

RENEWABLE HEATING PROGRAMME (ENVIRONMENT FUND)

To: Environment and Sustainability Committee

Meeting Date: 25th June 2020

From: Steve Cox - Executive Director, Place and Economy

Electoral division(s): All

Forward Plan ref: 2020/030 **Key decision:** Yes

Outcome: To agree the assessment criteria for the Low Carbon Heating Programme for the Council's buildings against which individual projects can draw down investment from the Environment Fund for their implementation. The intended outcome of this proposal is to enable the Council to proceed with significant work towards meeting its climate change commitments.

Recommendation: The Committee is asked to:

- a) Note the background, progress to date, issues, challenges and opportunities regarding the set up of a programme of renewable heating projects for Council buildings.
- b) Approve the assessment criteria for the Low Carbon Heating Programme to draw down Environment Fund investment.
- c) Delegate authority to the Chief Finance Officer in discussion with the Committee Chair, to approve the individual business cases for projects, in compliance with the approved assessment criteria for the Low Carbon Heating Programme.
- d) Approve the inclusion of a carbon savings cost into the business case to sit alongside the financial business case.

<i>Officer contact:</i>		<i>Member contacts:</i>	
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1. BACKGROUND

- 1.1. In February 2020, the Council adopted a fourth corporate objective to deliver net zero carbon for Cambridgeshire by 2050 and included a £16million Environment Fund in its budget plan to support delivery of its commitments set out in the Climate Change and Environment Strategy approved in May 2020 at Full Council.
- 1.2. The £16million Environment Fund is to implement near-term targets set out in the Climate Change and Environment Strategy and £15million of the fund is earmarked for replacing oil and gas heating with renewable heating, at the approximately 70 buildings owned and occupied by the Council.
- 1.3. In December 2019, following an update to Buildings Regulations on 'Nearly Zero Energy Buildings', the Council's General Purposes Committee resolved unanimously to install low carbon heating systems for any refurbishments and boiler replacements, to reduce the Council's carbon footprint and maximise energy benefits to the Council. As heating plants typically have long lifetimes e.g. 20 years or more for boilers, there will be only one or two opportunities between now and 2050 to replace both gas and oil heating systems, at the end of their lives, with low carbon heating solutions.
- 1.4. The intended outcome of this report is therefore to agree the assessment criteria for the Low Carbon Heating Programme for the Council's buildings against which individual projects can draw down investment from the Environment Fund for their implementation and thus enable the Council to proceed with significant work towards meeting its climate change commitments. By reducing the Council's and Cambridgeshire's carbon footprint, this will have wide reaching benefits to our residents and local communities.

2. MAIN ISSUES

- 2.1. *Development of a Low carbon Heating Programme.* The renewable heating programme is intended to make a significant contribution towards reducing its carbon emissions and delivering the Council's pledge to have fossil-fuel-free heating for all buildings that it both owns and occupies, by 2025.
- 2.2. *Carbon footprint of heating.* The Council's annual carbon footprint report for 2018-19 shows that heating of 73 buildings with oil and gas accounted for 61% of the Council's 'Scope 1' carbon footprint (scope 1 meaning direct emissions from the Council's own assets). Scope 1 emissions are those that we have the greatest control over. It will not be possible to meet the Council's climate change targets whilst so many of its buildings are heated with gas and oil.
- 2.3. *Renewable heating technologies.* The most suitable technologies for heating buildings from renewable sources are Air Source Heat Pumps (ASHPs) and Ground Source Heat Pumps (GSHPs). In ASHPs, outside air is used to heat a liquid refrigerant. The pump uses electricity to compress the refrigerant to increase its temperature then condenses it back to release stored heat – a bit like a fridge in reverse. ASHPs still work well even when the outside air temperature is very low. They are generally very reliable sources of heat and require very little maintenance. GSHPs work in a similar way, except that coils or pipes containing refrigerant are buried in the ground. Note that whilst heat pumps do use electricity, they are very different to traditional electric heating, in that the electricity is not

the source of heat. Heat pumps typically produce a heat output 3 to 4 times as much as the electricity they use.

