HEAT NETWORKS (SCOTLAND) BILL

1. Which part of the Heat Networks Bill is of most relevance to you or your organisation, why, and what do you consider its impact will be?

Heat networks have the potential to play an important part in addressing the challenge of decarbonising heat and meeting the Scottish Government’s goal of the Net Zero emissions target for Scotland by 2045 more generally. We agree that a robust regulatory framework is needed to ensure that consumers are well-protected. This protection is essential to ensure that the reputation of heat networks as an energy supply solution is maintained and enhanced. We also support the steps that the Scottish Government is taking through this Bill to provide additional certainty for heat network developers.

Our interest in this draft Bill is driven both by the potential impacts on energy consumers in Scotland, including our own customers, but also by our ambition to develop ground source heat pumps with shared ground loops. We consider that shared ground loops (or arrays) are a form of heat network, as discussed in the response to Question 2 below.

GSHPs with shared ground loops are likely to be the most efficient and cost-effective solution for decarbonising heat in many applications. They consist of a central operator, responsible for operation and maintenance of the shared ground loop, and individual heat pumps for each building. As well as being highly efficient, GSHPs with shared ground loops have a range of other benefits, including:

- Consumers will access all the performance benefits of ground source heat pumps without large upfront costs and with the minimum impact/cost on the electrical distribution network.
- As each property has its own heat pump, the system enables consumers to carefully control their own use and it prevents any issues with overheating and promotes energy efficiency.
- Performance is not dependent on external conditions, which means that unit costs are kept low in colder periods.
- System losses through the distribution network are low.
- Demand can be shifted to non-peak times providing flexibility to the system.

While consumers will be free to change the electricity supplier for their own heat pump, they could be tied into a long-term agreement for use of the shared ground loop, as consumers with other types of heat network are. For these reasons, therefore, we consider all parts of the Bill are relevant to our organisation.

2. Are you content with the definition of heat networks used in section 1 of the Bill? (If not, please elaborate.)

We broadly agree with the definition of a heat network outlined in section 1 of the Bill. It is important, however, that the definition includes shared ground loops for individual and/or collective ground source heat pumps (GSHPs). These shared ground loops distribute heat from the ground to ground source heat pumps in more than one building. As such GSHPs would seem to fit within the definition in Section 1 (2), though there may be scope for interpretation and we would welcome additional clarification on this point.

In this respect, we would note that the UK Government’s Consultation on Heat Networks: Building a Market Framework, explicitly excludes ground source heat pumps with shared
ground loops from their definition of a heat network. Whilst we appreciate that there is a complex legislative context around heat networks, partly because of the devolution of some powers to the Scottish Government but not others, we would urge the Scottish Government to work with the UK Government to establish a consistent definition of a heat network that include GSHPs with shared ground loops.

3. **Previous consultations have identified different priorities for this legislation – including transition to low-carbon or renewable energy, tackling fuel poverty, and ensuring consumer protection. To what extent do you think such priorities are reflected – and balanced – in the Heat Networks (Scotland) Bill?**

We agree that the fundamental driver for facilitating the take up of heat networks is to address the challenge of decarbonising heat and we, therefore, support the stated purpose of the Bill to ‘encourage greater deployment of heat networks in Scotland, in order to help reduce emissions from heating homes and buildings’.

With respect to decarbonisation, GSHPs with shared ground loops have the significant benefit of providing a clear route to achieving the Scottish Government’s goal of Net Zero emissions by 2045. The power sector has already made significant progress towards decarbonisation, particularly through the deployment of highly cost-effective renewables such as offshore and onshore wind, and GSHPs with ground loops can build on this continued progress.

As recognised in the Policy Memorandum accompanying the Bill, heat networks can also reduce heating costs for householders and could, therefore, make a positive contribution to tackling fuel poverty. In this respect we would emphasise the importance of cost-effective energy efficiency measures both in ensuring that heat pumps are a viable option but also in limiting the overall energy demand from heat networks. We would urge the Scottish Government to consider how the various Home Energy Efficiency Programmes which they offer can complement any measures to facilitate heat networks. We would also urge the Scottish Government to work with the UK Government to consider how UK-wide support schemes focussed on energy efficiency (including the Energy Company Obligation) could complement any measures to facilitate heat networks.

4. **What are your views on the licensing regime as envisaged by the Bill?**

We note that the licencing regime described in the Bill is similar to that used for the electricity and gas sectors, which is distinctly different to the lighter touch approach proposed for England and Wales in the UK Government’s Consultation on ‘Heat Networks: Building A Market Framework’. We support the licencing regime proposed by the Scottish Government in the draft Bill as we believe it will provide a higher level of consumer protection, which would be consistent with the level of assurance offered to consumers in the gas and electricity market. We also have a number of more specific comments as to how the licensing regime will work:

- It is not clear how the licences will be administered and for what period they will apply. We consider that the length of the licence should be linked to the projected life of the primary heat network asset that is to be installed, which is typically 40 years. In the case of GSHP with a shared ground loop, this primary asset would be the shared ground loop. Alternatively, the licence could work in same way as licences for existing utilities where the licence is in perpetuity but could be lost through serious breach of conditions.

