

**NORTH LINCOLNSHIRE COUNCIL**

**SAFER, GREENER AND CLEANER  
PLACES**

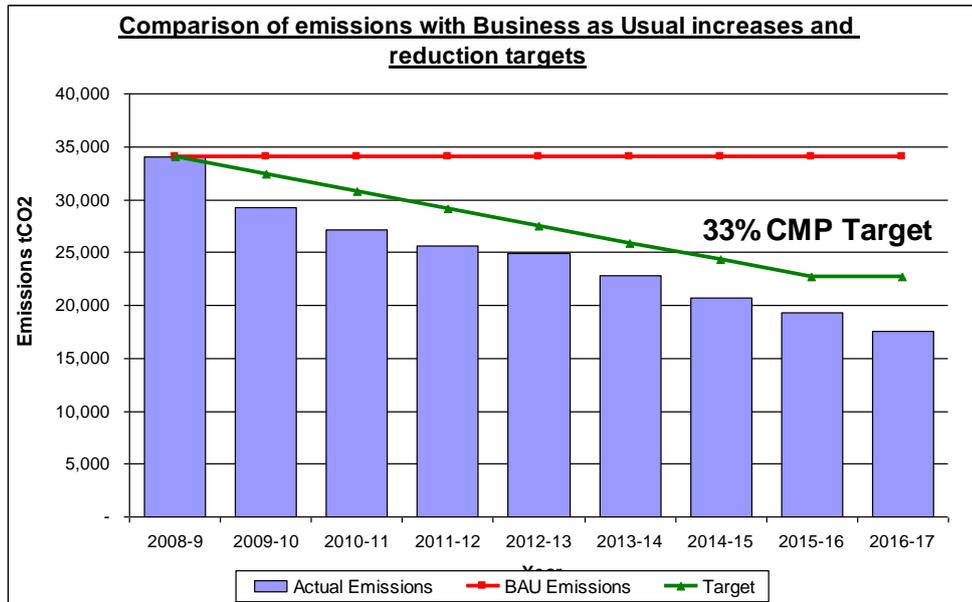
**CARBON MANAGEMENT PLAN 2017-2022**

**1. OBJECT AND KEY POINTS IN THIS REPORT**

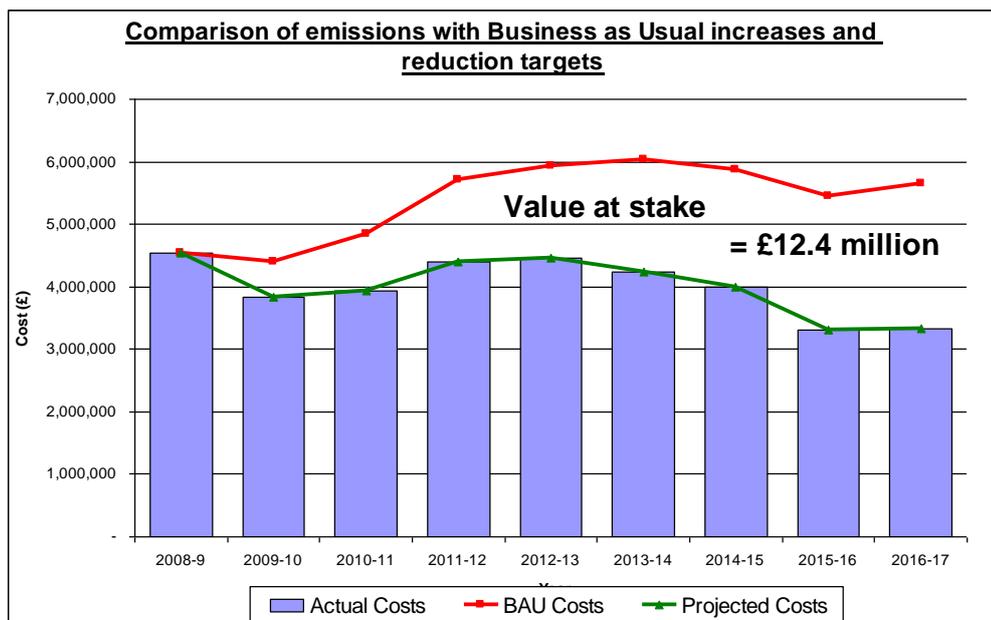
- 1.1 To seek approval to adopt the new Carbon Management Plan and its targets.
- 1.2 To seek approval to develop a business case for the financing options to enable delivery of a programme of energy reductions over the next five years.
- 1.3 To seek approval to explore the potential of Salix Finance to help towards achieving further reductions in the carbon footprint of the council over the next 5 years.

**2. BACKGROUND INFORMATION**

- 2.1 The council approved the previous Carbon Management Plan in 2009. The plan set a target of reducing CO<sub>2</sub> emissions across its buildings and operations by 33% by 2015/16. This included schools.
- 2.2 In 2010 a carbon management budget was approved. To date, over £1.5m has been allocated to this budget. It has delivered many carbon & energy efficiency projects.
- 2.3 Projects include the adoption of renewable energy technologies, LED lighting, IT power management, improved heating controls, voltage optimisation, variable speed drives, insulation & lagging, building rationalisation and smart working.
- 2.4 By 2014, we had met the carbon reduction target. By 2016/17 we had reduced our CO<sub>2</sub> emissions by 48%. In 2008/09 our total carbon emissions were nearly 34,000 Tonnes CO<sub>2</sub>. By 2015/16 they were 18,200 Tonnes CO<sub>2</sub>. The following graph illustrates this reduction.



2.5 Reducing carbon also results in cost savings and avoidance. This reduced energy consumption equates to a cost saving and avoidance of approximately £12.4m by 2016/17.



2.6 The council was recently awarded the 'Carbon Masters' standard in recognition of its work in reducing its carbon footprint as set out above.

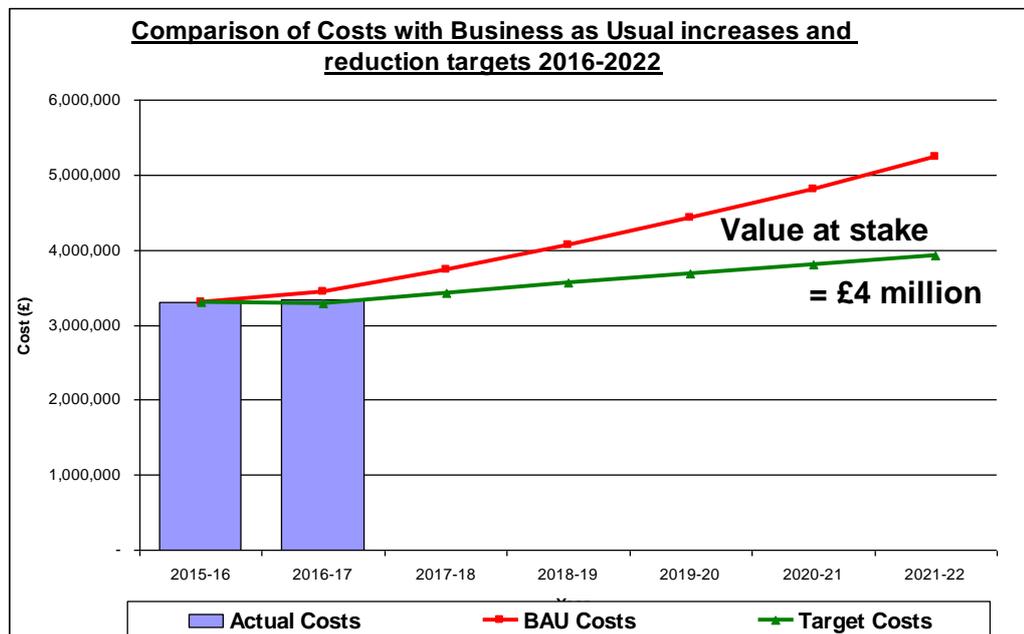
### 3. OPTIONS FOR CONSIDERATION

3.1 The recommendation is to continue to work to further reduce the council's carbon footprint via the adoption of a new Carbon Management Plan. We have set a new target to reduce our carbon emissions by an additional 25% by 2021/22 (compared to our 2015/16 baseline).

3.2 Achieving this would require that we continue to invest in energy efficiency schemes. Salix Finance offers interest free loans to public sector bodies for a range of technologies that result in reduced carbon emissions. The savings made then pay back the loan up to 5 years in Council buildings and 8 years in schools.

