

# CLIMATE LOCAL - **DRAFT**

## Foreword

Thurrock Council recognises the importance of the climate change agenda. As a riverside borough with low lying areas we have experienced the impact of severe weather on people, industry and our wildlife and understand potential vulnerability from changing weather patterns.

Thurrock made its first commitment to tackling climate change in 2007. Since then it has been working with partners to reduce carbon emissions and increase our understanding of the risks of climate change for our residents, economy and environment.

Our carbon reduction programmes are focussed on supporting communities, local business and community leadership. We aim to tackle fuel poverty, reduce energy costs for local people and increase the competitiveness of the local economy through energy and resources efficiency and environmental technologies. We are committed to leading by example on this agenda and improving our own efficiency to reduce the emissions and energy costs in our estate and fleet.

Significant progress has been made in many areas. The authority has taken the lead on sub regional programmes to reduce carbon emissions from private housing and local business as well as delivering a borough wide sustainable transport programme.

Thurrock's climate local commitment, the first in the Eastern region of the country, was agreed cross party by the full council in November 2012.

*"This council applauds and supports the aims and objectives of the Climate Local scheme, and agrees to sign up to the Climate Local Commitment.*

*The council agrees to set locally owned and determined targets and actions, aimed at both saving money and tackling climate change, and to publish these within 6 months as required by the commitment."*

A member working group was set up comprised of Cllr Steven Liddiard (Labour, Tilbury St Chads), Chairmen of the cleaner greener safer committee, Cllr James Halden (Conservative, Homesteads), Former Chairmen of the cleaner greener safer committee, and Cllr Simon Wootton (Conservative, Chafford and North Stifford), Vice Chairmen of the cleaner greener safer committee.

Thurrock has a bold commitment to "local action, global responsibility", and to do this in a pro business way. Thurrock's commitment to acting on energy efficacy and climate change is absolute as it was drafted jointly between the administration and the opposition.

## Introduction

Climate Local is an initiative launched by the Local Government Association in 2012. It builds on the Nottingham Declaration on Climate Change and enables local areas to make a national commitment whilst setting locally relevant targets.

Thurrock Council signed up to the Nottingham Declaration in 2007 and began work to reduce climate change emissions from 2005 levels both within the Council and across the borough. Good progress has been made in a number of areas to date on climate change emissions and climate resilience. This plan both reports on our successes and sets the new local targets for Climate Local.

## The National Picture

In June 2011 the Climate Change Act set a target to reduce the UK's greenhouse gas emissions by 80% from 1990 levels by 2050. The Carbon Plan sets four national carbon budgets.

	Carbon Budget 1 2008 - 12	Carbon Budget 2 2013 - 17	Carbon Budget 3 2018 - 22	Carbon Budget 4 2023 - 27
Carbon Budget Mt CO <sub>2</sub> e	3,018	2,782	3,544	1,950
Percentage reduction from 1990	23%	29%	35%	50%

These budgets cover

- Buildings
- Transport
- Industry
- Securing low carbon electricity
- Agriculture, forestry and land management
- Waste and resource efficiency

The activities for reducing emissions includes both national government activities and government activities that can be influenced locally.

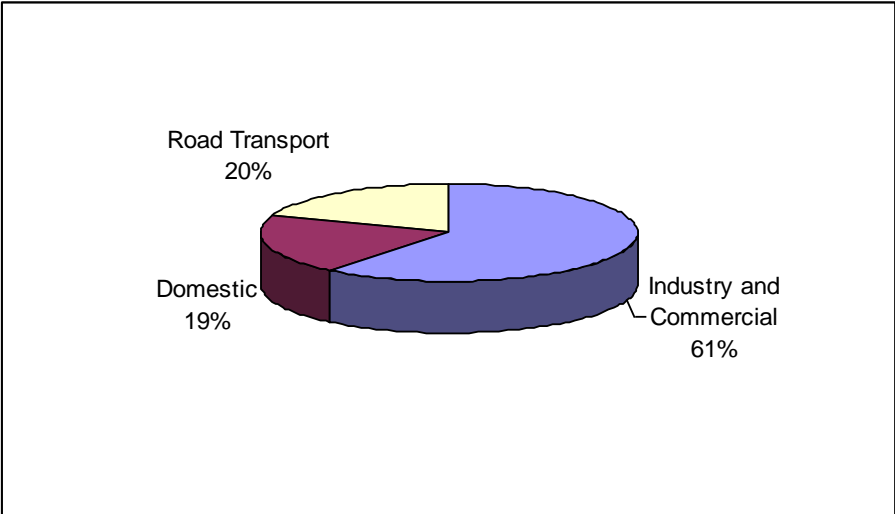
### The Thurrock Picture

Thurrock's emissions baseline is based on the 2005 CO2 emissions estimates. These are calculated by the Department of Energy and Climate Change annually from energy consumption data for each local authority and are published 2 years in arrears.

