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Submitted to **Call for Expert Evidence - Climate Action Plan 2021**
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About you

1 Name

Please provide your name, or the name of the organisation you are representing.:
Irish District Energy Association

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Carbon Pricing and Cross-Cutting Issues

1 What further opportunities exist within our taxation system, beyond measures already implemented and planned, to promote emissions reductions, either on an economy-wide basis, or in specific sectors?

Please provide details in the text box provided:

The Irish District Energy Association (IrDEA) supports the gradual increase of carbon taxes to €100/tCO2 by 2030 in the Programme for Government 2020. The '40 by 30' study published by Renewable Energy Ireland and sponsored by IrDEA (A 40% Renewable Heat Vision by 2030 - Delivering 7% CO2 Abatement per Year) indicates that the marginal cost of further decarbonising the national heat supply between the NECP_WAM and the RES-H_7% scenario is €86/tCO2, and €66/tCO2 with RES-H_Max (see Figure 13 in the '40 by 30' submitted herewith).

The €100/tCO2 carbon tax target will establish a level playing field for renewable heat solutions and will incentivise heat users to invest in associated technologies. The IrDEA advocates the reallocation by the exchequer of carbon tax revenues to support investment in renewable energy and energy efficiency, including towards the deployment of district heating infrastructure in urban centres in Ireland. District heating systems harnessing low-cost surplus heat to meet the heating requirements of households, businesses and public services in towns and cities will help mitigating the rise in fossil fuels costs due to increase carbon taxes, supporting the principles of a Just Transition.

2 What supporting policies might be required to offset the impact of any taxation changes on low income households or those most at risk from fuel poverty?

Please provide details in the text box provided:

In urban centres with sufficient heat density, support policies for the accelerated deployment of district heating using low-carbon/renewable and low-cost heat sources can be a very cost-effective and a practical solution in addressing fuel poverty and improving living conditions for vulnerable households. Social housing bodies who have a significant housing stock in urban areas, with an adequate heat density, should be incentivised to adopt district heating solutions. Support systems for low income households at risk from fuel poverty should be prioritised for energy efficiency and renewable energy upgrade measures, to radically reduce their dependency on fossil fuels and improve their living conditions.

There are very positive examples of initiatives leveraging district heating networks to tackle fuel poverty across Europe and the UK. Aberdeen Heat and Power was established by Aberdeen City Council in 2002 as an independent not-for-profit company to help address fuel poverty in the city's municipal housing stock, and has achieved up to 40% heating cost savings for the thousands of residents it supplies. Aberdeen Heat and Power has widened its commitment to providing affordable heat and hot water to households right across the city, as well as to a mix of public and private enterprises.

3 What further measures might be required in the planning system to realise the objectives of the National Planning Framework in respect of climate action?

Please provide details in the text box provided:

Policy instrument recommendation in the '40 by 30' Renewable Heat Plan for Ireland study published by Renewable Energy Ireland:

(DH1) County/City Development Plans to zone for district heating networks and renewable heating deployment as a priority:
+ Publish heat planning and DH zoning at local authority level to mandate deployment of DH in areas with heat density > 120 TJ/km2 and renewable heat sources, including deep geothermal, are (or will be) available.
+ Planning regulations to mandate connection to DH networks where they are in place, for all new developments and major redevelopments, or upon boiler replacement.
Next steps:
a) National Planning Framework and National Development Plan to introduce planning policy that will support heat planning and DH roll-out
b) Regional Spatial & Economic Strategies to formally recommend heat planning and designation of low-carbon heat zones in County & City Development Plans.
c) Guidelines for heat planning and district heating development to be issued to Regional Assemblies & Local Authorities.

In addition, instrument GeoH1 in the '40 by 30' study advocates the development a regulatory framework for ground source heat pumps and deep geothermal

systems, including licensing and regulatory conditions for deep geothermal energy projects through a centralised government body.