## 4. ANALYSIS OF OPTIONS

4.1 The Plan contains a 5-year programme that has the potential to deliver significant savings. This could help the council meet some of the cost pressures it faces in the next few years.



4.2 Electricity prices are predicted to rise by over 50% by 2021. If we do nothing, our total energy costs could rise to as much as £5.2m as a result. It was £3.2 million in 2016/17.

4.3 To achieve this we have identified the following project areas.

- LED Street lighting
- LED lighting in buildings
- Further adoption of renewables
- Investigation of battery storage technology
- Peak load management strategy
- Rationalisation of buildings
- Promotion of energy awareness in schools
- Biomass and water supply frameworks

4.4 The Plan lists the projects that have already been agreed (e.g LED street lighting). The potential projects in the Plan will have to be funded and it is suggested that we explore the use Salix interest free loans as a potential funding route.

**5. RESOURCE IMPLICATIONS (FINANCIAL, STAFFING, PROPERTY, I.T.)**

5.1 The financial implications are detailed above.

**6. OUTCOMES OF INTEGRATED IMPACT ASSESSMENT (IF APPLICABLE)**

6.1 Not applicable.

**7. OUTCOMES OF CONSULTATION AND CONFLICTS OF INTEREST DECLARED**

7.1 Relevant council officers in the Legal Services and Asset and Estate Management teams were consulted. They support the proposal.

7.2 Officers in the Finance Services team were consulted on the content of this report and agree with the recommendations.

7.3 There are no conflicts of interest to highlight.

**8. RECOMMENDATIONS**

8.1 That the Cabinet Member approves the adoption of the new Carbon Management Plan and its 25% CO<sub>2</sub> reduction target against the 2015/16 baseline.

8.2 That the Cabinet Member approves the development of a business case for the financing options to enable delivery of a programme of energy reductions over the next five years.

8.3 The Cabinet Member agrees that the Director of Operations and Director of Governance and Partnerships explore the opportunities of bidding for Salix funding to support the delivery of projects listed in the Carbon Management Plan.

DIRECTOR: OPERATIONS

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DN16 1AB

Author: Craig Stapleton  
Date: November 2017

**Background papers used in the preparation of this report: N/A**

**North Lincolnshire  
Carbon Management Strategy**

**2017 - 2022**

## EXECUTIVE SUMMARY

This Carbon Management Strategy 2017-2022 sets out our strategy and action plan for reducing carbon emissions and associated energy costs over the next five years. This programme will enable us to deliver our priorities for action:

1. **Priority One Low Carbon Council** - Reduce carbon emissions across the council estate, operations and street lighting
2. **Priority Two Low Carbon Economy** - Promote business resource efficiency and help low carbon and local businesses grow in North Lincolnshire
3. **Priority 3 Low Carbon Communities** - Support and promote community action for low carbon living
4. **Priority 4 Low Carbon Transport** – Reducing energy use and carbon emissions from transport

Our new Carbon Strategy will build on the successes of the previous Carbon Management Plan covering the period 2009 - 2016. By 2016/17, we had reduced our carbon emissions by 48% which has delivered a total of £12.4 million in cost savings and avoidance. Due to our substantial energy reductions a further £1.3 million has been saved in the Carbon Reduction Commitment Energy Efficiency Scheme (CRC) payments.

We have set an ambitious target to reduce our carbon emissions by an additional 25% by 2021/2022 (compared to our 2015-16 baseline). To achieve this we have identified carbon reduction projects in the following areas:

- LED street lighting
- LED lighting in buildings
- Further adoption of renewable technologies and investigation of battery storage technology
- A load management strategy. Manage consumption during peak charging time bands.
- Rationalisation of building stock and better use of existing buildings
- Promotion of energy awareness in schools, businesses and the wider community
- Biomass pellet and water frameworks
- Business and Community Energy Action Plans
- Low carbon transport

This Strategy contains a 5 year programme aimed at delivering a total of £4m savings. This will help North Lincolnshire Council meet some of the unavoidable cost pressures it faces in the next few years. Reducing carbon and bills can contribute significantly.

The scope of our Baseline and Plan covers council buildings and operations and includes all our maintained schools. This baseline figure also includes business travel and emissions from our key partners as they carry out work on our behalf (buildings and transport). In 2015/16 we spent £3.3 million on energy and emitted 18,200 tonnes of CO<sub>2</sub>. On a business as usual scenario and the impacts of the Energy Market reforms (due to start in 2018) this is estimated to rise to £5.2 million by 2021.

We will also establish a Business Energy Efficiency Programme for local businesses. This has been highlighted as an urgent need. In the latest UK local and regional carbon emissions data, published by the Department of Energy & Climate Change (DECC), CO2 emissions from North Lincolnshire's industry and businesses account for nearly 91% of our total regional emissions. That is 18 times the national per capita average.

This Strategy demonstrates that North Lincolnshire Council is:

- Signing up to the Climate Local commitment
- Committed to dealing with the impacts of climate change
- Making the best use of resources and delivering value for money
- Investing in infrastructure and the provision of services
- Promoting community well-being and resilience
- Supporting our local businesses
- Showing local leadership by example.

# **1. INTRODUCTION AND POLICY CONTEXT**

The reduction of greenhouse gas emissions to mitigate climate change is one of the foremost challenges of the 21st century, reflected in the Paris Agreement resulting from the Paris Climate Conference (COP21) in December 2015. Governments agreed a long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels,

## **1.1 Climate Change**

The earth's climate is changing predominantly because of an increase in greenhouse gases, in particular methane and carbon dioxide (CO<sub>2</sub>). The greenhouse effect is a natural occurrence trapping heat that originates from the sun, and then radiating it back to the earth. Human activity is upsetting this balance causing an 'enhanced' greenhouse effect. We must stabilise concentrations in order to avoid serious consequences. Atmospheric concentrations of CO<sub>2</sub> are currently at about 400 parts per million (ppm) compared with 315ppm 50 years earlier. It is rising at nearly 2ppm each year.

However, as greenhouse gas emissions remain in the atmosphere for many decades, current emissions and those over the past few decades have already committed us to future climate change, which cannot now be avoided. This is called unavoidable climate change. The longer reductions in emissions are left unabated, the deeper the cut required in the future. As a result of cumulative emissions, the climate is predicted to change, although the degree to which it will is uncertain. Consequently, we must make adaptations to counter some of the possible effects

### **1.1a Adaptation/Mitigation**

It is now widely accepted that a certain amount of climate change is inevitable even under the most optimistic carbon reduction scenarios. North Lincolnshire's Carbon Strategy must therefore incorporate two types of response: Mitigation: those responses that seek to reduce the impact of our behaviour on the natural systems of our planet; that is, reducing greenhouse gas emissions. Adaptation: those responses that seek to prepare us better for the challenges likely to arise from climate change.

### **1.1b Effects of climate change for North Lincolnshire.**

The direct effects of climate change will vary depending on geographic location. Regions with estuaries such as North Lincolnshire will be at greater risk, particularly from sea level rises and storm surges. A 2011 study on the Impacts of climate change on disadvantaged UK coastal communities stated that the Lincolnshire coast is one of the 5 most vulnerable in the UK. These threats will be felt most by communities that rely on the immediate coastal area for their residence, communications and economic and social activity. The impacts of climate change are already being felt in some areas and there will be very significant changes by the middle of the century.

Figure 1 below show the current state of the Humber Estuary Plan.