- 2.4. *Renewable Heat Incentive (RHI)*. The non-domestic RHI is a government-funded scheme which provides a source of income to owners of eligible renewable heating systems in non-domestic buildings for 20 years. However, the scheme will not be funded for new applications beyond March 2021. There is therefore an additional incentive to get as many installations as possible completed before March 2021, in order to be able to claim this source of additional income for the Council. The non-domestic RHI is currently (2020-21 Q1 rates) worth 2.79 pence per kWh of heat generated for ASHPs, and 2.6 to 9.68 p/kWh for GSHPs, for a period of 20 years (adjusted by CPI). The total income would depend on the heat output. As an example, an ASHP to be installed at Huntingdon Youth Centre, with a building annual heat demand expected to be 73,000kWh, would mean approximately £50,000 of RHI payments spread over the 20 years.
- 2.5. *Timing of projects*. Whilst the heating systems in many of the Council's buildings are aging and will need replacing soon, others still have some years' life expectancy left. However, in order to meet the Council's carbon reduction commitments, as well as to maximise income from RHI, upgrades of some buildings' heating to renewable systems will need to take place ahead of the existing system's end of life. The whole lifecycle costs (both financial and environmental) will need to be considered in each case.
- 2.6. *Prioritising sites*. The Council's Energy and Property FM teams have worked together to identify a list of properties for the first batch of projects to replace oil or gas heating with ASHPs. This site list takes into account the age and condition of the current heating system (prioritising those with older and poor condition heating), the current carbon footprint of the site (prioritising those with higher oil or gas consumption), and whether there are any other projects or plans for the site currently being developed (for example existing heating projects or alterations with the Cambs2020 'spokes' work). This has identified 26 potential projects, a list of which is shown in Appendix A. This list has been assembled with input from representatives of the Cambs2020 team, the Property FM team, the Energy Investment Unit and the Strategic Property Asset Board at their meeting in March 2020.
- 2.7. *Project development budget*. In order to complete as many heating projects as possible before the closure of the RHI scheme, it has been necessary to start some preliminary works in advance and incur costs to cover asbestos surveys and design work. These costs will be included in the overall programme and reflected into the individual business cases as they come forward for funding.
- 2.8. *Asbestos*. The first task has been to arrange asbestos surveys at 20 of the sites (five sites did not require surveys since it was already known there is no asbestos there). These surveys were all completed by the end of April, at a cost of around £9,000. Some sites may require remedial works to make safe or remove asbestos. Remedial works will be paid for by the Facilities budget if they are required anyway for the site's normal use, or from the Environment Fund in cases where only required because of the heating projects.
- 2.9. *Existing projects*. Seven projects on the list were already planned or underway through existing schemes of work: Huntingdon Youth Centre, Butts Grove Day Centre, Grafham Water Centre Workshop building, Hawthorns Adolescent Unit, Sackville House, Roger Ascham Library and March Community Centre, and are at various stages. For these projects, it is expected that the Environment Fund will only pay for any extra costs

associated with installing renewable heating that would not have been incurred for traditional gas heating.

- 2.10. *Procurement.* For the remaining 19 projects, a design consultant has been procured, using an existing framework. The tender was divided into three lots based on the geographical locations of the sites. The specification included the requirement for renewable heating systems that meet the RHI eligibility criteria. However, owing to the COVID-19 situation, site visits were avoided, and tenderers were asked to price based on the information provided. The design work for these 19 sites is expected to cost £161,800 (this was the lowest price bid received), including production of carbon reduction reports, production of concept designs, production of technical designs, project management for the construction phase, CDM¹ fees and compliance with Building Regulations.
- 2.11. *Project timetable.* The planned timetable for the 19 additional projects is shown below in Table 1.

