



Dublin District Heating Scheme

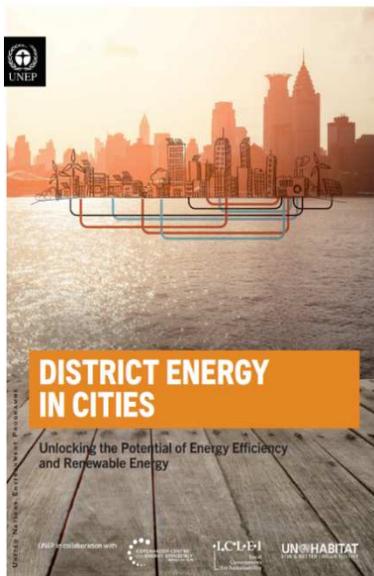
Presentation 17th May 2022



Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council

Why District Heating

The UN Environment Programme (2015) report *District Energy in Cities: Unlocking the Potential of Energy Efficiency and Renewable Energy* identifies modern district energy as the most effective approach for many cities to transition to sustainable heating and cooling, by improving energy efficiency and enabling higher shares of renewables.



District Heating Benefits

- Reduced CO² emissions and other pollutants
- Less dependence on imported fuels
- Use of local energy resources and sources
- Fuel Flexibility & Resilience
- 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

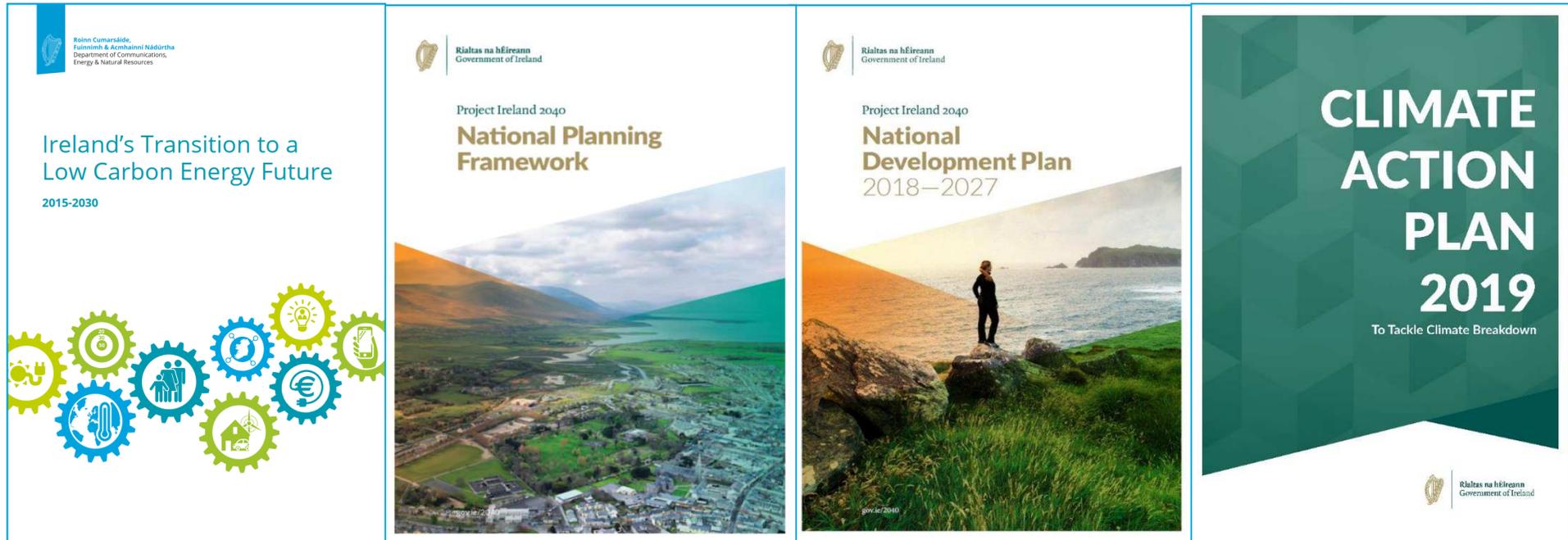
- 92% of citizens in Iceland were served by district heating in 2013

“European Commission Joint Research Centre 2012”



Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council

National Policy / Documents



Pledged to;
We will **develop a policy framework** to encourage the **development** of district heating.

