



**APSE Renewables Group 13<sup>th</sup> November 2013**  
**STEP-UP Project & Glasgow's Energy Planning**

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# What is STEP UP?

- €3.7m EU energy project - led by University of Strathclyde
- Produces an Energy and Carbon Masterplan in each city
- Action Plan and projects to provide cheaper/secure energy
- A model of energy planning for Europe, training courses and Masters degree





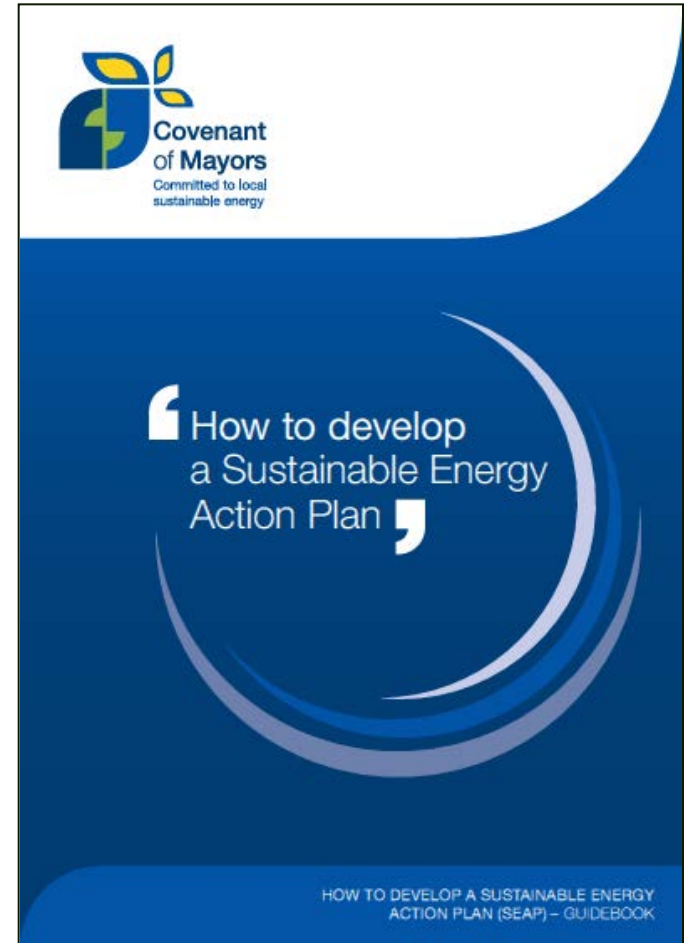
# Aims



- Create a model for energy planning to deliver greater impact on EU 2020 energy targets.
- Support a learning network of cities across Europe
- Train professionals in energy planning
- Help deliver wider policy objectives for cities e.g. energy security, reduction of fuel poverty, greener city and economic regeneration.
- Make cities better places to live, work, learn and do business.

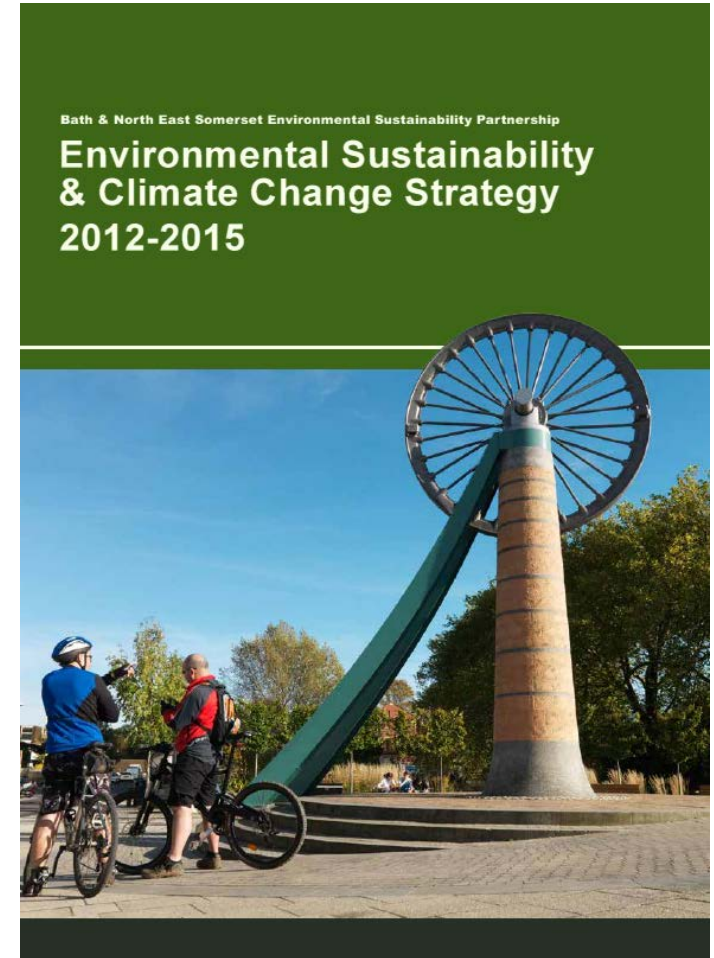
# What is a SEAP?

