
Submission to the Preliminary Stakeholder Consultation on the National Planning Framework 'Ireland 2040 Our Plan'

Report Prepared by Codema, Dublin's Energy Agency

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Background

Codema is Dublin's Energy Agency and act as an energy adviser to the Dublin Local Authorities. We aim to improve the energy efficiency in Dublin in order to reduce the city's CO₂ emission and achieve the European climate and energy targets. We do this by providing a range of services to the Dublin Local Authorities. These include energy surveys of the Local Authority buildings, energy monitoring & verification to ensure energy savings are on track, and energy awareness campaigns with Council staff and local communities. We have developed Sustainable Energy Action Plans (SEAPs), Climate Change Strategies and Strategic Energy Demand Analyses (SEDAs) for the Local Authorities as well as provided procurement and funding assistance on energy performance contracts and solar pv projects. Through our work on European projects, Codema has gained a vast array of knowledge on best practice in Europe and brings the learnings from other European countries to Ireland.

Context

Codema welcomes the opportunity to make a submission to the preliminary stakeholder consultation on the National Planning Framework 'Ireland 2040 Our Plan'. Codema's interest in the National Planning Framework stems from our work in the area of *Energy Policy & Planning*. We have contributed to the climate chapters in the City & County Development Plans as well as developed a methodology to map areas of high energy consumption, high fossil-fuel use, high heat demand densities and energy costs on a local level. This so-called **Spatial Energy Demand Analysis (SEDA) provides an essential tool to local authority planners** in order to make informed, strategic and sustainable planning decisions. In 2016, Codema also delivered training on the SEDA methodology to various public sector organisations as part of the SEAI's (Sustainable Energy Authority of Ireland) initiative to equip local authority staff with the right tools for developing and implementing their Local Area Renewable Energy Strategies (LARES).

Through this work, Codema assists the Dublin Local Authorities to achieve their 33% energy reduction targets by 2020 and therefore helps Ireland meet its national targets as laid out in the National Energy Efficiency Action Plan (NEEAP).

Submission

In post-recession Ireland, climate change is back on the agenda and with this, the need for long-term planning and investment in infrastructure that both reduce our effect on climate change through the reduction of CO₂ emissions (*mitigation*) as well as prepare Ireland for the risks of climate change in the form of effective adaptation practices (i.e. flood defences) and resilience building.

For a successful road towards a low carbon society, as outlined in the *White Paper on Energy: Ireland's Transition to a Low Carbon Energy Future 2015-2030*, **it is essential to bring spatial planning and energy planning together.**

There is currently a lack of interconnection between traditional planning practices and planning for sustainable energy use at a local authority level. Planners should be equipped with evidence-based spatial energy analysis to develop strategic sustainable energy planning.

Local level intermediaries have a key role to play in helping the public sector achieve its energy reduction targets of 33% by 2020. As there are currently limited energy expertise available in the local authorities, energy agencies such as Codema, Tipperary Energy Agency and Carlow Kilkenny Energy Agency act as **trusted energy facilitators** to overcome this gap and advice on suitable strategies for energy efficiency and the implementation of renewable energies.

With 40% of the Irish population living in the Greater Dublin Area (GDA) and almost 50% of the economic activity concentrated in the Dublin region, there is a need to concentrate on **climate change mitigation actions in an urban context**. Codema therefore recommends two key courses of action:

1. Combating energy poverty in Dublin City and reducing CO₂ emissions
2. Reducing fossil fuel imports and increasing local energy production through district heating

These can be implemented by local planners by using Spatial Energy Demand Analyses (SEDAs) as developed by Codema for the Dublin Local Authorities. The SEDA allows estimations of energy demands in each building of a specific county which is mapped along with real energy data for municipal sector buildings. This mapping process provides a visualisation of areas of high energy consumption, high fossil-fuel use, high heat demand density and approximate associated energy costs across the county.

1. Combating energy poverty in Dublin City and reducing CO₂ emissions

The SEDA creates an essential tool for planners to help combat energy poverty in Ireland and with this reduce the CO₂ emissions in the city through a strategic approach for energy efficiency improvements by targeting people most affected by and vulnerable to high energy costs.

In 2015, Codema produced the Spatial Energy Demand Analysis (SEDA) for Dublin City Council, which analysed over 200,000 dwellings in the city based on the cost of energy, unemployment levels and energy rating of homes. This analysis resulted in the mapping of small local areas. It identified that **70% of Dublin City dwellings have a BER rating of D1 or lower**. In addition, it is also highlighted areas most at risk of energy poverty¹ in Dublin City (see Figure 1).