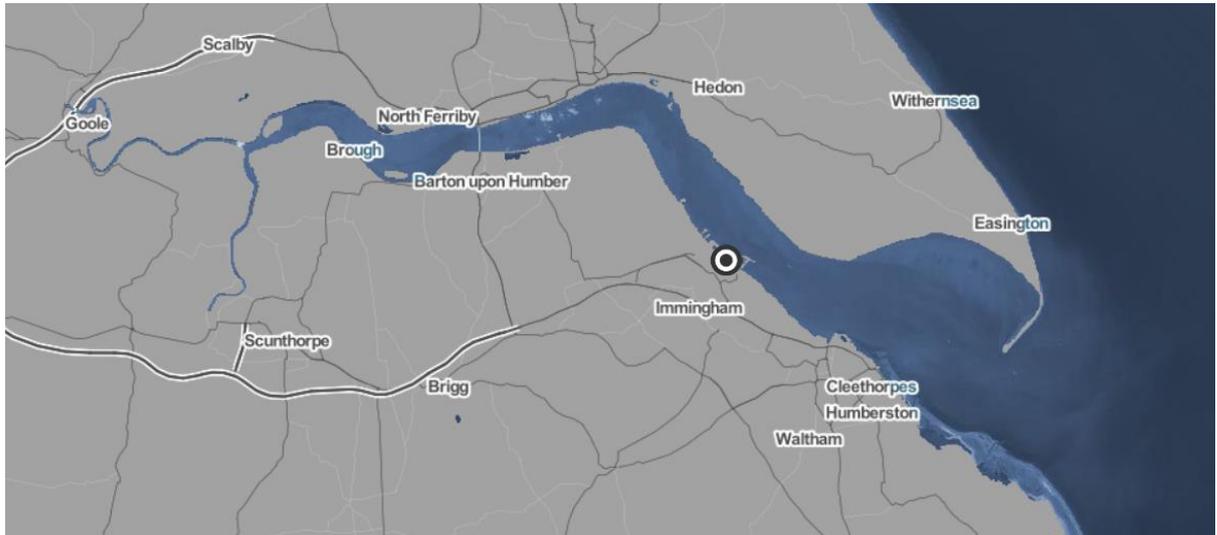


Figure 1 Current Humber Estuary Coastal Plain – source Surging Seas

Based on the latest projections from the Intergovernmental Panel on Climate Change (IPPC), if global emissions continue on their current trend, UK sea levels could rise by 1 metre by 2100. Figure 2 shows the potential modelled impacts to North Lincolnshire.

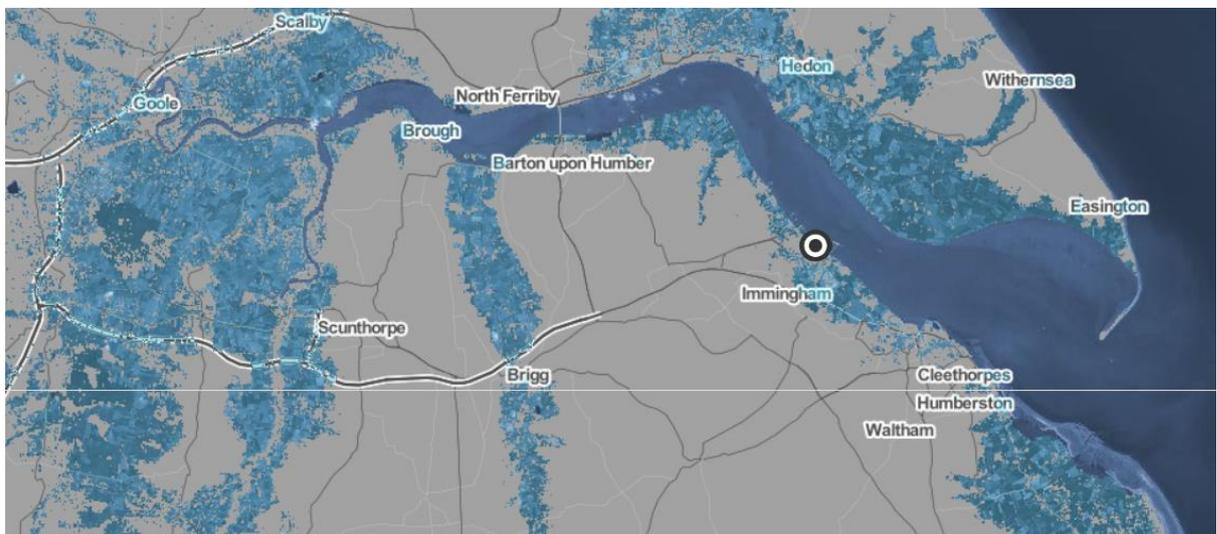


Figure 2 Predicted Humber Estuary Coastal Plain with 1m sea level rise – source Surging Seas

However, IPCC projections predict if the global temperatures increase by 2 degrees, this could lead to a sea level rise in excess of 5 metres. Surging seas modelling represents the drastic impact on our region shown in figure 3.

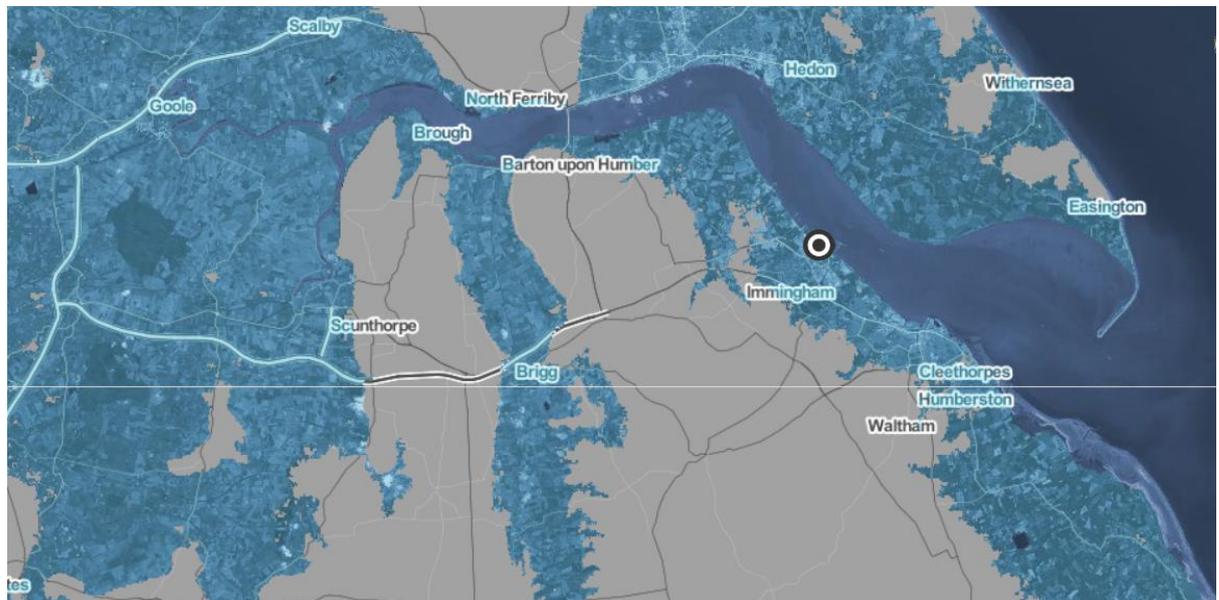


Figure 3 Predicted Humber Estuary Coastal Plain with 5m sea level rise – source Surging Seas

## 1.2 National drivers

- **The Climate Change Act 2008** set legally binding targets for reductions in CO<sub>2</sub> emissions of 80% by 2050 and 34% by 2020. The government sees Local Authorities as central to delivering this target
- **The Energy Act 2013** has introduced electricity market reform (EMR) and decarbonisation policies.
- **Greenhouse Gas Emissions** – Local authorities now report on Green House Gas (GHG) emissions annually to DECC instead of its predecessor NI185.
- **Climate Local** – (succeeded Nottingham Declaration) - voluntary commitment by councils signing up shows commitment to taking action on climate change. By signing councils set locally owned and determined commitments, publish these commitments and progress towards them, share their experiences with other councils, review and update commitments and actions.
- **Climate Change Levy** – CCL is an energy tax which aims to increase energy efficiency by incentivising big energy users with the greatest potential to save energy. This is set to increase from 2017 to 2020 as the CRC is phased out; whilst we were exempt from CRC we are not from CCL and this will impact on energy bills.
- **EU Directive Energy Performance of Buildings.** Display Energy Certificates (DEC) are required on all public buildings with a useful floor area above 250m<sup>2</sup> that are frequently visited by the public.

### **1.3 Regional and local drivers.**

North Lincolnshire is seriously exposed to climate change. The Humber Estuary is especially vulnerable to rising sea levels. Our industrial base of power stations, oil refineries and chemical plants also means that we have one of the most carbon intensive economies in Europe. Their competitiveness will be challenged as demands for lower emissions increases and energy prices rise.

The task of transforming our economy and investment priorities to take account of these factors is vital. This plan will continue to lay the foundations of our contribution to the regional vision. The Carbon Management Strategy fits with the following Council priorities:

- Enable communities to thrive and live active and healthy lives
- Support, safeguard and protect the vulnerable
- Shape the area into a prosperous place to live, work, visit and invest
- Commission to improve outcomes for individuals and communities
- Transform and refocus ensuring we remain a dynamic and innovative council

### **1.4 Energy Prices**

There will be sharp rises in utility prices over the next 5 years as a result of two recent pieces of legislation. The reforms of the Energy Act 2013 will mean there will be more electricity from large-scale decarbonised energy generation through to 2021. This generation is funded through utility bills.

