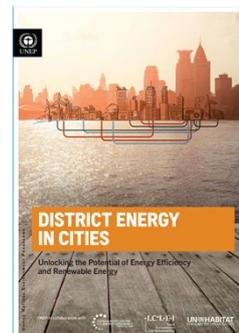
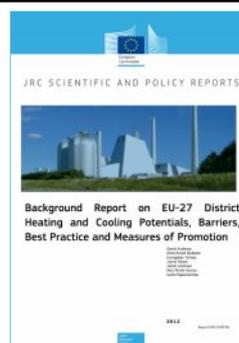


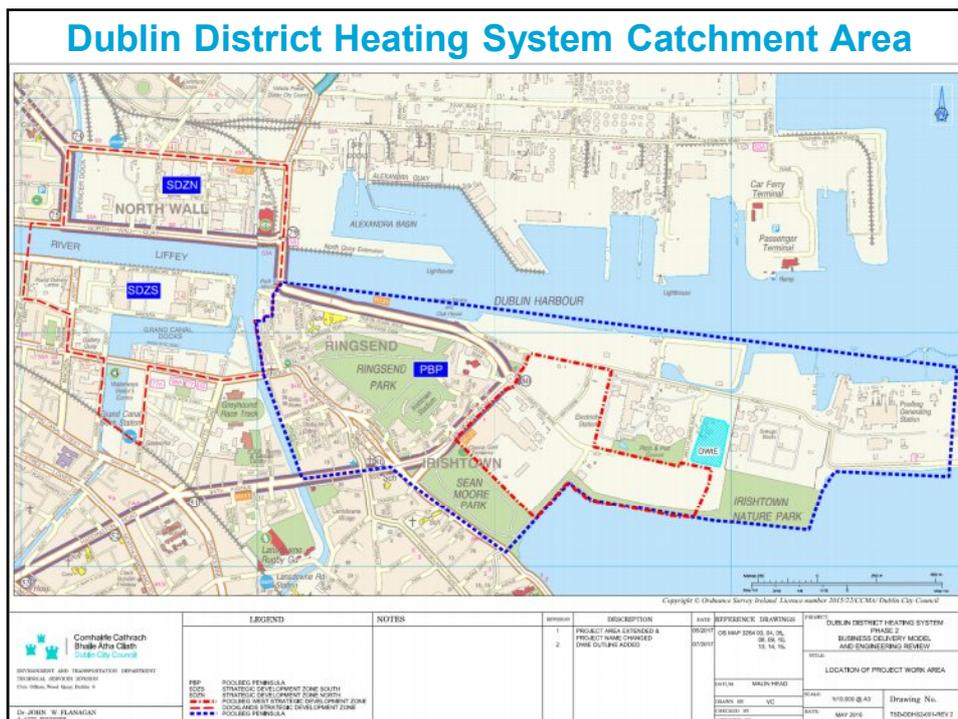
District Heating Benefits

- Reduced CO² emissions and other pollutants
- Less dependence on imported fuels
- Use of local energy resources and sources
- Fuel Flexibility
- Greater de-carbonisation of the heat sector
- Installation is labour intensive, local labour, local products
- Improved safety having no fuel in home
- Increased energy efficiency

- 62% of homes in Denmark are supplied by DH, or 50% of the total heat demand
- 92% of citizens in Iceland were served by district heating in 2013

“European Commission Joint Research Centre 2012”





Where we currently are?

- Rambøll Danmark A/S, a leading Danish engineering, design and consultancy company has been procured, and are currently completing reports on;
 - the most appropriate business / commercial delivery model which will successfully deliver the project.
 - a high level review of the engineering options available.
- The contract start date is the 9th of April 2018
- Codema (the City of Dublin Energy Management Agency) carried out;
 - a Detailed Financial Appraisal,
 - and a Market Research Report and Communications Strategy for the DDHS.
- A District Heating EIB/DCC Workshop was held on the 22nd March 2018 with representatives from;
 - the European Investment Bank,
 - the European Investment Advisory Hub
 - the Irish Strategic Investment Fund
 - where representatives from key industry stakeholders attended.
- The National Development Finance Agency (NDFA) have been engaged in June this year to provide financial and commercial support and advice to DCC
- Identifying the ideal site for the Energy Station

Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council

Findings so far?

- The project is economically viable (Codema and Rambøll economic models)
- Returns and risks are unlikely to attract private finance for the project as a whole
- The infrastructure (network and energy centre) should be publicly procured and owned, i.e. DCC
- The infrastructure will require public funding, i.e. grants, Climate Action Fund, and public sector loans
- The operation of the network should be some form of concession/PPP contract with private 3rd party



Key Risks?