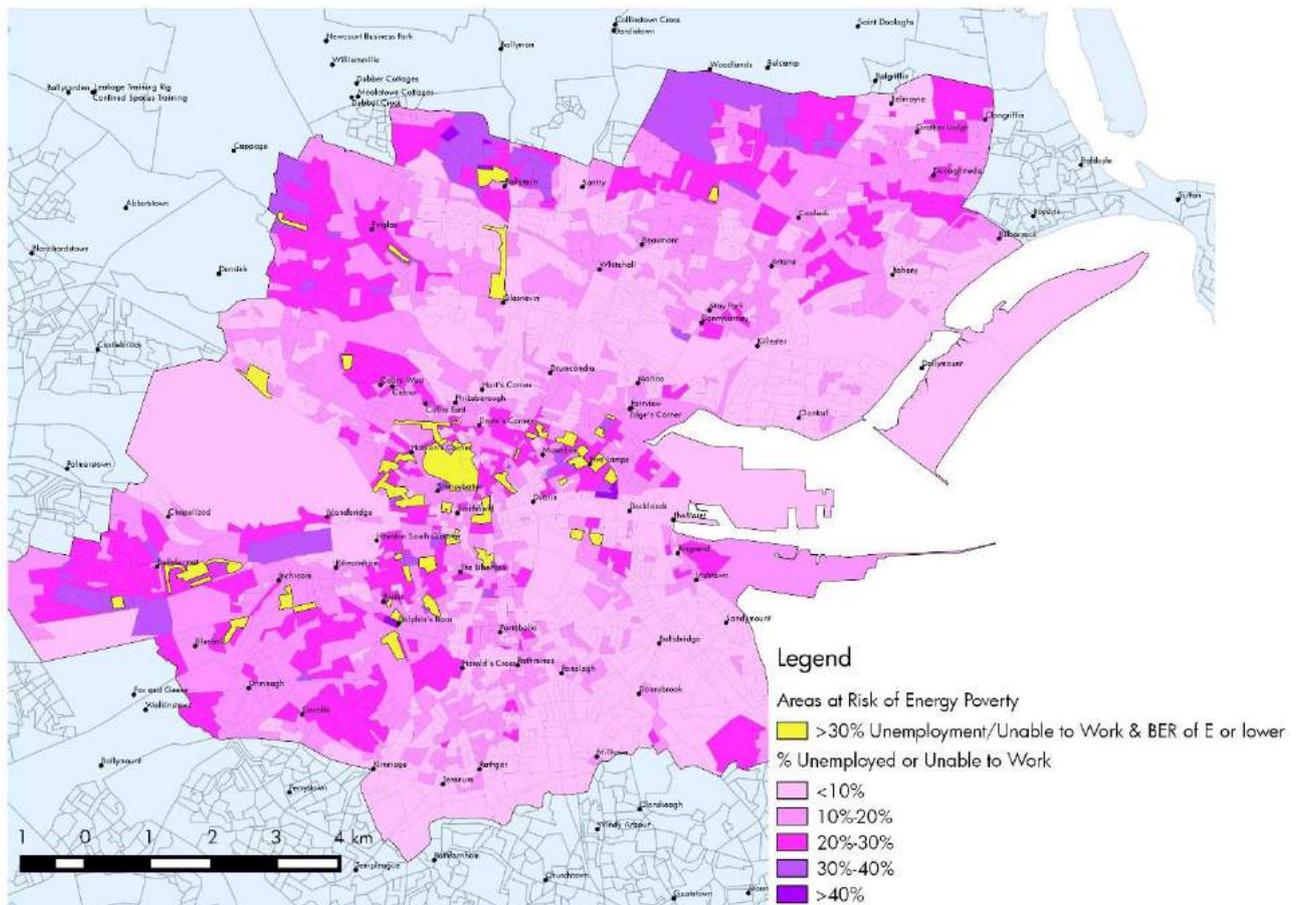


Figure 1: Areas Most at Risk of Energy Poverty (SEDA, 2015)

A household is considered energy poor if it is unable to attain an acceptable standard of warmth and energy services at an affordable cost.² Energy poverty has a considerable effect on health due to the lack of heat and fresh air circulation in these houses. Furthermore, energy poor households waste energy and thus fossil fuels due to their lack of insulation and lack of low energy efficiency lighting.