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 (*now called Department of Environment, Climate and Communications*)

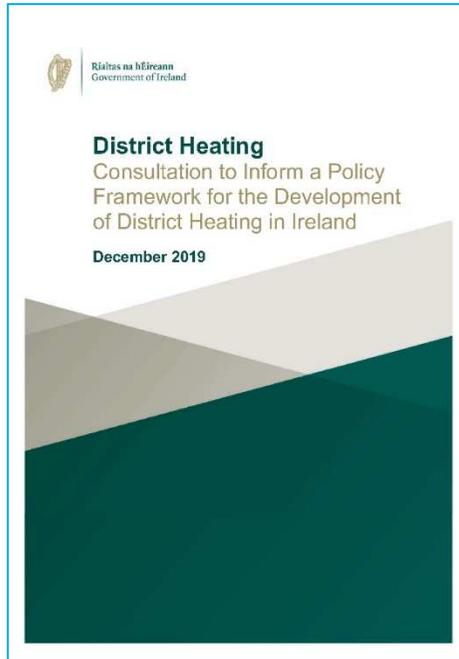
Renewable Heat and District Heating Actions

- 67. Complete the rollout of the SSRH, including support for biomass and anaerobic digestion heating systems
- 68. **Develop a policy framework** for the development of district heating in Ireland and **support the delivery of two district heating projects** under the Climate Action Fund



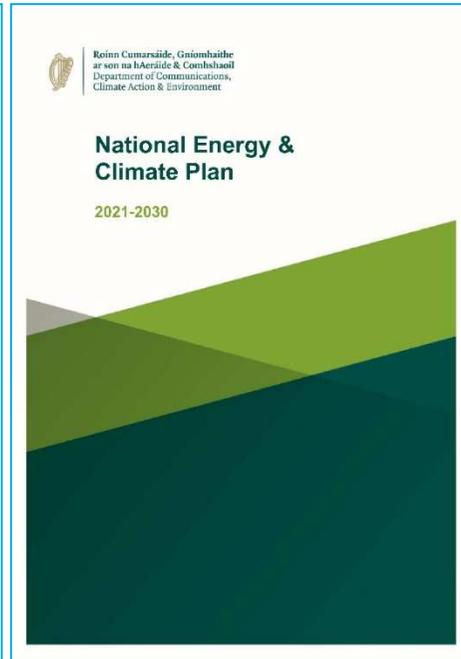
Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council

National Policy / Documents



The public consultation focused on four key areas – namely:

- research
- regulation;
- planning; and
- financing



District Heating Planned Measures:

- Develop a **national policy framework for district heating**, which covers the key areas of **regulation, planning, financing and research**
- Use the **two district heating pilot schemes** to develop experience and knowledge that can **promote and inform further schemes nationwide** to facilitate greater uptake of district heating through self-financed heat networks



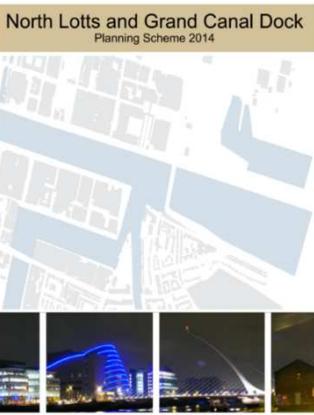
District Heating Actions

180. Support the **delivery** of district heating projects under the Climate Action Fund
181. Establish a **system of governance** for the development of district heating policy
182. **Conduct appropriate research** to inform and support the growth and development of district heating in Ireland
183. Develop a **regulatory framework to protect consumers**, and to ensure that district heating is developed in a structured way
184. Ensure national, regional and local **planning frameworks encourage and facilitate** the development of district heating where appropriate to facilitating compact urban development
185. Identify appropriate **financing mechanism** to support the delivery of district heating projects
186. Assess the **viability of district heating systems** within higher density urban/periurban developments through a demonstration project

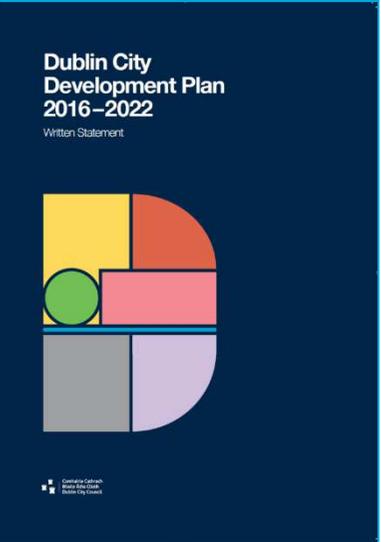


Bhaile Átha Cliath
Dublin City Council

DCC Policy / Documents



North Lotts and Grand Canal Dock
Planning Scheme 2014



Dublin City
Development Plan
2016-2022
Written Statement

**Dublin City
Development Plan
2022-2028 DRAFT**

Going through the public
consultation & drafting
processes

Similar but updated text to
previous plans, while including
text on

- Strategic Energy Zones
- Decarbonising Zones
- Dublin Regional Energy Masterplan
- Climate Action Energy Statements

