# PRIMARY IMPACT AREA FOR CLIMATE CHANGE

ENERGY

June 2022

# Contents

# INTRODUCTION

This document aims to provide information in as simple and brief a form as possible, of the aspects that can be considered in applying action to reduce the impacts on climate emissions on goods or service procured by institutions.

- Section 1 provides information on framework agreements that are available to the sector that have climate emission reduction / low climate emission options either as a fundamental part of the framework or as a lot within the framework or otherwise as provided for via the framework.
- Section 2 contains potential short-term permanent changes that can be made now for this PIACC area / sub-area.
- Section 3 contains potential longer-term aspects that may need a longer lead-in / planning time and/ or liaison with other parties. This can include aspects where the CEPWG may be able to collectively represent the sector and seek change in policy, regulations etc, and if applicable, engage other sector bodies and individuals in influencing the desired changes.
- Section 4 contains details of other working groups / organisations that may also be working on similar work to the area covered by this document.
- Section 5 contains links to other sources of information that have been reviewed by a CEPWG PIACC Member.
- Section 6 contains (where applicable) potential sources of funding / grants that may be available to develop work in this area.
- Section 7 contains information on Lifecycle Impact / Whole Life Costing, which identify and assess the social and environmental impacts as well as whole life costing factors for this area.
- Annex 1 contains information on examples of good practice already identified in relation to this PIACC / case studies, / draft codes of good practice etc (or further links to them).
- Annex 2 contains information from the APUC Responsible Procurement Guides in relation to carbon reduction

## OVERVIEW - SETTING THE SCENE

Procuring Energy is a major factor of institutional carbon emissions and requires careful management. A vast number of opportunities and resources are available. Tackling carbon emissions is a major task and the following needs to be considered.

Reducing your carbon footprint by making changes to your energy generation and consumption can only be truly efficient by making changes in the right sequence.

**Step 1:** Understand your current energy consumption, your building fabric, energy use behaviours and map out your long-term strategy by considering your plans for Steps 2, 3 and 4 as they will build on one another. The big-ticket items such as fabric, HVAC and BMS are important and need to be in place first.  These systems require investment and that aspect also needs to be considered and accounted for in planning actions to reduce consumption.

**Step 2:** A starting point for all of this is the Building Condition Survey that enables an understanding of the fabric and integrity of the estate/building(s).  A detailed energy audit of the estate can follow on the back of the building condition survey.  This then enables investment decisions to be arrived at.

**Step 3:**  Ensure prioritisation of actions (short and long-term changes) and seek funding based on institutional requirements. This can be achieved by creating a prioritisation matrix comparing the project(s) or action(s) to predetermined, weighted criteria. See Annex for further details and example on Prioritisation Matrix.

**Step 4:** Once all efforts to minimise energy demand have been exhausted a change over to low carbon energy sources should be investigated, such as energy from waste; city wide district heating, solar PV, ground source, air source heating etc.

**Step 5:** Analyse your new energy consumption and associated carbon emissions and identify further opportunities not realised previously, studying changes in behaviour and innovative technology available. Check your target and consider credible offsetting schemes.

# SECTION 1 – FRAMEWORK AGREEMENTS

Section 1 – Framework Agreements / Lots with Climate Relevant Options

Find below information on framework agreements that are available to the sector that have climate emission reduction / low climate emission options either as a fundamental part of the framework or as a lot within the framework or otherwise as provided for via the framework:

## National Framework Agreements

### *National Electricity Framework (UTI1000AP) / SP-17-004*

Provides a range of sustainability benefits and added value services, such as option of Renewable Energy Guarantee of Origin (REGO) certificates at a fixed rate a range of Energy Efficiency Services available as additional services framework designed to facilitate renewable energy Power Purchase Agreements ability for public bodies to sell self-generated renewable energy back to the grid via a Power Purchase Agreement

**Single Source Supplier EDF** - See Resource Centre specifically for the Scottish Government Framework

For more information, see the Buyers Guide

### *National Natural Gas Framework (UTI1001AP)*

Has a range added value services aimed to support maximising energy efficiency and carbon reduction.

### *National Water & Wastewater Billing Services Framework (UTI1003AP):*

Has a range added value services aimed to support maximising energy efficiency and carbon reduction, many of which are free of charge.

### *Non-domestic Energy Efficiency <£1M (UTI1004AP)*

### *Non-domestic Energy Efficiency >£1M (UIT1005AP):*

Both Framework Agreements are designed to deliver projects that are aimed to produce energy efficiencies including upgrading or replacing lighting and heating systems, building environmental services systems and their control, installation of energy generating equipment and carbon reduction technologies and practices and can be used for multiple projects delivered through an Energy Performance Contracts.

