



Sustainable Energy Action Plan (SEAP) and Spatial Energy Policy Development



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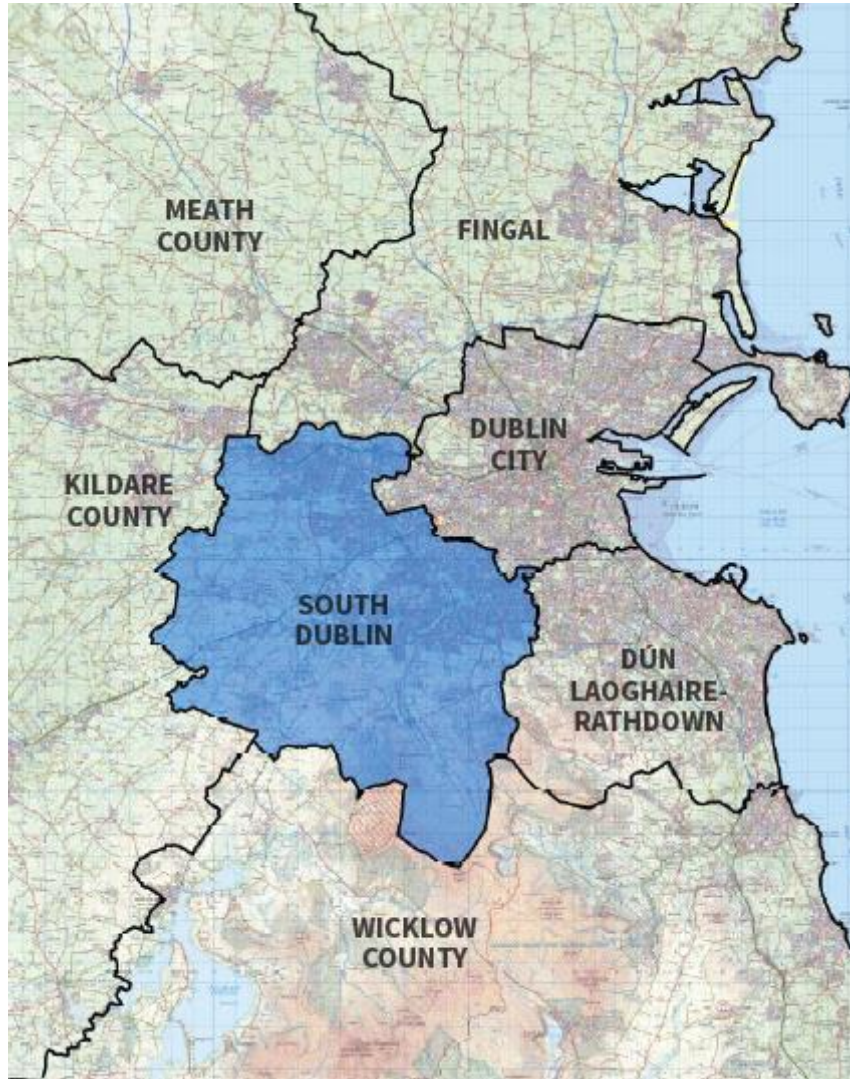
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Programme of the European Union

South Dublin County Council
Development Plan
2016 – 2022

A VISION FOR
SOUTH DUBLIN'S
FUTURE



South Dublin - Location



Live, Work and Do Business

Capture share of growth in
Dublin Region

Urban & Rural Context...
this includes Energy!

Little spatial link between energy
supply and areas of use

Energy Policy ?

It is the policy of the Council to **support and promote** renewable energy / energy efficiency...



What is the starting point ?

Link to an evidence base ?

Link to existing Plan making process ?

Energy Planning Background

Track record in environmental efficiency and developing sustainable communities

Clonburris SDZ 2008 – Eco District: Sustainability Management and Appraisal Committee...explore energy measures linked to energy demand

County Development Plan 2010 – 2016

Tallaght Pilot Energy Study – first efforts mapping energy demand information

2011 joined SEAI Sustainable Energy Communities



Tallaght Pilot Energy Study

‘First Step’ in co-ordinated energy planning

Major development in last 15 years: Hospital, IT Tallaght, Civic Offices, The Square...

Had some information on building uses, sizes etc

1,010 hectares, population of 34,489 persons,
14,215 dwellings

580 Commercial/Industrial Uses

Study showed DH feasibility study was appropriate



EU Context - Covenant of Mayors

The Covenant of Mayors is the mainstream European movement committing authorities to increasing energy efficiency and use of renewable energy.

Covenant signatories aim to voluntarily meet and exceed the EU 20% CO₂ reduction target by 2020.

A key requirement of the COM was the preparation of a SEAP within a 12 month period.



Former Mayor Caitriona Jones signing the Covenant of Mayors, June 2012

SEAP Structure

Where are
you?

Where do you
want to go?

How do you
get there?

Baseline Emission Inventory

Analyse the current
status in terms of
energy use and
associated CO₂
emissions.

Actions

Define a set of
comprehensive
actions with
estimated impacts.

Vision, Objectives, Target

Agree on a vision,
objectives and
CO₂ emissions
reduction target
for 2020.

Where are
you?