Dublin City Development Plan - 2011-2017 - Objective;
SI62 To support the development of energy efficient initiatives such as the district-heating network for Dublin and combined heat and power.
SI63 To promote the use of Combined Heat and Power in large developments

North Lotts and Grand Canal Dock Planning Scheme 2014
SI14 That all proposed developments be district heating enabled in order to provide an environmentally sustainable source of heating and cooling.
4.14.2 [B] Design of the Building
 Building design will be required to comply with criteria in the following key areas:
 Thermal energy and integration into a District Heating Scheme

Dublin City Development Plan 2016-2022 - Objective:
CCO9: To encourage the production of energy from renewable sources, such as combined heat and power (CHP), heat energy distribution such as district heating/cooling systems, and any other renewable energy sources.....
SIO33: To support the development of energy efficient initiatives such as use of District Heating and Combined Heat and Power, and to promote the use of CHP in large developments.



Dublin City Development Plan
2011 - 2017
WRITTEN STATEMENT



Poolbeg West
Planning Scheme
April 2019

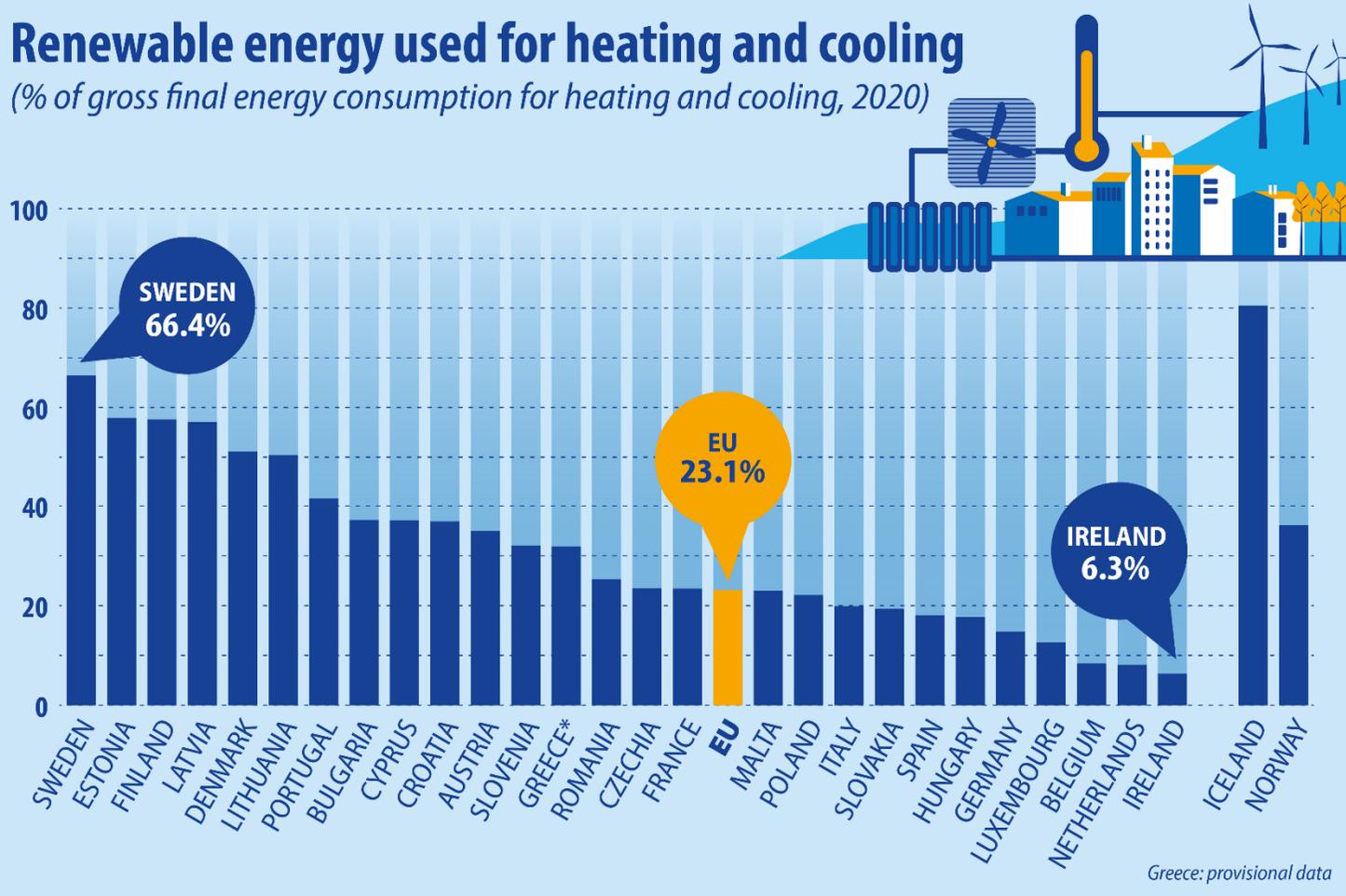


DUBLIN CITY COUNCIL
CLIMATE CHANGE
ACTION PLAN
2019-2024

Poolbeg West Planning Scheme - April 2019
IU9 That all developments shall be District Heating enabled and this shall be demonstrated through compliance with the Dublin City document 'Dublin District Heating System – Technical Information Pack for Developers' (February, 2018), and future updated versions of this document. All streets from initial construction shall have outgoing and ingoing district heating pipes with connections for each development as part of a wider district heating network.
IU10 To investigate the feasibility of providing a district heating boiler station in the eastern/industrial portion of the SDZ area

Renewable energy used for heating and cooling

(% of gross final energy consumption for heating and cooling, 2020)

