

Bolsover District Council

Executive

22 February 2021

Climate Change Update & Renewable Energy Tariff

Report of Councillor N Clarke, Portfolio Holder Carbon Reduction Efficiencies

This report is public

Purpose of the Report:

- To provide Executive with an update of steps taken to achieve its climate change ambitions
- To seek agreement to purchase electricity from certified renewable sources from April 2021

1 Report Details

- 1.1 In 2018, the Council adopted the Carbon Reduction Plan which set out the Council's ambition to both reduce its own carbon footprint, along with leading the community to do the same. This report provides Executive with an update on actions and initiatives that the Council has undertaken in order to meet its climate change objectives.

Theme 1 – Sustainable Buildings and Workplaces

- 1.2 Energy Efficiency Measures (Corporate Buildings)

Improvements to LED Lighting at the Arc has led to an annual carbon saving of 32,381kg (32.4 tonnes). This is due to be rolled out across other facilities in the near future.

Variable speed drives have been fitted on appropriate plant equipment situated at The Arc which offer an energy saving with payback for this investment being achieved in a couple of years and achieve an annual carbon reduction of 12,100kg (12.1 tonnes).

Theme 2 – Renewable Energy

- 1.3 As outlined in the Council's Recovery Plan and previously discussed at the Climate Change Group, Property and Estates are about to commission a full feasibility assessment which considers all options and technologies, including but not restricted to, improving insulation, air source heat pumps, ground source type installations. The assessment is will provide:

- A detailed feasibility study to assess the potential and suitability of all corporate buildings for a programme of carbon reduction measures.

- RAG rated options in terms of suitability, with clear identification of any opportunities or potential risks.

This project will be jointly commissioned with North East Derbyshire District Council and funded through a Low Carbon Skills grant of £20,000.

Theme 3 – Low Carbon Fleet

- 1.4 A demonstration of a BEV (Battery Electric Vehicle) was undertaken during 2019 to establish suitability for utilisation in the Council's shared courier service.

The demonstration of this small car derived van established suitability in meeting the Council's shared Courier Service requirements and should be further progressed however, the need for a courier service is being reviewed at the time of writing.

A further trial of a BEV vehicle has been undertaken which offers greater vehicle range to that of the earlier demonstration and has Pool Car potential.

The above testing informs future procurement decisions when fleet renewal is required, along with establishment of 'fast charge' facilities at key operating facilities.

Grounds maintenance operations now utilise battery powered chainsaws\pole-saws. Trials continue to be undertaken with hedge cutters which have not proven successful due to size and weight of battery pack. Further consideration of battery hand tools will be given 'as and when' operational plant falls due for replacement and suitability\availability of battery\electric powered tools.

Theme 4 – Transport

- 1.5 Covid19 Travel - While the seismic changes in how the Council operates were obviously not planned, the disaster recovery planning and infrastructure allowed the Council to react and support the mass migration to home working. The scale of the shift to home working is from 7% of office based staff frequently working from home pre-Covid19 to around 90% now.

The subsequent reduction in travel associated with this presents both short-term and long-term benefits. For example, if the workforce worked from home half of the time and continued to use virtual meetings, the potential CO2 savings will be in the region of 100 tonne per annum. With 90% of the workforce at home for the period April-July, the CO2 emission savings are in the region of 60 tonne.

In addition to the carbon savings made, there have been improvements in our digital services to residents such as face-to-face video appointments (Revenues and Housing Options) and a growth in the number of accessible services available online. Whilst difficult to measure, this further reduces the need to travel and subsequent CO2 emissions.

Clearly this has been driven by short term need, but it has clearly demonstrated what can be achieved, and a major strategic project for the next 12 months will be

to embed this and ensure it is a win-win scenario for carbon reduction, customer satisfaction, staff work-life balance and quality of service.

Theme 5 - Planning

- 1.6 The most significant way to reduce lifetime emissions from new buildings is to reduce the energy needed to heat and cool a house, and that is primarily down to better design and insulation. Other passive elements reduce water usage and overall impact of housing on our environment. Our planning and building control departments are involved throughout the planning process in ensuring these items are all addressed.

Theme 6 – Community Collaboration

- 1.7 Parish Council Climate Change Advice Pack – In January 2021 an information pack was distributed to all Parish Councils to assist them in making carbon reduction savings of their own. Following on from this, we conducted an Energy Audit and provided SALIX green technology/energy efficiency bid recommendations for the Oxcroft Centre Stanfree on behalf of the Town Council.