Baseline Emissions Inventory

Full 2006 inventory for energy consumption / CO₂ emissions in South Dublin County was undertaken

This baseline year was chosen due to the availability of reliable data i.e. Census of Population and NTA household survey etc

Data was collated under the residential, transport and commercial sectors

Energy baseline for all Council buildings, facilities, public lighting & fleet was also calculated based on 2010 data

BEI was completed in line with Covenant of Mayors guidelines, assistance from CODEMA and Southampton City Council



Where do you
want to go?

South Dublin SEAP

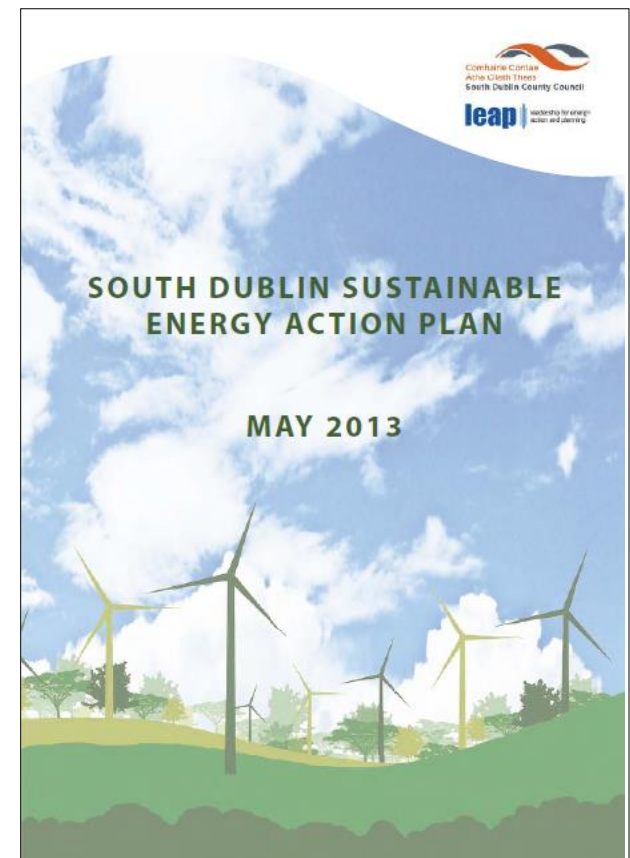
SEAP prepared in response to EU and national legislation and policy – including targets

2020 energy targets

1	Covenant of Mayors >20% CO2
2	Whole economy > 20% energy demand
3	SDCC > 33% energy demand
4	16% of consumption from renewables

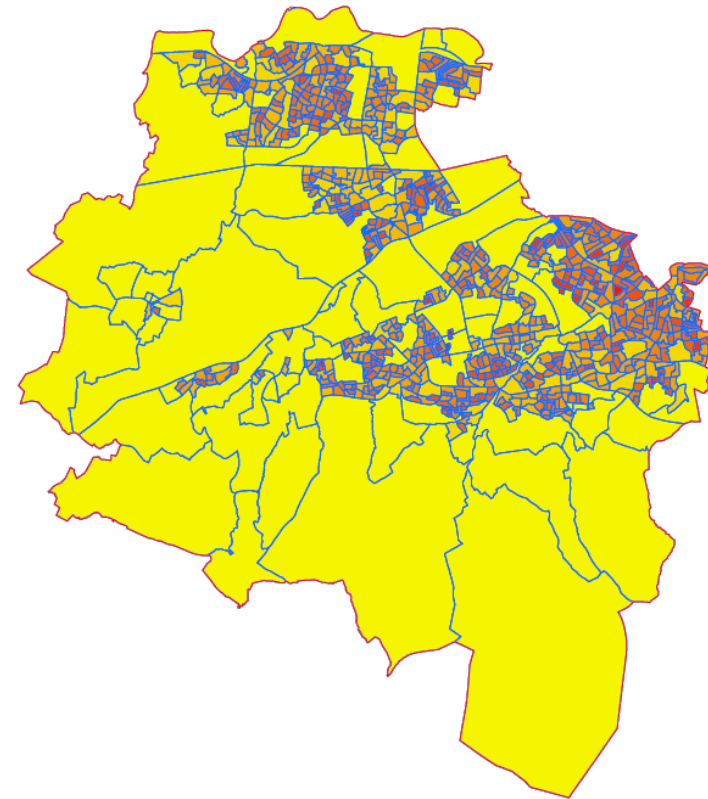
SDCC recognises need for a more co-ordinated, evidence based, countywide approach building on areas that SDCC has experience in

Three guiding principles: Record, Reduce & Replace



Spatial Energy Demand Analysis

It is the policy of the Council to support and promote renewable energy / energy efficiency...



Spatial understanding of energy issues, parameters for DM Planners in planning applications and further inform decision making i.e. SDZ, LAP level..

