

# Sustainable Energy Communities Programme: Dundalk 2020

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November 2009

National Energy Authority of Ireland

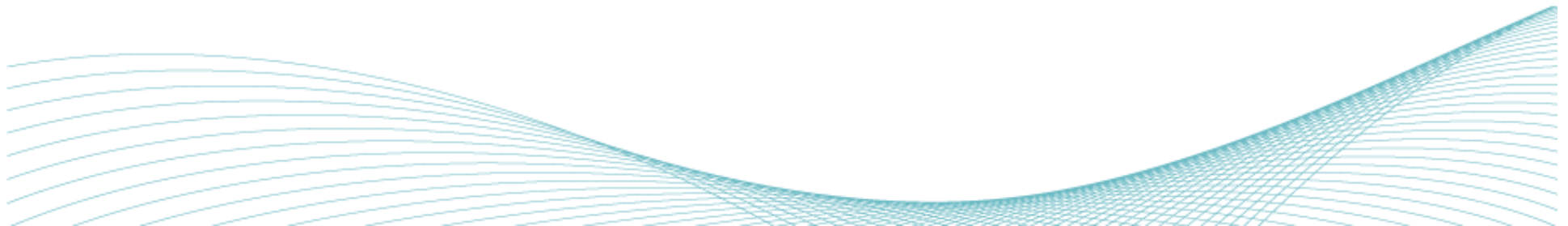
Sustainable Energy Act 2002

Mission: To promote and assist  
the development of sustainable  
energy

