

ESTA



Environmental Sustainability  
Technical Assistance

Integrating Environmental  
Sustainability into ERDF Projects

**Applicant Advice**



# CONTENTS

## Introduction

Who is this advice for? _____	3
The ERDF application process _____	4
What is the cross-cutting theme for Sustainable Development? _____	4
The Sustainable Development cross-cutting theme requirements _____	5

## How can projects meet these requirements? \_\_\_\_\_

Capital projects _____	7
Revenue projects _____	7

## Resource efficiency

Capital projects _____	8
Revenue projects _____	11

## Climate change resilience

Capital projects _____	12
Revenue projects _____	13

## Environmental protection and enhancement through green infrastructure

Capital projects _____	14
------------------------	----

## Sustainable procurement

Capital projects _____	15
Revenue projects _____	16

## Sustainability standards

Capital projects _____	17
Revenue projects _____	18

## Appendix A

Evaluating carbon emissions for low carbon projects _____	19
Calculating carbon emissions reductions: energy generation requirements _____	20
Calculating carbon emissions reductions: energy efficiency measures _____	21

## Appendix B

Potential environmental impacts and opportunities associated with capital construction schemes _____	22
--	----



## Who is this advice for?

This advice has been designed to help applicants for European Regional Development Fund (ERDF) monies to understand and consider the environmental sustainability impacts of their project early on in the project development stage.

In addition to bringing significant added value to projects, this will also support project applicants in addressing the Sustainable Development cross-cutting theme as part of the ERDF application process.

This advice illustrates different approaches and examples of measures that could be integrated into projects to increase their sustainability and outlines the benefits of considering these.

The ERDF is one of three European funding streams that have been brought together under the European Structural Investment Fund (ESIF). This advice note does not seek to specifically support applications for European Social Fund (ESF) or the European Agricultural Fund for Rural Development (EAFRD), which are also covered by the ESIF.

## The ERDF application process

Project applicants will need to meet a series of requirements and answer a number of questions to demonstrate how their project will contribute towards the aims of the relevant Local Enterprise Partnerships and achieve best value for money. This information forms part of the assessment that will be made to determine which projects are most suitable for ERDF funding. Part of the application (and assessment) process will also require applicants to answer the following broad question:

“How does the project maximise positive environmental impacts or mitigate potential negative impacts?”

The answer to this question will be different for each individual project, and there is no right or wrong answer as such. However, applicants will need to demonstrate that they have considered key sustainability factors in the development of their project.

## What is the cross-cutting theme for Sustainable Development?

Sustainable development is about achieving an appropriate balance between environmental, social and economic objectives. It is an overarching objective of the European Union and has been established as a cross-cutting priority theme within the ERDF programme 2014-2020. This means that, at a project level, applicants need to demonstrate how any potential negative environmental impacts associated with their project will be minimised, or mitigated, and how potential positive impacts will be maximised.

The European Union’s Common Provisions Regulations cover environmental protection, resource efficiency, climate change mitigation and adaptation, biodiversity, disaster resilience, risk prevention and management. The cross-cutting theme also reflects the ‘Polluter Pays Principle’ – the party responsible for producing pollution should pay for the damage to the natural environment. All ERDF funded projects must comply with UK environmental law and apply this principle systematically.



ERDF Operational Programme (England)  
2014-2020

## The Sustainable Development cross-cutting theme requirements

The preparation and implementation of ERDF projects should consider actions against the following five topic areas (which are aligned with the priorities identified in the ERDF Operational Programme above).

### Green infrastructure

The 'natural environment' provides vital ecosystem services such as water management, pollution control, provision of raw materials, food and medicine, climate regulation, recreation and wildlife preservation. Economic growth and social development cannot be sustained without protecting and enhancing the natural resources they rely upon.

**Applicants will need to demonstrate how environmental impacts will be managed and opportunities to enhance green infrastructure have been considered.**

### Resource efficiency

Minimising the use of energy and water and reducing the generation of waste has multiple benefits including carbon emissions reductions, cost savings and the development of renewable energy markets.

**Applicants will need to demonstrate how they have maximised opportunities to improve resource efficiency.**

### Sustainable procurement

All projects involve the purchase of services, materials and/or products. Procurement activities should consider sustainability issues as well as price.

**Applicants will need to demonstrate how they have considered environmental, social and economic benefits in their purchasing decisions.**

### Climate change resilience

The evidence is clear that ignoring climate change will eventually damage economic growth. In fact, the benefits of strong, early action far outweigh the costs in the longer term. Adapting to climate change is just as important as mitigation efforts.

**Applicants will need to demonstrate how their projects will be resilient to climate risk and take advantage of any opportunities.**

### Standards

There are well established environmental standards that bring together the themes of resource efficiency, climate change, green infrastructure/environmental protection, and sustainable procurement.