A non-domestic energy efficiency project retrofits public sector and third sector buildings with energy efficiency assets. These may include, but not limited to, prefabricated energy centres; combined heat and power units; energy efficient boilers; communal heating; voltage management units; controls outstations; luminaires, lighting controllers and other lighting assets

These projects save energy and maintenance costs; they are self-funding (for example, the costs saved pay for the assets installed); they reduce carbon emissions and improve the environmental comfort of the buildings.

## NDEE Project Support (UTI1006AP):

This Framework is designed to provide Project Management and Technical advisory support to assist the sourcing and delivery of carbon reduction and energy efficiency projects under the two Non-Domestic Energy Efficiency Framework Agreements. This is further aided by a grant of up to £50k to help design and deliver projects.

## Heat Networks and Electricity Generation Assets DPS (RM3824):

This Dynamic Purchasing System tendered and managed by Crown Commercial Services CCS) is designed to provide Energy demand management and generation services and has five lots based on service requirements:

Lot 1: Energy Advisory, Design & Technical Services - Energy Advisory, Design and Technical Services: Technical services relating to the advice and design of any demand management or generation type

Lot 2: Delivery Services - Delivery Services: Delivery services to install, manage and maintain any demand management or generation type

Lot 3: Energy Purchase Agreement - Energy Purchase Agreement: Provision of Energy Purchase Agreements through direct or indirect opportunities

Lot 4: Commoditised Products - Commoditised Products: Access to commoditised products through bulk purchasing

Lot 5: One Stop Shop Solution - One Stop Shop: One stop shop solution to deliver full end-to-end advisory, design, delivery, energy purchase agreements, and commoditised products.

# Higher and Further Education Sector Agreements

## Electrical Sundries Framework (EFM1020AP):

Added value services available through this are aimed at supporting maximising energy efficiency and carbon reduction measures and include free lighting surveys to identify optimal performance and payback periods.

## Condition Surveys and Associated Services (EFM1030 AP):

Provides access to Building Condition Surveys and various reports that enables an understanding of the fabric and integrity of the estate/building(s) and the improvements that require to be made and identify priorities by need or carbon impact and provide asset predictor modelling. The Framework also offers access to Energy Performance certification for commercial and domestic properties.

# SECTION 2 – POTENTIAL SHORT-TERM PERMANENT CHANGES THAT CAN HAVE POSITIVE IMPACTS

**Behaviour Change**

1. Turn heating down to a maximum of 20 degC in all buildings

2. Have "switch-off" campaigns / signage

3. Check out-of-hours energy use

4. Prohibit use of fan heaters etc in offices (& halls)

5. Cease heating corridors

6. Switch to renewable / green energy

Priorities are to reduce the electrical and heat demand of our buildings.

The Sustainable Scotland Network – Individual, Social & Material Framework (ISM)

ISM is a practical tool that has been developed from a sound conceptual model and refined through research and live projects. The ISM tool has grown out of Southerton et al's (2011) International Review of Behaviour Change Initiatives where the Individual, Social and Material contexts were used to examine the effectiveness of environmental behaviour change interventions.

Home - The Carbon Literacy Project

The Carbon Literacy Project is a training programme that equips participants with the knowledge and understanding of carbon costs and impacts of everyday activities, and the ability and motivation to reduce emissions, on an individual, community and organisational basis.

Climate Solutions | The Royal Scottish Geographical Society (rsgs.org)

Climate Solutions Course is aimed at businesses and institutions, helping to prepare them for climate change transformation and outline where opportunities lie.

**Information Technology - see ICT Subgroup**

**Energy Performance Contracts**

**Suggested Procurement Route: Non-domestic Energy Efficiency >£1M (UIT1005AP)**

**Case Study: Strathclyde University - CHP Case Study**

**Energy Audits**

Undertake energy use audits – campus wide energy efficiency assessments that can lead to investment grade proposals to retrofit solutions.  This can then drive investment decisions to develop improvements.  Also needs to be tied into building condition surveys where these are available/possible.