Emissions are by end user and cover

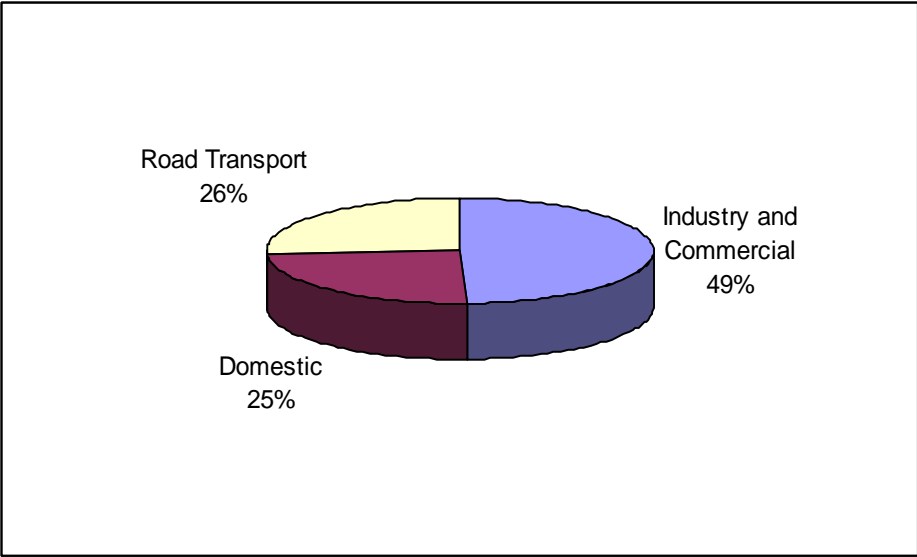
- Road Transport
- Domestic
- Industry and commerce
- Land use , land use change and forestry

### CO<sub>2</sub> Emissions in Thurrock by sector, 2005 Baseline



The majority of Thurrock's baseline was industrial emissions, however the ratio of emission has changed significantly over the 5 year period due to large scale reductions in industrial and commercial emissions.

### CO<sub>2</sub> Emissions in Thurrock by sector, 2010



Thurrock emissions are higher than both the regional and the national averages. The borough ranks in the highest 20% emission producers nationally for both transport and industrial sources at 331 and 341 respectively. Within the eastern region Thurrock has the 3<sup>rd</sup> highest industrial emissions sources and the 5<sup>th</sup> highest overall while domestic emissions perform well and lie below the national average.

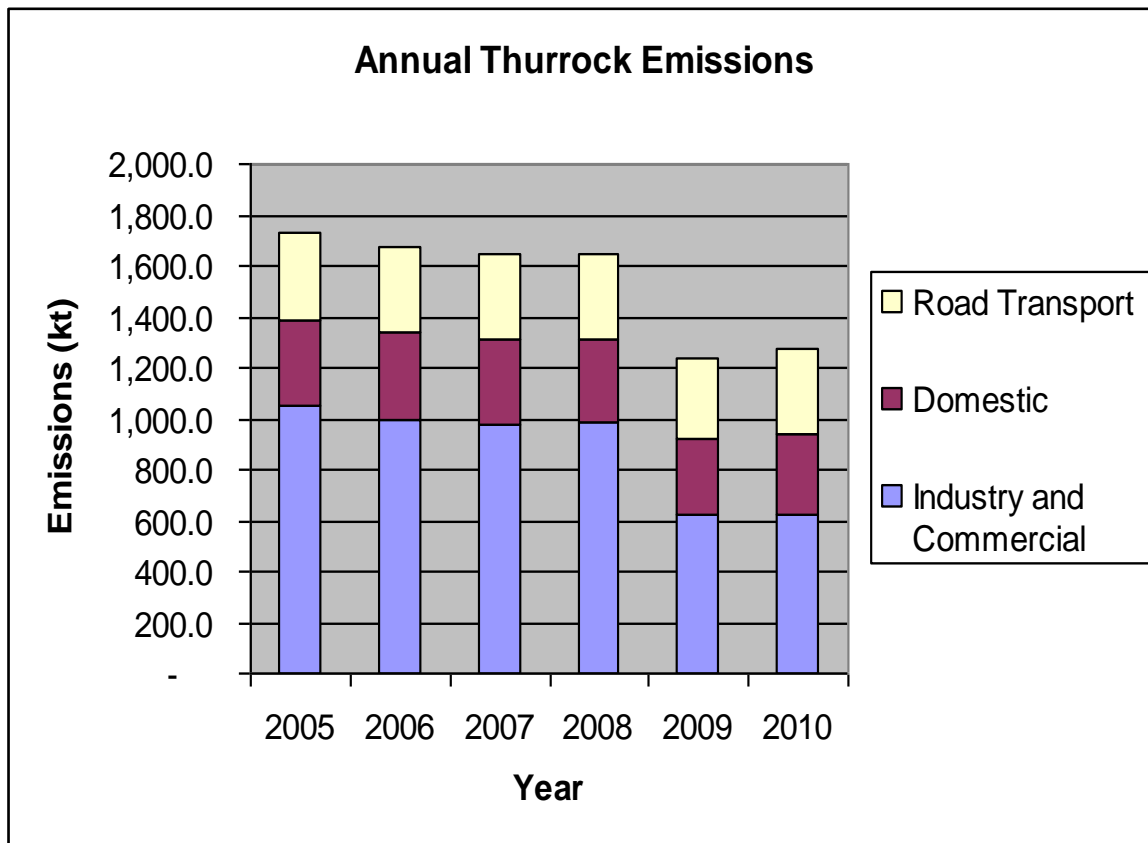
#### Per Capita CO2 Emissions Comparison (tonnes) Area