Table 1

Activity	Planned timescale	Notes
Procure design consultant	21/04/2020 – 15/05/2020	Completed
Concept designs, and energy/carbon reports. Including indicative costs.	15/05/2020 – 19/06/2020	In progress
Detailed and technical designs. Including refined cost estimates.	Complete by 03/07/2020	
Obtain planning permission where required.	19/06/2020 – 28/08/2020	Unlikely to be required for most projects, but anticipated determination timescales of 12 weeks if and where required.
Arrange electrical supply upgrades if required.	19/06/2020 – 28/08/2020	May be required for some projects, with anticipated timescales of 8 to 12 weeks.
Procurement of contractor: tender period	03/07/2020 – 31/07/2020	
Construction phase	28/08/2020 – 20/11/2020	
RHI applications	20/11/2020 – 31/03/2021	

This timetable is subject to change and will be reviewed as the projects progress.

- 2.12. *Minimising disruption.* Since the heating works are due to take place in autumn, it is possible that temporary alternative heating may be needed at some sites whilst the works take place. This will depend on the exact timing, duration of works, outside temperature at the time, and the use of the site. Work plans will be co-ordinated with site users to minimise disruption.
- 2.13. *Process for approval.* In order to adhere to the proposed timescale, it will be necessary to make the decision on whether or not to proceed with heating works at any particular site, as soon as possible once the concept designs and indicative costs are known. This is to ensure there is enough time for design work, planning applications and, where required,

¹ Construction, Design and Management Regulations

upgrades to electricity supplies, to take place ahead of construction. Carrying out the works on site in the summer (or early autumn) would be preferential if possible, in order to minimise downtime during the winter heating season, whilst still completing works before the RHI closure date in March 2021. Business cases will be presented to Strategic Property Assets Board (SPAB) who will make recommendations to the Chief Finance Officer, in discussion with the Chair of Committee, to proceed with works on site for each individual project, in line with criteria set out below. The programme will also need to retain enough flexibility to respond to the potential for changing building needs following the COVID-19 pandemic.

2.14. *Criteria for approval.* To ensure that heating projects provide good value for money for the Council, it is proposed that Committee approve the following criteria for the overall Programme and individual projects to be funded from the Environment Fund.

- Individual sites are owned (either freehold or long term leaseholds) and occupied by the Council;
- The individual site is not planned to be sold or let out within the next five years (based on currently known and agreed plans);
- The total investment for the Low Carbon Heating Programme is approved at a cap of £15million to decarbonise all Council buildings that are heated by oil or gas (approximately 70 buildings);
- The proposed design meets the renewable heating specification detailed in Appendix B;
- A report has been produced detailing the whole lifecycle costs (financial and environmental), current and expected energy usage, projected energy savings and carbon reductions from the project and how this contributes to our targets;
- The Programme is expected to achieve a simple average payback of 20 years or better for the £15million investment, taking into account the cost of carbon as discussed in paragraphs 2.17 to 2.19. (Individual projects may exceed this as long as the average is maintained);
- If any individual project is greater than £500,000, the business case will come forward to Committee for approval.

Progress reporting on the £15million investment programme will be provided via the Quarterly Monitoring Report for Energy Programmes which will come to this committee;

2.15. *Economic recovery from COVID-19 impact.* The COVID-19 pandemic will have a significant impact on the local economy, as many businesses are temporarily closed down and others carrying out reduced operations, whilst hundreds of Council and other public sector employees and volunteers are dealing with the response to the crisis. These heating projects will contribute to the economic recovery plan for Cambridgeshire, by employing contractors (including locally where possible and appropriate) to complete the works.

2.16. *Energy market fluctuations.* The recent exceptionally low UK energy demand due to the lockdown situation has seen gas prices fall to unusually low levels in recent weeks. This

could affect business cases if taken out of context, however over the long term timeframe of a heating system, energy prices are still expected to rise.