- There are a range of potential low carbon heat solutions, not all of which will be suitable for every application, so it is important that the Bill allows for different technological solutions to operate alongside each other. Indeed, there may be instances where the technology primarily used by the licensee in a particular area is not appropriate for some reason, in which case it will be important that the licensee has the flexibility to use other technologies in that area. The aim of this approach should be to encourage the use of the least cost, most efficient solutions. Given that heat networks are likely to be in place for 40 years or longer, it is important that the assessment of the options fully considers the longer term
economic benefits of the infrastructure that is put in place (for example by discounting the costs and benefits at the Government’s Social Time Preference Rate of 3.5%, rather than a higher private discount rate).

- It is important that the licences have the right customer service levers to ensure the licensee is required to provide a high level of service at a competitive price to protect consumers whilst ensuring the network is operated safely at all times.

- Whilst we understand the rationale for a licence to require heat meters for a heat network where consumers take heat out of the network directly, we do not believe that heat meters should be required for GSHP with shared ground loops, as they would be an additional unnecessary cost. Consumers using a GSHP with a shared ground loop have a clear incentive to control their energy use as each property has its own individual heat pump. Moreover, the operator of the shared ground loop can design a charging system which reflects the size of the individual heat pumps that are using the shared ground loop as a source of low grade heat. We do not consider that the cost and complexity of installing a heat meter to measure the change in temperature and the flow rate in the shared ground loop across one individual heat pump would provide any additional benefits in terms of consumer behaviour.

5. **What is your opinion of the approach taken with Heat Network Zones (see parts 3 and 4 of the Bill)?**

We agree that the creation of exclusive zones and natural monopolies, following a competitive process, provides a degree of certainty for investors regarding a potential large-scale customer base. Identifying the most appropriate areas for heat networks based on the characteristics of the built environment, infrastructure and energy demand in a particular area is a positive way to develop the right solutions in the right places.

Heat Network Zones should be suitably discrete that the winning solution represents the most efficient and cheapest heating option for the large majority of buildings within the zone. Where buildings fall within Zones but are not suitable for connection, either from a technical or economic perspective, the market should be open for other regulated low carbon heat assets to meet their heat needs.

As recognised in the Policy Memorandum accompanying the Bill, for heat permits to attract investment in Heat Network Zones there must be a degree of compulsion on the building owners to both connect to and use the networks within each zone.

We agree that, in designating Heat Network Zones, it makes sense to identify sources of waste or surplus heat or constrained renewable energy generation that could be a cost-effective source of energy for use in heat networks. We would, however, highlight the importance of ensuring that there is a level playing field for all potential sources of energy for a heat network. It will also be important to consider the risk of the heat network becoming overly dependent on waste heat sources whose characteristics may change over time.

For example, as mentioned above in our response to Question 3, the power sector has made significant progress in driving down carbon emissions and there is a clear and credible plan for further highly cost-effective carbon reductions. This decarbonisation has primarily been driven by the deployment of large-scale renewable electricity generation such as onshore and offshore wind. GSHPs with shared ground loops can make the most of the progress in this sector by using this renewable energy as the primary source of energy. We, therefore, consider that any potential sources of energy for a heat network need to be assessed in this context.

We also believe that the Scottish Government should focus on those proven technologies, such as GSHPs, that are available today. In designating Heat Network Zones, it will also be vital to consider the full range of different heat network options to determine the right
technologies or mix of technologies for an application. This is particularly important for low housing density areas.

At the moment, there is limited information available on the mechanism for appointing the operators of the heat zones and how ownership would be established. It will clearly be important to the process to be as transparent and competitive as possible. We would welcome the opportunity to engage further with the Scottish Government in developing these processes.

6. How will the Bill impact on local authorities? (In terms both of the assessment of the suitability of their own buildings and also the power to designate heat network zones)

As recognised in the Policy Memorandum accompanying the Bill, local authorities may not possess the capacity and resources to undertake heat network zoning and we support the flexible approach taken with respect to the duty place on local authorities. We would, however, encourage the Scottish Government to consider other ways of support local authorities, so that they do not simply choose to opt out of not undertaking the designation of Heat Network Zones within its area.

7. Part 6 of the Bill confers powers for the compulsory acquisition of land and wayleave rights; to survey land for the purpose of construction or operating a heat network, and to access land in order to carry out repairs. What do you think of the extent of the powers in the Bill for licensed heat network operators (similar, in some respects, to those of utility companies)? Has a balance been struck with the rights of others (property rights for example)? If not, what would that balance be?

The powers proposed for heat networks are similar to those of other utilities which have been in place (and refined) for many years. While execution of such powers can be disruptive to local communities, there are routes to contest decision and compensation regimes are in place. These powers are necessary to allow projects to progress and to protect the level of service delivery to all consumers on the network.

8. Please feel free to provide your views on any other aspects of the Bill or the policy aims underpinning it if not covered above.

The Bill focusses on heat only which is sensible in trying to limit the scope and make it deliverable. There is, however, merit in considering total energy use and demand within an area and optimising its delivery for the benefits to consumers, systems and businesses. This energy master planning can bring benefits in overall system costs and utilisation whilst reducing the overall burden on consumers. Many of the short-term opportunities will in the power sector, particularly as the industry continues to be at the forefront of decarbonisation, and applying highly efficient heat sources with time shifting abilities makes sense in minimising the upstream reinforcement required for the supporting networks and to provide an opportunity for speedy deployment of these solutions. To support time-shifting, thermal storage should be considered as a mandatory requirement in all new build and refurbished buildings to help ease the peak burden, minimise the costs to consumers and maximise the utilisation of existing assets. Consideration should also be given to including assessment criteria around the ability of a heat network to respond to market signals, thereby providing flexibility to the energy system.