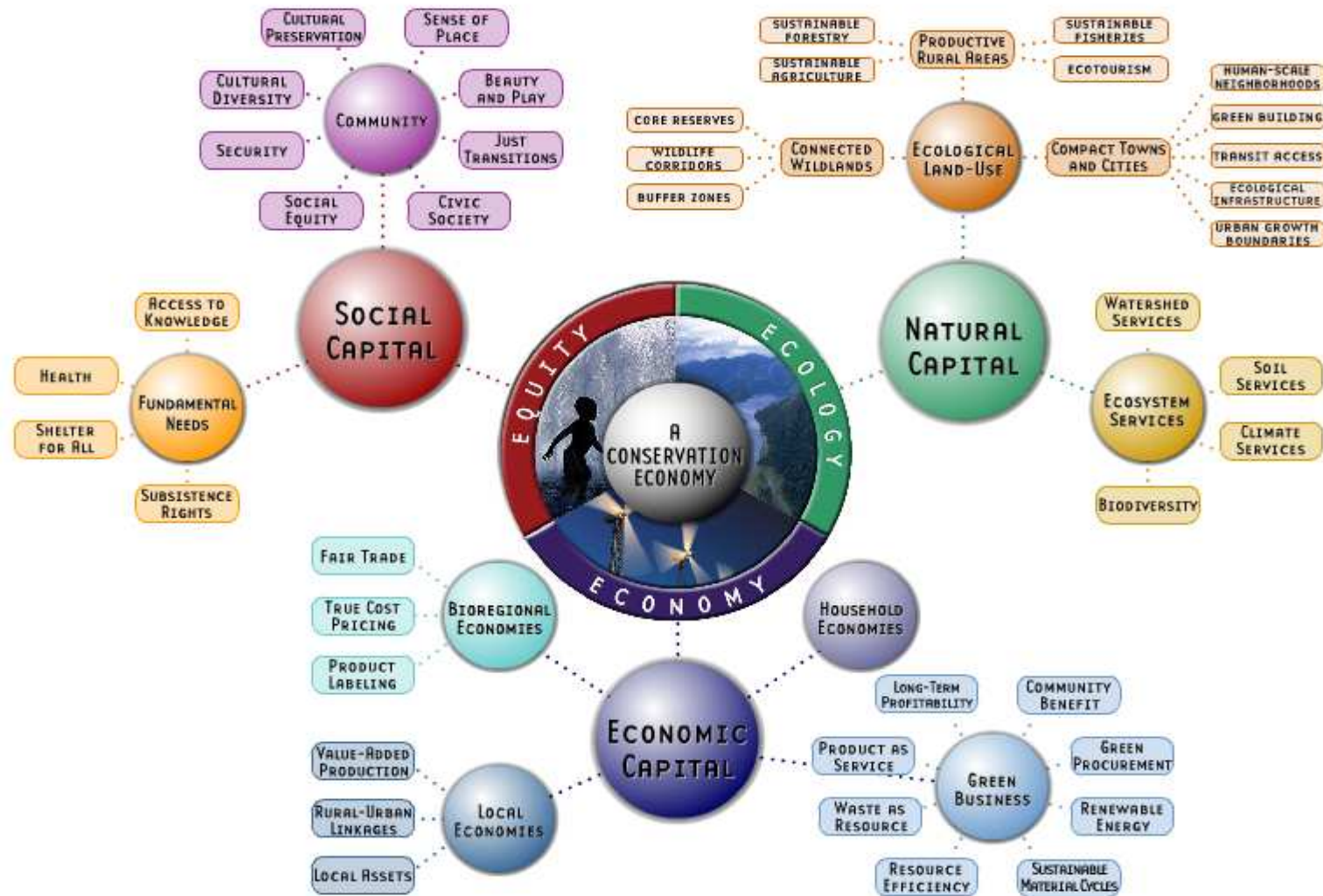


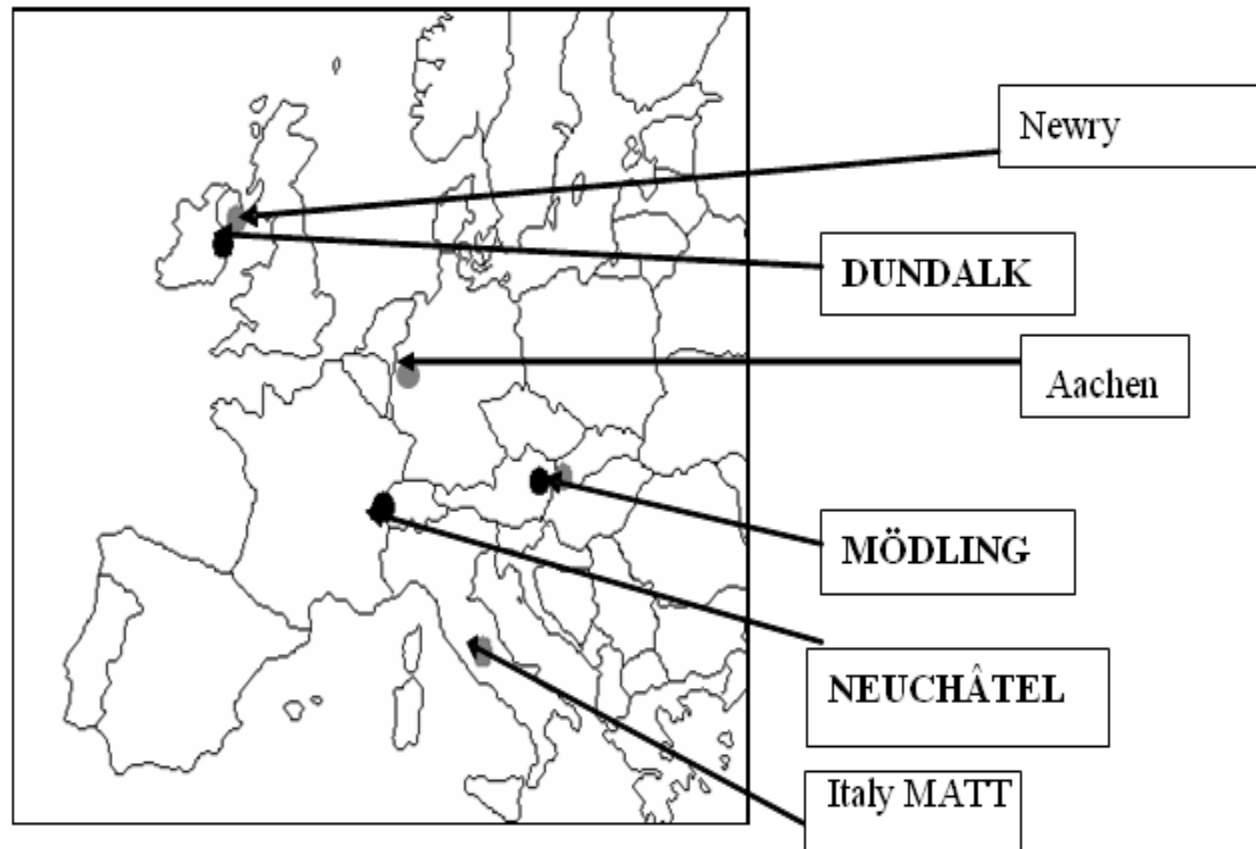
## The Vision

... to stimulate a national move towards sustainable energy practice through demonstration in an exemplar community



# The Rationale

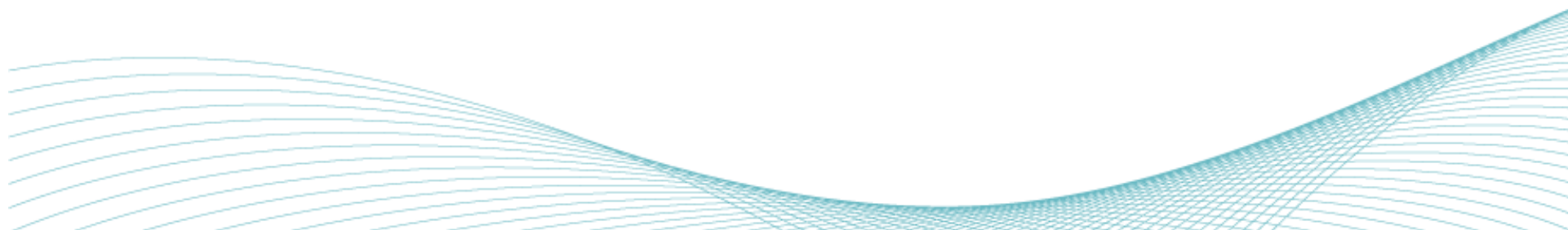
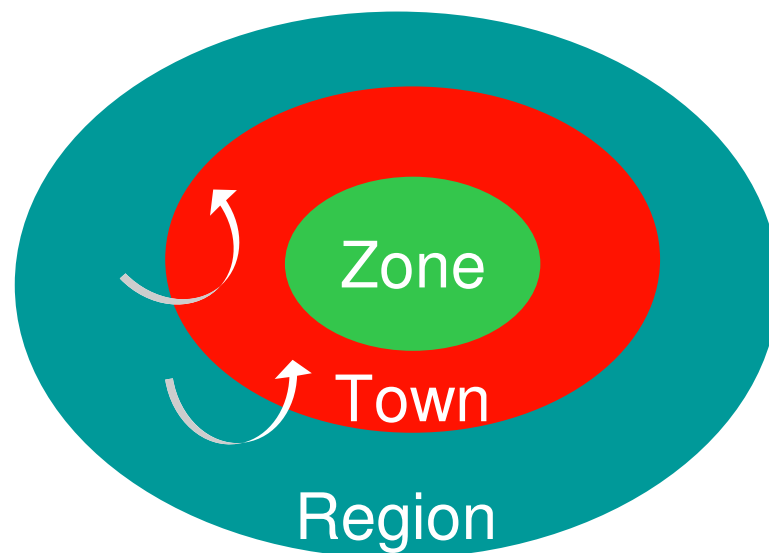




**H**olistic **O**ptimisation **L**eading to **I**ntegration of **S**ustainable **T**echnologies In **C**ommunities

# Dundalk 2020: The starting point

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# Dundalk Sustainable Energy Zone

- Hospital
- Residential
- Industrial/Manufactural
- Retail/Commercial/Leisure
- Educational