4 What specific additional measures might be required to promote sustainable growth in our urban centres, including to realise the potential of a "15-minute city"?

Please provide details in the text box provided:

Spatial planning policy to support 'compact urban growth' also supports the roll-out of district heating and cooling, increasing the density of buildings in urban areas so that the district heating network costs are shared and therefore costs are reduced for customers. In this regard, sustainable growth policy needs to be interlinked with energy planning policy to ensure they support each other's aims. District heating is a low cost technology for developers to meet building regulations, and therefore urban areas with DH will be more attractive to new development and help lower construction costs of new housing.

Support policies that will accelerate the deployment of district heating in urban centres, with a target of achieving a 10% share of the national heat demand by 2030, will enable the transition of high density area to renewable heat, the cost-effective decarbonisation of a significant proportion of the national building stock, including hard to retrofit buildings (heritage buildings, university and hospital campuses, etc.), improvement in air quality and reduction in fuel poverty. It will also increase local spending power and employment.

5 What specific additional measures might be required to promote sustainable growth in rural areas?

Please provide details in the text box provided:

6 Are there further measures that the Government should take to channel private finance into low-carbon investments in Ireland?

Please provide details in the text box provided:

In much the same way that the state owned and funded electricity network allows private finance investment into renewable electricity assets, building a state owned and funded district heating transmission network will open up private sector investment into the heat supply assets and the end-user assets. The piece of the puzzle that is missing is the main transmission infrastructure, and this would bring a whole new energy sector to Ireland that is common across Europe, with plenty of investors who are familiar with such schemes.

Policy-instrument DH3 recommended by the '40 by 30' study published by REI:
Support financing of DH network deployment with investor-specific instruments:
• National DH Delivery Company (see DH5)
• Local Authorities
• Community cooperatives
• Private developers
• Heat users

Next steps include:
a) Allocate a €650 million capital investment fund to build networks for 10% DH e.g. via the Climate Action Fund and/or a DH Price Control.
b) Secure low-cost guaranteed loan facility such as the Strategic Banking Corporation of Ireland's energy efficiency scheme.
c) Launch grant scheme for connection to DH network and installation of heat user interface units. For example, by offering grants equivalent to those available for heat pump and bioenergy boilers.

7 Are any changes required in Ireland's research policy to channel research funding into climate action-related topics?

Please provide details in the text box provided:

IrDEA's members commit to support capacity building in Ireland to underline the development and deployment of district heating projects towards the 10% target by 2030. While district heating is a mature technology, innovation continues across Europe. The Irish district heating sector is in its infancy and will benefit from advances in other countries and brought to our market by leading international companies. However, the Irish industry and academic research should be supported in joining European RD&D initiatives in this space (such as the IEA's TCP on DHC), in order to build capacity for innovation here and facilitate the development of appropriate solutions for Irish conditions.

Industry-led Action DH2 in the '40 by 30' report aims for the establishment of an Irish 'DH centre of excellence' as part of a partnership between industry and academia to bring best practice and research on DH to Ireland. The centre of excellence will support upskilling Irish energy sector and stay up to date on and apply latest DH technological developments.

Industry-led Action DH3 in the '40 by 30' aims to bring international expertise to Ireland by connecting EU companies which are well-established in DH with potential partners across industry, education and training bodies, research and innovation organisations, etc. This should encourage scaling-up of Irish DH industry building on capacity of leading EU companies.

Equally, cross-sectorial commitment 'All-RES-H1' by the participating trade associations in the '40 by 30' study supports training & upskilling for designers and installers, as well as BER assessors & other building professionals. Increase the number of skilled professionals with RES-H competence.

8 Is there any additional information you would like to submit in relation to Carbon Pricing and Cross-Cutting Issues?

Please provide details in the text box provided:

Electricity

1 What options are available to increase the penetration of renewable electricity beyond the 70% committed to in Climate Action Plan 2019?