- 2.17. *Cost of carbon.* With the risk and impacts of climate change becoming more well-known, and the need to pay for carbon emissions emerging as a part of the cost of doing business, more organisations and governments are looking to put a price on carbon. Governments implement carbon pricing in two key ways - through carbon taxes, or through cap-and-trade or emissions trading systems. An internal or shadow price on carbon, which creates a theoretical or assumed cost per tonne of carbon emissions, can be used as an organisational decision-making tool to assess potential policy changes and project business cases. This has the benefits of being able to assess the profitability of projects in different scenarios, future-proof investment decisions, stimulate ideas on how to best allocate capital in a low carbon economy, and demonstrate that we are taking the risks of climate change seriously.
- 2.18. There are several methods to value carbon, but the most logical approach for the Council would be to mirror the UK Government's method of using the Emissions Trading Scheme price for traded emissions (electricity generation, aviation and industrial process emissions), and the BEIS² carbon value for non-traded emissions (all other emissions sources including transport and heating). These traded and non-traded carbon prices are different in the short-term (central scenario of £14/tonne traded and £69/tonne non-traded in 2020), but the two are projected to converge, becoming equal in 2030 (at £81/tonne) and remaining so in further years (rising to £231/tonne by 2050). Further information and a graph of projected carbon prices is shown in Appendix C.
- 2.19. It is recommended that carbon prices are built into business cases on this basis (as a 'virtual' cost) and presented alongside the base business case (without carbon prices) in order to understand how and which decisions may differ when the cost of carbon is taken into account.

3. ALIGNMENT WITH CORPORATE PRIORITIES

3.1 A good quality of life for everyone

There are no significant implications for this priority. However, a reduction in the carbon footprint for Cambridgeshire has benefits to the quality of life of our residents.

3.2 Thriving places for people to live

There will be a benefit to workers involved in the works. The sites having updated heating systems will benefit the staff and service users who use those sites.

3.3 The best start for Cambridgeshire's children

Some of the sites on the list (such as the Grafham Water Centre) offer educational and recreational services for children. These sites will benefit from the updated heating systems with reduced carbon footprints.

3.4 Net zero carbon emissions for Cambridgeshire by 2050

These projects will help the Council to meet its ambitions in relation to this priority, as set out in paragraphs 1.1 to 1.3 and 2.1 to 2.6.

² BEIS = Department for Business, Energy and Industrial Strategy

4. SIGNIFICANT IMPLICATIONS

4.1 Resource Implications

The report above sets out details of significant implications in paragraphs 1.1 – 1.3, 2.1 – 2.2, 2.4 – 2.10, and 2.14 – 2.19. This includes:

- In May 2020, Council agreed a £15 million investment into renewable heating systems over 5 years;
- Significant reduction in the Council's 'scope 1' carbon footprint by removing oil and gas heating;
- Potential to receive RHI income;
- Accounting for the cost of carbon in business case analyses.

4.2 Procurement/Contractual/Council Contract Procedure Rules Implications

The report above sets out details of significant implications in paragraphs 2.9 – 2.11.

4.3 Statutory, Legal and Risk Implications

The following bullet points set out details of significant implications identified by officers:

- All building works will need to comply with Building Regulations and Health and Safety legislation and policies; and
- Key risks include potential delays or additional costs owing to asbestos remedial works, COVID-19-related delays to materials supplies or contractor staff shortages, planning permission, or electricity supply upgrades. These will all be monitored and managed by the project team.

4.4 Equality and Diversity Implications

The following bullet point sets out details of a significant implication identified by officers:

- Access to some Council buildings by staff and service users may be temporarily restricted whilst works on site are taking place. This could include temporarily closing buildings or relocating access routes, workspaces and services to other parts of the building or other buildings. This will be assessed on a case by case basis and alternative plans put in place where required.