To M1 Motorway

Dublin Road N1

Eastern By Pass Road N52

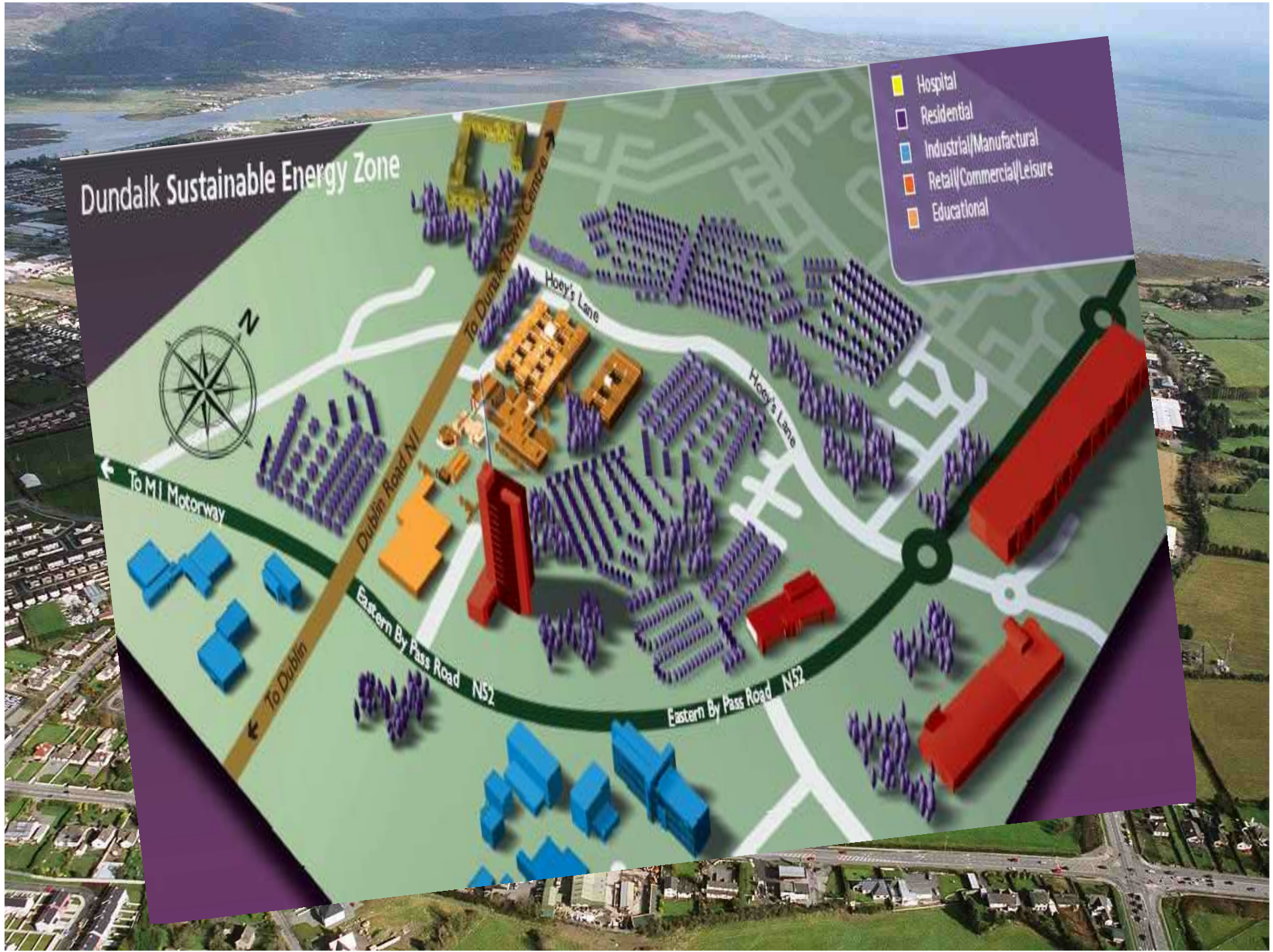
Eastern By Pass Road N52

To Dublin

To Dundalk Town Centre

Hoey's Lane

Hoey's Lane



# Dundalk 2020: Replication



**Commit**

Dundalk SEZ Steering Committee



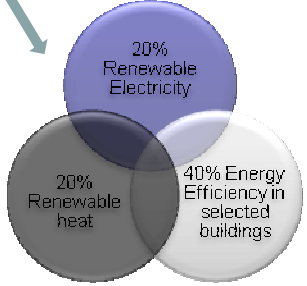
**Review**

**Identify**

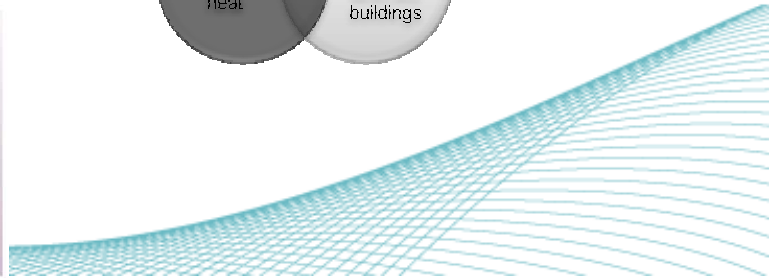
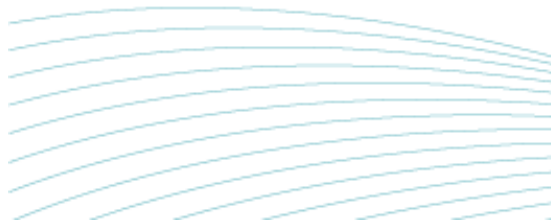


**Take Action**

**Plan**



Work Packages	2007	2008	2009	Dundalk 2020 Targets
201 District Heating				20% Renewable Electricity
202 Wind Turbine				20% Renewable Heat
203 Renewable street lighting				40% Energy Efficiency
204 Retrofit of Housing				
205 Retrofit Non-Residential				
206 New Eco Houses				
207 New Eco Buildings				
208 Smart Metering				
209 Energy Bureau				
Industry Agreements				



# Step 1: The Commitment

- December 2006 – Public and Private stakeholders signed a Dundalk 2020 Charter

## Three key phrases

- To use their best efforts to advance the project and all its constituent parts
- To collaborate fully with other participants in the project
- To make appropriate resources available to support the project

### Dundalk 2020 Charter

Leading Ireland towards a sustainable future

**OUR VISION...** to stimulate a national move towards sustainable energy practice through demonstration in an exemplar community.

The Dundalk 2020 project aims to demonstrate how a community can move to a more sustainable pattern of energy supply and use. This project is to be an exemplar, first within the town of Dundalk, then the surrounding region and ultimately to Ireland as a whole.

The project will achieve a substantial increase in the use of renewable energy, a significant improvement in the energy performance of the built environment, the provision of intelligent management of the supply demand balance and greater energy autonomy for the community.

This project is initially focused on the Dundalk Sustainable Energy Zone, which is a defined area of approximately 4 square kilometres that contains every element of a community (housing, education, hospital, industry, retail and leisure).

The targets set for the Dundalk Sustainable Energy Zone are to achieve a reduction in carbon dioxide emissions as follows:

- 20% of the heat required within the zone to be supplied from renewables
- 20% of the electricity required within the zone to be supplied from renewables
- And 40% greater energy efficiency in designated buildings
- All the above to be achieved by 2010

The undersigned are fully supportive of the aims and objectives of the Dundalk 2020 project and have each committed:

- To use their best efforts to advance the project and all its constituent parts
- To collaborate fully with other participants in the project
- To make appropriate resources available to support the project
- To promote the project and the theme of sustainable energy that underlies it
- To participate actively in the Dundalk 2020 Project