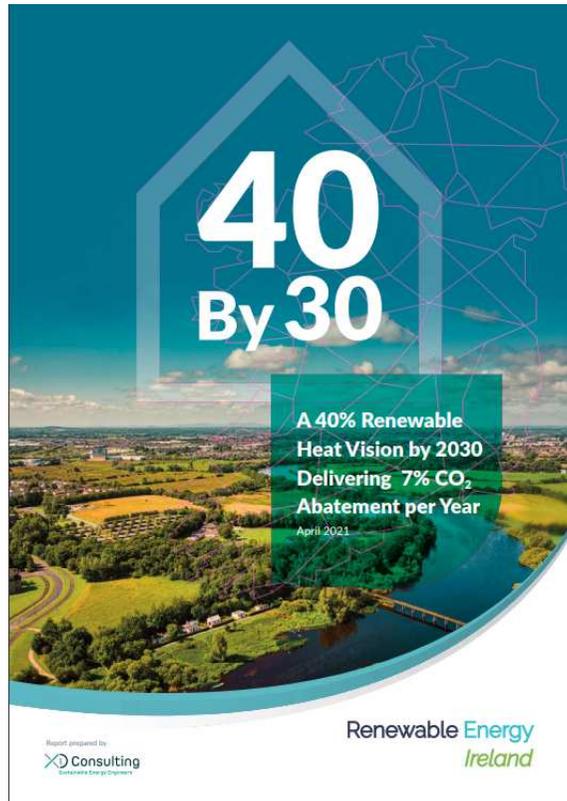


#EUIndustryDays

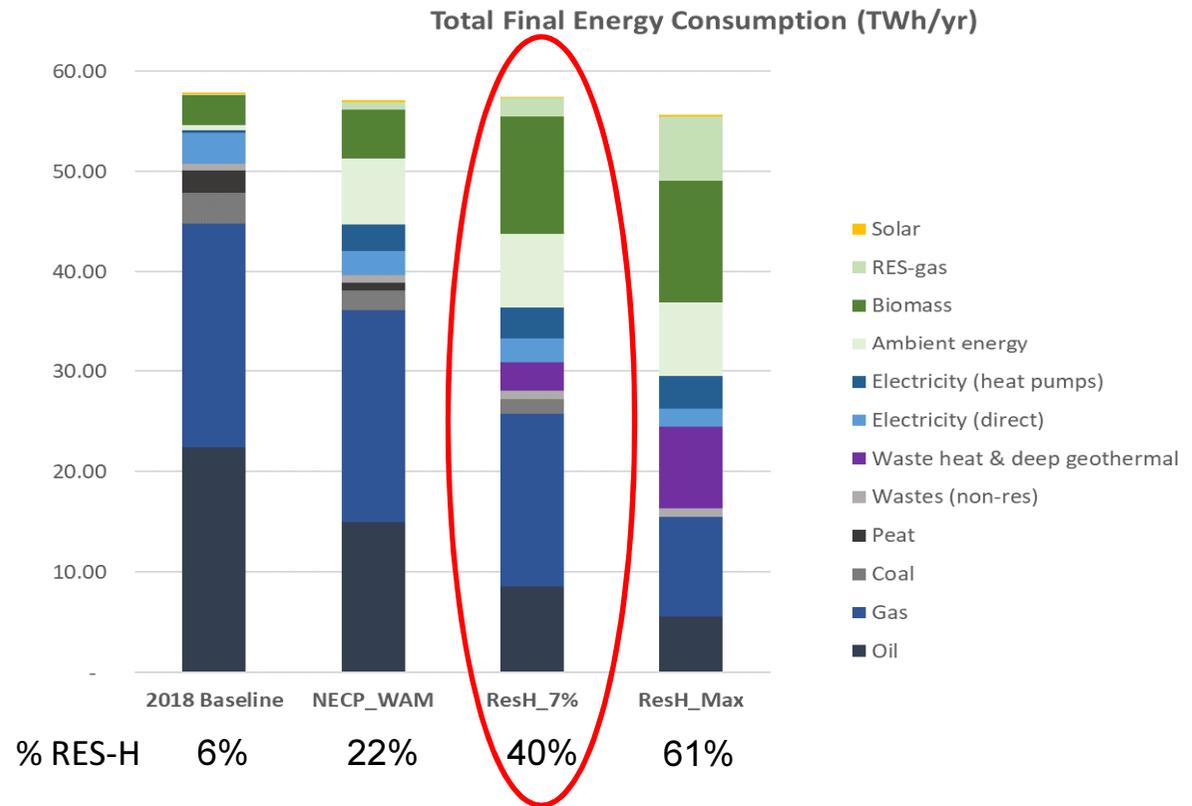
ec.europa.eu/eurostat



Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council



Results: 40% Target Required to meet Government 7% per year reduction targets, and can be practical and realistically achieved



Dublin City Council Project

Project

- Supply of waste heat from DWtE facility via the DDHS district heating distribution network which has the purpose of delivering heat and hot water on a commercial basis to domestic and commercial building owners in PBW, North & South Docklands