**Where appropriate, applicants will need to demonstrate how they have applied these standards. For capital programmes this includes BREEAM and CEEQUAL, and for revenue programmes includes Environmental Management Systems such as EMAS and ISO14001.**

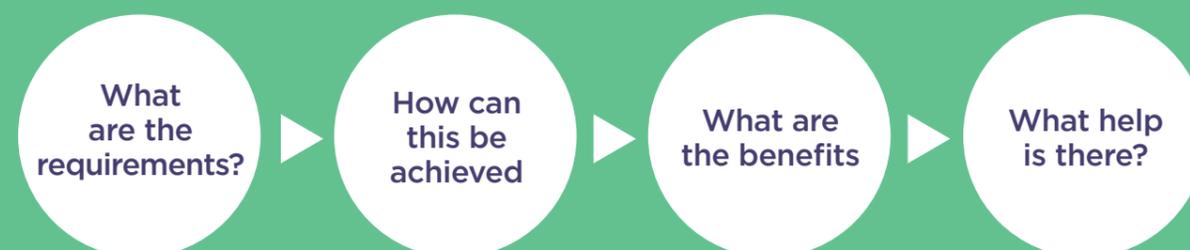
# HOW CAN PROJECTS MEET THESE REQUIREMENTS?

The issues and solutions to consider when meeting the cross-cutting theme requirements will differ dependent upon the types of projects that are being delivered. It is important to ensure that projects honestly identify the positive and negative impacts for each of the five aspects of the cross-cutting theme (resource efficiency, climate change resilience, green infrastructure, sustainable procurement, sustainability standards).

Applicants should then consider where it is appropriate for projects to implement measures to address these impacts, recognising that it may not always be appropriate for them. Where applicants consider that certain measures would not be value for money, or unfeasible, this should be made clear in the application.

For example, it may be more beneficial and cost effective for some projects to maximise resource efficiency, whilst for other projects, the main benefits may relate to opportunities to enhance green infrastructure.

What is most important is that applicants demonstrate that sustainability has been integral to the development of the project, and that the most appropriate solutions have been proposed given the unique circumstances of that project. Further advice is provided throughout this document on a project specific basis to help applicants understand the following:



For the purposes of this advice document, projects have been broadly grouped as primarily ‘capital’ or ‘revenue’ based; although in some cases, the project may include elements of both at different stages of its lifecycle. In those cases, applicants should refer to all relevant parts of this advice note.

---

## Capital projects

The majority of capital projects will involve construction of some sort, whether this is new buildings, infrastructure or low carbon energy schemes. Construction projects can have a negative impact on the environment but can also present opportunities to add value through consideration of environmental improvements at each stage in the project lifecycle from design, through to construction, operation and end-of-life.

Other capital projects might include investment in refurbishment schemes, more efficient machinery and fleet, and ‘place-making’ such as green infrastructure enhancement.

By achieving the capital standards associated with BREEAM and CEEQUAL a project will have been deemed to have met the requirements of the cross cutting theme.

---

## Revenue projects

Business support and community development projects have the potential to raise awareness of environmental issues with staff, suppliers, visitors and/or customers and improve the environmental performance of organisations.

Environmental considerations can be factored in to the support provided through these projects and also in the way in which the projects themselves are delivered (the operation of the project). For example, in supporting SMEs to develop new product lines, consideration could be given to sustainable supply chain management and sustainable procurement. The support provided might be direct, or by signposting and connecting organisations with other support programmes and tools.

## Resource efficiency: capital projects (PAGE 1 of 3)

Capital projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<b>Construction and infrastructure projects</b>  Such as: <b>Business units, refurbishment schemes, transport improvements</b>	<b>Energy and water</b> All new developments have to meet minimum standards for energy and water efficiency set by Building Regulations. However, ERDF funded projects will also need to demonstrate how further efficiencies will be achieved where possible. This will also be necessary to meet the higher standards for water and energy efficiency required to achieve higher levels of the BREEAM Standard.	Utilise passive design to minimise the requirement for artificial heating, lighting and cooling. Integrate low carbon technologies into the development. Maximise energy efficiency performance. Implement greywater recycling systems. Produce a building user manual to help maximise the use of new technologies.	Reduction in utility bills and carbon emissions. Payments can be received for generating electricity and heat. Improved fuel security and business resilience to power shortages. Better working environments can improve tenancy satisfaction and workforce productivity (which can reduce by 30% in poorly ventilated offices if temperatures reach 32 degrees Celsius).	Many Local Authorities have produced planning guidance documents that contain advice on the types of sustainability measures that are encouraged in new developments. The Carbon Trust has produced a series of <a href="#">guidance documents</a> on how to retrofit buildings with low carbon technologies. The <a href="#">Low Carbon Planning Support Pack</a> provides guidance on the integration of renewable technologies into plans, projects and developments. The Carbon Trust has produced a <a href="#">Good Practice Guide</a> on how to produce a Building Log Book. They have also produced practical guide on <a href="#">how to make buildings work</a> more effectively through the commissioning process.
	<b>Waste management</b> Projects will be expected to demonstrate how waste will be managed during construction, and also what measures will be adopted to support waste reduction and higher levels of recycling once buildings are operational.	Implement a Site Waste Management Plan (SWMP). Provision of adequate storage space for waste/ recycling receptacles. Consideration of on-site waste management facilities - such as balers.	Reduces the need to buy excess materials, leading to cost savings during construction. Reduces the cost of sending waste to landfill and could lead to a revenue stream rather than a waste disposal cost. It is estimated that a capital project of £500,000 in value will save between £3k-£6k by implementing a SWMP <sup>1</sup> .	The Government has produced <a href="#">guidance on how to produce an effective Site Waste Management Plan</a> . Although Site Waste Management Plans are no longer mandatory, they demonstrate good practice. The Government has also produced <a href="#">guidance on business and commercial waste management</a> including duty of care, licencing requirements and waste storage.