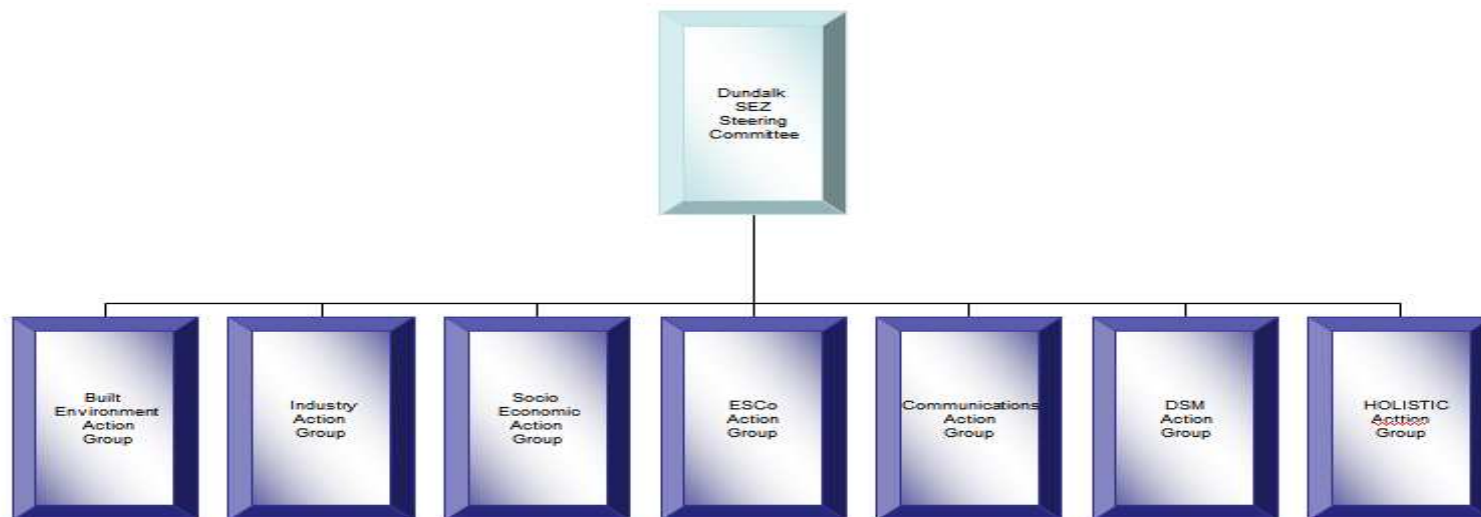
Signees:



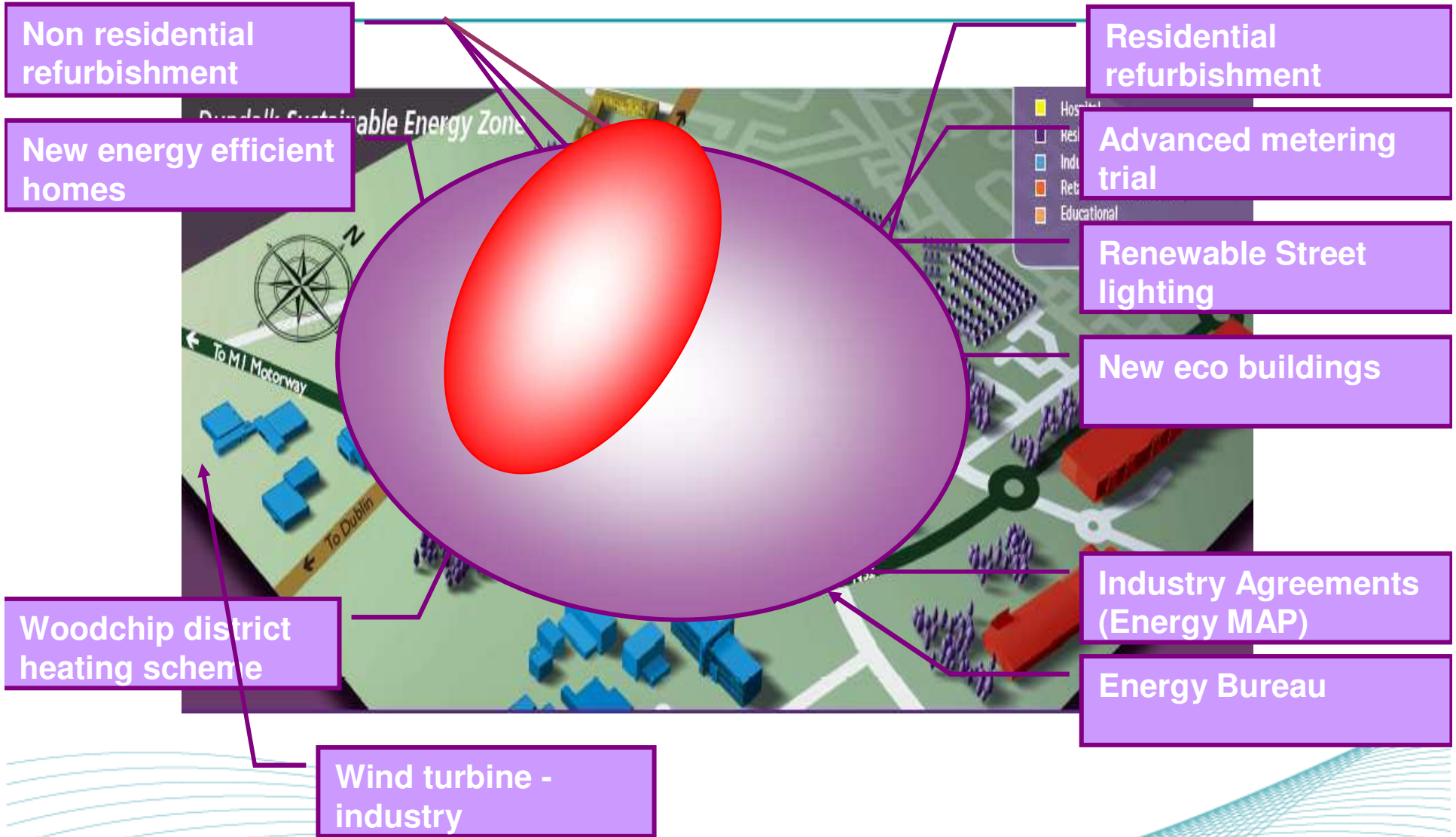


# Step 2: Identify

## Project Management Structure



# Step 3 & 4: Dundalk Sustainable Energy Zone



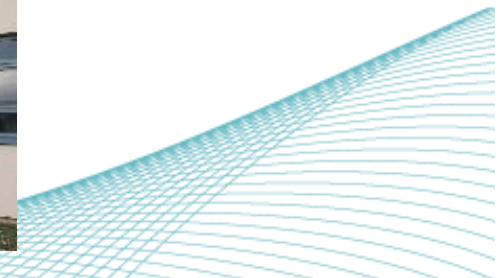
# Step 5: Review

- **ESCO Action Group**
- Development of an Energy Master Plan for the Dundalk SEZ and Dundalk town
- Development of model contracts for ESCO market in Ireland
- Development of economic calculator for biomass crops



# Step 5: Review

- **Built Environment Action Group**
- Full retrofit of public buildings – O’Fiach secondary school, Carrolls Building at Dundalk Institute of Technology
- Retrofit of > 300 low income homes
- Energy profile methodology developed for Local Authority Housing stock
- Trialling of hybrid street lights & trialling of LED street lighting

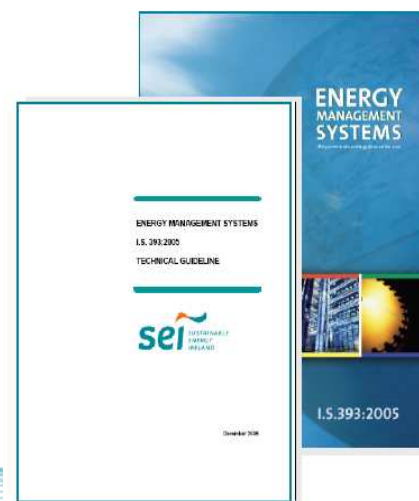


# Step 5: Review

- **Industry**
- Heinz and Xerox accredited to IS 393
- Multiple companies involved in structured energy management – Energy MAP
- Sustainable transport initiative – electric bicycle, scooter, car and van all on trial



Energy MAP (Energy Management Action programme) is a web-based tool to help you decrease energy use and therefore costs, thus increasing your competitive edge in local and global markets. Energy MAP explains the best practice process in 20 easy to follow steps. [Learn more about Energy MAP >](#)



