Evidence to the Public Accounts Committee: Decarbonising Home Heating

Introduction

1. This evidence is provided by the Independent Network Association (INA). A trade body whose members own and operate independent networks that provide energy, water and wastewater to over 4 million households across Great Britain.

The deliverability of policies aimed at the decarbonisation of heat

2. It is important for there to be alignment of any policy deadlines or targets and the interaction with wider policies and regulation to ensure they can be delivered effectively and efficiently. There needs to be consideration of the electricity network requirements and that the impacts on the existing gas networks are managed.

3. Electricity demand is expected to increase at least two-fold by 2050 as different sectors, such as heat, transport and industry electrify. Supporting this growth will require transformation of the energy system and there is very active competition for connections to the electricity networks. The recent Electricity Network Commissioner's report showed that investment was needed across the electricity networks and that a queue had formed of more than 230GW of generation projects at the transmission level, compared to c.80GW of generation currently connected[1]. The transmission queue is having a knock-on effect on the ability of the regional electricity distribution levels to provide connection agreements and there is also considerable demand for connections for domestic and commercial buildings, transport, commercial operations, generation and storage at this level too. To unlock capacity at the transmission level, the Network Commissioner has proposed a range of measures to allow transmission investment to be built more quickly i.e. from around 12 years to 7 years. This will unlock capacity at the distribution level but given the delivery timescales of new investment, this will not be a quick solution. As capacity opens up at the higher voltages, further reinforcement and investment at the lower voltage tiers will need to take place.

4. INA members are already seeing some challenges for the connection of new homes. These include:
    - restrictions on the timing of release of the necessary electricity capacity, sometimes over several years
    - needing to connect into the electricity system at a higher voltage to access capacity, which takes longer to connect to and means more costly assets to do so
    - restrictions on the connections that contain export capability, such as solar PV or other storage
    - limited capacity in some areas due to high energy users that have already connected.

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1 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1175647/electricity-networks-commissioner-companion-report.pdf

5. The Government has recently consulted on the Future Homes Standard, which proposes that from 2025 new homes will have an electric solution to their heat demands. However, considerations should be given for developments that are already in flight. Energy infrastructure is usually provided at the start of any construction and in the case of larger developments, it may already be laid. Due to the proposal to apply the 2025 Future Homes and Buildings Standards to individual buildings on a site, this not only changes the fabric of the buildings on the site it also changes the energy needs and the required networks to service individual properties. This could mean that the gas infrastructure built to serve a development is oversized and/or the electricity infrastructure is inadequate to meet the needs of the remaining homes' heating and charging needs.

6. In the case of gas infrastructure, the INA estimates that approximately 530,000 new dwellings in England (or up to 2,500 projects) that were originally contracted with gas infrastructure are unlikely to have completed construction by 2025. This includes some sizable housing developments that were always intended to complete over several years.

7. It is important that regional system planning through the Distribution System Operators, and then the National Energy System Operator later this decade, considers how the delivery and provision of infrastructure and the delivery of policy goals can align to ensure a deliverable plan.

Communication and engagement with consumers

8. Another aspect of the deliverability of policies is engagement with consumers and homeowners. In order to move away from natural gas being the dominant home heat source in Great Britain, from 2025 over 20,000 homes each and every week would need to make a change to meet a 2050 target.

9. When the proposals for a future homes standard that moved away from gas heating in new homes first emerged, the INA started advocating for public engagement plan. This was required to raise awareness of wider heating options and to create demand pull from consumers for low carbon heating options in new homes. National Grid conducted a study on Heating our homes in a Net Zero Future: Understanding what matters to consumers[2] that sets out the low base from which we are currently at. This survey showed only 18 or 20% were familiar with air and ground source heat pumps (respectively) and only 5% identified heat as a main contributor to the UK's carbon emissions, and were more likely to cite power, transport or agriculture as key contributors to climate change. Both the Government's Heat and Buildings Strategy and the Net Zero Strategy, published in October 2021, referenced the need for a communications strategy in order to address this lack of awareness but no strategy has yet been implemented.

10. A further issue that has recently emerged around the hydrogen trials was that consumers wanted to have choices in their heating options. Bringing the consumers into the debate on: the range of technology solutions; practical strategies as to whether converting straight to new options or some form of hybrid heating step would gain greater acceptance; and the pace of any changes should be a Government priority if we are to move the debate on heat forward and achieve greater uptake of low carbon technologies.

[2] https://www.nationalgrid.com/document/134296/download