<sup>1</sup> <http://archive.defra.gov.uk/environment/waste/topics/construction/pdf/swmp-cost-benefits.pdf>

### Capital topic areas **Quick links**

Resource efficiency	<b>PAGE 2</b>	Climate change resilience →	Green infrastructure →	Sustainable procurement →	Sustainability standards →
---------------------	---------------	-----------------------------	------------------------	---------------------------	----------------------------

## Resource efficiency: capital projects (PAGE 2 of 3)

Capital projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<p><b>Construction and infrastructure projects (continued)</b></p>	<p><b>Transport</b></p> <p>Projects should demonstrate how they have been located and designed to support a reduction in the use of private vehicles and an increase in walking, cycling and public transport.</p> <p>It would also be beneficial for applicants to demonstrate (as appropriate) how carbon emissions from transportation and machinery will be reduced during construction.</p>	<p>Locate new development in areas where better use can be made of existing infrastructure and services.</p> <p>Building design should include adequate cycle stores, showering and storage facilities.</p> <p>Use of alternative fuel vehicles and machinery, rail transport of heavy materials, the amalgamation of deliveries where appropriate to reduce mileage.</p>	<p>Minimise the energy use (and cost) associated with the transportation of heavy construction materials.</p> <p>Good links to public transport and strategic road networks can improve the attractiveness of business locations.</p> <p>Improved punctuality for workforce and visitors.</p> <p>Reduced requirement (and cost) to provide parking.</p> <p>Reduced fuel costs and less carbon emissions.</p>	<p>Transport for Greater Manchester (TfGM) has produced <a href="#">guidance for developers</a> to promote sustainable communities.</p> <p>Transport for London (TfL) has produced some <a href="#">detailed guidance</a> on the development of travel plans for new developments with links to useful information</p>
<p><b>Low carbon energy generation schemes</b></p> <p>Such as: <b>Energy from waste, Carbon Capture and Storage, renewables, nuclear</b></p>	<p>It is necessary for applicants to identify annual carbon savings for Low Carbon Schemes in line with the <b>EC Common Indicator 34:</b></p> <p>Estimated Decrease of Green House Gases (tonnes of CO<sub>2</sub> equivalent).</p>	<p>By estimating carbon emissions savings and value for money.</p> <p>By monitoring actual carbon emissions savings once the project is operational.</p>	<p>Ensures that low carbon energy schemes are achieving the greatest value for money in reducing carbon emissions.</p>	<p><a href="#">Appendix A</a> contains a simple methodology to follow for calculating carbon emissions savings from energy generation and energy efficiency schemes.</p> <p>The Government has produced a <a href="#">report that provides advice</a> on the types of indicators that should be used to assess ERDF funded projects.</p>

### Capital topic areas **Quick links**

Resource efficiency	<b>PAGE 3</b>	Climate change resilience →	Green infrastructure →	Sustainable procurement →	Sustainability standards →
---------------------	---------------	-----------------------------	------------------------	---------------------------	----------------------------

## Resource efficiency: capital projects (PAGE 3 of 3)

Capital projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<p><b>Product and process engineering</b></p> <p>Such as: <b>New machinery, product innovation</b></p>	Applicants should consider how key resources (energy, water, materials and waste) are used efficiently in their business processes and products, identifying any opportunities for process development improvements or innovation.	<p>Invest in new and innovative machinery and technologies that can improve efficiency. For example; air compressors, voltage optimisation, packaging design, route optimisation.</p> <p>Substitute existing materials for those with a lower ecological footprint.</p>	<p>Reduced energy and water use/costs.</p> <p>Reduced waste disposal costs.</p> <p>Access to new markets.</p> <p>Improved image and marketability.</p> <p>Reduced business downtime.</p>	WRAP website has a <a href="#">guidance section on sustainable products</a> and the <a href="#">Ecolabel catalogue</a> identifies a range of products and services that have been evaluated by independent experts to ensure they meet criteria that reduce their environmental impact.