	Industry and Commercial	Domestic	Road Transport	LULUCF	Total
<b>Thurrock</b>	3.94	1.98	2.62	0.0	8.5
<b>East of England</b>	2.58	2.25	2.27	0.09	7.2
<b>UK</b>	3.34	2.35	2.00	-0.07	7.6

#### Total CO2 Emissions – 2005 to 2010 (kilo tonnes)

Total CO2 Emissions – 2005 to 2010 (kilo tonnes) Year	Industry and Commercial	Domestic	Road Transport	LULUCF	Total	Per Capita Emissions
2005	1,053.1	336.5	338.1	-0.65	1,727.8	11.6
2006	999.0	338.7	332.4	-0.67	1,670.1	11.1
2007	976.1	332.9	338.9	-0.68	1,647.9	10.8
2008	983.0	328.1	335.0	-0.53	1,646.1	10.6
2009	627.3	293.6	318.9	-0.83	1,239.8	7.9
2010	627.9	316.3	326.8	-0.45	1,270.9	8.0
<b>Total Change</b>	40.38%	6.01%	3.37%	31%	26.44%	31.03%

Data Source: DECC, Local and Regional CO<sub>2</sub> Emissions Estimates for 2005-2010 Full Dataset, 2012



In 5 years Thurrock's emissions have reduced by 26% overall, however the latest data shows a slight increase, further action is required to maintain positive progress.

Thurrock's emissions have been subject to a significant drop between 2008 and 2010. It is likely that this is in part due to reductions in the economy and ensuring low carbon growth will be important to maintain the current emission levels as the economy grows in the future.

## Thurrock Climate Local Commitments

Thurrock is committed to support the delivery of the national carbon reduction targets. We will achieve this by:

Working towards a 35% reduction in emissions by 2022

This equates to a saving of 604 kt of CO<sub>2</sub> over 15 years to reduce the emissions baseline to 1,123 kt by 2022.

In addition we recognise the importance of regeneration and growth, and that this could increase our overall footprint. We will support our carbon tonnage reduction targets with low carbon growth targets to:

Working towards low carbon growth by:  
Reducing the emissions per job by 50% by 2022  
Reducing the emissions per household by 17% by 2022  
Reducing emissions per daily road movement by 8% by 2022

## Delivery at a National Level

National initiatives with a direct impact on Thurrock are forecast to deliver the following emissions savings with no additional action at a local level.

Fig X Forecast reduction in emissions from National initiatives (business as usual scenario)

	Baseline	Forecast reduction emission 2015/17	Percentage reduction	Forecast reduction emission 2020/22	Cumulative Percentage reduction
Transport	338	15.681	4.64%	17.92	5.30%
Housing	337	1.541	0.46%	2.348	0.70%
Industrial	1,053	94	8.93%	131	12.44%

From these activities we would expect to see a combined reduction of the 2005 emissions of 6.44% by 2017 and a 8.75% reduction by 2022.

