

South Heaton Carbon Challenge

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1. Aims

The main objectives of this project are;

1. To calculate the main sources of carbon emissions from the South Heaton Ward and so enable the production of a carbon footprint.
2. To identify and deliver carbon reduction projects with a particular focus on community building and domestic emissions.

2. Introduction

South Heaton is located in the East of the city with a population of 8,449 making up 3.3% of the total population of Newcastle (2001 Census). 35% of the population are between the ages of 16 and 24 reflecting the fact that there is a large student population in the ward. It has two main high streets providing a good mix of retail units and services along Shields Road and Chillingham Road. It has one primary school and a large leisure pool and library complex. It has several community buildings providing a range of services to the local community and a popular green space in the North of the ward.

Recently the ward members have shown an interest in better understanding the carbon footprint of the ward. The Carbon Trust definition of a carbon footprint is – *‘The total set of greenhouse gas emissions caused directly and indirectly by an [individual, event, organisation, product] expressed as CO₂e.’*

Because the full footprint of an area encompasses a wide range of emissions sources, from direct use of fuels to indirect impacts such as employee travel or emissions from other organisations within the supply chain, it will always be difficult to establish an exact footprint. Therefore, we have opted not to look at carbon production from transport in this proposal, and will concentrate on direct carbon emissions from energy consumption; although in the longer term, it may be appropriate to include transport emissions.

The City Council signed the Nottingham Declaration on climate change in 2006, by signing the declaration the Council accepted the evidence for climate change and committed the Council to take action to reduce the Council's emissions of greenhouse gases and work with partners to reduce emissions of greenhouse gases across the City. More recently an ambitious Climate Change Strategy and Action Plan has been developed and the Council has signed up to the Covenant of Mayors which is a commitment by signatory towns and cities to go beyond the objectives of EU energy policy in terms of reduction in CO₂ emissions through enhanced energy efficiency and cleaner energy production and use.

There are a number of National Indicators placed upon the Council and its partners relevant to carbon emissions. These include National Indicator 185 – CO₂ reduction from Local Authority operations, 186 – CO₂ per capita, and 187 - tackling fuel poverty - % of people receiving income based benefits living in homes with a low and high energy efficiency rating. In further support of the Council's commitment to tackling climate change NI186 & NI187 are included in the Local Area Agreement.

The first part of this proposal identifies carbon production in South Heaton in council and community buildings, domestic properties, industrial and commercial buildings. The second part of the proposal sets out recommendations for reducing carbon production in council and community buildings, domestic properties and industrial and commercial buildings in an action plan.

3.0 CO₂ production in South Heaton

The main sources of carbon dioxide emissions in the South Heaton Ward are discussed below.

3.1 Area based energy consumption data

Although consumption data is available for the whole of Newcastle through the Department of Climate Change (DECC), the data will not be used in this proposal for the reasons outlined below. DECC produce electricity and gas consumption data below local authority (LA) level, (Middle Layer Super Output Area, MLSOA) to allow LA's and other interested bodies to more easily target specific areas as part of the implementation and monitoring of local energy strategies. There are several advantages to using MLSOA's; they are relatively consistent in terms of population (minimum population of 5,000 equating to around 2,000 households), and are more static in terms of boundary changes. Whilst DECC recognizes some authorities would like data down to postcode level, data quality and disclosure issues prevent such disaggregation.

3.2 Council and community buildings

There are 10 council owned and managed buildings in South Heaton. The Councils Energy Centre (EC), receives, processes, record and monitors the utility bills for these buildings. By analysing this annual consumption it is possible to calculate carbon emissions and therefore establish a baseline. Using the Carbon Trust developed benchmarks for Local Authority buildings the standard of energy efficiency can also be assessed and priority areas for action to be identified.

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Table 1 shows the CO₂ emissions 08/09 per property and shows the total carbon emissions. This is the carbon footprint for council buildings in South Heaton and will need to be added to the total from the domestic and industrial/commercial sectors.

Table 1 CO₂ emissions 08/09

Building Name	Floor area M ²	Electricity Tons / CO ₂	Gas Tons / CO ₂	Total Tons / CO ₂
Rothbury Terrace Depot	2,583	92	32	124
Heaton Complex	3,242	116	207	322
East End pool and Library	4,619	401	662	1,063
East End Customer Services	84	9	5	14
East End Enterprise Centre	-	5	-	5
Chillingham Road Primary	2,920	48	108	156
Cragside House	542	14	-	14
Belvedere House	570	33	98	131
Heaton Road Studio	188	21	4	25
Theresa Russell House	620	33	83	116
			Total	1,970

Building Name	Floor area M ²	Electricity Tons / CO ₂	Gas Tons / CO ₂	Total Tons / CO ₂
East End Community Centre	*	*	*	*
Charles Street Community Centre	*	*	*	*
			Total	