Please provide details in the text box provided:

District heating (and cooling) systems can contribute to an increased penetration of renewable electricity in the Irish system in a number of ways:

a) capture surplus electricity for the production of heat, using heat pump technology and direct electric heating, before supplying it to multiple heat users via their heat distribution network. The '40 by 30' study estimates that the available surplus electricity due to dispatch-down of intermittent renewable generation would be in the order of 2.8 TWh. If this surplus electricity is harnessed by large scale heat pumps with an efficiency of 300%, 8.5 TWh of renewable heat could be produced very cost-effectively as part of a demand-response strategy. The advantage of using DH rather than individual building heating is the scale and simplicity; DH allows large scale integration of the heat and electricity sectors without needing to involve thousands of individual stakeholders.

b) combined with large-scale thermal storage, the district heating can play a very significant role in supporting the high-RES electricity grid with demand-side management. Large-scale thermal storage is by far the most cost-effective solution for electricity storage.

c) In addition, large surface water bodies (rivers, lakes, seawater) and grey water from the sewage systems are ideal renewable heat sources for heat pump applications in conjunction with district heating, with a technical potential estimated at 1.4 TWh/yr.

d) moreover, the vast majority of power plants are currently releasing heat equivalent to 40% of their fuel input into the atmosphere or in adjacent water bodies. The theoretical potential for recovering heat as a by-product from power stations has been estimated at 8.7 TWh/yr for 2030. The potential revenue stream from power plants' heat recovery might support their economic viability in the context of an electricity system with very high levels of intermittent generation sources.

2 What can be done to increase the uptake of offshore wind and solar PV in particular, in the context of the Programme for Government ambition?

Please provide details in the text box provided:

3 What role does renewable gas have in the power generation sector?

Please provide details in the text box provided:

4 What role could carbon, capture and storage have in decarbonising our power sector?

Please provide details in the text box provided:

5 What other opportunities exist to support the decarbonisation of the electricity sector?

Please provide details in the text box provided:

6 What measures might be taken to improve the resilience of the electricity system to the impacts of climate change?

Please provide details in the text box provided:

Enterprise

1 What measures can be taken to accelerate the uptake of carbon-neutral low temperature heating?

Please provide details in the text box provided:

District heating can play an important role in decarbonising industrial heat users, in particular in the low-temperature range of applications. Surplus heat from industrial processes is not only a great way to get carbon neutral heat for district heating, but it can increase the attractiveness of industry to a location. According to the '40 by 30' study, industry surplus heat in Ireland has an estimated potential of 4.4 TWh/yr. This surplus heat can be captured to meet the thermal energy requirements of nearby residential and commercial buildings, as well as of other nearby industrial heat users.

Bodies responsible for planning need to ensure these industrial sources of carbon neutral low temperature heat and future-proofed through the planning process so that they can supply into a district heating network. There is often the situation where one building is exhausting heat to air, beside a new development that requires a low-temperature supply, but instead install their own heat generation equipment, and this needs to change in order to achieve a circular economy. For existing sources of carbon neutral low-temperature heat, there is a lack of knowledge around the usefulness of their by-product and how it could be used by neighbouring buildings. There needs to awareness raising through business energy networks and increased networking between sources and potential users.

IrDEA endorses the 'All RES-H3' industry-led initiative planned as part of the '40 by 30' study to engage in "Awareness Campaign towards large heat users on the options to transition to renewable heat sources such as biomass, biogas/biomethane, bioLPG and electrification, along with how they can provide surplus heat to district heating networks."