### Capital topic areas **Quick links**

Climate change  
resilience



Green  
infrastructure



Sustainable  
procurement



Sustainability  
standards



## Resource efficiency: revenue projects

Revenue projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<p><b>Business support projects</b></p> <p>Such as:  <b>Business start-up, accessing new markets, marketing, training and development, knowledge transfer</b></p>	<p>Business and community development projects have the potential to raise awareness of environmental issues with staff, suppliers, visitors and/or customers and improve the environmental performance of organisations.</p> <p>In delivering support programmes, applicants must ensure that they:</p> <ul style="list-style-type: none"> <li>- Build resource efficiency advice into the business support offer</li> <li>- Are managing their own resources efficiently.</li> </ul>	<p>Delivering resource efficiency as part of a business support offer can be achieved in a number of ways including:</p> <ul style="list-style-type: none"> <li>- Initial diagnostics could include an assessment of whether an SME would benefit from resource efficiency support</li> <li>- Training and empowering business advisors to understand resource efficiency to signpost and support SMEs</li> <li>- Have in place a dedicated resource efficiency advisor to work with SMEs, or buy-in external skills and support</li> <li>- Sign-post SMEs to support available through existing local and national organisations</li> <li>- Consideration of the location and timing of training to reduce travel for beneficiaries</li> <li>- Support the development of ‘Environmental Champions’ both within and between SMEs. These groups help to encourage behaviour change and embed sustainability into an organisation</li> <li>- ICT can help to improve the effectiveness and efficiency of projects/the businesses that are being supported. For example, improved use of and access to broadband facilities, video conferencing and digital media services can be factored into project delivery to help achieve cost savings and environmental benefits.</li> </ul>	<p>Achievement of cost savings for the coordinating body and project beneficiaries.</p> <p>Improved customer feedback and achievement of positive project outcomes.</p> <p>Ability to win more contracts and/or attract funding.</p> <p>Reduced fuel, travel and associated costs.</p> <p>Improved resilience to climate change events (e.g. ability to work remotely).</p> <p>Increased working flexibility.</p> <p>Improves workforce morale.</p>	<p>Within your LEP area existing resource efficiency support projects may be running and SMEs can be sign-posted to these to receive support.</p> <p>If existing support projects do not exist, businesses should be provided with access to a range of tools and information to help them improve their resource efficiency. Business Advisors are particularly helpful contacts to make use of.</p> <p><b>Some useful tools for signposting</b></p> <p><a href="#">WRAP’s Business Waste and Cost Calculator tool</a> provides a quick and simple online assessment of the potential costs and savings that SMEs have for waste management.</p> <p>The <a href="#">Carbon Trust</a> and <a href="#">Energy Saving Trust (EST)</a> provide advice to help individuals and organisations reduce energy use and improve efficiency.</p> <p>WRAP’s <a href="#">guide</a> to running a more cost effective and resource efficient office includes advice on how to set up a green team.</p> <p>The North West Fire and Rescue service has produced a <a href="#">summary of how it set up its own Environmental Champion’s network</a> and the steps, successes and challenges involved.</p>

### Revenue topic areas **Quick links**

Climate change resilience 

Sustainable procurement 

Sustainability standards 

## Climate change resilience and risk management: capital projects

Capital projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<b>New buildings and infrastructure</b>	<p>As a minimum projects will need to demonstrate that there will not be a net increase in surface water run-off as a result of the development. Applicants will also be required to adhere to local planning policies with regards to climate change resilience measures.</p> <p>Projects that deliver significant improvements to the resilience of places to climate change would be considered best practice. This would include the achievement of a net decrease in surface water run-off, wider management of flood risk, contributions towards enhanced waste water treatment facilities or improvements in the quality of runoff, and enhancement of green infrastructure beyond the boundary of the site in order to contribute towards wider urban cooling.</p>	<p>Choosing the right location is an important factor in ensuring that new development is resilient to climate change, particularly flood risk.</p> <p>Sustainable Drainage Systems (SuDS) are a natural approach to managing drainage and should be considered for new developments. As well as decreasing flood risk in urban areas, SuDS can minimise the threat of pollution run-off from sites too.</p> <p>Integrating passive ventilation design into developments helps to reduce the need for artificial cooling in summer.</p> <p>Landscaping should be designed to be resilient to hotter summers and wetter winters. It is also possible to create areas of shade as well as improve the environmental and visual quality of any areas next to water courses.</p> <p>Ideally, developments should link to the wider areas beyond the site to enhance green infrastructure. For example, through the creation of 'green travel routes'.</p>	<p>More attractive buildings/developments that can be let or sold quicker.</p> <p>Improved image and reputation.</p> <p>Reduced risk of business interruption or damage to assets.</p> <p>Reduced insurance premiums.</p> <p>Reduced maintenance and replacement costs.</p> <p>SuDS can reduce surface water run-off and associated flood risk.</p> <p>Landscaping can help to cool urban areas.</p> <p>Enhancements to green infrastructure can have multiple benefits including encourage walking and cycling as an alternative to car use.</p>	<p>Early engagement of Local Planning Authorities in the design process is essential. General advice is available from the <a href="#">National Building Specification</a>, and <a href="#">Code for Sustainable Homes guidance</a>. CIBSE also have an <a href="#">online tool for designers</a>.</p> <p>There are a range of advice and toolkits available to help designers to integrate climate change resilience into their projects, available at <a href="http://www.climateuk.net">www.climateuk.net</a>, including:</p> <ul style="list-style-type: none"> <li>- <a href="#">Training materials</a> for those involved in the planning process</li> <li>- <a href="#">TCPA advice</a> on incorporating adaptation into design and planning</li> <li>- Information on applying climate resilience <a href="#">to local highways</a></li> <li>- <a href="#">Green Roofs guidance (Institute of Structural Engineers)</a></li> <li>- <a href="#">Beat the Heat: Keeping UK buildings cool in a warming climate</a></li> </ul> <p>Information on sustainable drainage systems is available from CIRIA at <a href="http://www.susdrain.org">www.susdrain.org</a></p> <p>A 'Thematic Issue Paper' for the EU Commission brings together the <a href="#">latest research on brownfield remediation and redevelopment</a>, exploring new tools and approaches and highlighting successful strategies from across Europe.</p>