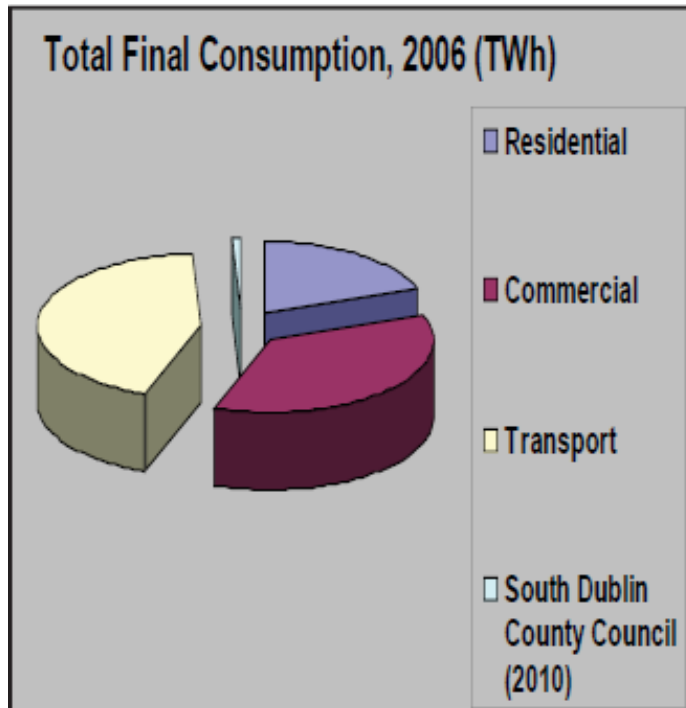


Towards an Energy Chapter...

- New standalone Chapter - key input includes the countywide Spatial Energy Demand Analysis (SEDA) using SEAP as starting point
- Can include strategies for energy efficiency and renewables:
 - Energy Performance in Existing / New Buildings
 - Low Carbon District Heating networks
 - Waste heat recovery and utilisation
 - Solar energy
 - Small scale hydro electricity
 - Wind energy
- Identifies areas of high heat density and areas of high energy use
- Development Management standards for Implementation

Spatial Energy Demand Analysis (SEDA)

- Next step after SEAP to link energy and spatial planning





Spatial Energy Demand Analysis (SEDA)

Why?

Allows visualisation of areas with;

- Highest energy demand
- Highest fossil fuel demand
- Highest electrical demand
- Lowest Building Energy Ratings
- Highest risk of Fuel Poverty
- Most suitable for District Heating schemes
- Clusters of high commercial/industrial demand



Spatial Energy Demand Analysis (SEDA)

How?

Link energy info to a common geographic reference

‘Small Areas’ - smallest geographical breakdown used for statistics in Ireland
Special tabulations of Census information available for housing at this detailed level

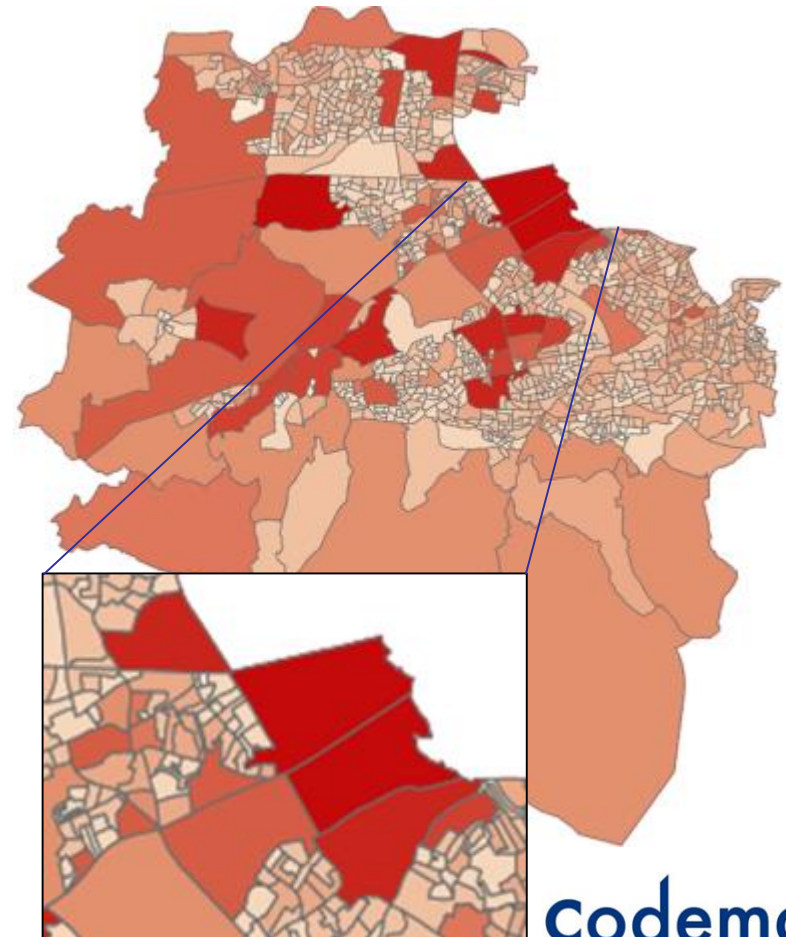
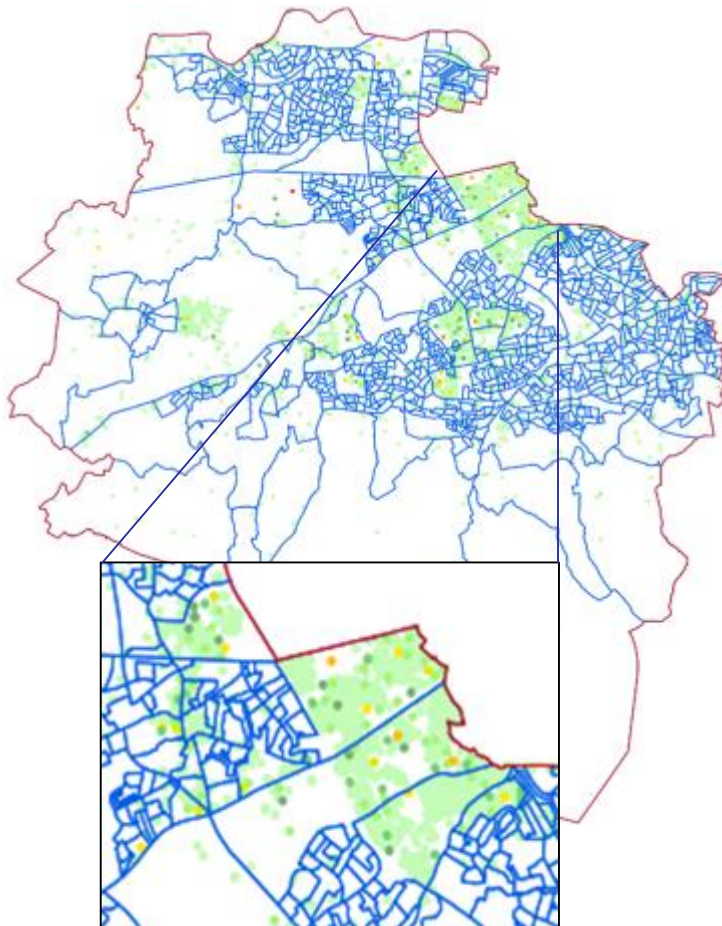