Derbyshire County wide Climate Change Group – In 2019, the Council joined the Climate Change Officer Working Group to consider and develop large scale carbon reduction and air quality improvements focusing on transport and travel infrastructure. This partnership is further developed through the Vision Derbyshire climate change objective. The Director for Corporate Resources is the Derbyshire lead officer for 'living and working sustainably' with two strategic projects, 'Thanks a Tonne' and external wall insulation for private households, in development.

Support and advice for Residents - During 2020/21 we have undertaken the following activity to support residents:

- Home Improvement Team have visited 22 owner occupier properties from April to September (limited due to COVID-19)
- Working in partnership with the Derbyshire County Council Healthy Homes Team, 27 new heating systems have been installed to the most vulnerable residents. This is an investment of £99,188.36 safeguarding the wellbeing of the districts most vulnerable residents and providing a reduction in carbon emissions in the region of 23 tonne per annum.
- To continue improving Bramley Vale from the funded gas main connection and heating upgrade project, the Council is looking to secure £410,000 from the Green Homes Grant Local Authority Delivery (GHG LAD) scheme Round 1B.
- Continue working in partnership with Cadent Affordable Warmth (CAW) Solutions to fund gas connections to the most vulnerable Council Tenants so that a modern affordable heating system can be installed. This is forecast 50 properties at £80,000 from CAW.

Electric Vehicle (EV) Charging point – An EV charging station has been installed at The Arc as part of the council's efforts to support the community to reduce carbon emissions and improve air quality. The charging station is a rapid charging point which can charge vehicle batteries up to 80% in only thirty minutes.

1.8 Housing Improvements

Bolsover Homes – New build housing built to a high standard of energy efficiency, 103 completed to date with 16 under construction and contracts ready to be signed on a further 21.

Boiler Replacement – Following the installation of 4642 boilers, 93% of our housing stock benefit from high energy efficiency boilers. This investment is estimated to reduce carbon emissions by approximately 4054 tonne per year whilst saving residents in the region of £881,980 per annum.

District heating improvements - We are currently undertaking a programme to replace in-efficient district heating systems with new boilers, insulated pipework and individual heat units to our sheltered housing schemes.

External Wall Insulation (EWI) – We have completed EWI to 292 properties within the district and have submitted a bid for additional funding for properties at Bramley Vale. With an average carbon saving of 1.1 tonne per property, this equates to approximately 321 tonne reduction in carbon emissions.

Cavity Wall Insulation (CWI) = Over a number of years we have undertaken CWI works to all properties with a cavity, 3836 in total.

Internal wall insulation (IWI) - As part of a £13m refurbishment scheme to grade II properties at New Bolsover we carried out IWI to 134 council owned properties. This led to an energy improvement rating going from an F (38) to a D (62). In real terms this has reduced energy costs in these properties by over 50%. The forecast carbon reduction for this project is in the region of 228 tonne per annum.

Loft Insulation (LI) – 83% of housing stock benefit (4210 properties) from loft insulation with approximately half, in line with or exceeding recommended levels of 270mm-300mm in line with current building regulations. The remainder do not have a loft or a space that can safely be accessed by a certified contractor. This investment is estimated to reduce carbon emissions by approximately 5806 tonne per year whilst saving residents in the region of £1,263,000 per annum.

The housing improvement work outlined above have, in some cases, been underway for a number of years. However, the above provides an outline of the considerable progress to date and the impact of continued investment on energy efficiency programmes.

Theme 7 – Biodiversity

1.9 Recycling - The Council's combined recycling rate is slightly below the national average of 43.5% achieving a recycling rate of 41% in 2019/20.

The Government (Defra) has consulted on its new UK Waste & Resource Strategy which has two overarching objectives to (a) Maximise the Value of Resource Use and (b) Minimise Waste and its Impact on the Environment.

Consultations closed 12th May 2019; it was anticipated further consultations would be undertaken during 2020. Following new legislation, a re-modelling of the Council's waste collection service, particularly around food waste, is required. This is anticipated to result in a further 'increased stepped change' in our combined recycling performance. However, the impact of BREXIT and Covid-19 have delayed Defra's further guidance being published.

Carbon Sequestration and Biodiversity – The Council are working with Sheffield Hallam University on a project to improve the biodiversity and carbon sequestration of marginal parts of green and open spaces in the ownership of the Council.

Internal funding was agreed by the university with a planned start in May 2020. Unfortunately, this has been delayed due to Covid19 and will now be considered again by the university once field work is permitted for students.

