

Tallaght District Heating Scheme

Background

- The Tallaght District Heating Scheme (TDHS) is Ireland's first large-scale district heating network, delivering sustainable, low-carbon heat to public and residential buildings in South Dublin. Operated by Heat Works, a not-for-profit utility fully owned by South Dublin County Council, the scheme launched in response to Ireland's heavy reliance on imported fossil fuels for heating.
- The system captures waste heat from the nearby Amazon data centre, heat that would otherwise be lost to the atmosphere, and reuses it to supply connected buildings via a super-insulated underground pipe network.
- Current connections include South Dublin County Council buildings and the Technical University Dublin campus in Tallaght.
- As Ireland has one of the lowest shares of renewable heat in the EU, TDHS demonstrates how district heating can unlock underused resources. With enough renewable and waste heat in Dublin to supply 1.6 million homes, this model has huge potential for replication.



Key Activities

- Reuse of waste heat from Amazon data centre to supply heat to public buildings.
- Community engagement through tours and education (more than 25 group visits since July 2023).
- Collaboration with key partners: South Dublin County Council, Codema, Amazon, Fortum, DECC.
- Planning for thermal energy storage and integration of electric heat pumps for grid balancing.

Impact

Environmental Impact

- Over 1,098 tonnes of CO₂ saved as of June 2024.
- Annual emissions reduction of approx. 1,500 tonnes.
- Delivered nearly 6,000 MWh of heat since launch.
- Estimated 270,000 MWh of energy to be delivered over 30 years.
- Reduces demand for imported fossil fuels.

Social and Community Impact

- Expansion plans for 2025 include connecting 133 affordable housing units and the Tallaght Innovation Centre, with further renewable sources such as geothermal and solar thermal set to be integrated in future phases.
- Improves air quality and energy security.
- Engaged community through open tours and outreach.

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Impact

National Influence

- Awarded the 2024 Energy Globe Award for Ireland.
- Sets precedent for replication across Dublin and other Irish cities.
- Demonstrates practical use of untapped renewable and waste heat sources.

Challenges & Solutions

Challenges:

- Ireland's heating system is highly dependent on oil and gas.
- Lack of existing infrastructure for large-scale district heating.
- Limited public familiarity with district heating models.
- Technical and planning complexities around integrating diverse heat sources.

Solutions:

South Dublin County Council worked with partners including Amazon, Fortum, Codema, and DECC to design a scalable and innovative solution. Waste heat from the data centre was captured and distributed using a modern network. Plans for thermal energy storage and further renewable inputs will improve resilience. Early engagement and permitting helped align key stakeholders.

Tips for Similar Projects

- Leverage underused resources like waste heat from local industry or data centres.
- Use a not-for-profit utility model to maximise community benefit.
- Communicate benefits clearly: carbon savings, affordability, and security of supply.

- Provide tours and public engagement to build awareness and trust.



Identified Limitations/Weaknesses

- Current reliance on a single heat source (data centre) limits energy diversity.
- District heating is still relatively unfamiliar in Ireland and lacks supporting national infrastructure.
- Further expansion and grid integration will require continued investment and policy support.

Resources

- SEAI [Case Study](#).
- Dublin County Council's [Website Page](#) on the project
- [Heatworks Website](#)

Partners