2 What measures can be taken to tackle high temperature heating in industry?

Please provide details in the text box provided:

3 What measures can be introduced to reduce to F-Gases in the Enterprise sector?

Please provide details in the text box provided:

4 How can we encourage the diversification away from cement in construction?

Please provide details in the text box provided:

Please provide details in the text box provided:

5 What role could Carbon Capture and Storage (CCS) have in industry, and what steps would encourage its deployment?

Please provide details in the text box provided:

6 What other opportunities exist to support the decarbonisation of the enterprise sector?

Please provide details in the text box provided:

7 What measures should be taken to address the risks that climate change poses for enterprise?

Please provide details in the text box provided:

Built Environment

1 Can Ireland exceed the target of retrofitting 500,000 homes by 2030? If so, how?

Please provide details in the text box provided:

2 How should Ireland's training and education system scale to meet the skills requirements to achieve this target?

Please provide details in the text box provided:

3 Should Government consider bringing forward a phase out of the installation of fossil fuel boilers?

Please provide details in the text box provided:

4 Should further specific changes be made to Ireland's building standards be introduced to support the decarbonisation of Ireland's private and commercial building stock?

Please provide details in the text box provided:

In the 'All RES-H 1' policy instrument proposal of the '40 by 30' study, Renewable Energy Ireland requests an update to Building Regulations Part L compliance procedure and BER methodology to reflect properly the decarbonisation benefit of renewable heat options. The aim of this instrument is to remove Part L compliance & BER methodology barriers to the adoption of renewable heat technologies & district heating using 'waste heat' in particular.

With regard to district heating, the Irish District Energy Association has published the Policy Position Paper "The effect of Part L Building Regulations on the District Energy sector in Ireland", in October 2020. This position paper has been submitted to the DECC, the DHLGH , and is attached as part of IrDEA's submission to this consultation. The paper advocates the following short-term solutions to remove the barriers to the adoption of district heating currently in Part L and BER assessment methodology (DEAP):
+ Allow for waste heat from process and power stations to be a direct input and accounted for as a renewable energy source with a renewable primary energy factor along with an appropriate non-renewable primary energy factor to account for the energy required to deliver this waste heat (i.e. electricity for pumping etc.).
+ Allow buildings connected to a biomass DH system to use a Biomass DH Offset value. This would have the equivalent effect to adding solar PV panels to each building and could be entered into the Renewable and energy saving technologies section of DEAP. For non-domestic applications, an adjustment to the primary energy consumption factor in the District Heating Parameters section in NEAP could be allowed for.

Since this submission, no meaningful change has happened and IrDEA would like to continue engaging with the relevant departments and government bodies so we can together find a solution that will overcome the above issues and enable Irish District Energy projects to compete fairly with other low-carbon solutions and contribute positively to reducing carbon emissions from our heating sector.

5 What emerging technologies (e.g. in relation to heating, lighting, and/or building fabric) should be considered for use in Ireland's construction industry to promote further decarbonisation?

Please provide details in the text box provided:

6 What supports can we provide to assist the greater use of low-carbon building materials? How much consideration should be given to embodied carbon in construction materials?

Please provide details in the text box provided:

7 Are there specific technologies that should now be prohibited?

Please provide details in the text box provided:

8 What trade-offs between decarbonisation and air quality may need to be further considered in policy design?

Please provide details in the text box provided:

9 Are there specific household behaviour changes that should be considered? Should such changes be mandated by way of regulatory changes?

Please provide details in the text box provided:

10 What specific further measures should be considered to promote decarbonisation of Ireland's existing commercial buildings?

Please provide details in the text box provided:

11 Is there scope to further develop and deploy district heating opportunities in Ireland?

Please provide details in the text box provided:

A key criteria for developing and deploying district heating systems is measuring the 'heat demand density' – a common planning approach taken in many EU countries when planning local heat supply. Given the large capital cost associated with the transmission infrastructure, the heat demand density of the areas to be served by district heating systems allows us to examine their economic viability. There has been a commonly held belief in Ireland that we do not have the density of population or we are not cold enough for district heating. In order to challenge this perception, an evidence and research based approach was taken.

An analysis was conducted on behalf of Irish District Energy Association (IrDEA), and sponsored by the ESB, by experts involved in the Heat Roadmap Europe projects (https://heatroadmap.eu/) on the spatial distribution of heat demands in Ireland and the associated potential for district heating applications. This analysis concluded that 35% of the current heat demand is at a sufficient heat density for district heating to be highly feasible and feasible with current technology, using the same economic viability thresholds that are used by DH planning authorities in Scandinavia. Therefore, in response to this question, there is huge scope to develop and deploy district heating in Ireland, going from our current standing of <1% of the heat market to at least 35%.