In addition a number of national initiatives are in process which can be influenced at a local level

Fig X Forecast reduction in emissions from locally influence National initiatives (do minimum scenario)

	Baseline	Forecast reduction emission 2015/17	Percentage reduction	Forecast reduction emission 2020/22	Cumulative Percentage reduction
Transport	338	2.55	0.75%	2.92	0.86%
Housing	337	8	2.37%	21.131	6.27%
Industrial	1053	37	3.51%	50	4.75%

From these activities we would expect to see a combined reduction of the 2005 emissions of a further 2.59% by 2017 and 4.04 by 2022.

## Local Delivery to date

To date (2012) an emissions saving of 456kt has been delivered, leaving a target of 12.84kt to achieve by 2017 and a further 114kt by 2022 averaging a total of 14kT per year over 9 years.

The emissions target is split into six work streams with their own appropriate carbon saving.

Kilo Tonnes of CO2	Baseline	Target	Target Savings	Achieved to Date	Remaining	Annual target
Transport	338	-8%	-27	-11	-16	-2
Housing	337	-17%	-57	-20	-37	-5
Industrial	1053	-42%	-442	-425	-17	-2
Land use	-0.65	10%	0	0	-1	0
<b>Additional Sub Targets</b>						
Council	27	-35%	-9	-1	-8	-1
Renewables tCO2 equivalent	29	-235%	-68	-5	-63	-8
<b>Total</b>	<b>1727.35</b>	<b>35%</b>	<b>605</b>	<b>-462</b>	<b>-142</b>	<b>-18</b>



## TRANSPORT - EMISSIONS FACT SHEET

Transport emissions currently contribute 26% of Thurrock's carbon emissions. Thurrock is in the top 20% of road emissions at the 74<sup>th</sup> highest.

### Road Transport CO2 Emissions – 2005 to 2010 (kilo tonnes) Year

	<b>A roads</b>	<b>Motorways<sup>5</sup></b>	<b>Minor roads</b>	<b>Other</b>	<b>Total</b>
2005	224.17	105.01	112.19	1.78	443.15 *
2006	221.99	106.29	108.63	1.80	438.71
2007	223.99	110.24	113.23	1.70	449.17
2008	221.15	101.12	112.23	1.64	436.13
2009	209.38	98.28	108.03	1.46	417.16
2010	218.92	92.19	106.34	1.50	418.95
<b>Total Change</b>	<b>-2%</b>	<b>-12%</b>	<b>-5%</b>	<b>-16%</b>	<b>-5%</b>

\*Baseline figures have been recalculated by government and breakdown requires re-analysis

### National initiatives

UK domestic transport emissions in 2020 are forecast to be just over 5% lower than in 2005. Large cuts in transport emissions of carbon dioxide are essential if the UK is to meet its climate change targets.

National initiatives already in delivery include

- Voluntary Agreements
- Renewable Transport Fuel Obligations
- Fuel Duty Escalator

Forecasts show these measures should deliver a 5.6% saving per annual daily traffic flow by 2020.

In addition national initiatives with a local input could deliver a further 0.9% efficiency through

- Sustainable Distribution programme
- Smarter choices programme, and,
- Speed limit enforcement

Traditionally achieving reductions have had a reliance on technological changes in engine standards and vehicle specification. However, while technology obviously plays a central role in carbon reduction from Transport sources it cannot alone be relied upon to realise the necessary changes in behavioural change required.

## Modal Shift

Modal shift focuses on reducing single occupancy car journeys through increasing car sharing, public transport use, walking and cycling. Carbon reduction is a key theme running through Thurrock's Local Transport Plan (LTP). The core aims of the plan from this respect include:

- Reducing the need to travel;
- Encouraging a modal shift to more sustainable modes of transport, such as public transport, walking and cycling;
- Reducing emissions from residual sources; and
- Reducing vulnerability to climate change

## Technology

Technology improvements have had a positive impact on reducing emissions, the efficiency of vehicle engines has increased dramatically over the last few decades and new technology and alternative fuels are becoming increasingly available.

## Achieving our target

	Baseline	Target	Target Savings	Achieved to Date	Remaining	Annual target
Transport	338	-8%	-27	-11	-16	-2

## Current Projects and Programmes

Projects the Council is actively working on in this respect include:

- Workplace travel plans;
- Sustainable travel to school;
- Lift sharing and
- Personalised Journey Planning.