4.5 Engagement and Communications Implications

The following bullet points set out details of significant implications identified by officers:

- Extensive consultation with the public and other organisations on the Council's Climate Change and Environment Strategy and Action Plan took place before the final version was agreed. It was also developed in collaboration with a cross-party Member Advisory Group and a cross-departmental Officer Steering Group; and
- The report above sets out further implications in paragraphs 2.6 and 2.12.

4.6 Localism and Local Member Involvement

- The Climate Change and Environment Strategy was developed in collaboration with a cross-party Member Advisory Group.

4.7 Public Health Implications

The following bullet points set out details of significant implications identified by officers:

- The works will need to be done whilst minimising disruption and still adhering to social distancing requirements that may still be in place at the time, due to the COVID-19 situation.
- Reducing our carbon footprint and helping to mitigate climate change also has public health benefits in the long term.

Implications	Officer Clearance
Have the resource implications been cleared by Finance?	Yes Name of Financial Officer: Sarah Heywood
Have the procurement/contractual/ Council Contract Procedure Rules implications been cleared by the LGSS Head of Procurement?	Yes Name of Officer: Gus de Silva
Has the impact on statutory, legal and risk implications been cleared by the Council's Monitoring Officer or LGSS Law?	Yes Name of Legal Officer: Fiona McMillan
Have the equality and diversity implications been cleared by your Service Contact?	Yes Name of Officer: Elsa Evans
Have any engagement and communication implications been cleared by Communications?	Yes Name of Officer: Eleanor Bell
Have any localism and Local Member involvement issues been cleared by your Service Contact?	Yes Name of Officer: Emma Fitch
Have any Public Health implications been cleared by Public Health	Yes Name of Officer: Iain Green

Source Documents	Location
<ol style="list-style-type: none"> 1. Full Council meeting minutes – February 2020 2. General Purposes Committee minutes – Dec 2019 	<ol style="list-style-type: none"> 1. https://cambridgeshire.cmis.uk.com/ccclive/Meetings/tabid/70/ctl/ViewMeetingPublic/mid/397/Meeting/1102/Committee/20/Default.aspx 2. https://cambridgeshire.cmis.uk.com/ccclive/Meetings/tabid/70/ctl/ViewMeetingPublic/mid/397/Meeting/1016/Committee/2/Default.aspx

<p>3. Cambridgeshire County Council Climate Change and Environment Strategy and Cambridgeshire County Council Annual Carbon Footprint Report 2018-19</p> <p>4. Short term and long term forecast carbon prices</p>	<p>3. https://www.mlei.co.uk/climateenvironment/climate-change-and-environment-strategy</p> <p>4. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/794186/2018-short-term-traded-carbon-values-for-appraisal-purposes.pdf and https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal</p>
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Appendix A – List of projects for 2020-21

Environment Fund Projects

Site Name	Post Code	Current heating system estimated age (years)	Main heating fuel	Site total carbon footprint 2018-19 (net) (kg CO2e)	District of site location
33 Haviland Way	CB4 2RA	Unknown	Gas	Unknown	City
Bargroves Resource Centre	PE19 2EY	15	Gas	31,063	Hunts
Burwell House	CB5 0BA	20	Gas	28,130	E Cambs
Cambridge Central Library	CB2 3QD	10	Gas	52,778	City
Childrens Home (78 Victoria Rd)	PE13 2PY	15	Gas	9,508	Fenland
Cottenham Library	CB24 8QY	15	Gas	3,306	S Cambs
Ely Branch Library	CB7 4ZH	20	Gas	6,489	E Cambs
Grafham Water Residential Centre - Main building, sports hall and accommodation block	PE28 0GW	20	Gas	91,616	Hunts
Hereward Hall	PE15 8NE	18	Gas	20,919	Fenland
Hillrise Childrens Home	PE18 7LY	Unknown	Gas	4,182	Hunts
Horizon Resource Centre	CB1 3HY	15	Gas	70,863	City
Huntingdon Community Centre	PE29 1JE	20	Gas	37,423	Hunts
Huntingdon Library	PE29 3PA	10	Gas	15,142	Hunts
Larkfield Resource Centre	CB7 4SB	10	Gas	37,069	E Cambs
Scott House	PE29 3AD	10	Gas	13,144	Hunts
Stibbington Centre	PE8 6LP	25	Oil	19,526	Hunts
Victoria Lodge	PE13 2UW	15	Gas	10,877	Fenland
Whittlesford Highways Depot Site (Office Accommodation)	CB22 4NL	Unknown	Oil	10,414	S Cambs
Woodland Lodge	PE29 6JD	Unknown	Gas	Unknown	Hunts

