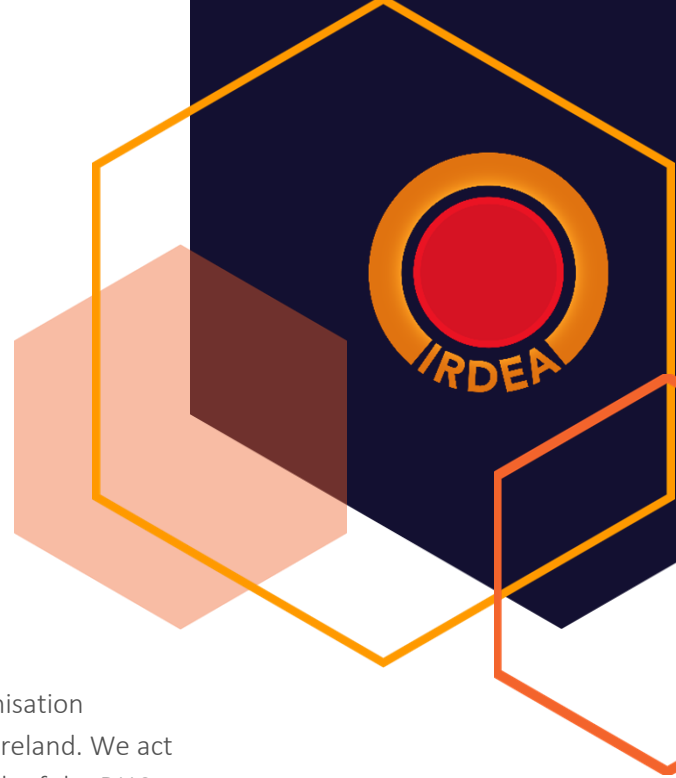


# Tipperary County Development 2022-2028 Consultation

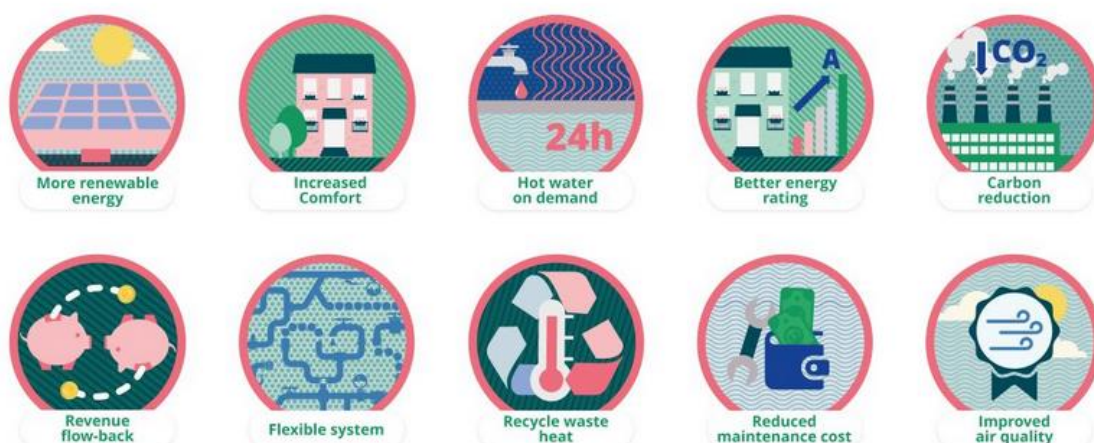
Response by the Irish District Energy  
Association - 14/10/21



The Irish District Energy Association (IrDEA) is the trade organisation representing the district heating and cooling (DHC) sector in Ireland. We act on behalf of our members to support and promote the growth of the DHC industry, creating a new heating market for Ireland which offers greater opportunities to utilise indigenous low-carbon and renewable sources of heat.

Dubbed 'central heating for towns and cities', district heating is a network of insulated pipes that delivers heat from a central energy source to provide space heating and hot water to buildings. It has the flexibility to combine multiple locally-available, renewable heat sources and it can also recycle surplus heat from applications such as electricity generation, industrial processes, data centres and breweries.

District heating has many economic, environmental and social benefits, such as carbon reduction, reduced maintenance costs, increased comfort and reduced fuel poverty. Local authorities, building developers, building managers and customers can all benefit from the development of a district heating network in their area, as illustrated below.



IrDEA and its members fully support the Tipperary County Development Plan's commitment to supporting investment and development in renewable energy as part of the national transition to a low-carbon, climate resilient and circular economy, as stated in section 10 of the Plan.