Figure 8:  Figure 8 illustrates the emissions sources within each of the scopes, aligned with the GHG Protocol. [17]
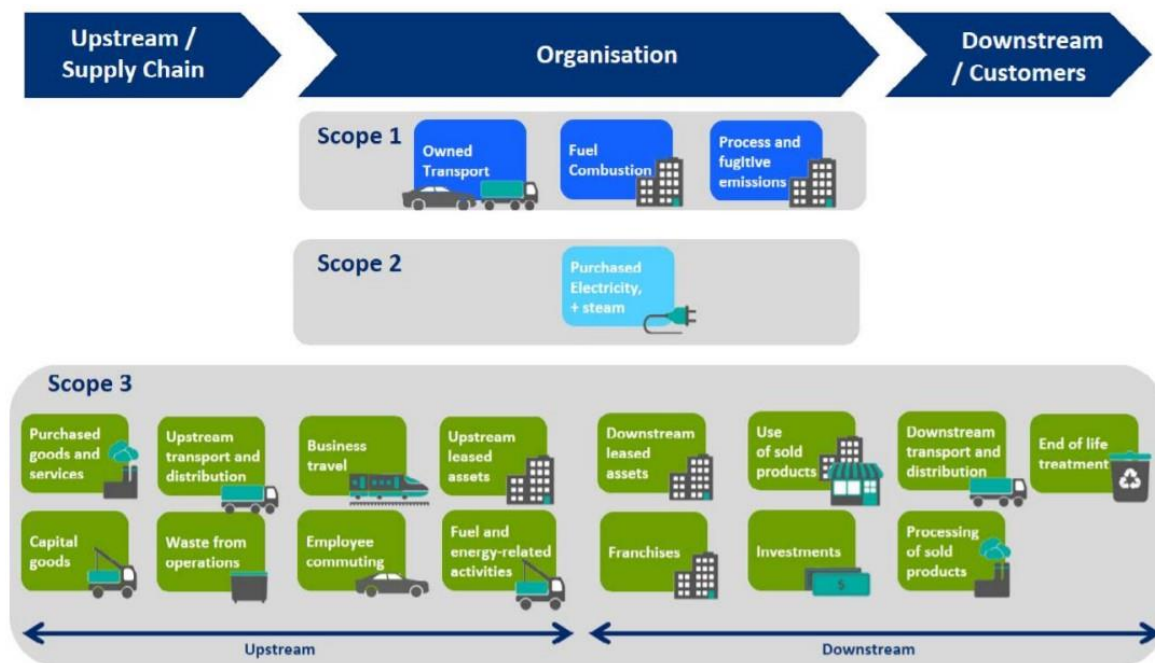
**Building Management System (BMS)**

Building Systems - There is also a large piece to be done around systems and controls for heating/cooling/air handling/lighting; building zoning; matching the systems to the building operations; metering and monitoring that all needs to be in place in order to effect the necessary change.

**HVAC Guidance**

**Lighting**

**Refrigeration**

**Building Fabric Changes**

Building fabric - (a 'fabric first' approach needs to be in place from the start and including windows, insulation, ventilation, cooling etc).  This drives the efficiency of the building over its life, regardless of the activity taking place within it.  The basics have to be in place such as good windows; insulated wall and roof panels; exclusion of drafts etc. Passivhaus is the highest standard available for building fabric, the Passivhaus Trust have training courses and resources available here.

**Carbon Trust recommends the following 6 steps:**

Step 1: Understand your energy use

Step 2: Identify your opportunities

Step 3: Prioritise your actions

Step 4: Seek specialist help

Step 5: Make the changes and measure the savings

Step 6: Continue managing your building for energy efficiency

*(Source: Carbon Trust - Building Fabric Guide)*

# SECTION 3 - POTENTIAL LONGER-TERM PERMANENT CHANGES THAT CAN HAVE POSITIVE IMPACTS

These potential longer-term aspects may need a longer lead-in / planning time and / or liaison with other parties. This can include aspects where the CEPWG may be able to collectively represent the sector and seek change in policy, regulations etc., and if applicable, engage other sector bodies and individuals in influencing the desired changes.

https://www.carbontrust.com/resources

**Resources | Carbon Trust**

www.carbontrust.com

A range of tools, guides and reports to help your business or organisation achieve your sustainability goals.