The '40 by 30' report and IrDEA's members advocate a national target for district heating to meet 10% of the building heat demand by 2030 and reach a minimum of 35% longer-term. This is an achievable target, again based on evidence of the growth levels achieved in other EU countries that have successfully implemented DH. Sweden, Finland and Denmark, countries that have now >50% of market supplied by DH, have all maintained annual market share growth rates in excess of 1% from 1970 till the late nighties, enabled by a strong policy framework.

IrDEA is encouraged by Minister Ryan's statement in the Five Degrees of Change podcast where he pointed to a specific ambition to convert 1% of the heat demand in buildings to district heating each year going forward, and to setting up a national district heating company later this year.

In addition to the policy instruments already referred to in this submission, the following measures advocated by the '40 by 30' study will support the further development and deployment of district heating:
+ DH2 - Heat Supply Tariff: Incentivise harnessing surplus heat and renewable heat opportunities for supply into DH networks by amending the Support Scheme for Renewable Heat terms and conditions to add surplus heat as eligible for the heat supply tariff.
+ All RES-H7 - Wider domestic grant supports: Expand the range of RES-H technologies eligible for Home Energy Grants and offer more options to homeowners, including for hard to retrofit homes, with the particular inclusion of district heating substations and Heat User Interface units.
+ DH4 - DH Delivery Company: Establish a utility, or mandate an existing one, to develop DH networks at scale. Measures requested:
a) Propose legislation to establish a DH state company.
b) Allocate €50 million per year of OPEX under a Price Control.
c) CAPEX allocation (see DH4)
d) Reassign 40-50 people with expertise in planning, procurement, financing and others. .

DH5 - Community & LA DH support: Support for local authorities & community groups to develop local DH schemes, with appropriate guidance and support from trusted intermediaries. Measures requested:
a) SEAI to create guidance/training for community DH schemes
b) Establish 'trusted intermediaries' to provide technical support and guidance in DH project development.
c) Mandate the national DH Delivery Company (DH4) to support the development of local DH networks with community benefit/ownership.

IrDEA also advocates the following cross-sectorial instruments proposed in the '40 by 30' study:

All RES-H2 - Simplify regulatory & administrative requirements:
+ Terms & conditions and procedures associated with application and payment of financial supports for renewable heat technologies to be streamlined and simplified with a customer-centric policy.
+ Accelerate digitalisation of processes to increase productivity and reduce compliance burden.
+ Foster a collaborative approach between funding authorities & industry in design and implementation of quality assurance & consumer protection policy.
+ Remove red tape and accelerate access to financial supports by consumers.

All RES-H3 - Renewable Heat Obligation Scheme: Implement Article 23 of REDII to mandate fuel suppliers to increase the share of RES-H in their supply by 3% per year.

All RES-H6 - Non-residential sectors, incl. industry & ETS sector:
Widen and improve supports for RES-H, including in hard to decarbonise sectors, in particular industry and ETS sector. Specific measures requested:

a) SEAI to improve and widen SSRH supports (grants and tariffs)
b) DECC to increase carbon tax in line with budgetary steps process towards €100/tCO2 by 2030.
c) SEAI to introduce measures to make the SSRH scheme more attractive to large industry.
d) SEAI to carry out detailed study of ETS and non-ETS sectors to identify all high heat demand users and suitable measures to decarbonise heat demand.

In turn, IrDEA's members commit to support the following industry-led initiatives, working in partnership with national and local government and other stakeholders:

DH1 - Roll-Out Plan: Create a strategic roll-out plan for DH in Ireland with 2030 and 2050 targets, including required upskilling, capacity building and customer acceptance, and examining sector integration opportunities.