The Council is also making a range of improvements to sustainable transport infrastructure, including:

- Retrofitting of particulate filter systems to haulage, logistics and mini bus vehicles;
- Installation of electric recharging points in Grays, South Ockendon and Stanford-le-hope;
- Innovative new exhaust pilot trial with taxi's in the borough and
- Seeking to secure funding for hybrid buses in the borough

The Local Sustainable Transport Fund programme targets a 3.12% reduction in transport emissions a reduction of 10.5kt of CO2.

TRANSPORT	Percentage	Kt CO2
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<b>Baseline</b>		338
Target	15%	50.7
Achieved to date	3.37%	11.38
Local Sustainable Transport Fund	3.12%	10.6
<b>Total</b>	<b>6.49%</b>	<b>21.98</b>
<b>Target Remaining</b>	<b>8.51%</b>	<b>28.72</b>

### Future projects and programmes for assessment in the delivery plan

TRANSPORT	Percentage	Kt CO2	Carbon Budget 2 2012-17	Carbon Budget 3 2017-22
<b>Target Remaining</b>	<b>8.51%</b>	<b>28.72</b>		
<b>Areas requiring further investigation/ analysis</b>				
Planning policy	Develop the sustainability planning guidance within the design and construction Supplementary Planning Document and implement on new planning applications			
low emission zones	Review the delivery of LEZ and carry out a feasibility study for Thurrock including assessment of the economic impacts and powers for delivery and enforcement			
Hydrogen cell powered public transport	Monitor the performance of existing programmes and identify funding opportunities for future development			
Electric vehicles	Monitor performance of current electric charging programmes and review the York programme to identify opportunities for Thurrock			
Rail improvements	Support the development of rail capacity improvements			
Walking and cycling improvements	Develop appropriate funding bids			
DP World and freight reductions	Modelling the likely reductions in the national transport carbon footprint from DP world and a proportional Thurrock saving			
Trialling street light reduction	Develop a trial LED project to delivery 60% reduction in electricity use per light adapted			

### Next Steps

The movement of the logistic centres from the midlands to the south east, including Thurrock, has been identified as contributing a significant carbon saving by reducing the double handling of freight. Thurrock's contribution to these national savings will require further assessment as part of the final target and delivery.

## DOMESTIC - EMISSIONS FACT SHEET

Thurrock's domestic emission baseline performs better than the regional and national average.

	2005
<b>Domestic Emissions: Tonnes of CO<sub>2</sub></b>	333,375
<b>Number of Houses</b>	62,536
<b>Tonnes CO<sub>2</sub> per household</b>	5.33
<b>Tonnes of CO<sub>2</sub> per capita</b>	2.2
<b>Tonnes of CO<sub>2</sub> per capita (east of England)</b>	2.3
<b>Tonnes of CO<sub>2</sub> per capita (UK)</b>	2.4

Domestic emissions include a subset of Council house emission. In 2007 it was estimated that 49.8kt of domestic emissions were from Council housing contributing 14.8% of the domestic footprint.

### National initiatives

Nationally the energy efficiency performance has been improving with changes to building regulations for new buildings. In addition the Climate Change Act promotes a number of domestic initiatives aimed to reduce emissions. There has been a significant movement from an individual focussed agenda on fuel poverty and carbon reduction to a hybrid approach drawing both together.

The national initiatives are forecast to delivery a 7% saving and include:

- Energy Efficient Products/Product Policy (additional)
- Better billing
- Real time displays and Smart metering
- Raising minimum standards for window replacements
- Energy Performance Certificates
- Tradable Obligations on House Builders
- Supplier Obligations after 2011
- Building Regulations (re-evaluated)
- Zero Carbon Homes
- Energy Performance of Buildings Directive
- Package of measures to improve energy efficiency in buildings
- Warm Front and fuel poverty programmes
- Winter fuel payments linked to energy efficiency
- House extension consequential work
- Green roofs
- Merton rule implementation
- Home Information Pack (HIP)

Central to this agenda has been the government's landmark initiative "The Green Deal" which is a financing mechanism that lets people pay for energy-efficiency improvements through savings on their energy bills. The Green Deal was launched in

January 2013 and applies to both the domestic and non-domestic sector. It replaces current policies such as the Carbon Emissions Reduction Target (CERT) and the Community Energy Saving Programme (CESP).

It was also envisaged that this would replace local authority responsibilities under the Home Energy and Conservation Act, (HECA), however, HECA is to be resurrected in the near future.