**Section 3 - Potential Longer-Term Permanent Changes That Can Have Positive Impacts**

*These potential longer term aspects may need a longer lead-in / planning time and  / or liaison with other parties. This can include aspects where the CEPWG may be able to collectively represent the sector and seek change in policy, regulations etc, and if applicable, engage other sector bodies and individuals in influencing the desired changes.*

**Identify long term changes within your Climate Change Action Plan or equivalent, which will include a shift to renewable and Low Carbon Energy Systems**

**Priorities are to increase local renewable energy production, decarbonisation of the grid, increasing diversity and flexibility of our supply.**

**Combined Heating and Power (CHP)**

**Suggested Procurement Route: Non-domestic Energy Efficiency >£1M (UIT1005AP)**

**Case Study: Strathclyde University - CHP Case Study**

**Energy Performance Contracts**

Energy Performance Contract (EPC) (performance risk only): Private sector contractor is engaged to undertake design and installation of group of measures. Payment is fully or partly linked to energy consumption savings realised as a result of the scheme.

Link to Scottish Futures Trust - Public Sector Delivery Structures for Low Carbon Investments

**New Builds - Low Carbon Construction**

The carbon emissions from heating and lighting our buildings (operational emissions) have been falling but these are not the only emissions arising from the built environment. Sizeable carbon emissions are incurred in constructing, maintaining, and demolishing an asset and producing the materials and components used throughout its life cycle (embodied emissions). Considering both the anticipated operational and embodied emissions of a built asset is considered a whole life approach. To date the construction industry has mainly focussed on reducing operational emissions, driven by changes in the building regulations and planning requirements. Extending the focus of project carbon assessments and targets from operational to whole life emissions presents designers, clients, and contractors with a broader range of mitigation options. The faster proliferation of a whole life approach should be supported by national and local policies for which there are a number of international precedents. Targeted intervention from national and local government could drive innovation in design teams and supply chains, improve sector productivity, reduce the costs of UK buildings and infrastructure, create employment opportunities, boost export markets, and deliver immediate reductions in carbon emissions.

**Recommendations**
1. The Government should establish a well-resourced independent body to develop and accelerate the construction sector's decarbonisation agenda.
2. Local authorities should require assessment of whole life carbon emissions on significant schemes as part of the planning process.
3. All publicly funded building projects should include a whole life carbon assessment and whole life carbon targets where project benchmarks can be established.
4. The greenhouse gas emission reporting requirements for quoted companies should be extended to include scope 3 emissions associated with developing new facilities.
5. Product manufacturers should require Environmental Product Declarations to support environmental claims.

- Building Regulations accommodating Low Carbon Energy Systems

**Practice Guidance Renewable and Low Carbon Energy in Buildings**

https://www.scottishfuturestrust.org.uk/page/net-zero-public-sector-buildings-standard

https://www.bridgend.gov.uk/media/1379/wd78.pdf

**Whole Life Carbon Assessment for the Built Environment (RICS)**

**The University and College Sectors Supply Chain Climate and Ecological Emergency Strategy**

The University and College Sectors Supply Chain Climate and Ecological Emergency Strategy, endorsed by the USECEC and the CDN-CEED, and also by the Universities Scotland Principals Group and the Colleges' Principals Group, sets out high level overall strategic approaches to addressing the Climate and Ecological Emergency across the identified seven Primary Impact Areas of Climate Change (PIACC).

Deep "decarbonisation" of the estate has become one of the main imperatives for University and College leaders. The University and College sectors and the Scottish Government "Programme for Government" recognises the need for climate action in this area, the sectors therefore will:

- Promote Framework Agreements that are put in place / maintained, that provide as a priority, an easy / simple cost-effective route to market for energy needs that enable and encourage lower GHG emission options and provide transparency over the impacts attributed to purchases under the agreements;

- Support and encourage low / zero carbon local energy generation solutions;

- Share best practice on how to reduce energy demand across the sectors'-built environment in alignment with Scottish Government guidance and legislation including the Heat in Buildings pending legislation and where energy consumption cannot be avoided, where practical, ensure demand is switched to renewable / green energy where this is not already in place;

- Consider heat decarbonisation as appropriate for estates investment and actively engage in the development of alternate and low carbon heat sources to assist transition to net-zero;

- Build expert knowledge on how to finance the necessary change needed. Maintaining support for existing schemes such as SFC's Financial Transactions (HE);

- Strongly promote Behavioral Change (e.g. turn heating down, "Switch-off & Save", monitor out-of-hours energy use and undertake regular Energy & Lighting Audits to identify potential waste and savings

Sustainable construction and the efficiency of new and existing non-domestic buildings are factors that the University and Colleges sectors will consider as part of a robust climate strategy. Environmental impacts of buildings and infrastructure, including the GHG emissions that contribute to climate change, can be linked to all stages of a building's lifecycle. Extracting raw materials, transforming them into products, transporting them to site, the construction process, use and maintenance, and demolition and disposal activities all demand energy.