The Common Distribution Charging (DCP228) regulations which come into force from 1<sup>st</sup> April 2018 will lead to increased electricity costs. They will also make organizations review how they consume electricity at certain times in the day. This will lead to a new shift in load management, generation and energy storage opportunities for local authorities.

The Climate Change Levy (CCL) rates will also rise sharply from 2019. These will effectively make up for the shortfall caused by the Government removing the Carbon Reduction Energy Efficiency Scheme (CRC).

### **1.5 Our low carbon vision**

North Lincolnshire Council will continue being a community leader in tackling Climate Change and lead by example. We will work with our partners to build stronger and more resilient communities and ensure that North Lincolnshire is where people will want to live, work, visit and invest.

We will aim to reduce emissions from our activities by a further 25% or greater.

We will support businesses in our area to reduce their emissions and costs. We will also support these businesses in adapting to climate change.

We will do this by:

- Maintaining carbon and energy management as a key corporate priority by ensuring it is included in all the council's decision making processes and policies.
- Maximising our use of external funding to deliver energy efficiency across all areas of the councils activities
- Exploring opportunities to invest on a 'spend to save' basis to reduce our energy demand and carbon footprint
- Developing policies standards and targets to reduce carbon dioxide emissions within key areas e.g. buildings, procurement, fleet management, business travel and commuting.
- Allocating central budget and Salix funds on a 'speculate to accumulate' basis
- Inspiring staff and Members on issues of climate change and carbon management
- Engaging with schools at all levels to reduce their carbon impacts
- Working with our partners within the area to raise awareness of carbon management and share our knowledge and experiences.
- Supporting SMEs by establishing a business energy efficiency programme. The programme will include offering energy reviews to SMEs which will help them manage and reduce their energy use, whilst improving their environmental impacts.
- Committing to improve and increase the charging network and supporting the growth in use of electric vehicles.

## 2. PRIORITY ONE - LOW CARBON COUNCIL

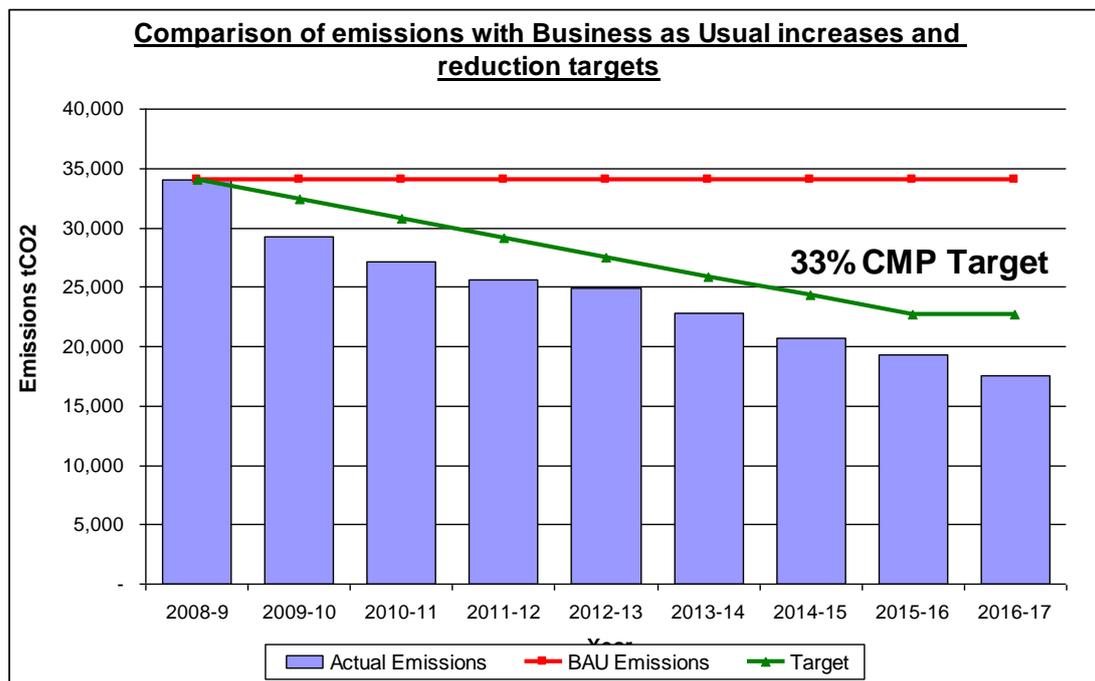
### Reducing carbon emissions across the council estate, operations and street lighting

#### 2.1 Progress to date

We have made significant efforts to reduce emissions from our estate and operations over the past seven years. In September 2009, working with the Carbon Trust, we published our first Carbon Management Plan 2009-2016. This set out a strategic and planned approach across the council's estate and operations. The Plan targeted the areas of the Council's activity which contribute most to our carbon emissions (e.g. leisure centres, schools, office buildings, fleet vehicles and a general inefficient use of buildings).

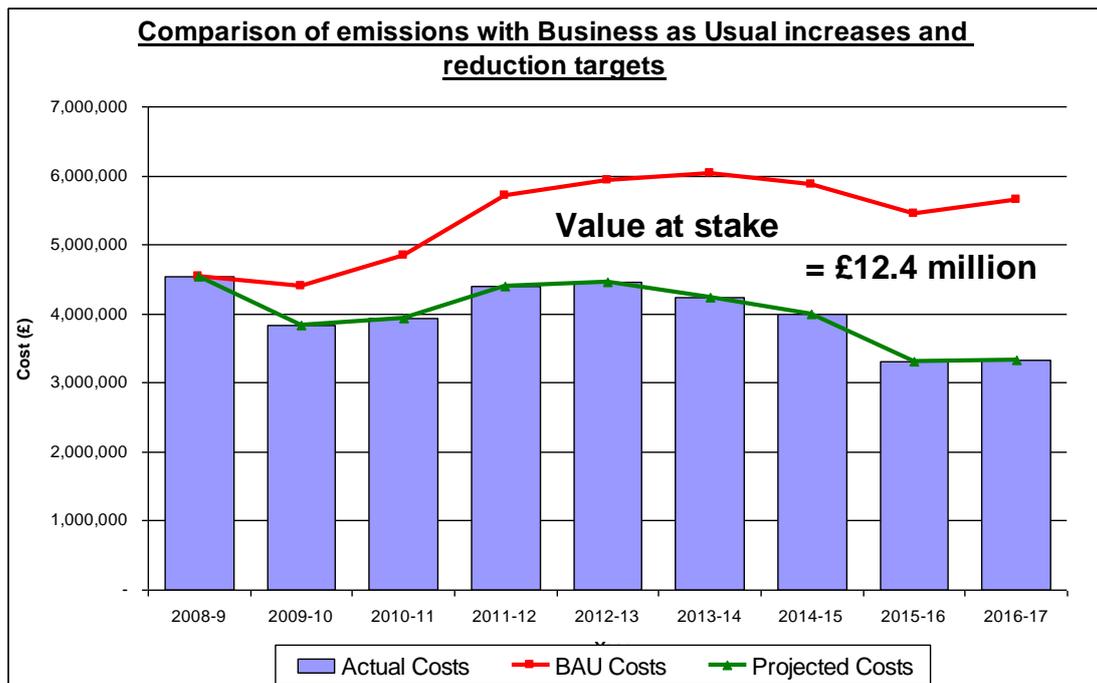
#### 2.1a Actual carbon reductions and Value at stake

By 2016/17 we had reduced our total CO2 emissions by 48% against the 33% Carbon Management Plan target. In 2008/09 our total carbon emissions were nearly 34,000 tonnes CO2 compared to 18,200 tonnes CO2 in 2015/16. Graph 1 below compares our targets set out in the first Carbon Management Plan compared to our actual reductions.



Graph 1 Actual carbon value at stake 2009-2017

Reducing carbon delivers substantial financial benefits. The total Value at Stake against the business as usual position between 2008/09 and 2016/17 shown in Graph 2, equates to a cost saving and avoidance of £12.4 million. (Total £13.7million including the CRC saving made)



Graph 2 Actual Financial value at stake 2009-2017

## 2.1b Carbon Management Funding

In 2010 we established a dedicated carbon management budget. To date, over £1.5 million has been allocated to this fund delivering many carbon & energy projects across our estate and operations between 2009/10 – 2015/16. The key measures delivered through the Plan include:

**Adoption of renewable energy technologies**, including: 10 x biomass heating systems, 6 x Ground Source/Air Source Heat Pump systems, 10 x Photovoltaic (PV) systems and 2 x solar hot water systems .

