved

Strategic/anticipatory investment ahead of need will be important so energy networks are able to support increased uptake of low-carbon technologies. Doing so, however, needs to be balanced with providing optionality for all future pathways to consumers and supporting the least cost transition.

In line with scenarios adopted, all DNOs are seeking significant load-related totex allowances to reinforce their networks – in many cases more than over doubling expenditure when compared with an equivalent period over RIIO-ED1. Most are also seeking these allowances upfront, with only some (e.g. UKPN) reserving greater amounts to be approved via uncertainty mechanisms.

Where investments identified have certain need it is important they are brought forward at pace to deliver value to customers, with all aspects of the regulatory regime recognising this (for example, in levels of totex incentive sharing and returns on capital). However, our view is that customers will need a mix of all different available technologies for heat to provide an affordable, secure and deliverable Net Zero outcome. It is therefore important for Ofgem to clarify:

- how it will assess the extent to which load-related investment is to support certain demand increases or whether it is pre-emptive; and
- for more speculative investments, how it intends to balance considerations of supporting Net Zero with customer affordability given the potential use of other technologies.

A decision on the role of hydrogen in domestic heat is not expected until 2026. Alongside staggered timings for the electricity and gas price controls, this uncertainty complicates the task in assessing the right level of anticipatory investment to approve.

To protect electricity *and* gas customers Ofgem must ensure levels of ex-ante allowances minimise the risk to customers of having to 'pay twice' to adopt low-carbon solutions for heat. For example, should expenditure be permitted upfront in the anticipation of large-scale electrification of heat, if many customers then adopt hydrogen-ready boilers, they would have to pay twice for investments in both networks. This will be even more important to get right given recent increases in the cost of living for customers, which are likely to persist over the medium-term.

For any expenditure not approved ex-ante, careful consideration will also be needed so that this can come forward quickly when uncertainties are resolved. In RIIO-GD2 Ofgem has chosen to use a significant amount of re-openers to adjust allowances, particularly in relation to hydrogen and heat. Most DNOs, by contrast, advocate use of automatic adjustment approaches, particularly volume drivers to flex allowances up or down quickly to bring forward investments where extra capacity or connections are required. To support keeping a range of whole-system pathways open for customers, our view is that there is a need for consistency in approaches between energy vectors – with the potential for volume drivers for DNOs needing to be echoed with commensurate approaches in gas to support hydrogen-readiness.



Next steps

We welcome the opportunity to contribute to Ofgem's Call for Evidence on the Electricity Distribution Business Plans for RII0-2 and to suggest areas for discussion as part of its Open Hearings. We consent to our views being published and would be happy to discuss any particular points or answer any questions you may have about our response.

Yours sincerely

Sam Hinds

Head of Regulatory Economics

By email