Spatial Energy Demand Analysis (SEDA)

How?

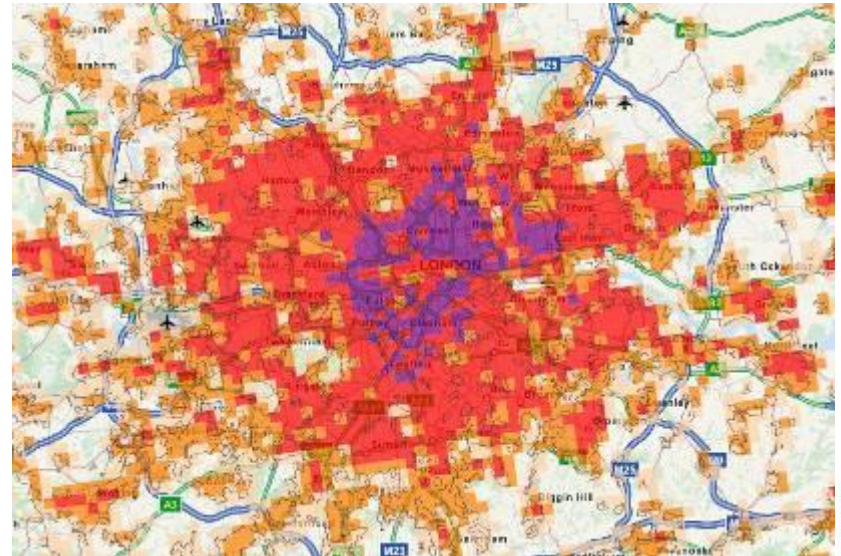
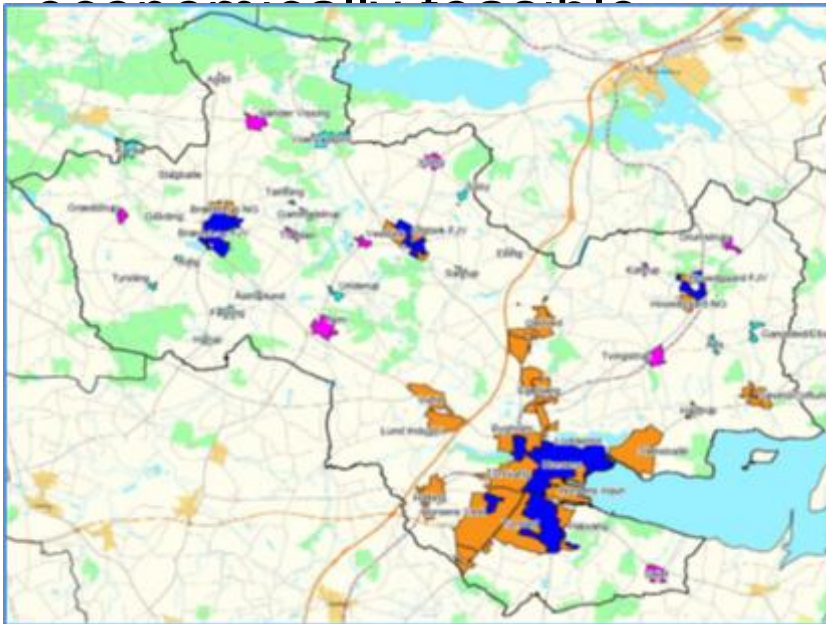
Link energy info to a common geographic reference



Spatial Energy Demand Analysis (SEDA)