- **2008 EC formed the Covenant of Mayors**
- **Main focus was (is) supporting 20% CO<sub>2</sub> emissions reduction by 2020**
- **Sustainable Energy Action Plan was introduced to implement this**
- **SEAP planning guidelines published in 2010**
- **4,866 signatory cities**



# Current SEAPs

- **2,964 SEAPS currently with CoM**
  - **1,494 Accepted**
- **CoM staffing supports only cursory review**
- **Progress reporting and updates are the responsibility of the cities**
- **Huge variety of submission formats and qualities**
  - **Specific SEAPs**
  - **Policy information document**
  - **Reference document**
- **SEAP Guidance now being updated – with improved monitoring**



# Key components of a SEAP

- A Baseline Emissions Inventory (BEI) using the CoM template

## Appendix A Submitted SEAP

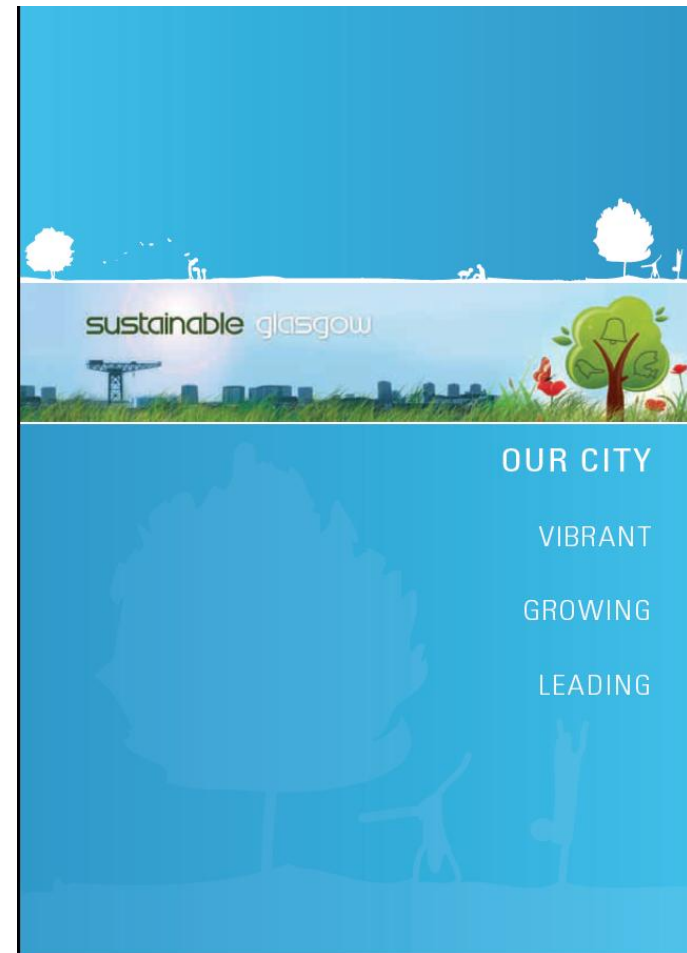
### A. Final energy consumption

Category	FINAL ENERGY CONSUMPTION [MWh]															Total	
	Electricity	Heat/cold	Fossil fuels							Renewable energies							
			Natural gas	Liquid gas	Heating Oil	Diesel	Gasoline	Lignite	Coal	Other fossil fuels	Plant oil	Biofuel	Other biomass	Solar thermal	Geothermal		
<b>BUILDINGS, EQUIPMENT/FACILITIES AND INDUSTRIES:</b>																	
Municipal buildings, equipment/facilities	196108	0	368895	0	18264	0	0	0	0	0	0	0	0	0	0	0	583267
Tertiary (non municipal) buildings, equipment/ facilities	995715	0	184583	0	0	0	0	0	0	0	0	0	0	0	0	0	1180298
Residential buildings	1777420	0	7264900	0	28185	0	0	0	4158	0	0	0	0	0	0	0	9074663
Municipal public lighting	59265	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59265
Industries (excluding industries involved in the EU Emission trading scheme - ETS)	2004760	0	4145602	0	991872	0	0	0	86985	0	0	0	0	0	0	0	7229219
Subtotal buildings, equipments/ facilities and industries	5033268	0	11963980	0	1038321	0	0	0	91143	0	0	0	0	0	0	0	18126712