*Data TBC, awaiting copy bills from sites to assess carbon production

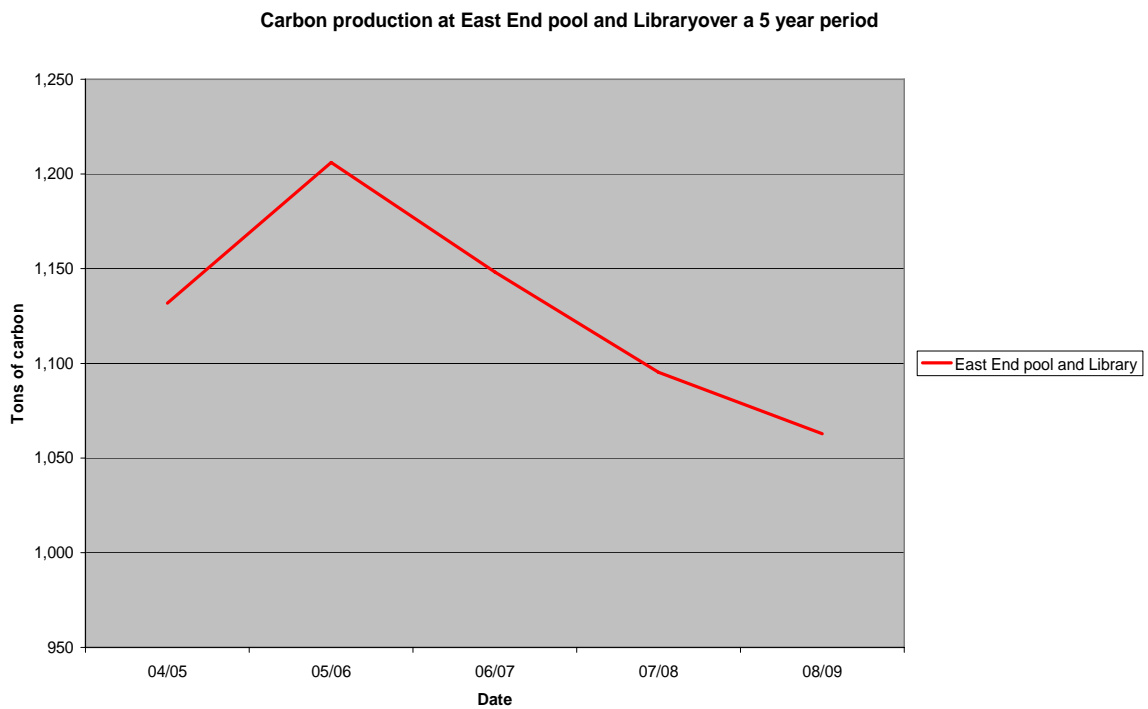
Figures 1 and 2 show the trend of carbon production over 5 years for the council buildings in South Heaton. It is clear that the East End pool and library is the highest producer followed by Heaton Road complex. In general, carbon production seems steady with the exception of the East End Pool and Library, which has seen a fall over the past 3 years, and Heaton Road complex, which has seen a substantial rise in carbon production over the last 12 months. Using this information it is clear that there are particular opportunities to reduce energy consumption and carbon production at Heaton Road Complex which should be investigated further. In addition there are likely to energy and carbon saving opportunities at many of the other buildings, as detailed in section 5.

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Figure 1 Carbon production for council buildings (except East End library and pool) over a 5 year period



Figure 2 carbon production from the East End Pool and library over a 5 year period



3.3 Domestic properties

According to the 2001 Census (using the 2001 ward boundaries) there are 4252 properties in South Heaton 93% of which are occupied, 37% of properties are owner occupied, 30% private, 21% local authority, and 8% housing association. The other 3% are unknown. Table 2 outlines the dwelling type of the properties in South Heaton, the highest proportion being flats, which is considerably higher than the city average.

Table 2 Dwelling type of properties in South Heaton (2001 Census)

	Ward	Ward	Newcastle
		%	%
Total	4,252	100	100
Detached	19	0.4	7.5
Semi-detached	144	3.4	34.7
Terraced	1,773	41.7	27.4
Flats	2,316	54.5	30.3
Other	0	0	0

Table 3 outlines the population structure of the ward. It shows that 35% of the population are between the ages of 16 and 24 a considerably higher number than the city as a whole, reflecting the fact that there is a large student population in the ward. In fact ,17% of the population are full time students.

Table 3 Population structure in South Heaton (2001 Census)

Age	Ward	Ward	Newcastle
		%	%
Total	8,461	100	100
Under 16	846	10	18.8
16-24	2,920	34.6	15.4
25-44	2,488	29.4	28.7
45-64	1,164	13.8	21.2
65-74	459	5.4	8.4
75+	584	6.9	7.6

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EST (Energy Saving Trust) estimate an average household in the UK creates around five and a half tonnes of carbon dioxide a year. On average, homes could save around £300 a year and reduce their carbon dioxide emissions by around 1.5 tonnes by insulating, improving their heating systems and being more energy efficient.

Newcastle Warm Zone (NWZ)

NWZ is a dynamic public-private partnership set up to tackle fuel poverty and improve energy efficiency across the City. Since it began work in April 2004, this exciting multi-million pound project has already benefited tens of thousands of households in Newcastle. The NWZ partnership includes Warm Zones Ltd, Newcastle City Council, Your Homes Newcastle, Scottish Power, Newcastle Primary Care Trust, insulation contractors and voluntary groups. NWZ will run for seven years to March 2011.