District Heating Suitability

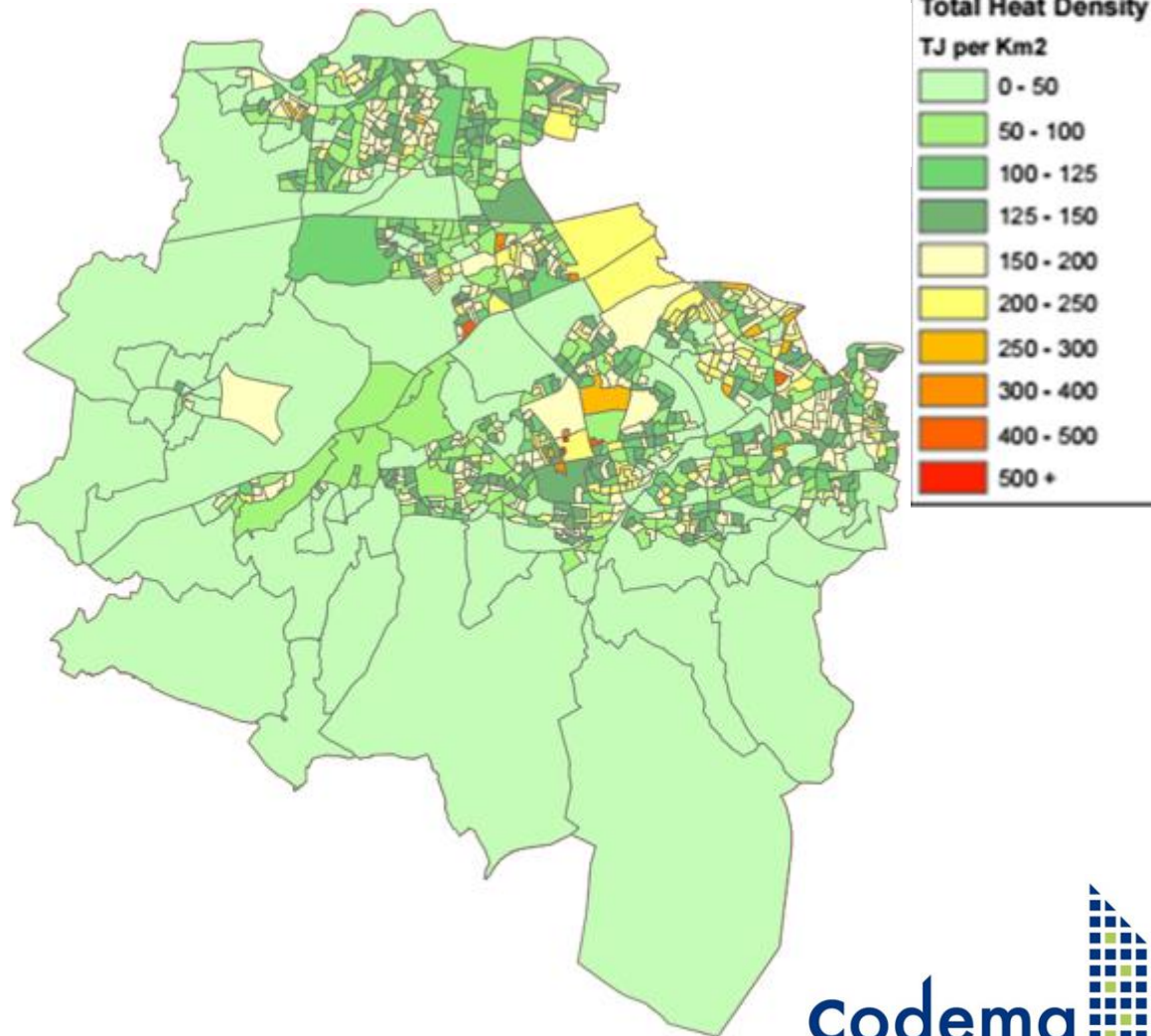
- **Heat Demand Density** (TJ/km²) calculated across all SA's
- Based on Danish model of DH planning, areas with >150TJ/km² considered most likely to be technically and economically feasible



Spatial Energy Demand Analysis (SEDA)