The sectors will adopt a systematic and hierarchical approach to minimising the impact of our built environment on the environment and integrate this approach into all related supply chain activity. This approach can be summarised into four activities:

- Firstly, we will minimise our overall demands on the environment by using our land, estate, spaces and assets to their fullest potential. We will continually challenge our holdings and usage of land, spaces and assets to ensure the right size and shape of our estate.

- Secondly, we will seek to maximise how our land, estate, spaces and other assets perform by optimising utilisation and efficiency, and by seeking carbon reduction through application of appropriate technologies.

Ensuring our maintenance and operational strategies are aligned to enhance our climate friendly and resilient estate.

- Thirdly, we will minimise the carbon emissions of the energy that supplies our land, estate, spaces and assets. We will achieve this by exploring low-carbon energy generation and securing low-carbon utility sources, interfacing these with our building systems, and developing the appropriate estate energy distribution and storage networks.

- Lastly, we will mitigate and minimise the environmental impacts and unavoidable by-products of our necessary estate activities. This includes carbon, waste and displacement of nature. Through robust environmental accounting, we will have an informed basis for our offsetting requirements.

# SECTION 4 - OTHER WORKING GROUPS / ORGS THAT MAY ALSO BE WORKING ON SIMILAR WORK

**Working Groups**

**EAUC Energy & Water Management Topic Support Network (TSN)**

The TSN meets to discuss and share good practice on energy and water management within institutions across Scotland. New Members are welcome.

**Get in touch with Andy Anderson (aanderson@apuc-scot.ac.uk) to get contacts for the working groups below:**

- SAUDE and AUDE Sustainability Group

- ADE

- ScotGov – Heat Decarbonisation Team

**Organisations**

1. Sustainable Scotland Network

2. Scottish Futures Trust

# SECTION 5 - LINKS TO OTHER SOURCES OF INFORMATION

This section includes various links to category relevant information for general information and centres of expertise in this area.

**Government Buying Standards – Construction & Buildings**

**REBus Construction Sector report**

**Public Bodies Climate Change Duties - Reporting Tools**

**EAUC Resources**

EAUC provides a range of support for universities and colleges to assist them with completing the annual reports to comply with the Scottish Public Bodies Climate Change Duties. The reports are due annually on 30 November.

Please get in contact with the EAUC Scotland Office (scotland@eauc.org.uk) if are looking for more support.

**Sustainable Scotland Network**

**Association of Decentralised Energy**

**Chartered Institute of Building Services Engineers**

**Institute of Mechanical Engineers - Resources**

**Institute of Mechanical Engineers - Energy & Sustainability Webinars**

**Zero Waste Scotland - Energy**

**Passive House Trust**

**Scottish Futures Trust - Energy Efficiency**

SFT's aim is to improve the efficiency and effectiveness of infrastructure investment and use in Scotland, by working collaboratively with public bodies and industry. Leading to better value for money and ultimately improved public services. More details can be found here and below,

- › Electric Vehicle Charging Infrastructure
- › Energy Efficiency
- › Heat
- › Low Carbon Infrastructure Transition Programme
- › Street Lighting

**Carbon Trust**

A range of tools, guides, and reports to help your business or organisation achieve your sustainability goals.

Carbon Trust - Energy Procurement and Green Tariffs

Carbon Trust - Carbon Footprinting Guide

Carbon Trust - Energy Efficiency Introductory Guides

Carbon Trust - Building Fabric Guide


**APUC Good Practice Hub**

Search for "Energy" in the top field


**ISO 50001:2011 Energy Management**
Using energy efficiently helps organisations save money as well as helping to conserve resources and tackle climate change. ISO 50001 supports organisations in all sectors to use energy more efficiently, through the development of an energy management system (EnMS).
The Standard is based on the management system model of continual improvement also used for other well-known standards such as ISO 9001 or ISO 14001. This makes it easier for organisations to integrate energy management into their overall efforts to improve quality and environmental management.
ISO 50001:2011 provides a framework of requirements for organisations to:
• Develop a policy for more efficient use of energy
• Fix targets and objectives to meet the policy
• Use data to better understand and make decisions about energy use
• Measure the results
• Review how well the policy works, and
• Continually improve energy management.
Full information is available here


**BREEAM - Building Research Establishment Environmental Assessment Method**
Developed by BRE (Building Research Establishment) it is the world's longest established method of assessing, rating, and certifying the sustainability of buildings.
Its categories evaluate energy and water use, health and wellbeing, pollution, transport, materials, waste, ecology and management processes. Buildings are rated and certified on a scale of 'Pass', 'Good', 'Very Good', 'Excellent' and 'Outstanding'. It is carried out by independent, licensed assessors.
The method works to raise awareness amongst owners, occupiers and designers of the benefits of taking a sustainability approach. It helps them to successfully adopt sustainable solutions in a cost-effective manner and

provides market recognition of their achievements. It also aims to reduce the negative effects of construction and development on the environment.