Existing Property Projects

Site Name	Post Code	Current heating system estimated age (years)	Main heating fuel	Site total carbon footprint 2018-19 (net) (kg CO2e)	District of site location
Buttsgrove Day Centre	PE29 1LY	25	Oil	45,639	Hunts
Grafham Water Residential Centre - Workshop building	PE28 0GW	20	Gas	Zero due to heating not working	Hunts
Hawthorns Adolescent Unit (formerly Community Home)	CB4 2RA	25	Gas	15,194	City
Huntingdon Youth Centre	PE29 7AF	25	Gas	19,764	Hunts
March Community Centre	PE15 8LE	30	Gas	44,196	Fenland
Roger Ascham Library	CB4 2BD	Unknown	Gas	Unknown	City
Sackville House	CB23 6HL	10	Gas	34,149	S Cambs

Appendix B – Renewable Heating Specification

Low carbon heating technologies

All new heating systems installed into Council buildings must be from renewable sources. Designers should consider heating options in line with Table 2 below.

Table 2

Heating Type	Potential Uses / Notes
Air Source Heat Pumps	Preferred option, suitable for most sites
Ground Source Heat Pumps	May be suitable for larger sites with sufficient land
Water source heat pumps	May be considered for sites adjacent to a water course
Biomass or biogas boilers	Unlikely to consider
Hydrogen	Technology not yet widely available but may consider in future
Heat networks	May consider if part of a larger scheme e.g. for villages, blocks or areas of several buildings. Not suitable for individual buildings.
Electric heating	Do not install new. May keep existing systems.
Gas Oil / kerosene LPG Coal	Do not install. Replace existing systems when feasible.

Energy Performance Requirements

Technical specification

Heat demand of the building must be considered and heating systems sized appropriately to meet demand.

For installations 60kW and above, the Seasonal Coefficient of Performance (SCOP) of any Air Source Heat Pump (ASHP) must be no lower than 4.0 at 35°C and 3.0 at 55°C.

For installations below 60kW, the SCOP of any ASHP must be no lower than 3.5 at 35°C and 2.8 at 55°C.

The energy rating of any unit must be no lower than Class A+.

Forecasting energy use, carbon savings and life cycle costs

An Energy Performance Certificate (EPC) must be obtained if there is not already one within the last two years, or if significant changes to the building have been carried out since the last EPC.

Design proposals must include information on forecast energy use of the new system, comparison to current/previous use, and estimates of carbon emissions savings, both annually and over the lifetime of the system.

Design proposals and supporting information should provide the data to enable Whole Life Cycle Costs (including the cost of carbon) to be calculated.

Building fabric efficiency upgrades

Building improvement works should be carried out where necessary to achieve an EPC level of 'C' or better for existing buildings. New builds (including extensions if heated separately) should target an EPC 'A' rating.

For some buildings, upgrades to the fabric of the building (e.g. insulation, windows, draught-proofing) or to other elements of the plumbing and heating system (e.g. radiators) may also be required.

- Wall insulation and loft/roof insulation must be installed in any buildings where these measures are recommended in the EPC. In these cases, a new EPC must be obtained after the insulation works are completed.
- Single glazed windows should be replaced with double- or triple-glazing where possible.
- Consideration should be given to any other measures recommended in the site's EPC Advisory report and/or the DEC Recommendation Report.