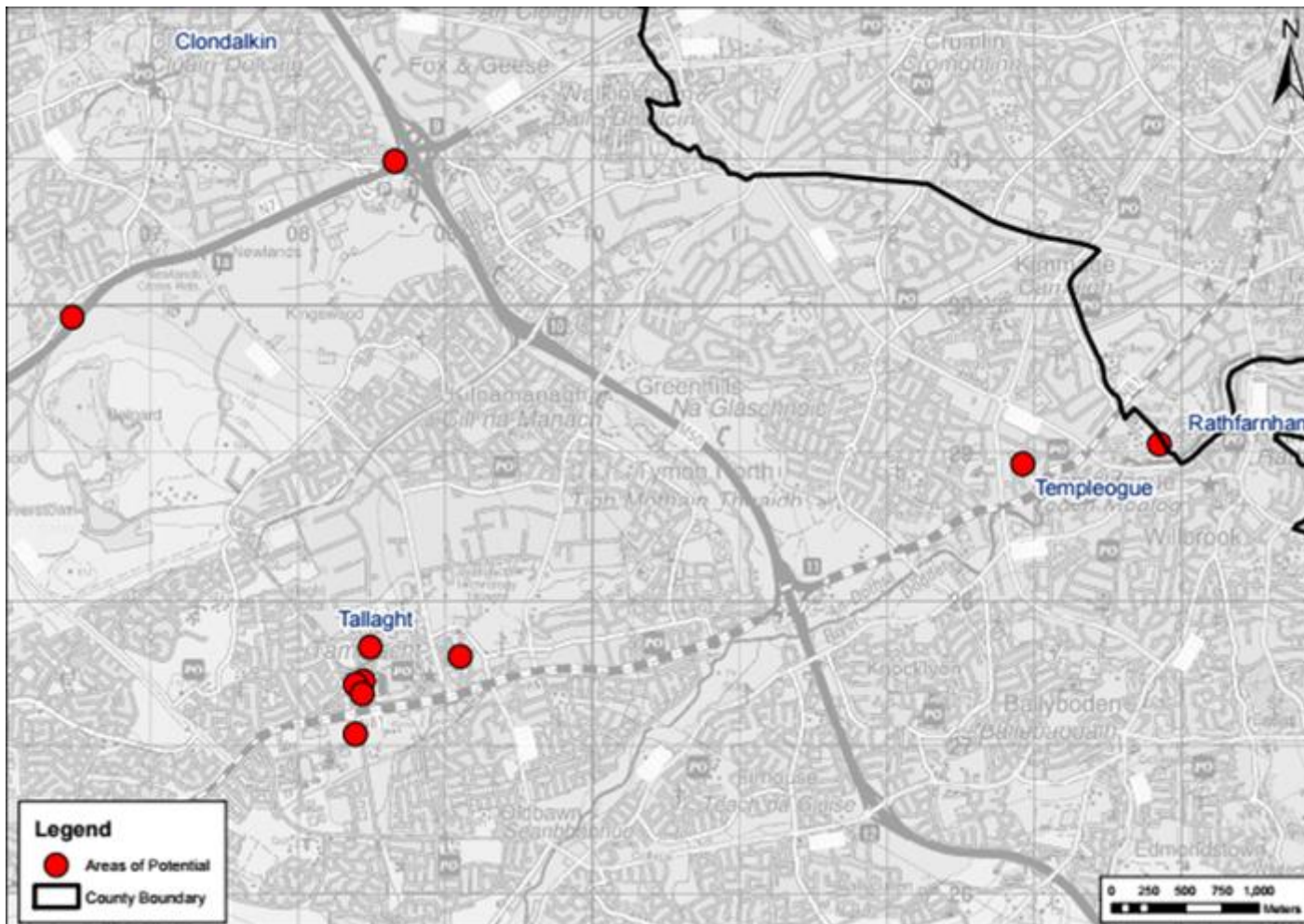
District Heating Suitability

- Heat Demand Density (TJ/km²) in SDCC, anything over **250TJ/km²** considered likely to be technically and economically feasible, due to lack of experience and supports in comparison to Denmark.



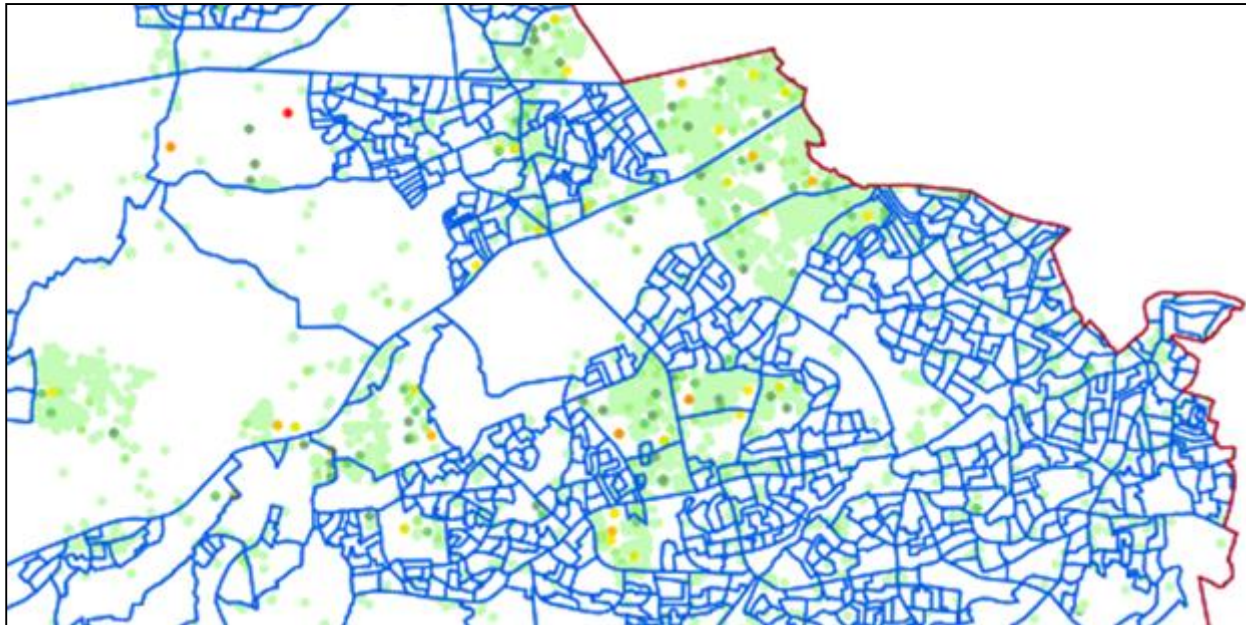
Spatial Energy Demand Analysis (SEDA)