### Capital topic areas Quick links

Resource efficiency



Green infrastructure



Sustainable procurement



Sustainability standards



## Climate change resilience and risk management: revenue projects

Revenue projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<p><b>Business support projects</b></p>	<p>Applicants should demonstrate how the project will take account of the risks and opportunities associated with climate change.</p> <p>As a minimum, this should involve measures to help SMEs identify and manage their risks.</p> <p>It would also be beneficial to demonstrate how the project would help to support or signpost SMEs to identify business opportunities arising from climate change.</p>	<p>Resource efficiency advice should also seek to reduce the need for artificial cooling.</p> <p>Provide or signpost to support to help SMEs develop a business continuity plan and climate change management plan. This would include exploring the risks of climate change and what measures could be implemented to minimise the risks.</p> <p>Provide or signpost support to SMEs to diversify products and services in response to climate risks and opportunities.</p> <p>Facilitate the development of local resilience networks that SMEs can participate in.</p>	<p>Reduced risk of business interruption or damage to assets.</p> <p>Reduced insurance premiums.</p> <p>Reduced maintenance and replacement costs.</p> <p>Improved health and safety provisions.</p> <p>Access to new customers and markets.</p>	<p>The Environment Agency's Climate Ready programme has a <a href="#">Climate Adaptation Resource for Advisors (CLARA)</a> to help business advisors support SMEs to understanding and preparing for the impacts of climate change. They also have advice on <a href="#">preparing for a flood</a>.</p> <p>The growing number of tools and advice for businesses are available at <a href="http://www.climateuk.net">www.climateuk.net</a>, including:</p> <ul style="list-style-type: none"> <li>- <a href="#">The Business Resilience Health Check</a> tool helps businesses to identify areas where operations could be impacted. This complements the wider <a href="#">Sustainable Business Toolkit</a> from Business in the Community</li> <li>- <a href="#">Weathering the storm</a> - business resilience guide for SMEs</li> <li>- <a href="#">Supply Chain Guidance</a></li> <li>- Specific guidance for the <a href="#">food and drink sector</a></li> <li>- <a href="#">Specific tourism guidance</a></li> </ul> <p>UK Climate Impacts Programme has resources to explore <a href="#">climate futures</a>, and BACLIAT to <a href="#">assess business risk</a>.</p> <p>The <a href="#">European Climate Adaptation Platform</a> is a toolkit that helps organisations adapt.</p>

### Revenue topic areas **Quick links**

Resource efficiency



Sustainable procurement



Sustainability standards



## Environmental protection and enhancement through green infrastructure

Capital projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<b>Buildings and Infrastructure</b>	<p><b>Green infrastructure</b> (GI) consists of a wide range of natural and man-made green and blue (water) spaces that sustain natural ecological process and provide multiple social, economic and environmental benefits.</p> <p>GI assets can range from parks, lakes and woodlands to smaller scale interventions such as green roofs, street trees and water storage areas.</p> <p>New developments can have negative impacts on GI, but also provide an opportunity to enhance their quality, function and connectivity.</p> <p>New build construction and infrastructure projects require planning permission. Environmental impacts would typically be managed through this process. However, applicants should seek to identify opportunities to enhance GI where possible, particularly where this can contribute to the more sustainable management of surface water.</p> <p><b>Appendix B</b> outlines some of the typical impacts and opportunities associated with development for applicants to consider as a starting point.</p>	<p>Larger scale projects are more likely to present opportunities to secure enhancements to GI that extend beyond the site boundary. This means that projects should seek to identify how they can connect to and enhance these wider environmental networks rather than only focusing on site specific measures.</p> <p>It may be more difficult for smaller scale projects to make links with strategic GI, but there may still be opportunities to enhance the environmental quality on-site through measures such as green roofs, and sustainable urban drainage systems.</p> <p>Redeveloping brownfield land as a priority can address health, ecological and economic threats from contaminated land and leads to a more sustainable use of valuable land resources.</p> <p>Design landscaping schemes that support effective and efficient maintenance of GI.</p>	<p>GI has the added benefit of boosting property values, enhancing habitats, improving the image of a place and creating attractive settings for businesses and inward investors.</p> <p>It can also help to manage surface water and reduce flood risk to sites and surrounding areas, helping development viability. Green roofs can help to provide natural insulation to buildings, reducing energy bills and trees can provide shade for buildings.</p>	<p>Local community groups may have an interest in the project and may be able to offer ideas on how the GI in the area can be enhanced. One example could be your local <b>Community Forest</b>.</p> <p>GI North West has produced a <b>valuation toolkit</b> for assessing the wider economic and social benefits of investing in environmental improvements.</p> <p><b>Local Wildlife Trusts</b> can help to identify ecologically important habitats/species. There is a network of wildlife trusts across England, with each providing guidance, information and services relating to environmental protection in their area.</p> <p>The <b>Green Roof Centre</b> provides technical support and guidance on the integration of green roofs into developments.</p> <p>The Landscape Institute have produced a <b>position statement on GI</b>, which provides a range of examples and case studies of how GI can be integrated into projects.</p>