Theme 8 – Procurement

- 1.10 A revised procurement policy has been agreed with carbon and climate considerations embedded. Until this time, since summer 2019, a supplementary questionnaire regarding carbon emissions is being sent out with the standard tender documentation.

Examples in the document will ask bidding contractors if they have formal environmental management systems in place such as ISO14001 or EMAS. Other aspects will query locally sourcing of materials and labour in order to minimise travel etc.

This change in policy ensures that environmental sustainability is at the heart of decision making when selecting the right product and/or supplier.

Future Key Carbon Reduction Projects

- 1.11 The Council have drawn up a series of strategic projects that directly contribute and deliver the Council's own carbon reduction targets and contribute to the wider carbon reduction of the community.
- Home/agile working - Embedding home/agile working and video conferencing to reduce the need to attend the workplace and ultimately reduce the number of desks required by both organisations. The vision is to consider work as something you do, rather than a place you go.
 - Undertake an annual review of the Climate Change Plan to ensure it remains relevant and aligns with the scale of the challenge and opportunities that are presented.
 - Bolsover Community Woodlands Project – Working with the Woodland Trust to bring about significant tree planting across the District to help reduce carbon dioxide levels in the atmosphere through the process of carbon sequestration, i.e. trees absorbing carbon dioxide that is already in the atmosphere as they grow. A funding bid for approximately £250,000 from the Woodland Trust's Emergency Tree Fund has been successful and this will lead to a flagship

Community Woodland (approximately 27,500 trees) being created on former colliery land to the south of Creswell, in addition to several smaller tree planting projects, from 2021 onwards.

1.12 Renewable Energy Tariff Project:

The Council buys its utilities through a national public framework called Crown Commercial Services (<https://www.crowncommercial.gov.uk/about-ccs/>). Crown Commercial Services are the biggest public procurement organisation in the UK. They use their commercial expertise to help buyers in central government and across the public and third sectors to purchase everything from locum doctors and laptops to police cars and electricity.

In recent months, we have been working with Crown Commercial Services to understand the impact and opportunity to reduce our carbon footprint by buying our energy through certified renewable sources.

1.13 Renewable Energy Guarantees of Origin (REGOs):

REGO certificates are issued for every megawatt hour (MWh) of eligible renewable output to generators of renewable electricity and can be sold to suppliers as a guarantee of energy being generated from a renewable source. The table below outlines the price increase based upon the unit rate and our forecast future usage for REGOs from EDF for the April 2020 delivery period.

	Fuel Mix	Uplift p/kWh	Additional Annual Cost
EDF Standard	Solar, Wind, Hydro and Biogas.	0.05	£1,198.58
EDF Clean	Solar and Wind.	0.07	£1,678.02
EDF Select	Customer choice of location and generation type.	0.08	£1,917.73

There are three differing tariffs options to the Council which are certified renewable:

- i. EDF Standard – Whilst from renewable sources, this tariff includes electricity generated using biomass generation. Biomass is a renewable energy source, generated from burning wood, plants and other organic matter, such as manure or household waste. It does release CO₂ when burned, but considerably less than fossil fuels. The Energy Saving Trust does consider biomass a renewable energy source, if the plants or other organic materials being burned are replaced. There are unanswered questions regarding the long-term impact of biomass on air quality in particular around particulate matter and nitrogen dioxide (NO₂).
 - ii. EDF Clean – As above but without the air quality question marks around biomass.
 - iii. EDF Select – The council can choose where the certified renewable energy comes from. This may be particularly useful if large scale renewable energy generation is happening in the district or county.
- 1.14 Similar to REGOs for Electricity, you can purchase renewable gas from the supplier, this comes in the form of Biogas. Biogas will produce carbon dioxide, but as with

biomass, it is produced from the anaerobic digestion of plant and animal waste that can again be reabsorbed by growing plants/trees. The cost of Biogas is more volatile than the cost of REGOs, below is the latest quote received from Corona for Biogas. The forecast additional cost for purchasing biogas instead of natural gas is detailed in the table below.