### Achieving our target

	Baseline	Target	Target Savings	Achieved to Date	Remaining	Annual target
Domestic	337	-17%	-57	-20	-37	-5

### Current Projects and Programmes

Whilst the Council has experienced a decline in traditional energy efficiency grant activity resulting from reduced public sector funding, it has, together with Tendring District Council, led in establishing the transition toward an Essex wide approach to the Green Deal. The impetus behind this being to maximise scale in order to achieve the best possible deal for householders on energy efficiency measures and improvements.

The Council is also seeking to facilitate further improvement in domestic energy efficiency and reduce emissions, by utilising its existing proactive energy efficiency improvement programme in its public sector housing stock and by extending this opportunity to private sector occupiers in the area.

The Council also seeks to support the growing private rented sector and act as an intermediary, resolving and in some situations enforcing improvements relating to complaints by tenants, including those relating to thermal comfort and energy efficiency. The Council also operates an accredited Landlord Scheme. This requires landlords to undertake training and continuous professional development and in return they can access the 50% loan 50% grant schemes which cover energy efficiency improvements such as boiler/heating replacement.

DOMESTIC	Percentage	Kt CO2
Baseline		338
Target	10%	34
Achieved to date	5.98%	20.22

<b>Total</b>	<b>5.98%</b>	<b>20.22</b>
<b>Target Remaining</b>	<b>4.02%</b>	<b>13.48</b>

### Future projects and programmes

<b>DOMESTIC</b>	<b>Percentage</b>	<b>Kt CO2</b>	<b>Carbon Budget 2 2012-17</b>	<b>Carbon Budget 3 2017-22</b>
<b>Target Remaining</b>	<b>4.02%</b>	<b>13.48</b>		
<b>Areas requiring further investigation/ analysis</b>				
Planning policy	Develop the sustainability planning guidance within the design and construction Supplementary Planning Document and implement on new planning applications			
ECO energy efficiency	Pilot a ECO funded thermal efficiency programme with utilities providers			
Council House refurbishment	Assess the potential carbon savings from the planned housing capital programme			
Essex wide procuring group to secure single supplier for green deal in Essex	Complete the appropriate procurement activity for the Essex provision of Green Deal			
New build scheme	Assess the potential carbon savings from the planned housing build programme			

### Next Steps

Securing a joint supplier for the Essex consortium for the Green Deal is a key priority for the Council. The Council also intends to fully utilise the BRE stock profiling of housing work the council has undertaken in order to focus our activity and resources through initiatives highlighted to target the areas in Thurrock in most need.

## INDUSTRIAL AND COMMERCIAL - EMISSIONS FACT SHEET

	2005
<b>Domestic Emissions: Tonnes of CO<sub>2</sub></b>	1,053
<b>Number of Jobs</b>	62,000
<b>Tonnes CO<sub>2</sub> per job</b>	16.98

Industrial emissions account for the biggest proportion of emissions in Thurrock due to the high density of industry across the borough, especially the proportion of logistic companies. However emissions from the industrial sector have been falling with a 60% fall since 2005.

Although good progress has been made, Thurrock is still the third highest emitter in the industrial sector in the East of England and is in the highest 20% for industrial emissions nationally. Although the large volume of industry in Thurrock means that emissions will be above the national average, further progress can be made to cut emissions further.

This sector is also affected by significant legislation and government policy regarding commercial carbon emissions, energy use and waste. This has seen the thresholds for these policies and legislation increase to affect more and more companies. Although these measures are in place to force the sector to reduce carbon emissions the costs to businesses can make this unviable. The Council is facilitating these businesses with grant support to allow businesses to install green technologies.

### National initiatives

Nationally carbon reduction in industry is being driven by increased regulation and reporting. Initiatives from government are forecast to deliver more than 16% reduction in Thurrock. These include:

- Carbon Trust
- Climate change agreements
- Carbon Trust support for investment in energy efficiency in SMEs
- Measures to encourage or assist SMEs to take up energy saving opportunities
- Energy Performance of Buildings Directive
- Business Smart Metering
- New measure for achieving carbon savings from large non-energy intensive organisations (Carbon Reduction Commitment, CRC)
- Products Policy
- Carbon Reduction Commitment
- Building Regulations (re-evaluated)
- Revolving loan fund for the public sector
- Activities including CT
- Carbon Neutral Government
- Energy Performance of Buildings Directive

### Achieving our target

	Baseline	Target	Target Savings	Achieved to Date	Remaining	Annual target
Industrial	1053	-42%	-442	-425	-17	-2

### Current Projects and Programmes

Reducing industrial and commercial emissions is a challenge and often outside the scope of a Local Authorities influence.