**LED Lighting Installations**, including: Full LED refurbishments in The Civic Centre, Hewson House, Central Library, Billet Lane Depot, Security Control centre. LEDs are now installed as a policy in all new Council buildings.

**IT improvements**, including: Virtualisation and Certero, including: the virtualisation of our servers and adopting the Certero IT Power Management Software

**A range of different energy efficiency improvements** across Council-owned sites, including: Voltage optimisation, Variable Speed Drives, heating controls, lighting controls, Insulation and lagging.

**Building rationalisation and Work Smart Initiatives**, including: Disposing of many of our least efficient buildings (e.g. The Grove, Brumby Resource Centre, Scotter House, Brigg Road Depot, 1-7 Cliff gardens). Through our smarter working initiatives we can use our buildings more efficiently.

**General Energy Management programmes**, including: energy awareness raising campaigns throughout the Authority. This has promoted a culture of environmental

responsibility amongst staff and customers, with the aim of reducing energy and water use. This runs alongside the Council's 19 degree heating policy.

## 2.2 Emissions Baseline & Projections

The starting point for carbon management is to establish the baseline emissions. Future emissions can be compared to the baseline and progress towards the reduction target monitored. We have selected 2015-2016 as our baseline year due to it being the end date of our previous Carbon Management Plan.

### 2.2a Emission sources

Our baseline includes CO2 emissions from the delivery of services, including emissions from both stationary and vehicle sources:

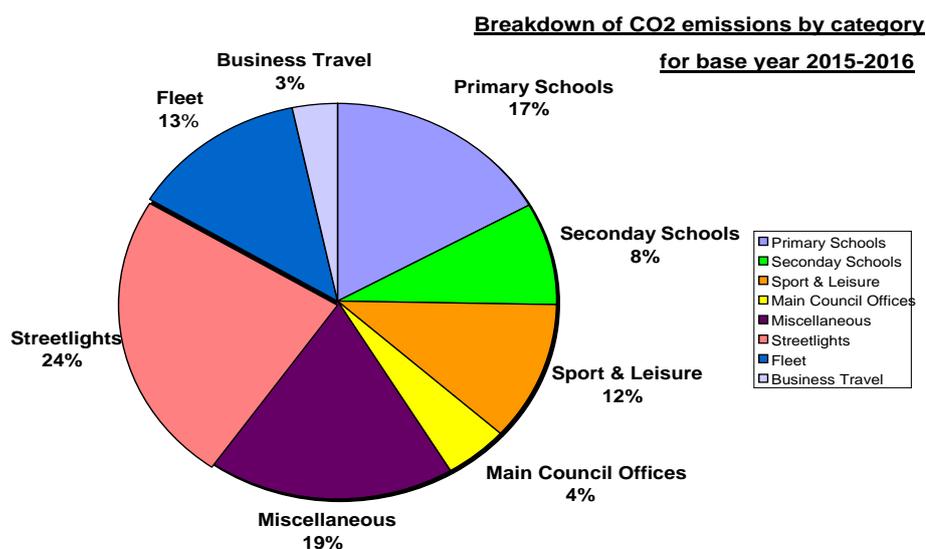
#### Stationary emission sources

- Main Council offices, including: Civic Centre, Church Square House and Hewson House.
- Sport and Leisure buildings, including: our Leisure Centres, Sports Halls etc
- Schools: including all our maintained Primary and Secondary Schools
- Street lighting: including urban, parish & car park lighting, road signs and bollards
- Miscellaneous, including all other buildings and activities

#### Transport emission sources

- Fleet vehicles, including: refuse trucks, road sweepers, council operated cars, vans and buses
- Business mileage: journeys by staff and members in the process of carrying out their role.

The percentage breakdown of our emission sources for the base year is shown in graph 3.



Graph 3 Summary of emissions for baseline year 2015/16

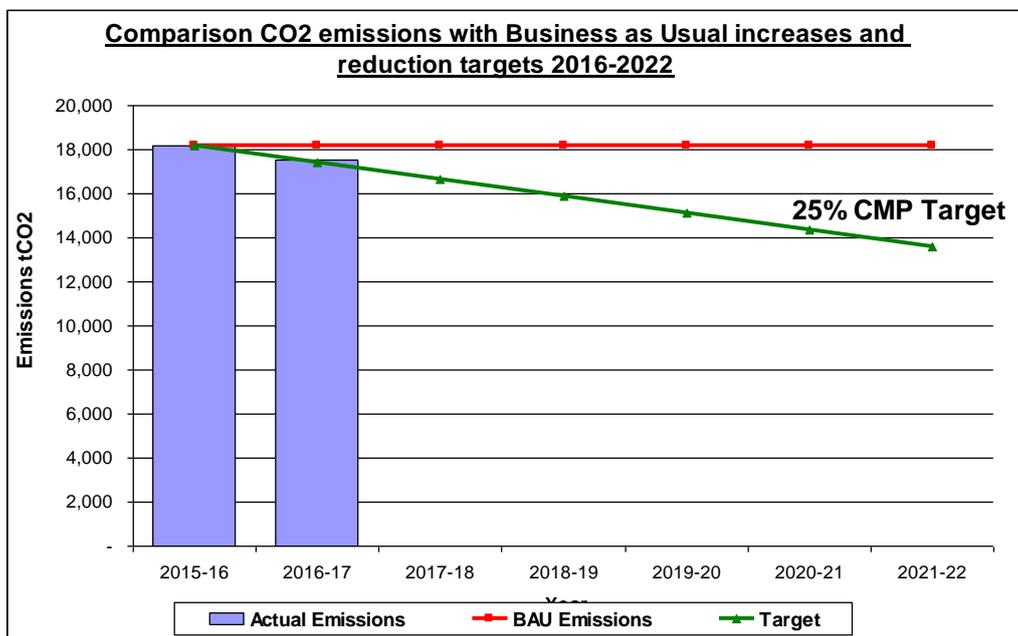
## 2.2b Data Collection

The energy data used to calculate the baseline was acquired from actual billed energy data downloaded from our Team Sigma Energy Management Software, Fuel Key Data, E-mileage payments and our WPS Travel Analysis Data.

The baseline emissions have been calculated from the energy consumption data using Defra conversion factors published in 2016.

## 2.2c Baseline emissions

North Lincolnshire Council's 2015/16 baseline emissions were 18,156 tonnes CO<sub>2</sub>. This means we will need to reduce our emissions by 4,540 tonnes CO<sub>2</sub> to meet our 25% reduction target, not considering any growth. This is represented in graph 4.



Graph 4 Carbon value at stake from inaction

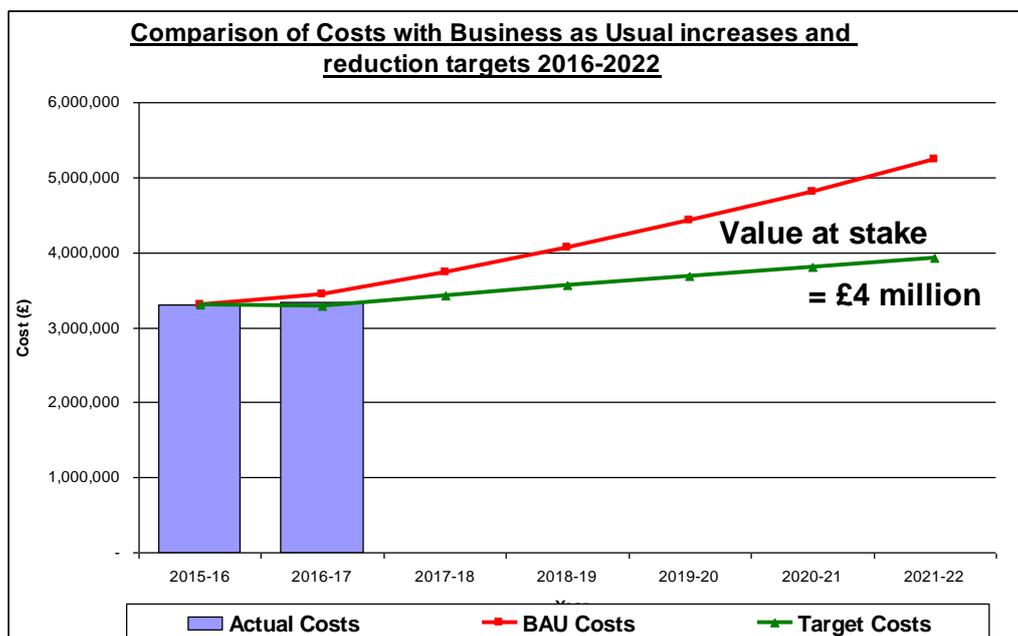
If we continue to reduce our emissions and meet the 25 % reduction target by 2021/22, we will have reduced our annual emissions to 13,617 tonnes CO<sub>2</sub>.