	Uplift p/kWh	Additional Annual Cost
Biogas (Corona)	1.03	£56,802.82

- 1.15 The potential carbon emissions savings through purchasing gas and electricity through renewable tariffs are detailed below:

	Annual Consumption (kWh)	CO2e2 emissions (tonnes)
Gas	5,514,837	1,107.76
HH Electricity (EDF)	2,397,167	606.94
NHH Electricity (British Gas)	536,789	135.91

- 1.16 Whilst the greatest carbon emissions savings are delivered through biogas, the additional cost pressure on the general fund is prohibitive at a time when the Council's finances are still recovering from lost income through Covid and challenges to recover the position.
- 1.17 However, significant carbon reduction (741 tonnes) savings can be delivered through renewable electricity tariffs at a cost which is not prohibitive for the Council. Given the air quality concerns from biomass electricity generation, particular with the Council's role in controlling air quality, it is recommended that from April 2021, the Council purchase renewable electricity from the EDF Clean tariff at a forecast increased cost of £1678 per annum.
- 1.18 Purchasing electricity from a renewable tariff doesn't negate the need to reduce our overall electricity consumption. Purchasing from certified renewable sources shows the demand is there. It sends a message to your supplier and the wider industry that you wish to avoid electricity generated from fossil fuels and gives investors' confidence that there is demand for further green infrastructure.
- 1.19 It should be noted that the information, projects and outcomes detailed in this report are from across the Council from Street scene to ICT, Facilities to Housing, and is an indication that the Council's climate change ambitions are embedded and being realised across all departments.

2 Conclusions and Reasons for Recommendations

- 2.1 The report summarises the progress to date on the Councils own climate change objectives and estimates CO2 emission savings of in excess of 661 tonnes per annum, in addition to as how it is working with partners to provide community leadership on the matter. It is not possible or practical to calculate the carbon reduction estimates in all scenarios. The carbon reduction figures provided should be considered indicative of what is likely to be achieved.

- 2.2 In order to further reduce our emissions and to demonstrate demand for renewable energy, this reports that the Council commits to purchasing electricity from a certified renewable energy tariff in the future.
- 2.3 This decision reduces the Councils carbon emissions by a further estimated 741 tonnes per annum which is a greater reduction than the whole corporate target of a 750 tonne reduction over a period of 3 years.
- 2.4 The Council has numerous options where it can invest to reduce carbon emissions and contribute towards its climate change objectives. However, each investment decision has differing potentials in carbon reduction terms. For instance, an investment of £584,000 in a BEV Refuse Collection Vehicle may achieve 33 tonne CO₂ reduction compared to that of its diesel counterpart. This investment equates to £17,697 per tonne reduced. However, a comparable investment of £500,000 would facilitate external wall insulation (EWI) to 115 properties which may achieve 131 tonne CO₂ reduction, equating to £3,816 per tonne.

3 Consultation and Equality Impact

- 3.1 There are no consultation and equality impact implications from this report.

4 Alternative Options and Reasons for Rejection

- 4.1 Do nothing – The council could choose not to increase the unit cost of energy and simply choose the cheapest tariff. This was discounted due to the significant carbon emission savings from the recommendation.
- 4.2 Purchase a renewable gas tariff too – This is addressed in the body of the report.

5 Implications

5.1 Finance and Risk Implications

- 5.1.1 No financial risks other than those identified in the body of the report.
- 5.1.2 Climate Change is an issue that both the Council and community are passionate about. The purchase of renewable energy sources to reduce carbon emissions is subjective. This report clearly demonstrates that the Council are serious about climate change and in addition to buying renewable energy, we are directly address our own demand for energy and leading the community to do the same.

5.2 Legal Implications including Data Protection

- 5.2.1 This report does not impact on how we procure our energy. The energy will still be required to be purchased in line with standing orders. The report recommends that renewable electricity is procured.

5.3 Human Resources Implications

- 5.3.1 None arising directly from the report

6 Recommendations

- 6.1 That Executive note the update on Climate Change actions.
- 6.2 That Executive agree to procure renewable electricity in future years as outlined in the report.

7 Decision Information

Is the decision a Key Decision? A Key Decision is an executive decision which has a significant impact on two or more District wards or which results in income or expenditure to the Council above the following thresholds: <i>BDC: Revenue - £75,000</i> <input type="checkbox"/> <i>Capital - £150,000</i> <input type="checkbox"/> <i>NEDDC: Revenue - £100,000</i> <input type="checkbox"/> <i>Capital - £250,000</i> <input type="checkbox"/> <input checked="" type="checkbox"/> <i>Please indicate which threshold applies</i>	No
Is the decision subject to Call-In? (Only Key Decisions are subject to Call-In)	No
Has the relevant Portfolio Holder been informed	Yes
District Wards Affected	All
Links to Corporate Plan priorities or Policy Framework	All

8 Document Information

Appendix No	Title
Background Papers	
Report Author	Contact Number
Head of Service – Organisation & Transformation	01246 242210