<b>TRANSPORT:</b>																	
Municipal fleet	0	0	0	0	0	6397	0	0	0	0	0	0	0	0	0	0	6397
Public transport	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Private and commercial transport	0	0	0	0	0	2576074	3557154	0	0	0	0	0	0	0	0	0	6133228
Subtotal transport	0	0	0	0	0	2582471	3557154	0	0	0	0	0	0	0	0	0	6139625
Total	5033268	0	11963980	0	1038321	2582471	3557154	0	91143	0	0	0	0	0	0	0	24266337

Municipal purchases of certified green electricity (if any) [MWh]:	0
CO <sub>2</sub> emission factor for certified green electricity purchases (for LCA approach):	n/a

# Key components of a SEAP

- A plan that uses the BEI to identify reduction actions and outlines how actions will be implemented
- Covers:
  - Built Environment
  - Transport
  - Renewable Energy
- Shows low carbon opportunities



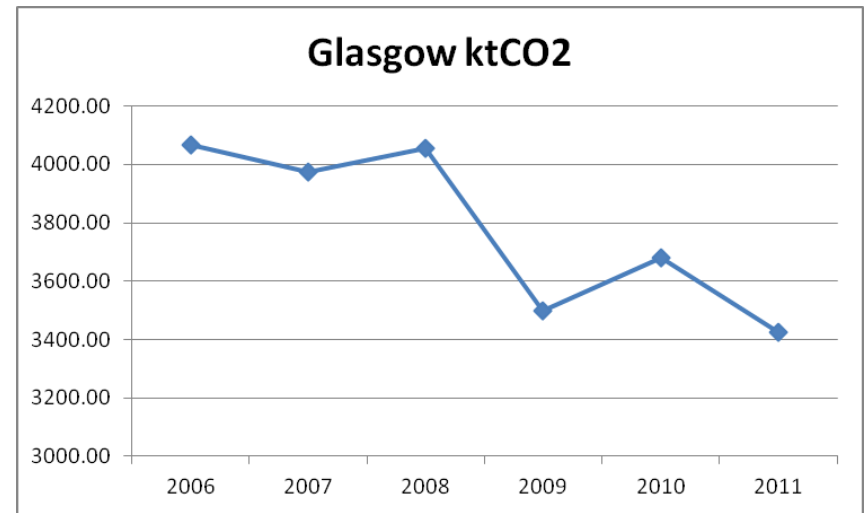
# Policies/actions of the Glasgow SEAP

- Existing Glasgow SEAP submitted to CoM in Nov 2010
  - Energy management
  - Reduce use of high carbon fuels
  - Low carbon energy systems
  - Low carbon heating: District Heating and CHP
  - Transport
  - Attitudes and Behaviour
  - Business Models and Financing
  - Creating Supportive Public Policy
  - Next Steps



# Gap analysis of the Glasgow SEAP

- Looked at gap between 2020 30% target and where we are now:
  - 100,000 tCO<sub>2</sub> reduced since 2010, 640,000 tCO<sub>2</sub> reduced from 2006/7 baseline
  - Gap of c.300,000 tCO<sub>2</sub> taking into account planned projects
  - Most productive areas for meeting the gap are energy efficiency and CHP in district heating
  - District heating needs to be planned and integrated
- Other areas:
  - Transport (city centre traffic reduction)
  - Wind power and PV
  - Creation of an ESCO delivery vehicle