The Plan's Renewable Energy Policy (Volume 3 Appendix 2) is exemplary and represents best practice in terms of local energy planning in Ireland. Its assessment of a wide range of renewable energy resources demonstrates the strong potential for the County's transition to fulfil the national commitment to achieve an average 7% per annum reduction in overall greenhouse gas emissions (GHG) from 2021 to 2030 (51% reduction over the decade) and achieving net zero emissions by 2050, as stated in the current Programme for Government.

While renewable electricity supply will play a significant contribution to these objectives, it is clear that a significant gap exists when it comes to the decarbonisation of heat. Currently, heat represents circa 20% of all GHG emissions in Ireland and the share of renewable heat supply is only 6.3% compared to a 12% target for 2020, making it the worst performing sector behind both electricity and transport. Ireland is also the worst performing country in the EU in terms of renewable heat share .

Renewable Energy Ireland, in partnership with the IrDEA, commissioned the '40 by 30' study which set out an ambitious and feasible target of 40% renewable heat share by 2030 – in line with the national 51% GHG reduction target by 2030. By displacing imported fossil fuels with renewable and sustainable energy resources, this development will not only tackle climate change but also provide a strong economic stimulus (+23,000 new permanent jobs), particularly in rural areas such as in Tipperary. A copy of the report is available here: <https://renewableenergyireland.ie/2021/05/renewable-energy-ireland-launches-countrys-first-heat-plan/>.

The '40 by 30' report shows that district heating is set to play a key role in decarbonising heat supply in Ireland and it calls for 10% of heat in buildings to be heated using district energy networks by 2030. Longer term, the study indicates that 35% of the heat demand is at a sufficient heat density for district heating to be feasible with current technology, and another 21% would be feasible with the deployment of the most advanced heat network technology.

The Irish Heat Atlas<sup>1</sup> published by IrDEA demonstrates that heat density is deemed at a sufficient level for district heating to be highly feasible (>300 TJ/km<sup>2</sup>) and feasible (between 120 and 300 TJ/km<sup>2</sup>) from a technical and economic point of view, in the following towns in county Tipperary: Nenagh, Thurles, Clonmel, Tipperary, Cashel, Roscrea and Carrick on Suir. A number of these towns have also significant industrial plants, with a significant potential for surplus heat to be harnessed with district heating to meet the local heat demand in homes, businesses and public buildings. This provides a real opportunity for decarbonising the heat supply of the county's urban areas, for new developments but even more so for the existing building stock.

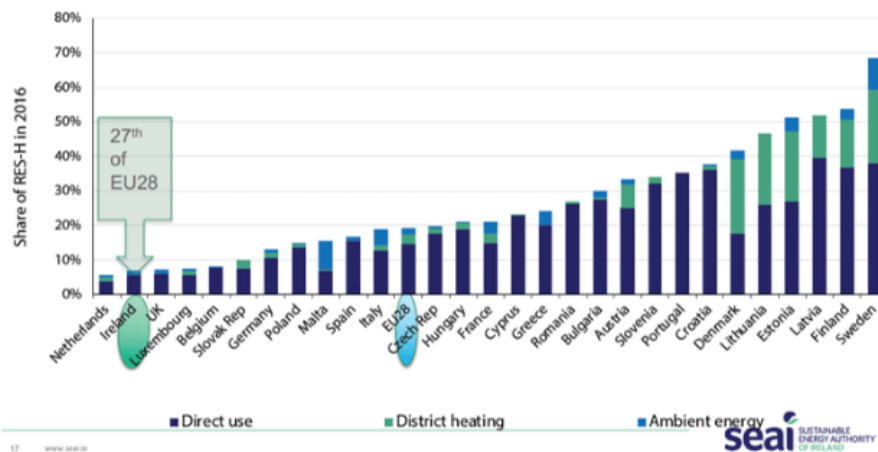
In our view, this can be achieved more cost-effectively than decarbonising the natural gas network with anaerobic digestion (which has limits based on feed stock availability) and other renewable gas options such as green hydrogen which is currently expensive to produce. This is evident from the progress made decarbonising heat in other EU countries: as outlined in the figure below, the EU countries with the highest shares of district heating are also the ones with the highest shares of renewable heat. This is something which Ireland urgently needs to replicate.

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<sup>1</sup> Available here: <https://euf.maps.arcgis.com/apps/webappviewer/index.html?id=101b7da79a7d4e09a92402bd4ce8384c>

In the context of the policy changes anticipated, IrDEA encourages Tipperary County Council to strengthen its commitment and policy-framework to support the deployment of renewable and surplus heat<sup>2</sup> as a priority in its County Development Plan for 2022-2028. The Plan’s Renewable Energy Strategy document indicates that the county is endowed with the resources (bioenergy, solar energy, surplus heat, etc.) to decarbonise its heat supply, while sustaining comfortable living and working environments, and boosting economic activity, in the county’s urban and rural areas.