More information is available here.

**EcoCampus (EAUC)**

EcoCampus is a national Environmental Management System (EMS) and award scheme for the higher education sector. The scheme allows universities to be recognised for addressing key issues of environmental sustainability, including carbon reduction. Universities gain recognition for improved environmental performance through a series of awards; Bronze, Silver, Gold and Platinum. The Platinum award is equivalent to the international standard ISO14001.

Full information can be found here

**Construction**

The Energy Efficient Scotland programme and associated regulations made under section 63 of the Climate Change (Scotland) Act 2009 - The Assessment of Energy Performance of Non-domestic Buildings (Scotland) Regulations 2016. These regulations apply to owners of non-domestic buildings and require action to assess and improve energy efficiency and reduce the greenhouse gas emissions associated with their building.

It is important to note that Scotland's Local Authorities were charged in 2017 with preparing Local Heat and Energy efficiency Strategies that will support a coordinated approach to the local planning and delivery of energy efficiency and heat decarbonisation programmes within Energy Efficient Scotland, and to ensure that national level policies and ambitions are delivered on the ground. This work will impact upon the sector's built environment.

**Existing Building Stock – Refurbishment**

It is also important to rethink how we use or reuse our existing building stock.  The value of the re-use of existing buildings over new build reduces the sector's embodied carbon emissions.  It is also true that the retrofitting efficiency measures for existing building stock can and will become an important contributor to reduced impact from the sector's estate.

**Refurbishment Case Study**

The University of Strathclyde's new Learning and Teaching facility reused and repurposed two existing buildings, one of which is B Listed, to create an up-to-date facility.  The savings in embodied carbon is informing future construction planning and delivery.
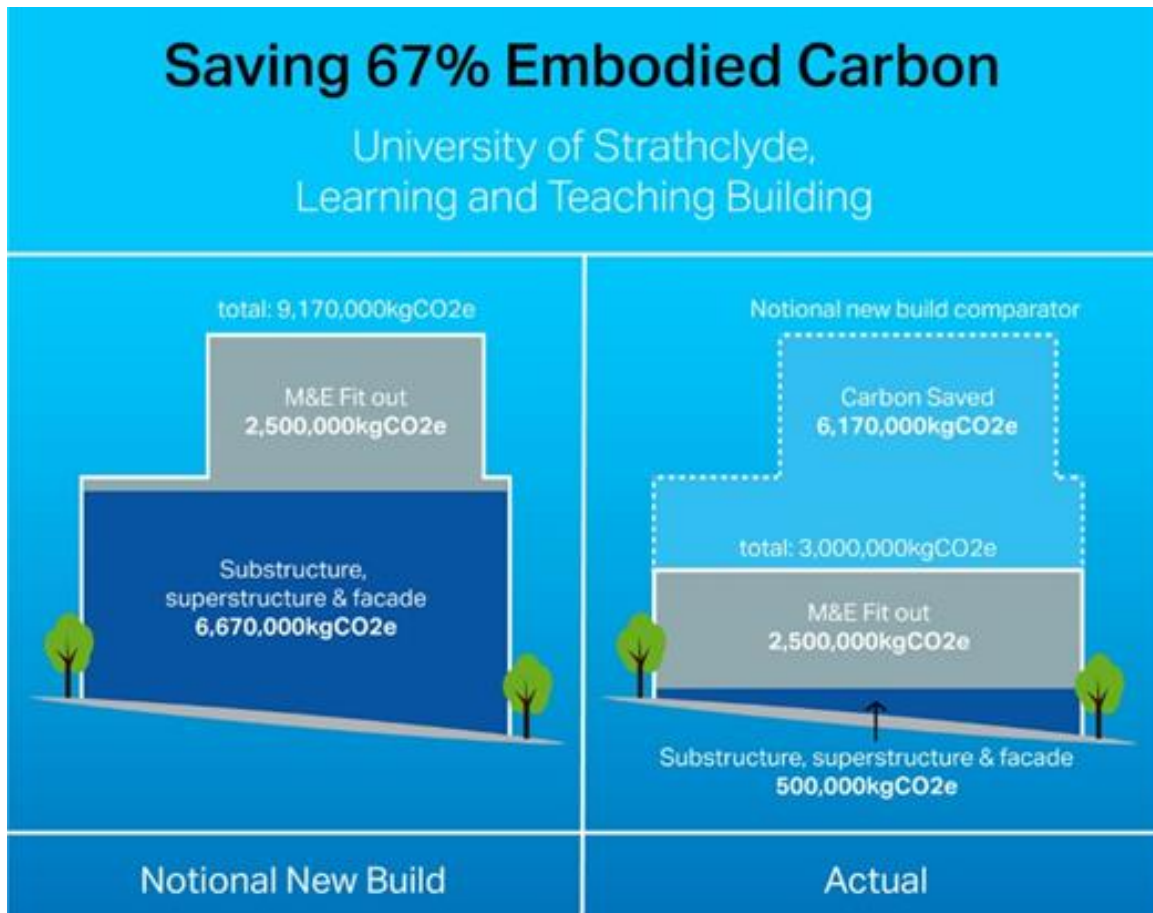