## 2.2d Projections and Value at Stake

In order to assess the potential financial and carbon savings which could be realised by implementing this plan, it is necessary to calculate the overall value at stake (VAS). The VAS is the aggregated difference between the predicted energy spends for the council under a business as usual scenario (i.e. no change) and the energy spend in a reduced emissions scenario (i.e. implementation of this plan).

It is important to note that the VAS does not take into account any costs needed to implement the carbon management initiative.

The total VAS for North Lincolnshire Council during the duration of the Carbon Management Plan is £4million.



Graph 5 Financial value at stake from inaction

The value at stake analysis is based upon the assumption that electricity and heating fuel will increase at a rate of 6% and 9.75% per year respectively.

If the councils energy consumption remained at 2015/16 levels and energy prices continue to increase as outlined above, the councils energy bill will increase from its current £3.3 million to £5.2 million by 2021. This represents an increase of 59% with a proposed CO2 reduction of 25%, the council's annual energy bill will still increase to £3.9 million by 2021.

### 2.3. Carbon Management Projects

The following projects have been identified as being able to deliver the 25% carbon reduction target by 2021/22, as well as offering substantial cost savings.

#### 2.3a Existing Projects

Project	Capital Cost	Completion Date	£Saving	£Income	Payback Years	CO2 Saving TCO2
Ancholme LC Heating system upgrade	£24,000	09/2017	£6,004	n/a	4	35
LED street lighting Phase 1 (Year 1)	£2.4million	03/2018	£199,000	n/a	7.4	551

Riddings Pool Biomass system	£150,000	03/2018	n/a	26,000	5.8	119
Axholme North Sports Centre Biomass Heating System	£200,000	06/2018		£30,000	6.7	138
Micro – Managing load in our Main Offices	n/a	ongoing	£22,000		n/a	81
Building Rationalisation	tbc	ongoing	Estimated £71,000	n/a	n/a	Estimated 300 Tonnes
Establish Biomass Pellet Framework	n/a	03/2018	£15,700	n/a	n/a	n/a
Establish Water Framework	n/a	03/2018	£8,300	n/a	n/a	n/a

### 2.3b Future Planned Projects

Project	Capital Cost	Completion Date	£Saving	£Income	Payback years	CO2 Saving
LED street lights Phase 1 (Year 2)	£2.4million	03/2019	£172,000	n/a	7.4	1,361
LED street lights Phase 1 (Year 3)	£1.2million	03/2020	£172,000	n/a	9.3	478
Church Square House LED lighting Upgrade	£147,000	2018	£18,350	n/a	8	82
Energy awareness raising Primary Schools	£10,000	06/2018	£47,000		0.2	213
Energy awareness	£4,000	06/2018	£19,000		0.2	81

raising Secondary Schools						
Fleet Review	In Progress					tbc

### 2.3c Potential Salix Projects

Project	Capital Cost	Completion Date	£Saving	£Income	Payback years	TCO2 Saving
Replacement Pool Covers Ancholme LC and Riddings Pool	£20,000	12/2018	£26,000	n/a	0.8	150
New Pool Covers at The Pods	£50,000	12/2018	£21,000	n/a	2.4	113
LED lighting upgrade for Council buildings	£1million	03/2021	£144,000	n/a	7	536
LED lighting for Primary Schools	£806,400	03/2021	£115,200	n/a	7	429
LED lighting for Secondary Schools	£386,600	03/2021	£55,224	n/a	7	206
PV and Battery storage- Pilot scheme	£100,000	03/2021	£12,500	n/a	8	37
LED street lights Phase 2	£1million	12/2021	£135,000	n/a	7.4	515

### **2.3d Street Lighting**

Street lighting currently accounts for nearly 25% of North Lincolnshire Council's total carbon emissions and 33% of our total energy costs. The wholesale conversion of our existing street lanterns into LED equivalents will be the central project in the Carbon Management Strategy.

In addition to the substantial cost and carbon savings, LED street lighting will bring the following benefits:

- We will continue to demonstrate leadership in advancing LED lighting in an Authority which is becoming a hub for renewable energy and sustainable technologies.
- LED street lighting will lead to a positive, tangible transformation across the entire region.
- They will improve the safety for residents as it provides a better quality of light. The improved lighting can be delivered at a fraction of the running cost of the inefficient existing units. This will deliver a better value for money service to the local residents.
- Improved LED lighting will reduce street crime and the fear of street crime. It will improve social inclusion by providing the freedom to use our streets after dark. LEDs allow a more effective use of CCTVs.
- Improved lighting will promote economic development by supporting a 24-hour leisure economy.
- An upgraded LED lighting solution, will future proof our neighbourhoods in terms of other technological advances. The new lighting systems can incorporate e.g. community Wi-Fi and monitoring stations

### **2.4 Carbon Management Financing**

The financial benefits from implementing a programme of carbon management are significant. Energy costs are predicted to rise significantly over the next few years. Without taking potential cost increases into account it is possible to save in the region of £4 million over the next five years. However, this will require further investment.

This Plan requires that all projects implemented as part of the carbon management programme undergo the council's full approval process. They will need to meet project management controls. The funding for projects will be from either:

- Existing funding
- Invest to save
- Grants and loans
- Match-funding
- Internal resources

#### **2.4a Salix Finance**

As in the previous Carbon Management Plan it is proposed that a percentage of the savings predicted for each scheme should be reinvested into more energy efficiency schemes. This will enable the council to accelerate its carbon reduction efforts and therefore its financial savings. It also enables the council to consider borrowing to fund the initiatives through the Government approved Salix Finance scheme.

Salix Finance offers interest free loans to public sector bodies for a range of technologies that reduce energy. The savings made then pay back the loan up to 5 years in Council

buildings and 8 years in schools. Salix Finance can fund projects to the value of several £millions

#### **2.4b Other Finance**

Other grants and funding streams will also be used as a when the opportunities arise

### 3. PRIORITY TWO - LOW CARBON ECONOMY

#### Promote business resource efficiency and help low carbon and local businesses grow in North Lincolnshire

##### 3.1 Target

An overall target has not been set. A Business Energy Action Plan will be developed throughout 2017/18 to determine appropriate targets.

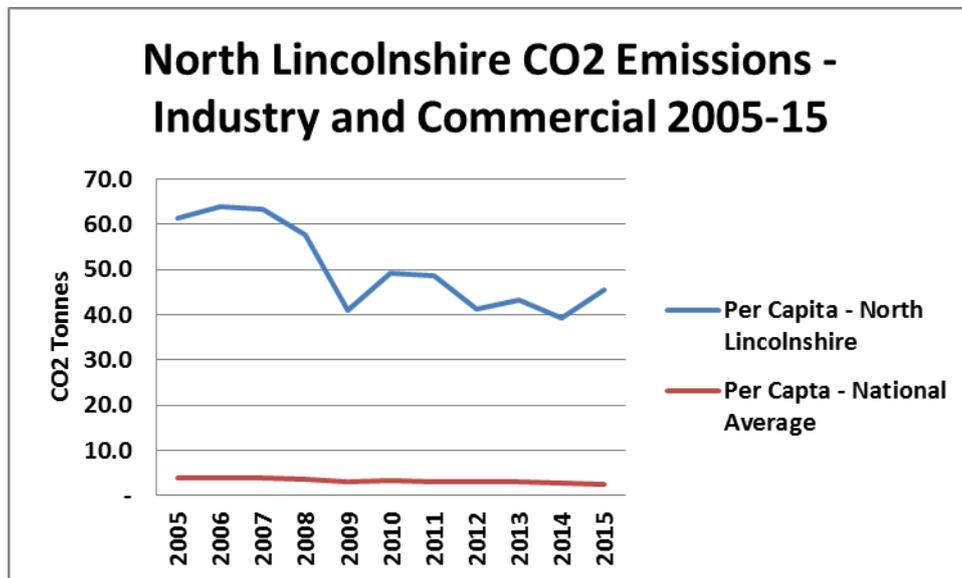
##### 3.2 DECC Carbon Emissions Data by Sector 2005-2015

Carbon emissions data is published annually by DECC and is available going back to 2005. It is broken down into three sectors: Industry & Commercial, Transport and Housing. The data is also provided as per capita emissions.