### Capital topic areas **Quick links**

Resource efficiency



Climate change resilience



Sustainable procurement



Sustainability standards



## Sustainable procurement: capital projects

Capital projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<p><b>New buildings and infrastructure</b></p>	<p>Where practicable, projects should maximise use of reused and recycled materials within construction and materials should be sourced as locally and sustainably as possible.</p> <p>Applicants must ensure that all timber is procured in line with the Governments Timber Procurement Policy.</p>	<p>Materials can be specified with a lower embodied energy/ecological footprint. For example:</p> <ul style="list-style-type: none"> <li>- Building with timber frames instead of steel</li> <li>- Using local labour</li> <li>- Using natural insulation products</li> <li>- Specifying materials with a high recycled content.</li> </ul>	<p>Identifying and managing sustainability risks in procurement will help to avoid financial penalties associated with failing to meet legislative requirements. It also reduces exposure to supply chain and reputational risks.</p> <p>Credits are awarded under the BREEAM Standard for the use of materials with a lower environmental impact.</p> <p>Improved image and marketability for the project/development.</p>	<p>The <a href="#">Green Guide</a> to building specification is a useful resource.</p> <p><a href="#">The Central Point of Expertise on Timber</a> (CPET) is a Defra funded body established to provide advice and guidance, assess evidence of compliance with the policy, and support implementation across the public sector.</p> <p>The Government produced a <a href="#">comprehensive guide on Sustainable Procurement for Construction Projects</a> as a legacy to the 2012 Olympic Games.</p> <p>The Government has produced a list of <a href="#">Buying Standards</a> that require all relevant organisations to meet mandatory standards when procuring goods and services. These standards can be set when drawing up tenders and project/product specifications.</p>

### Capital topic areas **Quick links**

<a href="#">Resource efficiency</a> 	<a href="#">Climate change resilience</a> 	<a href="#">Green infrastructure</a> 	<a href="#">Sustainability standards</a> 
---	---	--	--

## Sustainable procurement: revenue projects

Revenue projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<b>Business support projects</b>	Rather than focusing simply on the price of goods and services at a point in time, projects should consider costs over the longer term, and factor in environmental, social and economic implications within any procurement exercise undertaken as part of the project.	<p>The applicant could establish its own sustainable procurement policy to demonstrate commitment to considering environmental, social and economic benefits in their purchasing decisions.</p> <p>Provide or signpost to advice for SMEs to ensure that they are meeting any required buying standards.</p> <p>Provide training and support to SMEs on how to implement the Flexible Framework.</p> <p>Connect SMEs with suppliers that provide sustainable products and services.</p> <p>Help to set up networks that allow SMEs to joint-procure sustainable products.</p>	<p>Sustainable procurement can be a cost saving exercise, it can help with compliance, improve brand reputation, facilitate investment, improve the product or service that you provide and it can often help to manage the risks that you are exposed to.</p> <p>Helps SMEs to build relationships with ethical suppliers.</p> <p>Improved ability to gain and retain contracts.</p> <p>Encourages the adoption of environmentally sound business practices by beneficiaries. This can have a ‘trickle effect’ on further businesses that are part of the beneficiaries’ supply chain.</p> <p>A ‘green supply chain’ extends environmental consideration to all aspects of a product or service: from material sourcing, to product design, manufacture, distribution, delivery and end-of-life disposal. Establishing a green supply chain enables an organisation to gain access to key markets, differentiate themselves from the competition, and improve products, processes and quality, as well as reducing environmental risks and costs.<sup>2</sup></p>	<p><b>The Flexible Framework</b> is a widely used self-assessment mechanism developed by the business-led Sustainable Procurement Task Force, which allows all types and sizes of organisations to measure and monitor their progress on sustainable procurement.</p> <p>The Government has produced a list of <b>Buying Standards</b> that require all relevant organisations to meet mandatory standards when procuring goods and services. These standards can be set when drawing up tenders and project/product specifications.</p>