The Council's key project in improving energy efficiency in industrial energy use is the ERDF Low Carbon Business Programme. This £6.3 million programme is improving the energy efficiency of small to medium enterprises across the whole of South Essex and has been operational since 2009. The programme provides grants to install energy efficiency measures, green business audits, workshops and free support to help businesses cut costs and carbon emissions.

To date the programme has awarded grants totalling £508,458 to 136 businesses in Thurrock. These grants will result in the following reductions across the borough.

	Reduction (tCO <sub>2</sub> )
Water	4.1
Waste Diversion	42.56
Energy	1,296.27
<b>Total CO<sub>2</sub> reductions</b>	<b>1,342.93</b>
<b>Cost saving from reductions</b>	<b>£396,112.76</b>

This is delivering more than 10% carbon reductions in each business supported.

The Green Business Forum offer and advice and support to businesses in Thurrock. The Green Business Forum's environmental consultants support businesses to complete free waste and energy audits, provide advice on legislation, and help with environmental management systems and ISO 14001 Certification.

INDUSTRIAL	Percentage	Kt CO <sub>2</sub>
<b>Baseline</b>		1053
Target	43%	452.79
Achieved to date	40.38%	425
ERDF Low Carbon Business phase 1	0.17%	1.8
Green Business Forum	0.04%	0.4
ERDF Low Carbon Business phase 2	0.08%	0.8
<b>Total</b>	<b>40.67%</b>	<b>428</b>



<b>Target Remaining</b>	<b>2.33%</b>	<b>45.91</b>
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### Future projects and programmes

<b>DOMESTIC</b>	<b>Percentage</b>	<b>Kt CO2</b>	<b>Carbon Budget 2 2012-17</b>	<b>Carbon Budget 3 2017-22</b>
<b>Target Remaining</b>	<b>2.33%</b>	<b>45.91</b>		
<b>Areas requiring further investigation/ analysis</b>				
Green technologies	Develop the sustainability planning guidance within the design and construction Supplementary Planning Document and implement on new planning applications			
On site renewables	Develop the sustainability planning guidance within the design and construction Supplementary Planning Document and implement on new planning applications			
2016 ERDF low carbon opportunities	Identify opportunities from the Regional Development funding programme			
Smart cities	Identify opportunities from the wider EU funding programme			
Other				

### Next Steps

- The Low Carbon Business Programme and the Green Business Forum will continue to deliver carbon reduction measures and will reduce industrial energy use by a further 1.2 kt by 2022.
- Going forward the Low Carbon Business Programme aims to reduce emissions of industry in Thurrock by delivering further grants to SMEs across the borough to continue to support the installation of green technologies.
- The Green Business Forum will continue to provide support to businesses in Thurrock.

## COUNCIL EMISSIONS

The Council's emissions sit within the overall footprint for industry and commerce. The UK government has identified the local authority sector as key to delivering carbon reduction across the UK inline with its commitments.

Thurrock Council's 2007 carbon footprint was 27kt and the cost of energy for Council buildings reached £1.9m in 2011-12.

Thurrock qualifies under the governments Carbon Reduction commitment exceeding the 6000MWh threshold on half hourly meters. This places rigid annual statutory requirements on the organisation to submit a return on the organisations emissions. The council is also required to pay a fee for every ton of carbon used (currently set at £12 a tonne). In the last CRC year (2011/12) the organisation energy consumption resulted in 12787 tonnes of CO2 emissions.

The carbon reduction commitment covers only part of the Council's emission footprint.

CRC emissions	2010-11 t CO2	2011-12 t CO2	Kilo tonnes Saved	Percentage
Emissions	14044	12781	1.263	8.99%

### Achieving our target

	Baseline	Target	Target Savings	Achieved to Date	Remaining	Annual target
Council	27	35%	9.45	1.2	8.25	0.92

### Current Projects and Programmes

The council has an active programme of demand and supply management both in terms of energy efficiency and bill validation and procurement. The authority has been successful in securing a bid of £500,000 from SALIX (the financial wing of the carbon trust) that provides invest to save interest free loans for energy improvements in Council building where there is a four year payback. The savings are used to repay the loan are reinvested for further projects within the councils estate.

Thurrock has already participated within the Carbon Trusts Local Authority Carbon Management Programme for local authorities culminating in the production of its Local Authority Carbon Management Plan. This provides the basis to reduce emissions arising from the authority's activity and enabling the authority to reduce emissions and saving money on energy.

More influential programmes on the authority's emissions are being undertaken as part of the organisations Transformation programme.