Any project should consider embodied carbon and whole life performance, adoption of Passivhaus fabric first principles and The Next Generation of BREEAM to achieve net zero carbon.

The Scottish Government are creating new voluntary Standard for Construction for new build, non-domestic projects. These are being developed in collaboration with the Scottish Futures Trust, Zero Waste Scotland, Health Facilities Scotland and Construction & public sector in Scotland. Further details can be found here

The aim is to Set targets in client brief and verify outcomes in three key areas:

- Exemplar energy performance
- Strategy to reach Net Zero deadline
- Healthy indoor & outdoor environments

Sector support is available from organisations such as AUDE, SAUDE, RIBA, Universities, ZWS.

# SECTION 6 – POTENTIAL SOURCES OF EXTRA FUNDING

**Section 6 – Potential Sources of Extra Funding/Grants that may be available**

1. There has been previous funding rounds to drive energy efficiency in the Scottish HE sector including Universities Carbon Reduction Fund and the Universities for the Future: Decarbonising Scotland

2. SFC

3. Research Councils

4. EAUC put together a Scottish Funding Register

5. NUS Green Impact - A United Nations programme designed to support environmentally and socially sustainable practice in an organisation and has a programme for Unis and Colleges

6. Zero Waste Scotland

7. OFGEM - List of Environmental Programmes

**Salix Energy Efficiency Fund**

https://www.salixfinance.co.uk/loans/SEEF

**Low Carbon Infrastructure Transition Programme**

https://www.gov.scot/policies/renewable-and-low-carbon-energy/low-carbon-infrastructure-transition-programme/

https://www.gov.scot/publications/heat-network-fund-application-guidance/pages/overview/

**Heat Network Fund**

The £300 million Heat Network Fund has recently been launched (replacing the LCITP)

**Scottish Government Energy Investment Fund**

Simple steps to apply for a Salix Energy Efficiency Fund

1. Visit the Salix website: www.salixfinance.co.uk/loans/SEEF Firstly, download the 'pre-application' guidance document. Case studies of previous school projects can be found on the 'Knowledge Share' area of the website and talk to our expert staff for advice on projects. There are rounds of funding for academies, please check the website and sign up to the Salix mailing list for funding updates.

2. Complete the SEEF application form Download and complete the SEEF application form from the Salix website. This will only be available when the fund is open.

3. Complete our simple compliance tool with project details in the application form The Compliance Tool calculates your expected energy savings and payback, to ensure the project will deliver the required savings within an 8-year payback period.

4. Submit your application to schoolsapplication@salixfinance.co.uk All applications must be submitted by the academy directly, by someone who has authority to sign off on the funding and the project. Consultants can help with the application however are not able to submit application on behalf of an academy. Applications must include details on products selected, supporting calculations, operational hours (for lighting projects) and any further detail on the project that may be necessary for the assessment.

SFC Financial Transactions: Invitation of Expressions of interest FY 2019-21

A source of funding used to deliver a wide range of projects, including investment to save carbon (carbon reduction, energy efficiency etc.), improving the learner experience (facilities or transformation of spaces for learning) and collaborative projects. It will re-open next year *(2022).*

The Programme for Government 2020 to 2021 committed to providing a minimum of £200 million (was previously £95 million) of capital support over the next 5 year period to aid the decarbonisation of Scotland's public sector estates and to contribute effectively towards wider climate change and net zero targets – further information can be found here. The support offered will aid public bodies in fulfilling their duties under the Climate Change (Scotland) Act 2009, whereby public bodies must ensure the delivery of their functions is undertaken in the best calculated way to contribute towards meeting Scotland's climate change targets.