<sup>2</sup> <http://sd.defra.gov.uk/2011/12/developing-a-green-supply-chain/>

### Revenue topic areas **Quick links**

Resource efficiency



Climate change resilience



Sustainability standards



## Sustainability Standards: capital projects

Capital projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<p><b>Buildings and infrastructure</b></p> <p>Such as:  <b>New non domestic buildings, refurbishment, infrastructure and engineering projects</b></p>	<p>BREEAM and CEEQUAL are accreditation standards that promote best practice in sustainable design and construction (including resource efficiency). Any new and refurbished buildings that are funded through the ERDF programme fund will need to demonstrate that they have achieved the following as a minimum.</p> <ul style="list-style-type: none"> <li>- New buildings: BREEAM 'Excellent'</li> <li>- Refurbishment: BREEAM 'Very good'</li> <li>- Infrastructure: CEEQUAL 'Very Good'.</li> </ul> <p>In some cases, it may actually be possible to achieve even higher levels of sustainability than this, and projects should seek to go beyond these minimum standards wherever possible.</p>	<p>To achieve a BREEAM rating of 'very good' or above it will be necessary to achieve a higher performance of resource efficiency.</p> <p>There are also credits awarded in the BREEAM and CEEQUAL standards for implementing measures that help to reduce flood risk, and improve resilience to climate change. Locating in areas that are not at risk of flooding is a good start.</p> <p>A range of credits are awarded under the BREEAM and CEEQUAL standards for demonstrating how the development will help to enhance green infrastructure, reduce pollution, and protect environmental assets.</p>	<p>Meeting the required sustainability standards is a good way for project applications to demonstrate how the other four cross-cutting theme requirements relating to resource efficiency, climate change, sustainable procurement and GI have been met. However, this will depend upon the credits that are achieved.</p> <p>Projects that achieve high standards of sustainability are also likely to benefit from the following:</p> <ul style="list-style-type: none"> <li>- Enhanced marketing offer</li> <li>- Securing quicker sales/rentals</li> <li>- Reduced running and maintenance costs</li> <li>- Smoother planning permission process</li> <li>- More flexible buildings with longer life-spans</li> <li>- Improved awareness of environmental sustainability amongst tenants / occupants</li> <li>- Meeting higher stakeholder expectations (with regards to sustainability) and developing competitive advantage.</li> </ul>	<p>The Building Research Establishment provides guidance on how to get the most out of BREEAM, and demonstrates that <a href="#">BREEAM excellent can be achieved at little extra cost.</a></p> <p>Local Authority planning officers may be able to offer advice on what measures would be particularly welcomed on a particular development. Seek to engage with the planning authority early on in the design stage.</p> <p>Local environmental groups may also have an interest in the project and may be able to offer ideas on how the scheme can be enhanced.</p> <p>There may be knowledge exchange groups that can share experiences in the achievement of BREEAM for different project types.</p>

### Capital topic areas **Quick links**

<a href="#">Resource efficiency</a> 	<a href="#">Climate change resilience</a> 	<a href="#">Green infrastructure</a> 	<a href="#">Sustainable procurement</a> 
---	---	--	---

## Sustainability Standards: revenue projects

Revenue projects	What should be done?	Examples of how can this be achieved	What are the benefits?	What help is there?
<p><b>Business support projects</b></p> <p>Such as: <b>Business start-up, accessing new markets, marketing, training and development</b></p>	<p><b>The applicant</b> The organisations involved should demonstrate their own arrangements for managing environmental impacts. As a minimum each should be able to demonstrate that it has (or is developing) an adopted environmental policy.</p> <p><b>The project</b> Projects should demonstrate how beneficiaries will be supported to help them develop an appropriate Environmental Management System (EMS) (this could be formal or informal).</p>	<p>Environmental impacts can be managed formally through a management system known as an EMS (such as ISO14001). This gives organisations a framework for managing impacts, whilst demonstrating quality to potential customers/clients. Informal approaches are equally as relevant to smaller businesses.</p> <p>Projects that offer support or funding to businesses could consider how they encourage and support applicants to review their environmental management practices. This could be built into the project conditions and could be delivered via referral to existing environmental business support programmes in the local area where they exist.</p>	<p>Improved image and marketability. Able to win more contracts/attract funding.</p> <p>Ensure legal compliance and reduce risk.</p> <p>Improve working environment and tenant/worker satisfaction.</p> <p>An EMS helps to monitor impacts in a systematic way.</p>	<p><a href="#">WRAPs Business Waste and Cost Calculator tool</a> provides a quick and simple online assessment of the potential costs and savings that SMEs have for waste management.</p> <p>WRAP have also produced a <a href="#">practical guide</a> for SMEs to help them produce their own EMS.</p> <p>The British Standards Institute (BSI) has produced a short questionnaire to help organisations assess their <a href="#">‘readiness for an EMS’</a>. The form can be sent to BSI to evaluate.</p> <p>The <a href="#">Carbon Trust</a> and <a href="#">The Energy Saving Trust</a> (EST) provide advice to help individuals and organisations reduce energy use and improve efficiency.</p>

### Revenue topic areas **Quick links**

Resource efficiency



Climate change resilience



Sustainable procurement



# APPENDIX A: EVALUATING CARBON EMISSIONS FOR LOW CARBON PROJECTS

In 'More Developed' areas at least 20% of ERDF funding must be spent on Thematic Objective 4 activities relating to Low Carbon Economy<sup>3</sup>. The Local Enterprise Partnership (LEP) area partnership local sub-committees (European Structural Investment Fund Committees) are responsible for ensuring operational delivery of the Structural Fund Programme activity at a local area level, including assessing projects against local strategic fit, value for money and complementary interventions. For low carbon projects, they will be looking to identify projects that can help to achieve a shift towards a lower carbon economy.

Any project that aims to reduce greenhouse gas emissions (GHG) must have a transparent methodology for calculating and monitoring emissions. This is particularly important for projects that are delivering against Thematic Objective 4: Low Carbon Economy.

Where capital projects aim to directly increase renewable energy production or to decrease energy consumption through energy efficiency measures, the use the EC Common Indicator 34: Estimated annual decrease of Greenhouse Gases (tonnes of CO<sub>2</sub> equivalent<sup>4</sup>), is mandatory.

There are a number of ways that CO<sub>2</sub>e savings can be calculated. If your project is not covered by the two examples below a methodology will need to be agreed by your growth team.

<sup>3</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/190880/13-747an-structural-and-investment-fund-strategies-preliminary-guidance-to-leps-technical-annex.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/190880/13-747an-structural-and-investment-fund-strategies-preliminary-guidance-to-leps-technical-annex.pdf) (Page 20)

<sup>4</sup> CO<sub>2</sub> equivalent incorporates the measurement of all greenhouses gases and not just CO<sub>2</sub>.