COUNCIL	Percentage	Kt CO2
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<b>Baseline</b>		27
Target	35%	9.45
Achieved to date	4.68%	1.263
SALIX Invest to Save Programme	3.57%	0.964
<b>Total</b>	<b>8.25%</b>	<b>2.23</b>
<b>Target Remaining</b>	<b>26.75%</b>	<b>7.22</b>

### Future projects and programmes

COUNCIL	Percentage	Kt CO2	Carbon Budget 2 2012-17	Carbon Budget 3 2017-22
<b>Target Remaining</b>	<b>26.75%</b>	<b>7.22</b>		
<b>Areas requiring further investigation/ analysis</b>				
SALIX Invest to Save Programme	5.88%	1.59	0.71 kt	0.88 kt
Transformation	Assess the potential for energy efficiency into the transformation programmes for ICT and new ways of working			
Civic Office refurbishment	Assess the potential for energy efficiency into the office transformation programme			
Energy Surveying of Schools	Identify opportunities to work with schools on energy improvement			
Carbon Management Plan and CRC Annual Return and Evidence Pack	Update the carbon management plan to identify opportunities to reduce CRC costs and prepare business case for invest to save opportunities			
Design Advice	Develop the sustainability planning guidance within the design and construction Supplementary Planning Document and implement on new planning applications			

### Next Steps

Implementation of the Carbon Management Plan, including relevant surveys and projects.

## RENEWABLE ENERGY

Thurrock's renewable energy baseline was set in 2007. At the time the area was performing relatively well with 52.6 MW of installed capacity contributing 54% of the county's and 11% of the region's renewable energy generating capacity.

Figure 7: Renewable Energy in Thurrock Name	MW	Type
Tilbury Power Station	12.767	Biomass co-firing in fossil fuel power station
Aveley	3.952	Landfill Gas
Aveley - NFFO 5	2.006	Landfill Gas
Aveley Landfill	3.840	Landfill Gas
Aveley Phase 2 Generation	2.128	Landfill Gas
Mucking 3	4.074	Landfill Gas
Mucking Gas 2-NFFO	4.074	Landfill Gas
Mucking Landfill	3.2	Landfill Gas
Mucking Landfill 2	7.789	Landfill Gas
Ockendon "A" Power Plant	4.016	Landfill Gas
Ockendon "B" Power Plant	4.756	Landfill Gas

There are three main approaches for renewable energy:

- On site passive renewables such as solar hot water, which reduce demand for grid electricity
- On site renewables electricity, such as photovoltaic and wind energy which generate electricity for the needs of the site
- Renewable generation that contributes to the grid.

The national grid has a mix of energy sources which give a combined figure of 0.523 kg of CO<sub>2</sub> per kilo Watt hour of electricity. This figure is used as the baseline for any equivalent carbon savings from renewable energy.

The majority of renewable energy in Thurrock – 76% – is provided via a landfill gas, with the remaining 24% provided by a biomass facility at Tilbury Power Station.

Tilbury Green Power has permission for a 60MW power station using a mix of imported biomass, though this is not currently being delivered.

In 2005/06, the construction of the Environment and Education centre at Rainham, Wennington and Aveley Marshes RSPB Reserve was completed. The Environment and Education centre is using a ground source heat pump which is supported by photovoltaic panels yielding 10 mWh/year, which is providing 25% of the energy requirements for the building.<sup>6</sup>

In 2012-13 the Port of Tilbury installed four 2.3MW wind turbines which will deliver 50% of the ports energy requirements.

## Achieving our target

	Baseline	Target	Target Savings	Achieved to Date	Remaining	Annual target
Renewables tCO2 equivalent	29	-235%	-68	-5	-63	-8

## Current Projects and Programmes

RENEWABLES	Percentage	Kt CO2
Baseline		29
Target	200%	58
Achieved to date		
Port of Tilbury	8.27%	4.8
Riverside Business Centre		4.2
RSBP Rainham Purfleet visitor centre		10
<b>Total</b>	<b>8.27%</b>	<b>4.8</b>
<b>Target Remaining</b>	<b>191.73%</b>	<b>53.2</b>

## Future projects and programmes

RENEWABLES	Percentage	Kt CO2	Carbon Budget 2 2012-17	Carbon Budget 3 2017-22
<b>Target Remaining</b>	<b>191.73%</b>	<b>53.2</b>		
<b>Areas requiring further investigation/ analysis</b>				
PowerStation Proposals	191.73	53.2		
Other				