# Step 5: Review

- **Advanced Metering**
- Advanced meters were installed in 200 homes - Nov 2007
  - 15 minute interval (Elster A1140)
  - GSM connectivity
- Application of behavioural stimuli to understand domestic demand side management potential



# Step 5: Review

- **Research**
- Flow battery and ice banks installed to create a smart electricity network for the Dundalk Institute of Technology campus
- Carbon modelling tool trialled
- Control and sensor technology trialled in student apartments



Site for battery system

Transformer 10kV/400V  
Battery system will be  
connected at 400V level



# Step 5: Review

- **Community Engagement**
- Trialled “Be Your Own Energy Manager” programme with Ard Easmuinn residents
- Trialled an Energy Bureau with Transition Year Students at O’Fiach Secondary school
- Supplement



# Step 5: Review

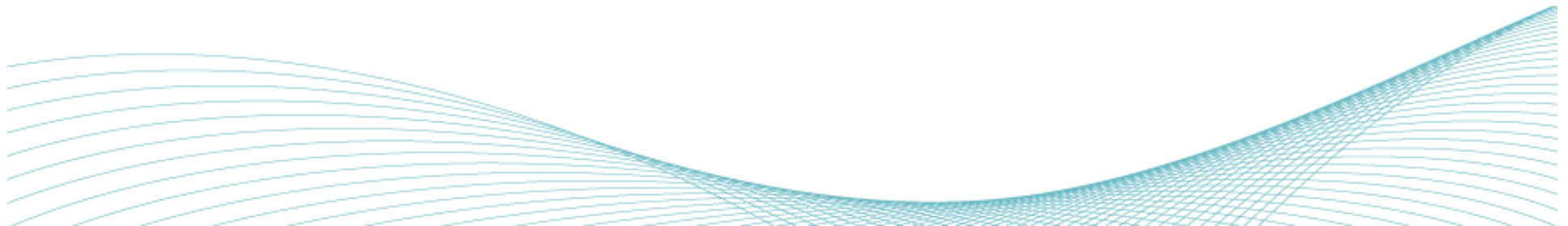
- **Steering Group**
- Approximately 5,000 tonnes CO2 saved
- Over €1m in collective savings
- Assisting Newry City develop itself as a Sustainable Energy Community
- International alignment
- integration with Enterprise Agencies

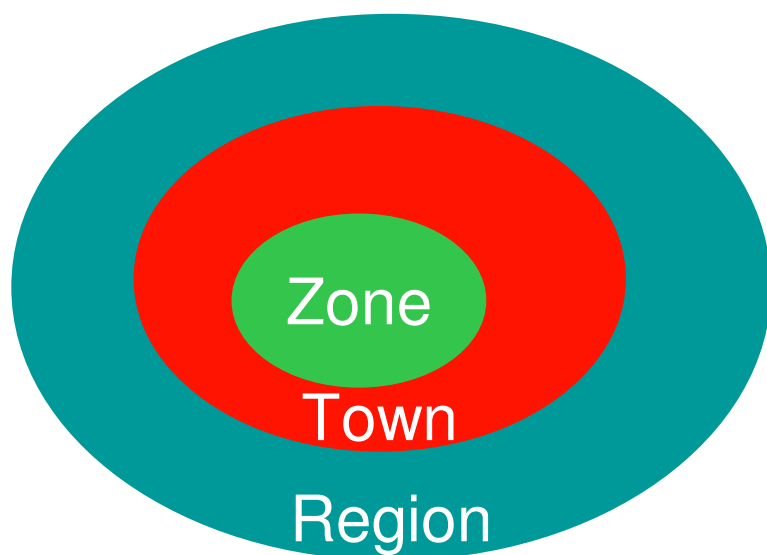


# Town Related Developments

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- Dundalk Gateway Innovation Fund
- Sustainable Transport Initiative
- Local Area / County Development Plan
- Ageing Well – Louth County
- Public Engagement
- Dundalk Economic Development Group (DEDG)





Dundalk



Zone



Zone



Zone



Zone



Zone



Zone

Phase 1

Phase 2

**“Integration is the Innovation”**