Renewable Heat Incentive (RHI)

Heating systems must be designed to meet all criteria necessary to be eligible for the Non-Domestic Renewable Heat Incentive (RHI) or, in the case of domestic properties, the Domestic RHI. This includes but is not limited to the following:

- Eligible technologies: solid biomass, biogas, ground and water source heat pumps, geothermal, solar collectors, energy from waste, air to water heat pumps, CHP from solid biomass, biogas or waste in combination with other source of energy, shared ground loop systems.
- Must be for a wholly enclosed, permanent building.
- Uses liquid as a means of heat delivery.
- Installations of 45kWth or less must be MCS certified.
- Planning permission in place (if required).
- Any necessary environmental permits in place (where required).
- Eligible heat uses: indoor space heating, water heating, heat for specific processes such as cooking. (Ineligible heat uses: cooling, generating electricity, heating of outside spaces.) Heat used to heat swimming pools is not eligible unless the pools are used for municipal or commercial purposes.
- Heat pumps must have a coefficient of performance of at least 2.9, and a design seasonal performance factor of at least 2.5.
- Heat meters required.

Project timing

Projects should be planned such that the new RHI-compliant heating system is fully installed, tested and commissioned before the RHI scheme ends, whenever possible³. Planning permission (where required) should be sought as early as possible to enable this.

Metering

Heating systems should be sub-metered in order to identify the electricity usage (and, if required for RHI, heat output) of the heating system. All metering must be RHI-compliant.

Evidence

All relevant paperwork must be provided promptly (e.g. invoices, commissioning certificate, installation schematic, MCS certificate if the capacity of the system is <45 kW, manufacturers specs, installer declaration of Seasonal Performance Factor).

³ At the time of writing, this is 31 March 2021 for the Non-Domestic RHI, and 31 March 2022 for the Domestic RHI.

Ongoing maintenance

Provision should be made for ongoing maintenance in line with that required by manufacturers' specifications, RHI requirements and/or other required to ensure the system continues to function well.

New builds

Heating systems for new builds should comply with the same requirements as those for retrofitting existing buildings, as described above. In addition, other requirements for new builds are specified below.

Nearly Zero Energy Buildings

All new buildings owned and occupied by public authorities must be 'Nearly Zero Energy Buildings', in line with the amended Building Regulations which came into force on 1 January 2019.

The legal definition of 'Nearly Zero Energy Building' is a building that has '*a very high energy performance..., where the nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby.*'

The Council's policy is that all new buildings (excluding schools) should:

- Be designed to achieve at least 6 BREEAM energy performance "Ene01" credits;
- Be designed to achieve an EPC rating of A or better; and
- Have on-site renewable energy generation installed, sized to meet a significant proportion (>80%) of the building's expected energy use.