3



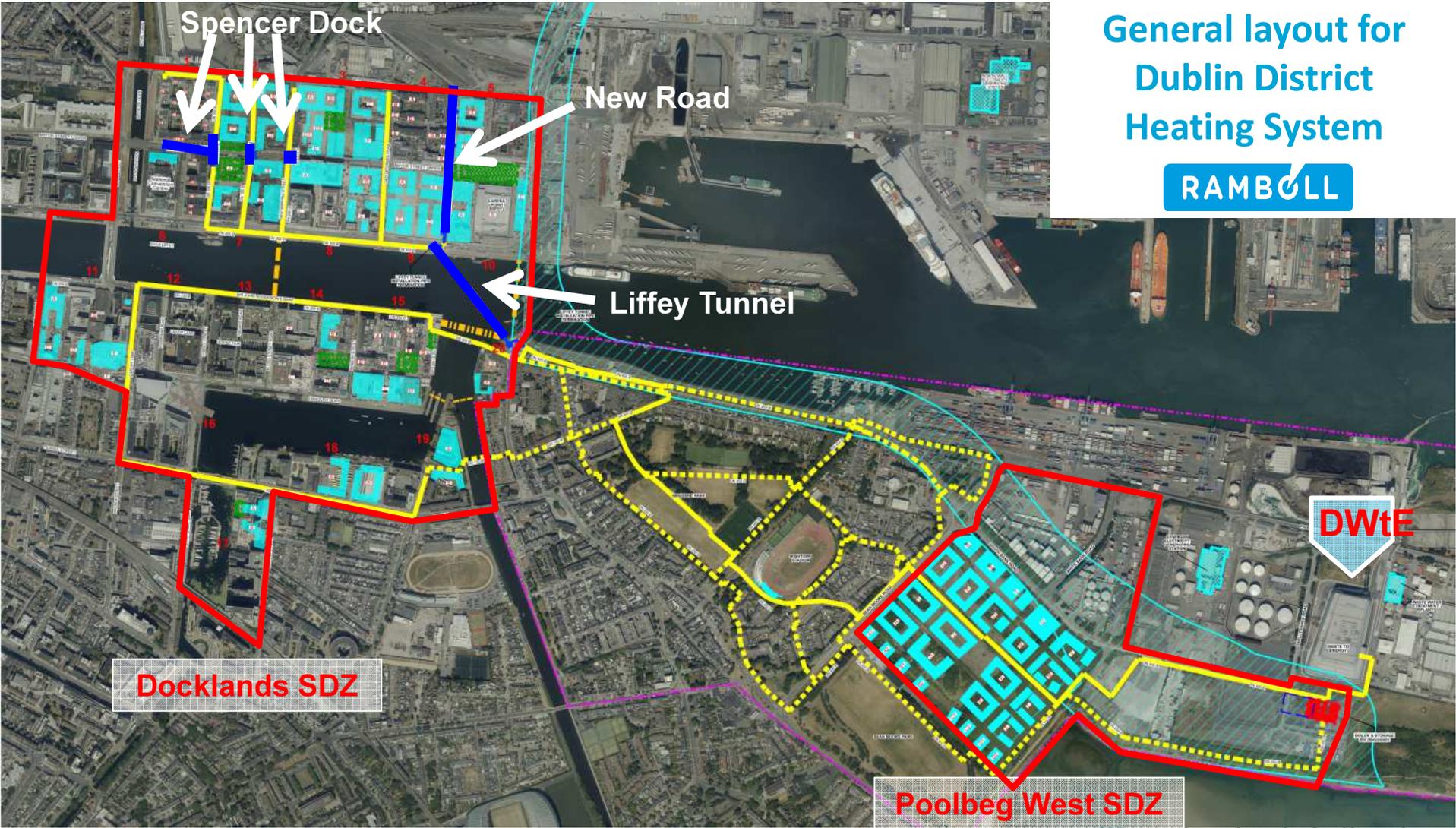
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

An Ghníomhaireacht Airgeadais d'Fhorbairt Náisiúnta
National Development Finance Agency



Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council

General layout for Dublin District Heating System



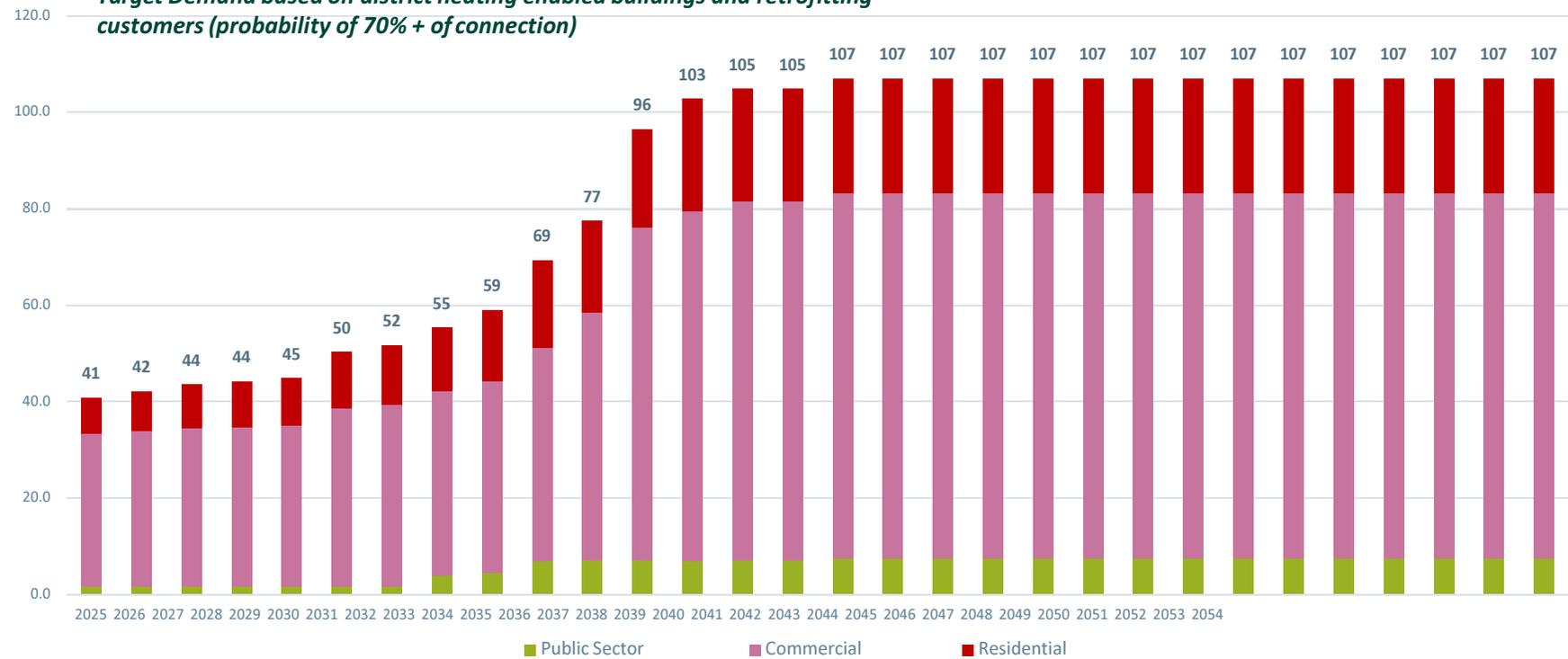
- The DDH System design,
 - a primary heat source, capable of producing 90MW of Heat, namely the DWtE Facility, (two independent boiler lines with an overall 92% boiler availability requirement)
 - 100% redundancy back-up, provided by a series of Boilers, which also provide peaking capacity to the network,
 - and a thermal storage tank, which will allow the optimisation of the network operation and provide back-up for circa 4hours at peak demand.
- 100% back-up on it's electricity supply to meet pumping requirements.
- The distribution network is an underground distribution network, with comparable reliability to equivalent utility networks.