- No existing consumer base
- Difficult to forecast heat demand
- No guaranteed revenue
- No track record of DH as a technology or utility in Ireland
- No regulation currently in place to protect consumers (currently DCC will safeguard customers)



Poolbeg West SDZ

- Connecting the heat demand of Poolbeg West is a priority
- Awaiting An Bord Planeála's decision
- On going liaison with our Planning Department
- Liaison with developer's representatives



Heat Storage & Generation



Storage Tank,
Pimlico District
Heating, UK



Peak / Reserve
Boiler Station,
Denmark

Heat storage tank
at a Danish district
heating plant



Gateshead District Energy Centre



Bunhill
Energy
Centre.
London



Central Government Support

The Department of Communications, Climate Action and Environment's energy white paper, published in December 2015, pledged to;

"develop a policy framework to encourage the development of district heat"



Ireland's Transition to a
Low Carbon Energy Future
2015-2030

District Heating Working Group

First met on 9th November 2017

Formulate recommendation focussing on the following areas:

- Policy and Regulation
- Planning and Building Regulations
- Financing

Report to be completed by end-2018

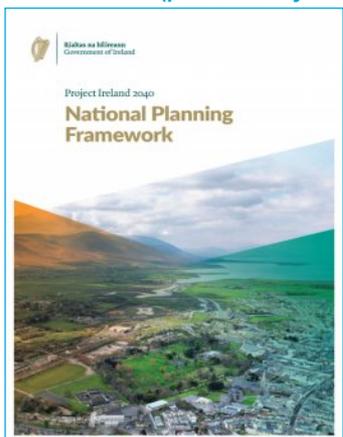
Members of Working Group

- Dept. Communications, Climate Action & Environment
- National Treasury Management Agency (NTMA)
- Gas Network Ireland (GNI)
- Dublin City Council (DCC)
- Dept. Housing Planning & Local Government
- Codema
- Sustainable Energy Authority Ireland (SEAI)
- Electricity Supply Board (ESB)
- South Dublin County Council
- Commission for Regulation of Utilities (CRU)



National Policy / Documents

(published by Government on 16th February 2018)



Project Ireland 2040
National Planning Framework



Project Ireland 2040
National Development Plan
2018-2027

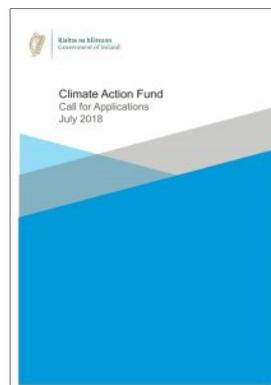
Key future growth enablers for Dublin include:

- Improving sustainability in terms of energy, waste and water, to include **district heating** and water conservation;
- Improving sustainability in terms of energy, waste management and resource efficiency and water, to include **district heating** and water conservation.

- Support New initiatives in District Heating (such as the **Dublin Docklands ' District Heating Scheme**) in cities and large towns with a leading role for State bodies, for example, Gas Networks Ireland, and Local Authorities.
- Establish a **Climate Action Fund** of €500 million under the Department of Communications Climate Action and Environment

Climate Action Fund

- 29th May 2018 Government agreed to establish the fund
- Minister Naughton announced the fund 9th July 2018
- €500 million available over period 2018 to 2027
- Grant funding for larger scale projects, in excess of €1million
- Projects scheduled for commencement in 2019 to 2020
- Closing date 5pm on 1st October 2018



Eligible project types	Eligible Costs	Maximum Support	Overall Limit
District Heating (distribution network)	Investment costs	Eligible costs less operating profits	50% of total investment costs



Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council

GEO-URBAN Project



Aim

'Identification and Assessment of Deep Geothermal Heat Reserves in Challenging Urban Environments'

Relevant Dates

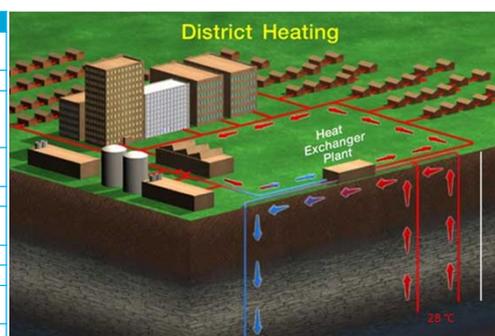
- July 2017 - first submission
- April 2018 - Geothermica confirmed project eligible
- May 2018 - start of study
- April 2021 - completion (3 year duration)

This project has been subsidised through the ERANET Cofund GEOTHERMICA (Project no. 731117), from the European Commission and the Department of Communications, Climate Action and Environment / Geological Survey Ireland

Roinn Cumarsáide, Gníomhaíthe ar son na hAeráide & Comhshaoil
Department of Communications, Climate Action & Environment



Organisation	Country
Gavin & Doherty Geosolutions	Ireland (National Coordinator)
University of Barcelona	Spain
University College Dublin, National University of Ireland, Dublin (Irish Centre for Research in Applied Geosciences)	Ireland
Geotermisk Operatørselskab	Denmark (National Coordinator)
Dublin Institute for Advanced Studies	Ireland
Barcelona Supercomputing Centre	Spain (National Coordinator)
Dublin City Council	Ireland
Geothermal Association of Ireland	Ireland
Spanish Geothermal Technology Platform	Spain
Geological and Cartographic Institute of Catalonia	Spain



"The Minewater Project", Heerlen, the Netherlands (inhabitat.com)

Where do we go from here?

- Complete and submit the Climate Action Fund application
- Complete and finalise Rambøll's reports
- Investigate in more detail the core recommendations from the Ramboll reports, in particular the risks with the various procurement options, with a view to developing emerging preferred strategy
 - Work being delivered jointly with the NDFA, which will include commercial market soundings
- Finalise a location for the District Heating Energy Station
- Completing the work of the Department of Communications, Climate Action and Environment's 'District Heating Working Group'.
- Continuing on going engagement with developers in the Docklands and Poolbeg ensuring they are District Heating enabled



Timelines (Draft)

