

# Veolia's contribution to the Public Consultation on District Heating in Ireland

February 2020

Veolia is Ireland's leading environmental services company. We provide a comprehensive range of energy, waste and water solutions and are dedicated to carbon reduction, protecting the environment and building the circular economy. Internationally, we have annually produced 46 MWh of energy and converted 49 million metric tons of waste into new materials and energy.

Veolia in Ireland works with our customers to carefully manage scarce resources. Through our expertise in operations, engineering and technology we reduce the environmental impact of our customers' activities while helping industrial companies, businesses and the public sector to operate in a more efficient manner. Over 2.3m people benefit from our drinking water, wastewater and sludge management infrastructure. We have annually saved 30,689 tonnes in CO<sub>2</sub> emissions for our customers through implementing energy efficiency projects and we are proud of our 82% material recovery rate for hazardous waste. Veolia provides district heating services which are an extremely efficient way of heating, optimising the usage of renewable and residual energy sources. In 2017, we managed a total of 7,400 km of district heating and cooling networks over 130m<sup>2</sup> of heated and cooled area internationally. We have 22,100 MW of installed capacity and over 570 heating and cooling networks in operation, with 43,000 GWh of heat and cold sold in 2017. We began operating District Heating Services schemes in Ireland in 2008 and today in Ireland, 2,500 people are currently served by our District Heating Services across 10 schemes in Dublin.

Veolia in Ireland has been awarded the Business Working Responsibly Mark certification for responsible and sustainable business practices. The Mark, developed by Business in the Community Ireland and audited by the NSAI, is based on ISO 26000.

Veolia Ireland is also recognised as an Engineers Ireland Continuing Professional Development (CPD) Accredited Employer. This accreditation applies to our three areas of expertise - water, waste and energy for which we received recertification in December 2019 for a further three years. This level of CPD will support our sustainable agenda for transformation, rapid change and innovation in environmental services. CPD is an important part of maintaining the skills our teams need in equipping them to deliver the best possible solutions to our customers' environmental and resource challenges. We work closely with Engineers Ireland (EI), the professional membership body, to ensure all of our engineers fully participate in its strategic CPD programme. This accreditation means Veolia has met with EI's seven criteria ensuring professional updating of technical and non-technical topics. We actively promote the pursuit of learning opportunities to ensure our team members have the keenest and most up to date knowledge which provides us with valuable insights in each specialist area.

Veolia's almost 700 employees on the island of Ireland are part of the world's leading provider of environmental solutions. Together with over 168,800 colleagues around the world we are dedicated to providing innovative solutions that are based on best practices, environmental protection and a better

quality of life for others and working together to support our stakeholders in improving their environmental economic and renewables performance.

Veolia in Ireland welcomes the opportunity to respond to the development of a policy framework for the development of district heating in Ireland.

### **General Comment**

Internationally, District Heating Networks are typically found in relatively densely populated large cities with urban piping network connecting inhabitants. There are more than 6,000 DH schemes in Europe. In Northern Europe, 50% of heat users are serviced by district heating

In Ireland, we typically find “District or Community Heating Schemes”, localised to the urban context with large apartment blocks; dense mixed use communities with a residential / commercial mix and adjacent to high heat sources, or on large multi-building campuses. There are also several examples of local community heating schemes in smaller towns and rural locations in Ireland.

### **Section 1: Research - Outline Question**

- 1. What additional research do you think needs to be carried out to support the development of district heating in Ireland?**
- 2. How should research (including the upcoming comprehensive assessment) be used to inform / support the development of district heating in Ireland?**
- 3. Are there relevant existing research projects into district heating, in the Irish context, which are not referenced in this document?**
- 4. Can further research contribute to encouraging areas of compact urban growth to develop district heating projects?**

In response to all of the above questions in this Research section, we think the Heat map has been a very useful addition to the research into district heating in Ireland. What is particularly useful to see is waste heat, we would recommend that while more detailed research is needed, it would be appropriate to do so on a project by project basis.

From our experience, for district heating schemes to be successful, they have to be public sector driven in order to gain buy-in from all parties, including but not limited to any tenants involved, access to roads, access to any procurement bodies or exercises.