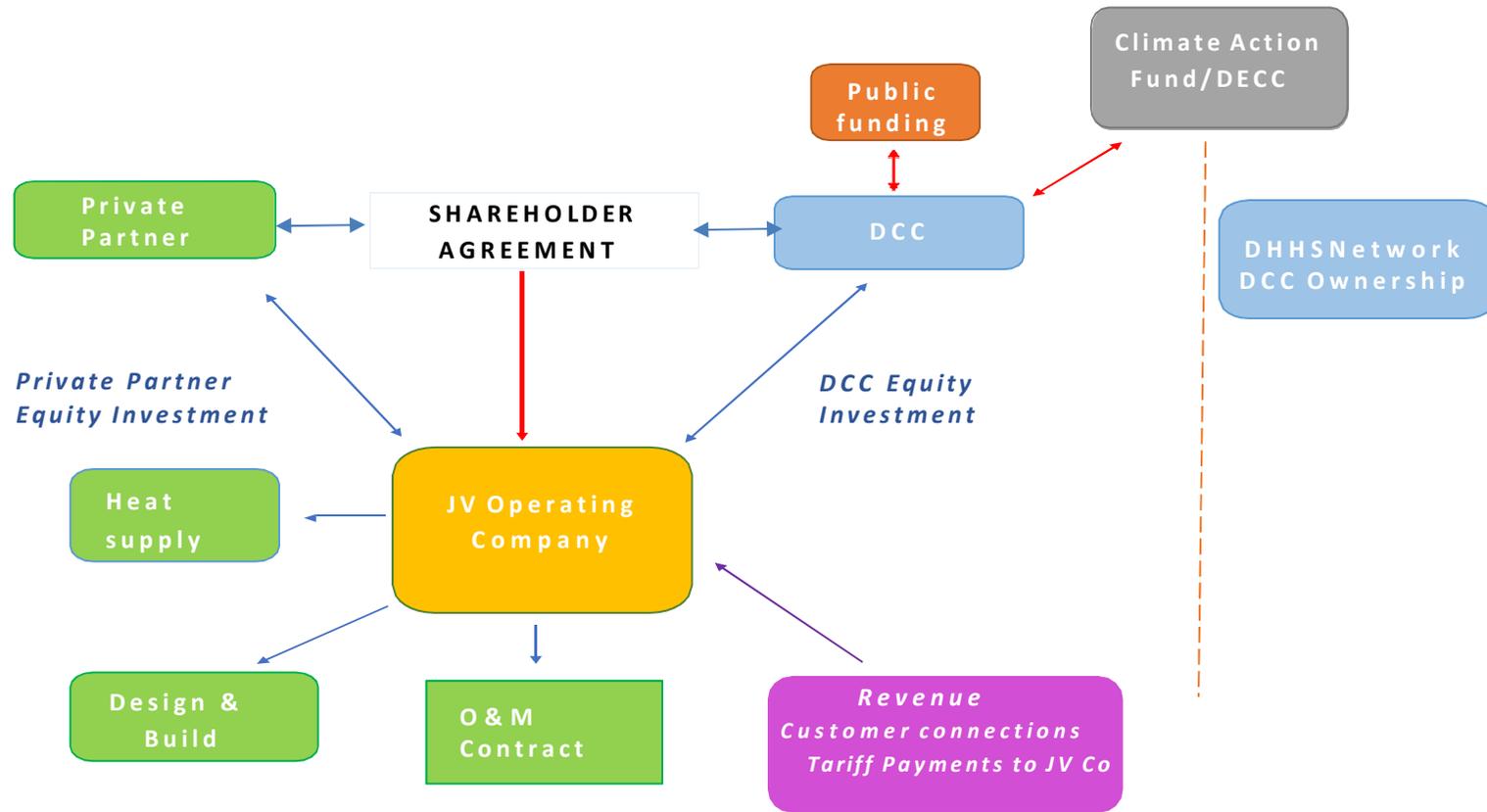
Forecast Demand (2025 – 2040 onwards)