Appendix C – Carbon Valuation

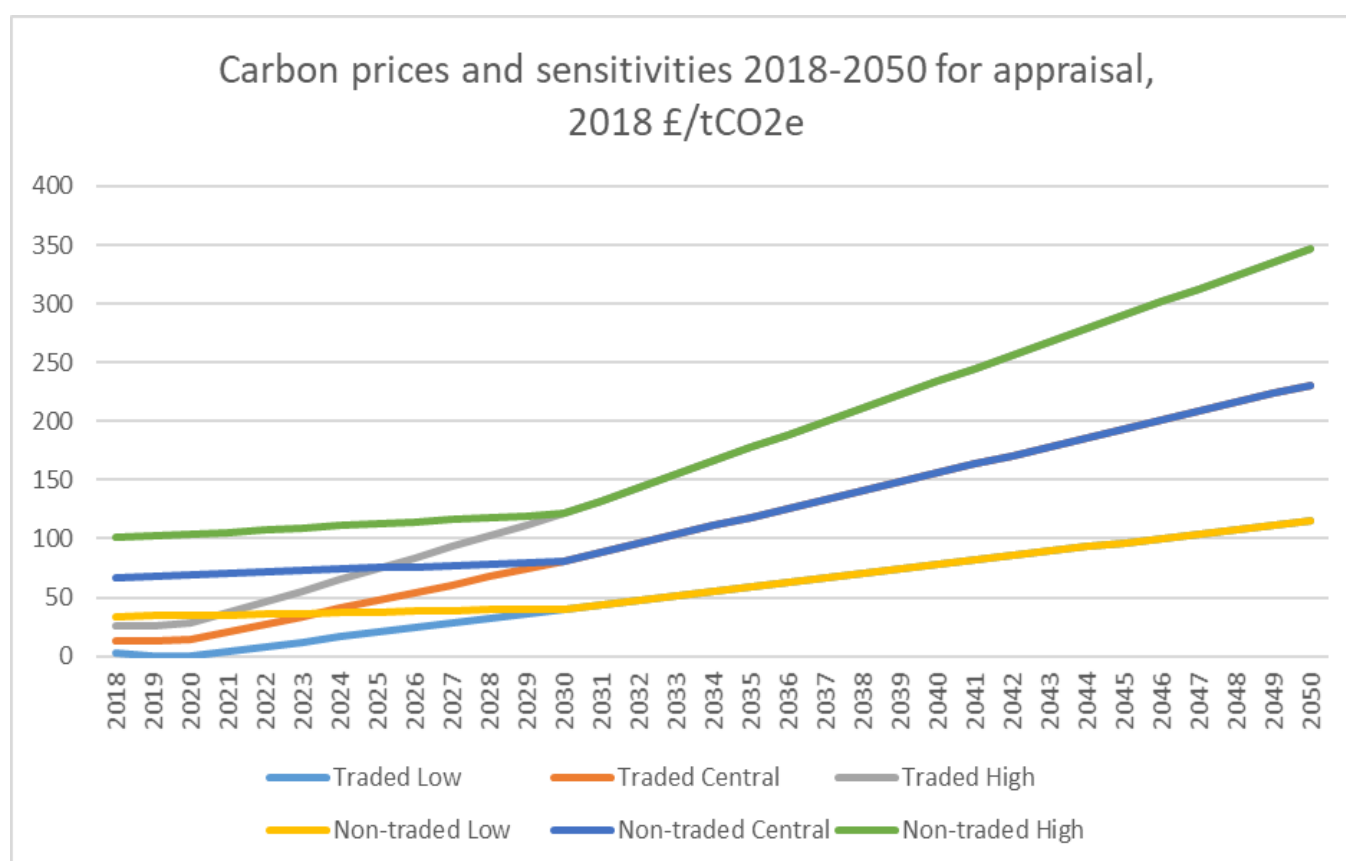


Figure 1: UK Carbon price projections

NB. These are presented in “real” rather than “nominal” values i.e. excluding the effect of inflation and for a 2018 base year.

Traded emissions are those from electricity generation, aviation and industrial process emissions – these are the sectors included in the EU Emissions Trading Scheme (ETS), in which the UK currently participates. Under the ETS, total applicable emissions are capped, and those emitting less than their allocation can sell their excess allowances to other higher emitters.

All other emissions (such as those from transport, heating, waste or agriculture) are **non-traded**. Carbon values from emissions in the non-traded sectors are based on the marginal abatement cost (MAC) required to meet UK emissions reduction targets, such as those agreed in international negotiations and the carbon budgets.

These traded and non-traded carbon prices are different in the short-term, but the two are projected to converge, becoming equal in 2030 and remaining so in further years. This is based on the Government’s assumption that there will be a functioning global carbon market by 2030.

The approach to valuing carbon may need reviewing once the UK has concluded its EU Exit negotiations, although at the time of writing it seems likely that the UK will mirror the EU ETS.