All-RES-H1 - Training & upskilling: Roll out industry-led training programme for designers and installers, as well as BER assessors & other building professionals.

DH4 - Standardised Designs: Create a catalogue of designs for typical Irish buildings e.g. housing estates, and technical guidance for M&E designers of secondary side DH installations.

DH5 - Develop voluntary Consumer Protection: In the absence of market regulation, establish a voluntary customer service standard for DH operators (e.g. Heat Trust UK) as an independent, non-profit consumer champion that holds the industry to account for the benefit of everyone involved.

All RES-H2 - Decarbonisation of low energy efficiency houses: Explore options for using biomass as a solution for homes where retrofit is not an option due to excessive capital cost of retrofit, or architectural/heritage reasons.

12 What specific approaches should be taken to accelerate decarbonisation of Ireland's public sector building stock?

Please provide details in the text box provided:

13 What other opportunities exist to support the decarbonisation of the Ireland's building sector?

Please provide details in the text box provided:

14 Are there further specific measures and policies, including through planning and building regulations, that might improve the resilience of our building stock to climate change?

Please provide details in the text box provided:

Public Sector Leading by Example

1 What opportunities exist for the public sector to step up its climate ambition?

Please provide details in the text box provided:

TThe public sector should lead by example and accelerate the decarbonisation of public services, prioritising the switch to renewable heat, both in public buildings and in social housing. This should be reflected in public procurement rules and practices.

The public sector can also drive market development by playing a role as early adopter in innovative technologies and by driving innovation procurement initiatives.

Planning authorities have a key role to play in zoning for district heating and future-proofing supply and demand, see recommended '40 by 30' measure DH1 elsewhere in this submission.

2 What sort of practical changes would you expect the public sector to make in leading and delivering Ireland's climate ambition?

Please provide details in the text box provided:

Policy instrument All-RES-H4 recommended by REI's '40 by 30' study:
Public sector green procurement Policy for RES-H
+ Public sector to lead in decarbonising its heat supply by setting Green Procurement targets at a minimum of a 20% annual increase in RES-H.
+ All new or replacement of heating systems procured to be 100% renewable.

3 How can the public sector support wider society to change? In the short-term, medium-term, long-term?

Please provide details in the text box provided:

4 What are the biggest barriers for the public sector in reducing greenhouse gas emissions and how can they be overcome?

Please provide details in the text box provided:

5 What other opportunities exist to support the decarbonisation of the public sector?

Please provide details in the text box provided:

6 What practical steps should the public sector take to adapt to climate change?

Please provide details in the text box provided:

Just Transition

1 Which regions, sectors, or industries do you believe will be most adversely affected by climate policy in Ireland and over what timeframe?

Please provide details in the text box provided:

2 What types of supporting interventions should be considered by the Government to address the specific areas identified?

Please provide details in the text box provided:

3 What specific further measures should Government undertake in order to realise the benefits of the low carbon transition, including in relation to supporting the development of low carbon sectors of the economy, including employment in these sectors?

Please provide details in the text box provided:

4 What specific investments should be considered to support a just transition in Ireland?

Please provide details in the text box provided:

5 How should the State finance just transition initiatives and investments?

Please provide details in the text box provided:

6 What changes should be considered in Ireland's social welfare system to support population cohorts that might be more adversely affected by the low carbon transition?

Please provide details in the text box provided:

7 Are there specific issues for consideration in Ireland's further education, training and skills system?

Please provide details in the text box provided:

8 What other issues should be considered by the Government to inform just transition policy in the 2021 Climate Action Plan?

Please provide details in the text box provided:

9 What additional supports could be considered for regions that are most at risk from the physical impacts of climate change?

Please provide details in the text box provided:

Additional Information

1 If you would like to submit some additional Information as part of your response, you can now attach a PDF.

Please chose your file for upload:
Renewable Energy Ireland_Renewable Heat Plan_ Final.pdf was uploaded