Residential, Commercial and Public Heat Demand

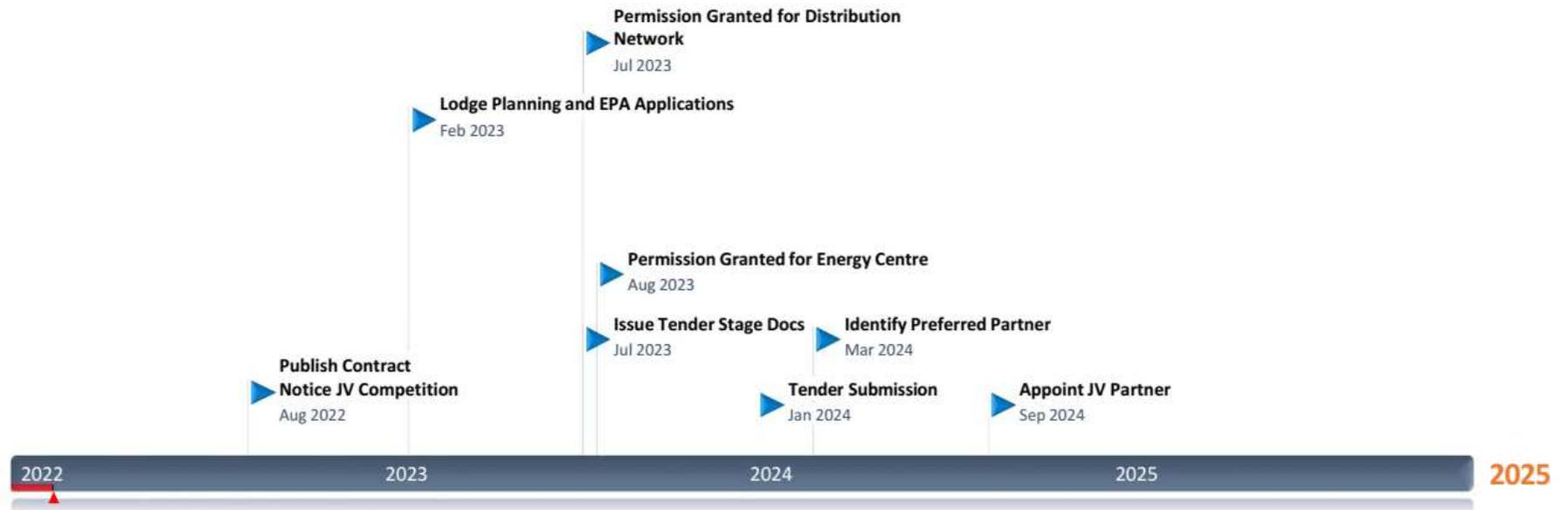
Target Demand based on district heating enabled buildings and retrofitting customers (probability of 70% + of connection)



Contract Structure



High Level Project Timeline



Where do we go from here?

Funding

Complete CAF/ private / State / DCC

Procurement

JV / Entity / EScO

Collect Customers

Marketing Campaign / Public Relations

Engineering / Infrastructure

Preliminary design for the entire network and energy station. Detailed design and installation for IGB / Fabrizia.



Comhairle Cathrach
Eanáil Átha Cliath
Dublin City Council