We would also suggest that research be undertaken on the users or off-takers of the proposed scheme, considering the topics of what is the benefit to them to sign up to 20 year agreement, especially when those people may be in a gas heating zone and considering the emphasis on electrification of heat being driven by government-backed agencies. This should also include research into public awareness around the real and perceived cost of such schemes, optimal contract durations, most appropriate subsidies, and other public drivers in choosing or opting in to district heating. Research may also include optimal channels to reach such audiences in any public awareness or educational programmes that need to be undertaken.

The question of whether district heating should be prioritised in areas that don't have access to gas should also be addressed in any research undertaken.

We should also consider the current popularity of heat pumps and whether they should be incentivised above and beyond other low carbon alternative sources of heat.

A best in class study of the treatment of thermal losses during the early phases of development of a district heating network should also be considered, particularly for the Dublin district heating scheme currently being looked at.

An emphasis or focus area for any research should be placed on zones without ready access to low carbon fuels i.e. natural gas. We believe that a study exploring any grid constraints or capacity limitations when moving heat from fossil fuel to electric sources should also be considered.

In terms of encouraging and demonstrating best practices in District Heating and setting in place the optimal practices for best performance infrastructure over the long term, we would recommend a small number of exemplar cases being put into place. This would then ensure that solutions and providers selected as part of any procurement and/or delivery exercise associated with the development of district heating in Ireland would have a prescribed service delivery level associated with their works.

The expertise of Energy Service Companies (ESCOs) with international experience of operating successful District Heating Schemes over the long term could be called on to contribute to best scheme proposals

## **Section 2 Regulation - Outline Questions**

### **Q5. What elements of Article 24 of the recast Renewable Energy Directive should be implemented in the near term (i.e. by the mid-2021 transposition deadline)?**

In the short term, we would recommend that items numbers 1, 4 and 9 from the Directive be prioritised for implementation.

Items 5 and 7 should also be focused on in the near term but in a project-specific fashion.

### **Q6. What elements of the Article 24 of the recast Renewable Energy Directive should be implemented in the medium term (i.e. by 2025)?**

In the medium term, we recommend that items numbers 2, 3 and 8 be prioritised for implementation. Items 5 and 7 should continue to be prioritised in the medium term, but continuing in a project-specific fashion.

### **Q7. Who should have the right to own the district heating networks?**

From our experience to date, district heating networks' ownership would work better if publicly owned, particularly from a piping perspective where we would think the challenge of this question lies. In order to meet state-aid rules, it would seem appropriate that an infrastructure charge be levied on the network users

### **Q8. Should there be a district heating market regulator?**

Yes, we would agree that there should be a regulator and we would offer the opinion that the CRU seems well positioned to take on this role.

### **Q9. Should there be guidelines / Code of Practice around district heating and if so, who should be responsible for their development and implementation?**

A code of practice should be developed, and an organisation like Engineers Ireland could consider taking on this task, and obtaining the input of ESCOs, particularly those with domestic and international experience of various elements of district heating, to do so. Other markets like the United Kingdom have already developed Codes of Practice (e.g. CIBSE) which could also be referred to.

Codes of practice could look at some of the following questions, which should be considered in the development of any District Heating Scheme:

- The location of the major users of the proposed network vs losses to get to that point from the proposed generation plant
- Any conflicts or overlaps with the MUD act (Multi-Unit Development Act) (*"The company may not enter into contracts with providers of goods and services which are to last for more than 3 years."*) will need to be considered from the perspectives of each of the infrastructure owners, developers, operators and users to find the best balance of working mechanism and support the practical implementation of district heating networks in Ireland
- Large scale data centre developments could be obliged to utilise or make available their waste heat sources (both low and high grade) into local and larger schemes

### **Section 3 - Planning - Outline Questions**

**Q10: What changes, if any, are required to existing planning and building regulations in order to support the development of district heating? In particular what changes might be required in order to promote the type of high density development that is seen as providing the most suitable conditions for development of district heating?**

We would firstly agree that Planning needs to be a prerequisite element to facilitate the development of District Heating. We are supportive of the fact that all of the new builds alongside the river Liffey have to have a pre connection to the proposed Dublin District Heating Scheme.