# Glasgow Energy Master Plan



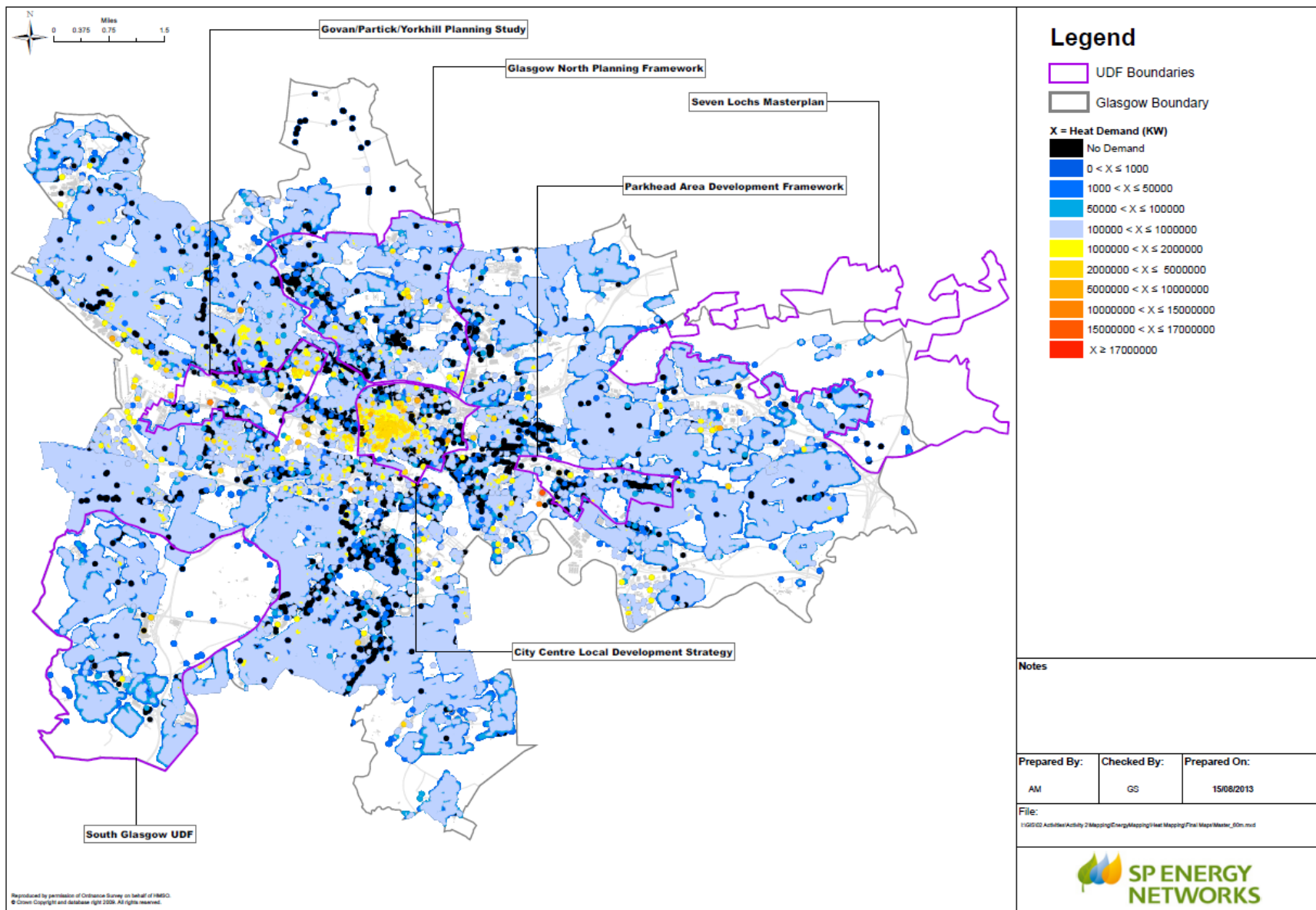
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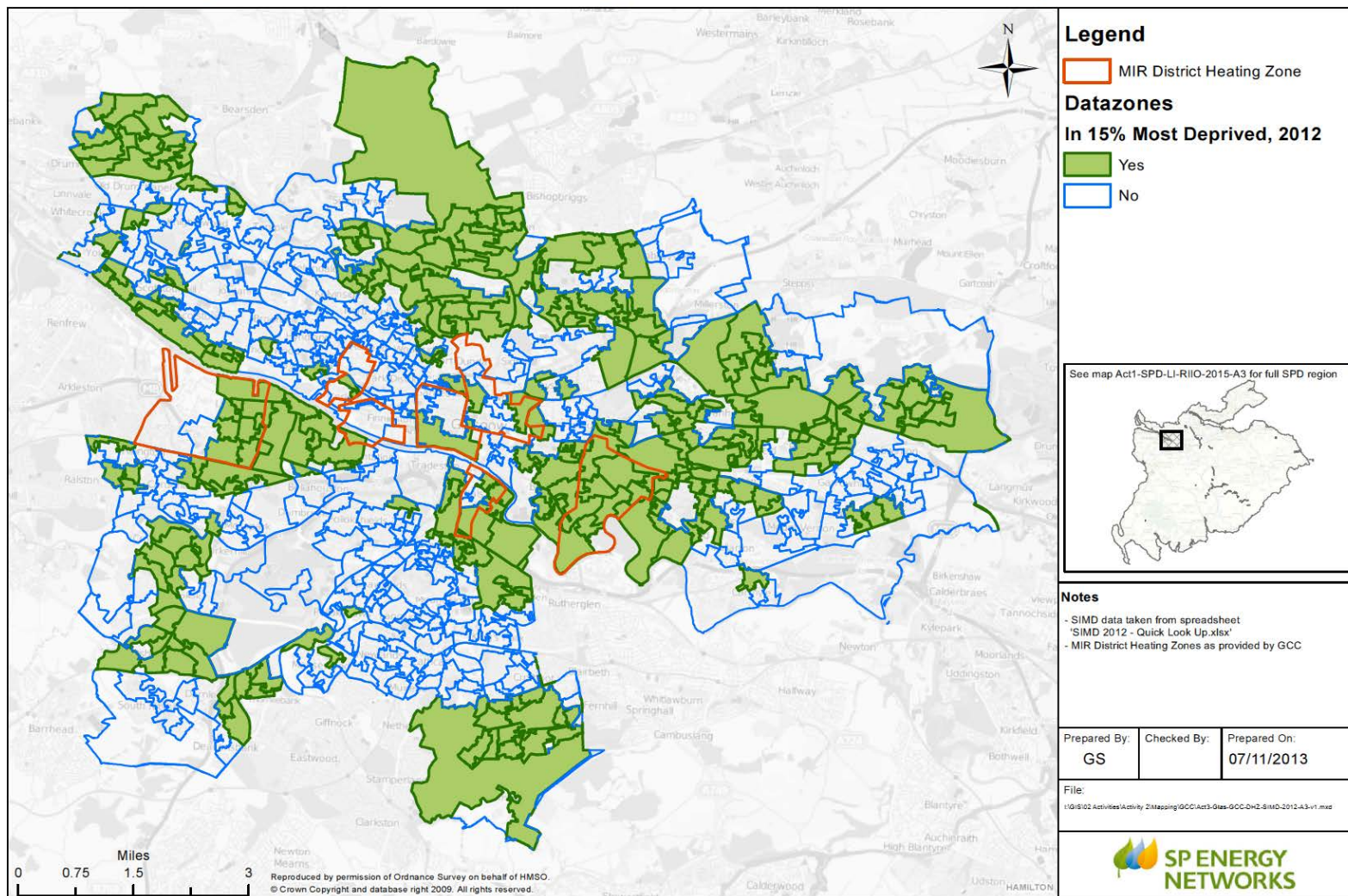
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- New City Energy and Carbon Masterplan by end 2014
  - Revised baseline, target (30%) and set of actions
  - Linked to strong policies in the LDP
  - A spatial framework for ‘energy opportunities’
  - District heat network areas
  - Pipeline of low carbon projects
- Investment strategy supporting delivery of projects
- Enhanced monitoring framework to track progress
- Setting standard across Europe for energy planning