In addition to these households living in energy poverty, numerous private tenants are at risk as they struggle to pay for rising rents as well as heating their badly insulated accommodation. In the private rental sector, there are currently no incentives for landlords nor tenants in short-term renting contracts to upgrade accommodation sufficiently. The European Commission's DG for Energy (2014) also

¹ Energy poverty criteria only look at income levels rather than disposable income (mortgage rates/high rents)

² Department of Communications, Climate Action & Environment – A Strategy to Combat Energy Poverty 2016-2019

recognises this major problem and states that “the so-called landlord/tenant dilemma is one of the greatest barriers hindering the development of sustainable renovation of residential buildings in Europe.” It is therefore essential that the new National Planning Framework addresses these issues by planning for large-scale housing refurbishment programmes with tools such as the SEDA, which not only assists planners to make informed and strategic decision but also helps empower citizens in a bottom-up approach to foster sustainable community energy projects.

Recommendations:

Codema recommends that the Government invests in a large-scale renovation programme to help alleviate ‘extreme energy poverty’. This could be done by implementing ‘medium-cost’ measures of efficient central heating system and ‘low-cost’ measures of draught-proofing, attic insulation and energy efficiency advice to residents in those households in ‘extreme energy poverty’. These **simple energy upgrades cost approximately €5,000 per household**. In Dublin City, this would mean a once-off capital investment of €415 million to alleviate extreme energy poverty in 83,000 households. In addition, further upgrades in the very low BER-rated properties across Ireland must be considered, with the SEAI estimating an investment of €21,000 per household to increase Building Energy Ratings.

2. Reducing fossil fuel imports and increasing local energy production through district heating

Codema's Spatial Energy Demand Analysis (SEDA) was the first report to calculate that Dublin City spends over €657 million on energy in buildings, with the majority of this money leaving the Irish economy to pay for fossil fuel imports. In fact, the city's residential sector is 99% fuelled by electricity and fossil fuels (Garland, 2013). The SEDA also found that 84% of energy used in Dublin City dwellings was used for heating, and the residential sector is responsible for 45% of all energy in the capital. In the commercial sector, around 60% of total energy use is for heat production. Overall this means that approximately **54% of all energy use in Dublin City (including transport) is for heating requirements**.

Industrial waste heat in Ireland is one indigenous source of sustainable, low-carbon, low-cost energy that can greatly contribute to reducing carbon emissions in the heating sector. At present, an enormous amount of heat, produced mainly as a by-product of large industry, electricity generation stations and new large data centres, is simply discharged into the environment (e.g. Dublin Bay).

District Heating systems provide a huge opportunity in terms of saving carbon emissions from heat waste and would significantly contribute towards the 2030, 2050 climate and energy targets and beyond. They are central for the urban environment in delivering renewable heat at large scale and provide a future-proofed and long-term solution to indigenous energy sources.

It is estimated from EU heat atlases developed in the Heat Roadmap Europe project that approximately 33% of the heat demand of Ireland is in areas with a heat demand density suitable for district heating (Connolly, et al., 2014).

Codema mapped the areas of heat demand densities in Dublin City as part of its SEDA and concluded that **over 75% of the city was suitable for district heating**. In order to promote the infrastructure development of district heating, it is essential that renewable heat technologies (i.e. heat exchangers) and heat distribution networks (i.e. district heating) are eligible for the renewable heat incentive (RHI) and are also supported via an alternative capital support scheme.

As part of the INTERREG NWE-funded project HeatNet³, Codema and South Dublin County Council are currently working on the roll out of Dublin's first large scale public district heating network, with

³ The HeatNet project promotes the roll-out of the most advanced form of district heating, known as 4th Generation District Heating, across North West Europe. This is a low-temperature distribution system to minimise heat loss, integrated electricity and heat networks, energy storage and supply to multiple low energy buildings. The project is funded under the Interreg North-West Europe Programme.

an initial project connecting the Council's headquarters at County Hall and Tallaght Hospital. The district heating system will save up to 8,900 tonnes of CO₂ per year, the equivalent of taking 1,700 cars off the road.

Recommendations:

It is recommended that the development of district heating networks are prioritised in urban areas across Ireland and supported via inclusion of building requirements in the Local Authorities' Strategic Development Zones. There is also a need to engage with local citizens and create awareness on the benefits of district heating as part of the large infrastructure roll-out. A compact urban form in planning also increases densities which are beneficial to district heating systems and reduce energy demand.

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