District Heating Suitability



Spatial Energy Demand Analysis (SEDA)

Clusters of Commercial/Industrial Demand



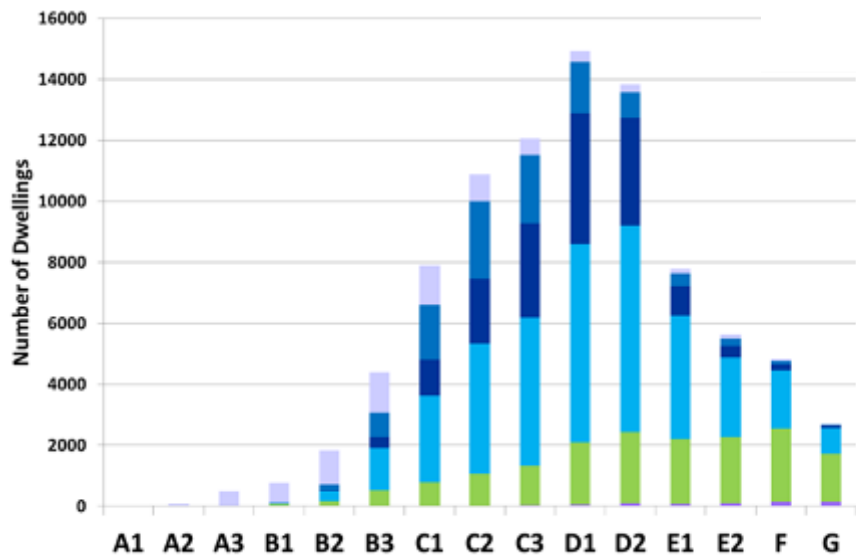
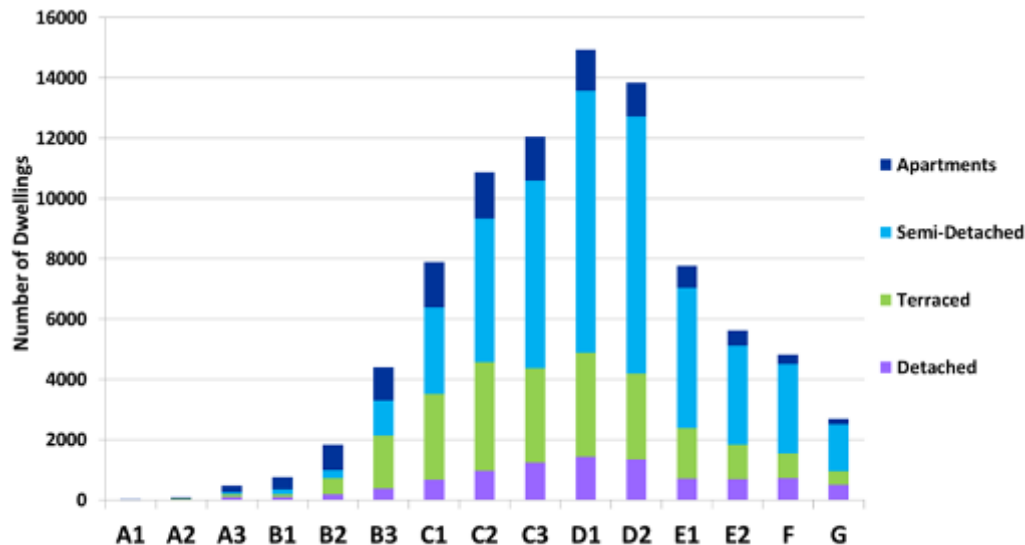
- Opportunities for shared Low-Carbon energy systems within these high energy demand areas
- Opportunities to use industrial waste heat in nearby units with heat demand
- Identify potential anchor loads for DH networks



Spatial Energy Demand Analysis (SEDA)

Residential Energy Demand

66% of Semi-D Dwellings have D1 or lower, most built pre-1990



The lower E, F and G ratings are dominated by buildings constructed in the period 1919-1970.

Spatial Energy Demand Analysis (SEDA)