Table 4 Summary of the overall Warm Zone project in Newcastle to 31st March 2009

No. households assessed	71,607
No. insulation measures installed*	40,502 (31,719 homes)
CFL's delivered	301,248
No. completed benefit checks	14,293
No. of confirmed secured claims	2,686
Value of confirmed secured claims	£6,114,016
Average fuel poverty identified**	33%
CO2 emissions reduced (estimate)	c. 28,000 t p.a

* installed and to be installed imminently

** Based on NWZ estimate on current fuel prices

Table 5 South Heaton Warm Zone data

Total properties in ward	4393	100%
Total assessment captured	2236	51%
Total properties that measures installed	611	27%
Total Measures Delivered		
Cavity Wall Insulation	218	31%
Hot Water Tank Jacket	12	2%
Loft Insulation top up 100	52	7%
Loft Insulation top up 150	193	28%
Loft Insulation top up 200	131	19%
Loft Insulation top up 250	91	13%

Table 6 shows that 51% of domestic properties have been assessed in South Heaton, of these 27% have had an insulation measure installed. 54% of the insulation measures were loft insulation top ups, followed by 31% for cavity wall insulation, and 13% full loft insulation. An explanation for the low uptake of measures could be linked to the high number of solid wall properties and the high percentage of students in the area.

Using EST assumptions that each household in the UK creates around five and a half tonnes of carbon dioxide a year, we can make a very rough assumption that in South Heaton 24,161 tons of carbon dioxide is released each year from the domestic stock.

3.4 Industrial and commercial buildings

There are 658 non residential sites in South Heaton, the majority of these are retail and commercial units along Shields Road and Chillingham Road. Postal addresses for these sites can be obtained through the Routemap project enabling a leaflet drop.

There are a number of external organisations which could assist this sector reduce their carbon emissions including:

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3.4.1 The Carbon Trust who offer support and advice to businesses. They provide free carbon surveys to organisations with annual energy bills of more than £50,000, and their carbon experts will,

- visit premises
- identify energy saving opportunities with no or low cost of implementation
- offer practical advice

There is help available both for companies with limited experience of energy efficiency and those organisations already committed to carbon reduction.

<http://www.carbontrust.co.uk/energy/assessyourorganisation/carbonsurvey.htm>

The Council's account manager at the Carbon Trust has offered to help arrange a half day event to introduce carbon trust services and offer Carbon Trust advice to interested local businesses. <http://www.carbontrust.co.uk/events/>

3.4.2 The Manufacturing Advisory Service (MAS) is operated by PA Consulting, a global management consultancy with a history of transforming the performance of organisations. Support and advice for manufacturing business is available covering a wide range of issues including energy management - reducing energy costs and usage.

4 Recommendations for reduction

This proposal has confirmed that there are significant opportunities for reducing carbon emissions in Council and community buildings, as well as domestic properties in the South Heaton ward. The action plan that follows lists steps that should to be taken to help reduce emissions in the ward. It is proposed that the action plan be review and updated on a quarterly basis.

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5. South Heaton Carbon Challenge Action Plan 09/10

EC – Energy Centre, Newcastle City Council

WZ – Warm Zone

YHN – Your Homes Newcastle

No	Objective	No	Task	Lead	Target date	Actual output	Completion Date/Status	Results/Comments
1	Reduce CO ₂ emissions from council and community buildings	1.1	Carry out energy surveys at relevant community /council buildings and implement relevant recommendations	EC	March 2010			
		1.2	Carry out staff awareness events	EC	July 2010			
		1.3	Identify energy champions at relevant community and council buildings	EC	Dec 2009			
		1.4	Provide an energy monitoring and targeting service to all	EC	Dec 2009			

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			Council Buildings					
		1.5	Promote the installation of Automatic Meter Reading to suitable council buildings.	EC	Dec 2009			
		1.6	Review and identify relevant funding streams for potential projects.	All	March 2010			
		1.8	Sports Hall Zoning to reduce gas consumption at Chillingham Rd Primary.	EC / NPower	Dec 2009			
2	Reduce CO ₂ emissions from domestic properties	2.1	Warm Zone intensive campaign in the ward to ensure all homes have taken up insulation measures where possible.	EC/WZ	March 2010			
		2.2	Ensure home visits are carried out in the ward to YHN tenants where necessary.	EC/ YHN	March 2010			
		2.4	Ensure energy information available at appropriate ward events.	EC	August 2010			

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		2.5	Promote energy monitor loan scheme via local libraries.	EC/ Libraries/ WZ	Ongoing			
3	Reduce CO ₂ emissions from community, industrial and commercial buildings	3.1	Where possible sign post business to available sources of energy and carbon saving advice services	Carbon Trust and other relevant support agencies	Ongoing			
4	Governance of project	4.1	Develop a core group to manage project delivery	EC/YHN/W Z	August 09			