### Renewable heat in EU (2016)



IrDEA recommends the following policy measures to strengthen the County Development Plan 2022-2028 to align Tipperary County Council with other leading local authorities in Ireland with regard to district heating policy:

- In line with the CDP’s Renewable Energy Strategy objective SO12, complete a detailed analysis of heat demand in the county, with a breakdown by sector, heat temperature profile and spatial distribution<sup>3</sup>. This analysis should also clearly identify and quantify areas where heat demand is at sufficient heat density for district heating to be feasible. IrDEA could share the data from our national heat atlas to facilitate this if useful.
- Build on the renewable energy resources assessment of the Plan’s Renewable Energy Strategy to quantify and establish the spatial distribution of renewable heat and surplus heat resources in the county.
- Adopt an aggressive target in the County Development Plan’s Renewable Energy Strategy for a minimum renewable and /or surplus heat deployment of 40% by 2030, together with a goal for district heating to supply 10% of the county’s heat demand.
- Apply zoning for district heating with the County Development Plan and Local Area Plans to mandate the deployment of district heating in areas with heat density > 120 TJ/km<sup>2</sup>, using

<sup>2</sup> Surplus heat resources include excess heat from power generation plants, data centres, industrial plants’ thermal processes, waste-to-energy plants, etc. as well as excess renewable electricity available when intermittent resources such as wind energy are curtailed. Surplus heat has ‘equivalent’ status as renewable heat under the EU Renewable Energy Directive (REDII).

<sup>3</sup> The Irish Heat Atlas developed by the University of Flensburg on behalf of IrDEA and the ‘40 by 30’ study referenced above are excellent resources in this regard.

renewable heat and/or surplus heat sources. We have provided some examples of the planning conditions which could be applied in these zones in the Appendix to this response.

- Support the utilisation of surplus heat in planning policy e.g. where new or extended industrial sites could be required to submit a report on the waste heat availability on their site as part of their planning application as has been adopted by other local authorities in Ireland.
- Mandate connection to district heating network where in place, for all new developments and major redevelopments, or upon boiler replacement.
- Set Green Procurement targets for the County Council to achieve a minimum of a 20% annual increase in renewable heat and for all new or replacement heating systems to be 100% renewable.
- Support community groups to develop local district heating schemes, with appropriate guidance and support from trusted intermediaries, such as the Tipperary Energy Agency.
- Support local developers to develop district heating networks and attract private sector funding<sup>4</sup>. Local authority can maintain arms-length involvement, if desired, and mitigate risks in planning or expansion, or encourage connection of demand through planning policies.

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<sup>4</sup> For example, consider Concession Contracts, Joint Co-operation Agreements, Strategic Partnership Model.

## APPENDIX: Examples of Planning Conditions That Can Be Applied with District Heating Zoning

Where zoning for district heating is applied, the following planning conditions will ensure that the full potential of decarbonised district heating solutions is appropriately considered and adopted where feasible:

- Ensure that all development proposals of a certain scale (>x units) in district heating zones carry out an Energy Analysis and explore the potential for the development of low-carbon district heating networks
- For new or expanded industrial sites within DH zones where significant waste heat has been identified and cannot be utilised on site, heat recovery equipment shall be installed and include heat distribution infrastructure above or below ground (including future-proofing of the building fabric to facilitate future connection, safeguarding any pipework routes up to the boundary to adjoining sites) **or** Provide evidence that heat recovery and distribution has been fully explored and is unfeasible.
- Within identified district heating zones where a network does not already exist but there is sufficient heat demand density to support a network, all buildings should be future-proofed for connection to a DH network. This shall include:
  - Ensuring new or upgraded buildings install/maintain centralised or communal wet heating systems with adequate controls such as thermostatic radiator valves, BMS, etc. to ensure the systems operates efficiently (with low return temperatures of 40°C or lower) and a flanged connection to allow future coupling to a DH network.
  - Locating plant rooms within buildings so that it reduces the pipe lengths required to connect to a DH network and facilitates access to the plant room from outside for any maintenance, i.e. plant rooms located adjacent to external walls (nearest the proposed/existing DH route, if known) on lower levels (basement or ground floor) with secure external door for access.
  - Allocating space in plant rooms for DH heat exchangers.
  - Safeguarding pipe runs within developments for later connection to a DH network up to the boundary of the site.
  - Considering the provision of energy centres within new developments for heat generating technologies and/or thermal storage, which could supply a local low-carbon DH network. Again, appropriately located to reduce pipe runs and provide easy access for maintenance.

End