The energy North Lincolnshire consumes in its businesses, road transport and homes produced 8,518 Kilo tonnes (Kt) CO<sub>2</sub> in 2015. This is equal to over 50 tonnes for each resident. The national average is only 5.9 tonnes per capita. North Lincolnshire only makes up less than 0.3% of the UK population but accounts for 2.2% of its total emissions.

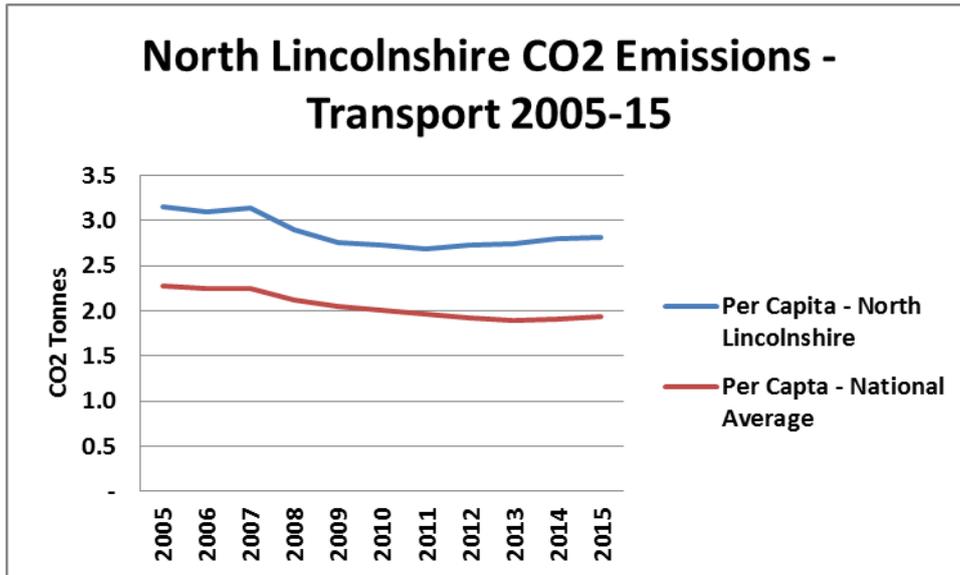
In 2015, almost 91% of North Lincolnshire's emissions came from industry and commercial sources, 3% from domestic sources, and 6% from road transport.

These emissions figures are represented in the graphs below, showing trends in CO<sub>2</sub> emissions by sector for the ten years for which data have been available:



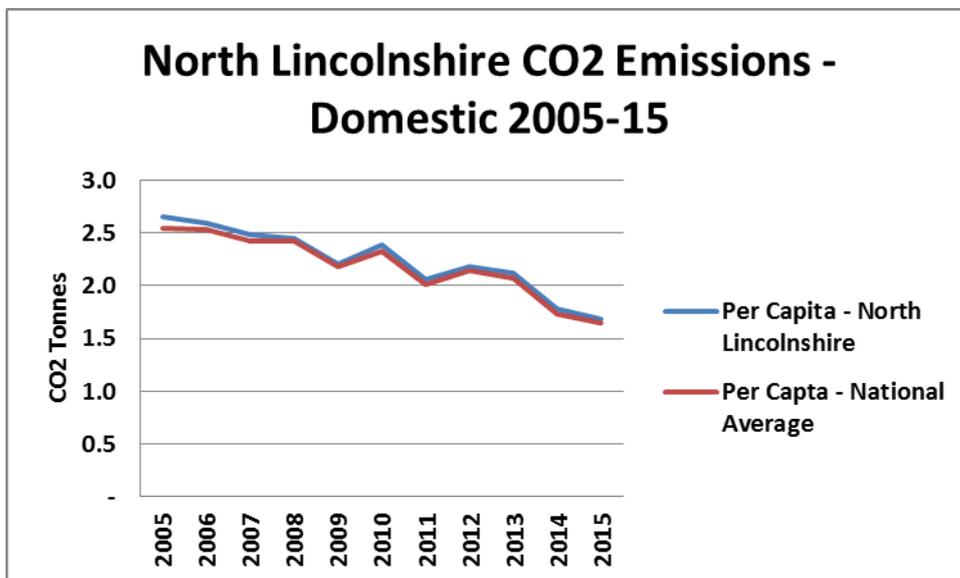
Graph 6 Industry and commercial CO<sub>2</sub> emissions 2005-15 (Source DECC)

Despite a 21% reduction in Industry & Commercial CO<sub>2</sub> emissions since 2005, our per capita commercial emissions are 18 times the national average. Much of this is down to the heavy industry located in the region.



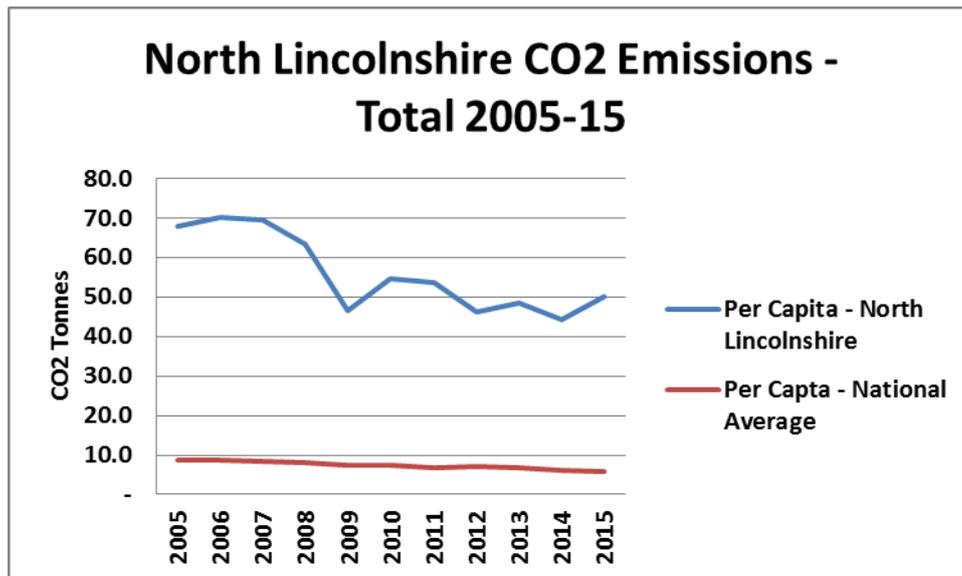
Graph 7 Transport CO2 emissions 2005-15 (Source DECC)

Whilst reductions in North Lincolnshire’s emissions from transport broadly follow the national trend. They are 32% higher when compared to the national per capita average.



Graph 8 Domestic CO2 emissions 2005-15 (Source DECC)

North Lincolnshire’s domestic emissions have fallen over 32% since 2005. Our per capita emissions are in line with the national average.



Graph 9 Total CO2 emissions 2005-15 (Source DECC)

North Lincolnshire has the 3<sup>rd</sup> worst total per capita CO2 emissions in the UK. This is mainly due to our industrial & commercial emissions.

### 3.3 National Programmes

With increasing energy costs it makes business sense for all organisations to actively improve resource efficiency and reduce their energy costs. A number of programmes have been put in place nationally (and at an EU level) to incentivise this such as the EU Emissions Trading Scheme and the CRC. Over time, their influence has resulted in some reductions in emissions from the industrial and commercial sector in North Lincolnshire.

### 3.4 North Lincolnshire Business Energy Efficiency Programme

The national programmes are aimed predominantly at energy intensive sectors and large organisations. Less energy intensive sectors, such as retail and business services and our SMEs are especially vulnerable to energy price rises. These comprise a high proportion of our Industrial and Commercial sector emissions. Due to the considerably higher than average industrial and commercial emissions in North Lincolnshire, without some local intervention, we will not achieve the necessary reductions.

Our Business Programme will be a key part of the Business Energy Action Plan comprising the following key aims:

- Create a Carbon Hub that local businesses can access for support and information on how to reduce energy use and carbon footprints.
- Support businesses to adapt to a low carbon economy.
- Businesses will be able to access free energy reviews detailing how they can reduce their energy use utilizing renewable and energy the latest energy saving technologies.
- Provide businesses with support on accessing funding that will help them reduce their energy use.