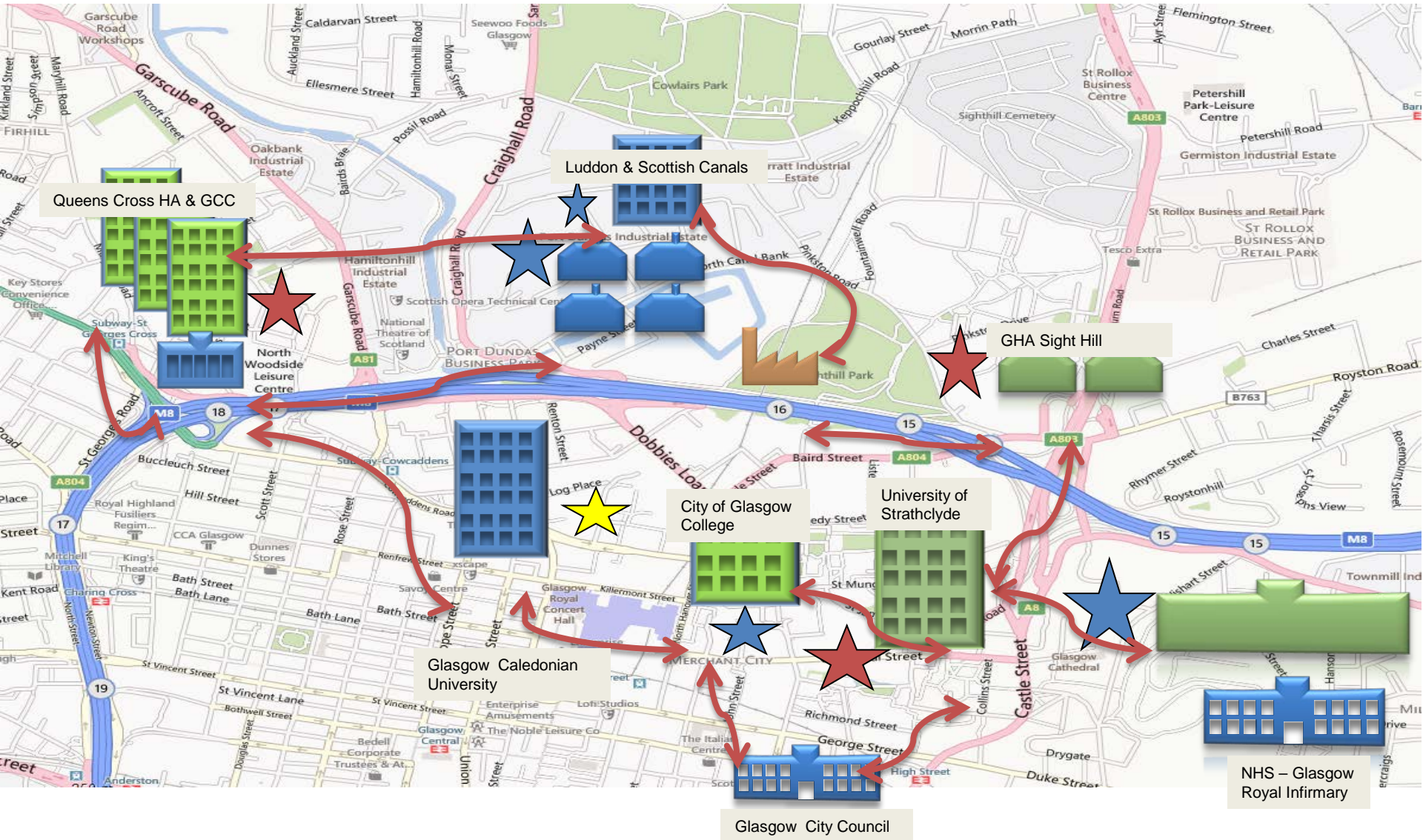
# Heat Mapping



## Glasgow - MIR district Heating; SIMD 2012 15% Most Deprived Areas



# Proposed North Glasgow Integrated Heat Network



# Glasgow LDP

- New LDP now being produced
- Summer 2014 consultation
- SG on 'Resource Management' covering
  - Low and zero carbon development
  - Opportunity areas for DH
  - Energy efficiency in domestic and non-domestic development
  - Renewable energy
  - Energy infrastructure





# Commonwealth Games Athletes' Village Energy Centre



- **The Energy Centre:**
  - Provides hot water for 700 houses, 120 bed care centre and Emirates Arena.
  - Combined Heat and Power (CHP) engine, 3 boilers and thermal store
  - Achieves key sustainability commitments  
(reduce waste and lower carbon emissions)
- **The Athletes' Village regenerates the area, creates opportunities for employment and training, local business and social enterprise.**
- **Potential to extend to other social housing nearby**



# Integrated Projects



**Land & Environmental Services**  
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# Conclusions – STEP Up and Glasgow



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- **City Energy and Carbon Masterplan 2014**
- **New action plan and energy projects**
- **Proposed new district heating zones**
- **Tackling fuel poverty, promoting low carbon energy, creating jobs**
- **Smarter, greener Glasgow**
- **Promoted across Europe**





# More information



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