Growth in Energy Demand

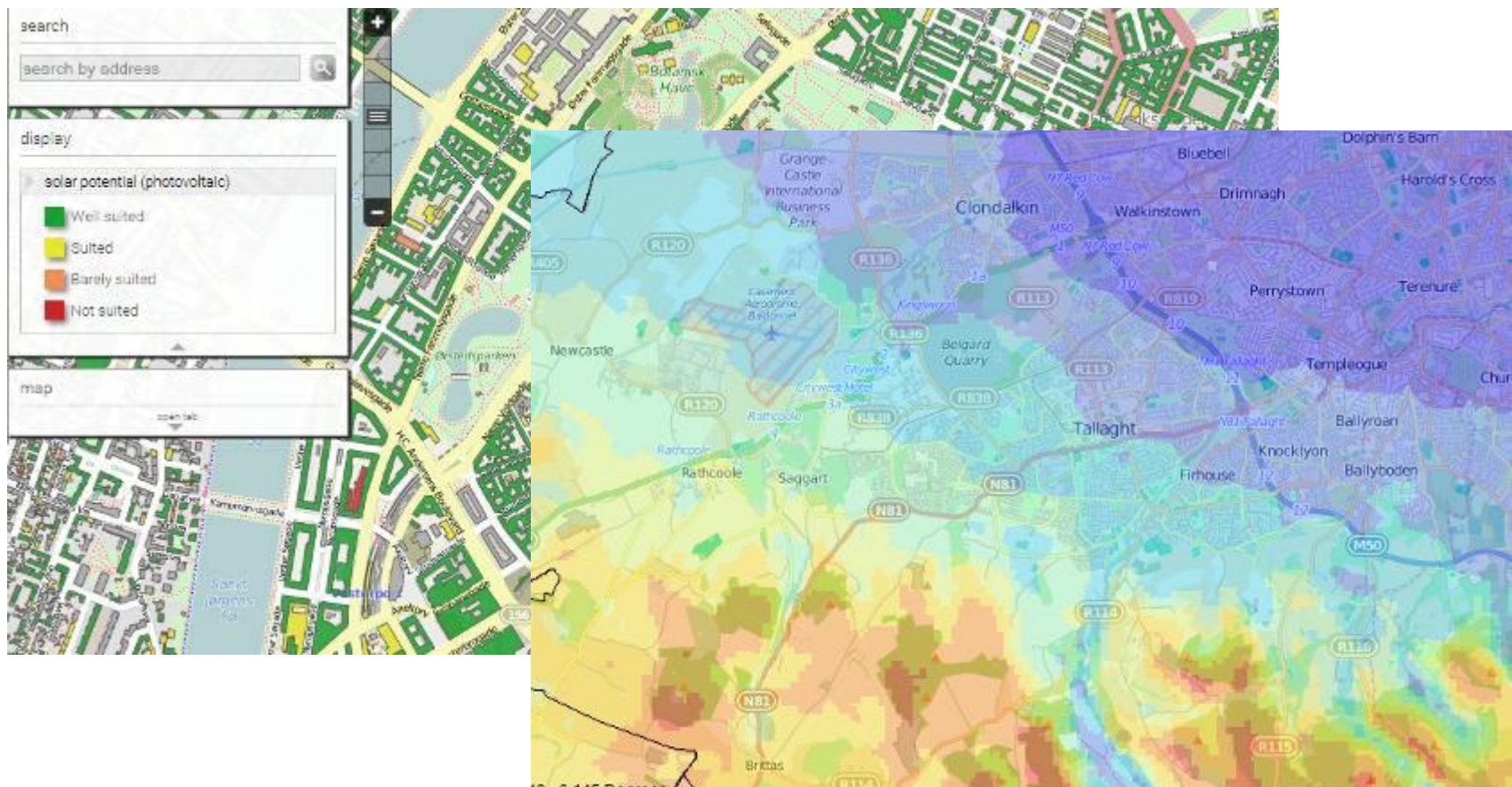
Areas with Housing Capacity	Capacity for Extra Households	Total Energy MWh	Heating (MWh)	Electricity (MWh)
Palmerstown, Naas Road, Templeogue, Ballyroan, Ballyboden, Edmondstown, Knocklyon, Firhouse / Ballycullen and parts of Greenhills, Terenure and Rathfarnham.	11,919	143028	114422	28606
Tallaght	5,511	66132	52906	13226
Lucan	9,685	116220	92976	23244
Clondalkin	7,440	89280	71424	17856
Saggart/ Citywest	4,076	48912	39130	9782
Newcastle	701	8412	6730	1682
Rathcoole	962	11544	9235	2309
Rural - Metropolitan Areas	75	900	720	180
Rural - Hinterland Areas	25	300	240	60
Total	40,394	484,728	387,782	96,946

Commercial Activity	Jobs Split 2014 in SDC Region	Job increase 2015-2022	Electricity MWh	Fossil Fuel MWh	Total MWh
Retail	36%	3383	61,224	6,427	67,651
Transport Distribution	14%	1315	17,627	5,525	23,152
Industrial & Manufacturing	12%	1128	253,329	67,619	320,948
Professional & Financial	12%	1128	13,079	3,270	16,349
Medical & Health	9%	846	9,809	2,452	12,262
Education	5%	470	5,450	1,362	6,812
Construction & Energy	4%	376	84,443	22,540	106,983
ICT	4%	376	9,170	451	9,621
Tourism & Recreation	3%	282	8,795	2,762	11,557
Scientific & Pharmaceutical	1%	94	1,090	272	1,362
Total	100%	9,396	464,015	112,681	576,696

Spatial Energy Demand Analysis (SEDA)

Next Steps

Energy Resource Mapping – Renewable resource suitability, waste heat sources, under-utilised CHP etc.





Spatial Energy Demand Analysis (SEDA)

- **SEDA allows more effective evidence based energy planning policy (move on from ‘support’ & ‘promote’ type policy)**
- **Allows County wide and more detailed Local Area energy analysis due to detailed spatial data**
- **SEAPs can be visualised and actions can be area focused**

Thank You

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