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# Submission to Ireland 2040 – Our Plan – National Planning Framework

Report Prepared by Codema, Dublin's Energy Agency

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## Background

Codema is Dublin's Energy and Climate Change Agency and was founded in 1997 as a not-for-profit limited company. We act as the energy and climate change adviser to the Local Authorities in Dublin and on their behalf sit as energy experts on a range of Steering Committees. Codema is well networked in Europe and has been very successful in bringing European projects to Dublin with a local implementation for the Local Authorities. We work on projects covering all aspects of sustainable energy including sustainable renovation, renewable energy, energy performance contracting, green electromobility, low energy buildings and end-user programmes, as well as smart metering through ICT.

## Context

Codema welcomes the opportunity to make a submission to this consultation process. Codema's interest in the draft national planning framework stems from our ongoing work with the Dublin local authorities (DLAs), reducing their CO<sub>2</sub> emissions and increasing their energy efficiencies to 33%. We have 20 years' experience in the climate change and energy sector, specifically in how EU and national legislation will affect their activities and how the DLAs can future proof their areas of governance to both mitigate and adapt to the effects of climate change. Codema is currently in the process of developing Climate Change Adaptation and Mitigation Action Plans for each DLA and are actively working on district heating systems for both Dublin City Council and South Dublin County Council.

## Climate Change Adaptation and Mitigation Action Plans for the Dublin Local Authorities

Codema, as part of its role as climate change and energy advisors to the four Dublin local authorities, are in the process of developing climate change adaptation and mitigation action plans for the four Dublin local authorities (DLAs). This is a multistep process, firstly we have written a strategy towards the development of the action plans. This allowed us to have meaningful consultation with a multitude of stakeholders from council management and staff, elected councilors, relevant professionals and citizens. The resulting strategy, [A Strategy Towards Climate Change Action Plans](#), identifies 7 action areas and a critical timeline to publication. The actions will cover the activities and responsibilities that are directly under the councils' control. These will be quantified, costed, scheduled and tracked with indicators and milestones.

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As part of this process Codema will update its previous work on local emissions baselines by developing and updating greenhouse gas (GHG) baselines for both the local authorities and county wide to determine present and future emissions and the actions needed to reduce these in line with the agreed targets. This baseline will also include adaptation indicators in line with the *Local Authority Adaptation Development Guide* issued by the EPA. "If the same methodology was to be applied across other local authorities this would allow for directly comparable baselines and enhance transboundary cooperation

## Spatial Planning for Energy and Climate Change

There is a need for long-term planning and investment in infrastructure that both reduce our effect on climate through the reduction of CO<sub>2</sub> 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 act as trusted energy facilitators to overcome this gap and advise on suitable strategies for energy efficiency and the implementation of renewable energies.

In this capacity Codema has created *Spatial Energy Demand Analysis (SEDA)* for the four DLAs <http://www.codema.ie/publications>. 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 (see fig 1 below). This and the associated data allows planners to identify areas which have high intensities of energy use, what type of fuel is being used and what type of consumer is using it. This allows for synergies between new and old developments in terms of utilizing waste heat, renewable energy generation and energy retro fitting.

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## Recommendations

Codema recommends that a SEDA approach is adopted into all medium to large scale plans as a requirement along with an energy masterplan based on its findings. The masterplans should contain detailed options for energy efficiency and renewable energy based on the current energy profiles and consumptions.

## District Heating as a Solution for Low Carbon 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% fueled by electricity and fossil fuels (Gartland, 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.

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

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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.

### Recommendations:

A district heating network allows for flexibility in the input source for the energy that will supply the heat from a small number of sources whether that is waste heat, biomass or other low or zero carbon sources. This means that as technology changes the sources can be updated without the need to change hundreds or thousands of individual heating systems. This overcomes the 'wait and see' approach that has been recommended in the draft National Mitigation Plan and allows for an immediate start towards solutions. It is also recommended that the development of district heating networks is 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.

The draft framework document at present, under the *Energy Policy and Planning* section, does not address the issue of sustainable and renewable heat. It is essential that this is provided for in the document.

Further, Codema would recommend that all new proposed commercial developments (data centres, incinerators, electrical generation plants etc) are required as part of their planning permissions to facilitate the use of the waste heat to surrounding developments. This waste heat should be provided at cost to the associated district heating system. The locations of such developments, should be in areas that can utilize this waste heat.

**For further enquiries regarding this submission, please contact Declan Mc Cormac, project manager, Codema at [REDACTED]**