- We will focus on improving the resource efficiency of business and industrial operations, rather than seeking to restructure the local economy in favour of less energy intensive sectors.
- Promoting the transition to a low carbon economy which will bring many business opportunities such as the development and marketing of low carbon technologies and environmental support industries.
- Encouraging the low carbon sector has the potential to create significant employment opportunities in North Lincolnshire
- Facilitate the necessary learning opportunities so that businesses can respond to the evolving demands.

Efforts to localise sourcing of low carbon products and services will be crucial to ensure that the local economic benefits are realised, and the public sector will have a leadership role in this. Local production and consumption of products and services close to where people live and work are important for local economic vibrancy and diversity, as well as reducing the need to travel to access products and services, and reducing the emissions 'embedded' in the products we consume (for example from food miles).

## **4. PRIORITY THREE – LOW CARBON COMMUNITIES**

### **Supporting and promoting community action for low carbon living**

#### **4.1 Target**

An overall target has not been set. A Community Energy Action Plan will be developed throughout 2017/18 to determine appropriate targets

#### **4.2 Background**

Increasingly people are becoming concerned about the harmful effects of climate change, the need to reduce carbon emissions and the need to reduce their rising energy costs. Local people are getting together to explore the issues and drive and influence change in their local communities. Local views and action also stimulate and drive strategic action and it is important that the two are connected.

Neighbourhood energy planning provides the opportunity for communities to come together and understand and plan for their future energy needs. This would include demand reduction measures and could also include community owned sustainable energy projects.

There are a many such groups taking co-ordinated action across the UK and the level of interest is only likely to increase as the localism and the neighbourhood planning agenda develops.

North Lincolnshire Council needs to encourage a strong culture of local community action and see this as a key way of delivering and promoting projects and behaviour change messages from all the priority themes. This approach will be particularly important for achieving improvements to our homes and community buildings. Energy efficiency savings and income generation from community sustainable energy projects are attractive to local groups and town and parish councils and can provide a new source of income. Collaborative local action and community projects make new ways of doing things more attractive and acceptable and are important in influencing a shift to low carbon and more sustainable lifestyles.

#### **4.2 Community Energy Action Plan**

As part of our Carbon Strategy, we will produce a Community Action Plan with the following objectives:

- Support the development of neighbourhood energy plans and low carbon community projects
- Develop and implement a strategic approach to neighbourhood energy planning so that communities can understand and plan for their future energy needs so that appropriate energy efficiency and renewable energy solutions are delivered
- Look at potential Pilot projects
- Promote the availability of energy audit schemes for village halls and community buildings Provide networking, learning, influencing and project development opportunities

### **4.3 Community Energy Funding Opportunities**

We will support community groups with funding opportunities.

Community groups can already access grants from various local large Scale Renewable Energy funds such as the Keadby Windfarm and Brigg Biomass Plant Schemes. The Keadby Fund has already pledged nearly £9 million to various community projects.

Other examples of funding currently available are the Rural Community Energy Fund offered by the Waste and Resources Action Programme (WRAP). It supports rural communities to develop renewable energy projects which provide economic and social benefits to the community

The Department for Business, Energy and Industrial Strategy (BEIS) has recently launched the first part of a £320 million scheme designed to support the deployment of district heating networks across the UK. We will be looking at working with communities to develop sustainable schemes across North Lincolnshire.

## **5. PRIORITY 4 - LOW CARBON TRAVEL**

### **5.1 Low Carbon Travel - Reduce energy use and carbon emissions from transport**

Transport currently accounts for 6% of the region's total CO2 emissions. However, fleet and business travel accounts for 16% of North Lincolnshire Council's emissions.

### **5.2 Objectives**

Our primary objectives for Low Carbon Travel are to:

- Reduce fuel use and transport generated carbon emissions and other pollutants as a result of Council activity.
- Reduce business travel by car and other fossil fuelled transport.
- Reduce transport related costs for the Council
- Reduce the number of employees travelling to work alone by car
- Promote and facilitate cycling, walking and public transport.
- Increase provision of agile working arrangements including a greater use of home working
- Fully utilise teleconferencing and skype based facilities.
- Expand the numbers of electric vehicle charge points across both council sites and the wider region in general.
- Promote the use of renewable fuels and low carbon vehicles

### **5.3 Car share**

The council will promote car sharing to staff and Elected Members.

The vast majority of car journeys are made without a passenger. If even a small proportion of the car driving majority were willing to car share, then significant financial and carbon savings could be made. Furthermore, traffic congestion on our regions roads would be reduced to the benefit of all.

We will develop a platform for finding potential car sharing partners that could potentially include members of the wider public.

### **5.4 Pool Cars**

One of the main problems with reducing the number of cars brought to work by employees is that many of the staff need to use a vehicle for a legitimate business use. It is therefore proposed to investigate the feasibility of providing a pool of small energy efficient vehicles for use by any authorised member of staff for legitimate business travel purposes.

These should be the most environmentally friendly vehicles available and consideration given to hybrids and electric cars as well as traditional pedal powered bikes and electric powered bicycles. The council would wherever possible provide staff with sustainable transport options for their business related journeys.

## **5.5 Reducing the Need for Travel**

The council will strive to reduce the need to travel wherever possible. We will aim to do this in a number of ways.

- The continued rationalisation of our buildings will further reduce the number of separate sites operated by the council therefore reducing travel between sites.
- The council's 'WorkWell' policy will develop a far more agile approach to working. Staff will have a greater opportunity to work from home reducing the travelling to a place of work.
- The widespread adoption of Skype and teleconferencing will remove the need to travel between sites for meetings.
- We must ensure that rounds made by fleet vehicles are planned as efficiently as possible.
- Similarly, where the use of our own vehicle for business mileage is unavoidable, staff will be encouraged to plan visits properly to minimise unnecessary mileage.

## **5.6 Green Fleet**

The Council's Fleet vehicles account for 13% of our total carbon emissions. Therefore we will seek to ensure that vehicle emissions from its fleet vehicles are minimised by using them in the most efficient manner and by procuring only the most environmentally friendly vehicles available.

- In order to reduce the environmental impact of our Fleet, it is proposed that all new fleet vehicles purchased will be Euro 6 compliant.
- We are seeking to phase out the use of diesel vehicles.
- Consideration should be given to the use of electric and hybrid vehicles as they become available as they can produce significant efficiency savings on the stop-start journeys which our fleet vehicles typically make.
- Fleet Services successfully trialled several electric vehicles and as a result purchased 5 electric vans. As part of the council's Fleet Management Review, provision will be made to expand the number of electric vehicles.
- All routes should be planned as efficiently as possible to minimise distance covered and fuel consumed.

## **5.7 Electric Vehicles and Charging Points**

In the UK, new registrations of electric plug-in cars increased from 3,500 in 2013 to more than 125,000 by the end of November 2017. Government projections show this could rise to 10.5 million by 2030 (Source: Department for Business, Energy and Industrial Strategy)

Electric vehicles have the following benefits:

- Electric vehicles use a battery and electric motor to power the vehicle, so they produce no vehicle exhaust or carbon emissions at the point of use.
- Electric vehicles use energy far more efficiently than a standard internal combustion engine vehicle, so even if the electricity is sourced from fossil fuel power stations, the carbon and particulate emissions remain significantly less than regular cars.
- Electric vehicles have the potential to be 'zero-emission vehicles' (ZEVs) if powered by renewable electricity, and create almost no noise.

North Lincolnshire has already installed 5 dedicated electric charging points at the following sites;

- The Civic Centre
- Church Square House
- Hewson House
- Cottage Beck Depot
- Midland Road Depot

North Lincolnshire Council is committed to improving and increasing the charging network and supporting the growth of electric vehicle use. We will demonstrate leadership when it comes to installing vehicle charging points.

- The council will increase the number of its charging points by accessing the Government's Workplace Charging Scheme (WCS) grant scheme.
- We will investigate the use of rapid charge systems.
- All major new Council buildings will provide charging points.
- We will develop local plans to ensure the provision of electric charging points in all major new developments in North Lincolnshire.
- We will utilise the On-street Residential Charge Scheme (ORCS) Fund. The scheme is aimed at increasing the availability of plug-in vehicle charging infrastructure for those who do not have access to off-street parking.
- We will also explore home charging options.