There is also no doubt that more density equals better efficiencies for district heating, so the best interaction of height restrictions with wider environmental and societal planning impacts should be a consideration when developing a District Heating Framework for Ireland.

Perhaps a zoning approach based on the available waste heat sources for residential and/or industrial mixed use developments could be considered?

It should also be considered that ultimately, district heating is a local issue that requires integrated land-use, energy and infrastructure planning with a balance of local-national planning authority.

**Q11: Is there potential for the revised building Regulations to act as a driver for district heating?**

The current lack of guidelines, regulations, frameworks and tariffs could be seen as not conducive to the development of 25 year contracts for district heating investors, operators and users.

We would think that there is currently a potential contradiction between the encouragement of heat pumps to meet Building Energy Regulations and the need to encourage District Heating connections in dwellings in order to facilitate the development of DHS in Ireland. We would urge that an option which best meets the evolving needs of a future Irish society is now selected. For example, if a dwelling has installed a heat pump within the last 3 years as part of a new build or refurbishment, they are unlikely to move away from that option within the next 20 or 30 years.

**Q12: Given the importance of the public sector taking a lead role in developing district heating in Ireland, as highlighted in the 2015 Comprehensive Assessment, what, if any, additional powers are required by local authorities in order to ensure they have the necessary vires to develop and operate district heating networks?**

This is a question for the public sector as to what technologies and options to prioritise in order to facilitate the future performance of the country.

**Section 4 - Financing - Outline Questions**

**Q13: What sources of financing are currently available to the Irish District Heating Market?**

Both public and private funding are currently available for District Heating in Ireland, but sometimes can be difficult to secure according to investment payback criteria.

**Q14: What are the most appropriate financing mechanisms for developing district heating in Ireland?**

All models can work according to who is driving the financing . For example, in the case of South Dublin County Council's scheme - it was an Energy Performance Contract (EPC) concession for District Heating which was the model selected during the tendering process.

In all contexts, Eurostat rulings regarding the treatment of the balance sheet for the public sector will need to be considered.

**Q15: What are the most appropriate business delivery models for the Irish context?**

Currently, there seems to be a government / council requirement for off-balance sheet projects. In that context, private ownership looks to be the only option, which then leads to Concessions currently being positioned as the best way forward in the Irish context.

**Q16: In addition to those listed above, what are the other main challenges to raising non exchequer financing for district heating projects in Ireland? What measures should Government consider putting in place in order to mitigate these challenges?**

Currently, the biggest challenge for District Heating investment in Ireland seems to be a guarantee of revenue from the energy users, in order to ultimately obtain payback for the investment. This does not appear to be as much of a challenge for greenfield sites, but in the case of brown field or retrofit, the impetus on the landowner and/or household needs to be considered. The typical questions which might come up could be for example, who upgrades the network, who pays for the connection into your house and then who owns that connection? We recommend that the incentives and benefits for all parties involved be explored.

**Q17: Other than providing direct exchequer funding, what incentives might Government consider implementing in order to drive the development of district heating? For example, should major users be allowed to offset their carbon taxes on energy demand by supplying waste heat to local communities?**

Currently, the only benefit observed from recovering heat is via heat sales. The question of whether the sales are going to be high enough to merit investment then comes up. For example, a feed-in tariff for waste heat sources to incentivise the current large energy users like data centres, hospitals, power stations, etc. to utilise that heat.

It is recognised that Planning is obligating new builds to do this however we would suggest that existing large energy users should be incentivised to sell that heat.

Typical DHS Customer Challenges involve guaranteeing the continuity & reliability of district heating operations, minimizing the environmental footprint thanks to maximising the selection of renewable energies and guaranteeing cost efficiency through a stable energy price. These typical challenges would be a good point of departure for any facilitation mechanisms being considered by the government.

## **Summary - In Conclusion**

In summary, Veolia welcomes the opportunity provided to respond as part of the consultation. We broadly welcome collaborative efforts to help Irish society move towards a district heating approach which is appropriate to our context and also takes reference from elements that have been demonstrated to work well in other countries. Any framework developed should be transparent and clear for all stakeholders and enable everyone, whether individual, business or public sector, to play their part.