In February 2021, the Scottish Government published the draft heat in buildings strategy, outlining a commitment to invest £1.6 billion in capital funding over the next five years for energy efficiency and zero carbon heating in Scotland's buildings. The draft strategy proposed the establishment of a new Scottish Green Public Sector Estate Decarbonisation Scheme that will act as the main government-led capital funding mechanism to support leadership for decarbonisation of buildings owned by the public sector.

In support of district heat as a large scale solution to enable heat decarbonisation, the Government passed The Heat Networks Bill which became law on 30 March 2021.

The Scottish Green Public Sector Estate Decarbonisation Scheme provides a number of support mechanisms for heat decarbonisation and improving energy efficiency across buildings owned by the public sector in Scotland, including**:**

**Scottish Public Sector Energy Efficiency Loan Scheme**

Established in 2008, this Loan Scheme is delivered by Salix Finance.  This loan scheme offers zero interest loans to those organisations which are subject to the Public Bodies Duties in the Climate Change (Scotland) Act 2009.  This includes 32 local authorities, universities, and some non-departmental public bodies, to enable them to undertake spend to save retrofit energy efficiency improvement projects to help them towards achieving net zero carbon in their estates.  Over 950 projects have been supported to date with total capital value of over £70 million.   **In 2021 to 2022, an additional £10 million capital** is being made available to eligible public bodies with increased maximum (from 50% to 75%) intervention rate offered along with increased pay back criteria.  Applications and expressions of interest can be submitted now.

**Scottish Central Government Energy Efficiency Grant Funding Scheme**

The initial call for applications under this Scheme  was recently launched for eligible public sector bodies.  Applications are invited for a share of a £1 million resource fund for pre-capital support with outputs to be delivered by 31 March 2022 and with supported projects expected to apply for capital support at a later date.  The initial call also invites applications for a share of a £7 million capital fund in respect of projects which can be delivered by 31 March 2022.

# SECTION 7 – WHOLE LIFE COSTING / LIFECYCLE IMPACTS

Find information on Lifecycle Impact / Whole Life Costing, which identify and assess the social and environmental impacts as well as whole life costing factors for this area.

Life Cycle Impact Mapping – Scottish Government

International Institute for Sustainable Development – Life Cycle Costing

Life Cycle Costing ICLEI

Life Cycle Costing – European Commission

# ANNEX 1 -INFORMATION ON GOOD PRACTICE / CASE STUDIES / DRAFT CODES OF GOOD PRACTICE ETC

Annex 1 contains information on examples of good practice already identified in relation to this PIACC / case studies, / draft codes of good practice etc (or further links to them).

Making the Business Case for Sustainability Guide

Sustainability Committees Best Practice Guide

Details on the Energy & Water Management Topic Support Network and Energy JISCmail are available here and Salix also have some that may be useful.

**Salix Case Studies**

**Good Practice Hub Case Study Links**

Aberdeen University Passive Haus Case Study.pdf

**GPP Good Practice Studies**

A range of case studies from across the EU on topics such as

ELECTRICITY

COMBINED HEAT & POWER

BUILDINGS

WATER BASED HEATERS

INDOOR LIGHTING

**GPP Technical Background Report Electricity**

**HE/FE Sector Case Studies**

**University of Aberdeen Passive House** (could be either here or as per above link to Good Practice Hub)

**South Lanarkshire College - Low Carbon Buildings**

**Strathclyde University - CHP Case Study**

**UWS Hamilton**

## University of Edinburgh

The Edinburgh Climate Change Institute (ECCI) is leading a collaboration between the University of Edinburgh and industry partners to drive forward improvements in construction delivery and building performance outcomes with a view to Building capacity for zero and low carbon innovation in construction and the built environment. Further details can be found here.

## University of Strathclyde

Strathclyde have recently released their collaboration project document for the Climate Neutral (Glasgow City) Innovation District. Atkins were commissioned with other specialist partners to undertake a feasibility study to review the Energy, Transport and Environmental greenhouse gas emissions from the 'Innovation District' of Glasgow. The aim was to determine a feasible roadmap of technical and financeable solutions to achieve a climate neutral district, where possible targeting 100% renewable energy, transport and sustainable places and inclusive of adaptation to the impact of climate change.  The full report can be found here.