## Calculating carbon emissions reductions: energy generation

A basic calculation for estimating carbon emissions reductions from energy generation schemes is set out below:

**(Installed Capacity (Kw) x total hours in 1 year x Load Factor) x conversion factor = Reduction in carbon emissions (kg carbon equivalent)**

### Step 1

First, estimate the amount of energy that will be generated by the project in Kilowatt hours (Kwh). This will differ depending upon the type of energy scheme being delivered and depends upon the capacity/load factor. If the scheme generates/makes efficiencies in terms of both heat and power, two separate calculations will need to be undertaken to account for the different conversion factors.

Load factors differ dependent upon a number of variables. For example, for wind technology the load factor depends upon turbine size, cut-in and cut-out speeds and wind speed. The Government **publishes average load factors** for different technologies based upon actual data collected each year.

### Step 2

Multiply the amount of energy expected to be generated / saved annually by the appropriate conversion factor. This will give a calculation of the amount of kg of carbon that would be saved annually due to lower carbon energy generation. Then divide the total amount by 1000 to estimate the amount of carbon saved in tonnes.

Calculations should assume that energy generation will offset an equivalent amount of 'grid' generated electricity (for power generation) or natural gas (for heating). The **latest conversion factors** published by the Government should be used.

- The conversion factor for grid electricity is **0.44548 kgCO<sub>2</sub>e/kWh** (2013-2014)
- The conversion factor for natural gas is **0.18404 kgCO<sub>2</sub>e/kWh** (2013-2014)

### Example: Energy generation – capital scheme

A large scale wind turbine is to be installed to provide power to a business park.

The turbine is rated at 3 Megawatts. Applying a load factor of 0.25% (8760 hours in a year), it is calculated that the turbine will generate 6,570,000 kWh per year of electricity. Multiplied by the conversion factor for electricity (0.44548), this equates to a saving of 2,962 tonnes per year of carbon.

<sup>5</sup> <http://www.nwueu.ac.uk/NWUEU/PDFs/Regeneris%20Consulting%20-%20ERDF%20Output%20Note%20FINAL%20Version%2018%2012%2013.pdf>

## Calculating carbon emissions reductions: energy efficiency measures

A basic calculation for estimating carbon emissions reductions from energy efficiency schemes is set out below:

**(Annual energy use before measures [Kwh] - annual energy after measures [Kwh]) x carbon dioxide coefficient = Annual carbon emissions saving.**

### Step 1

First, estimate the amount of energy that will be saved in Kilowatt hours (Kwh) by implementing the efficiency measures.

Modelling software, (such as the [Simplified Building Energy Model](#) [SBEM]) can be used to calculate the amount of energy that a building would be expected to use on the basis of implementing various efficient measures.

If the scheme achieves efficiencies in terms of both heat and power, two separate calculations will need to be undertaken to account for the different conversion factors.

### Step 2

Multiply the amount of energy expected to be saved annually (in Kwh) by the appropriate conversion factor. This will give a calculation of the amount of Kg of carbon equivalent that would be saved annually due to efficiency measures. Then divide the total amount by 1000 to estimate the amount of carbon saved in tonnes.

- Calculations should assume that energy generation will offset an equivalent amount of 'grid' generated electricity (for power generation) or natural gas (for heating).
- For energy saving measures (likely to be the main area of ERDF support) the calculations should be based on the first (or typical) year of savings.

### Example: Insulation and low carbon technology retrofit for SMEs – capital scheme

It will be difficult to estimate total carbon savings when the project aims to provide support to several businesses at a range of different premises. This is because each business will differ in size, and have its own unique issues, and solutions. However, applicants should seek to estimate an average annual saving in carbon emissions by setting out the types and numbers of businesses likely to be supported.

For example:

On average a **16kw** Solar PV system will be fitted per business. Some businesses may not be suitable, but others will be able to accommodate more. A 16kw system would be expected to achieve carbon emissions savings of 8 tonnes per year (energy saved x electricity coefficient). Insulation improvements would be expected to save approximately 25 tonnes per year (energy saved x gas coefficient).

- Average saving from insulation for one business = 25 tonnes per year.
- Average savings from Solar PV for one business = 8 tonnes per year.
- Average carbon saving per business = 33 tonnes per year.
- Aim to support 10 businesses per year = total of 330 tonnes per year.

# APPENDIX B: POTENTIAL ENVIRONMENTAL IMPACTS AND OPPORTUNITIES ASSOCIATED WITH CAPITAL CONSTRUCTION SCHEMES

Factor	Potential impacts	Opportunities
<b>Air quality/greenhouse gas emissions</b>	New buildings and infrastructure typically increases car use and travel. This can affect air quality and increase GHG emissions.	Development can be located in accessible locations and support sustainable modes of travel.
<b>Wildlife species and habitats</b>	New development can lead to the direct loss of wildlife habitats. There may also be increased recreational pressure on habitats and species as a result of development near to important habitats. Extraction of raw materials can have negative effects on wildlife habitats.	Development can include measures to enhance or create new habitats for wildlife and encourage and promote biodiversity. Consideration of how to link with green infrastructure beyond the site boundary is important.
<b>The character of the built and natural environment</b>	New buildings and infrastructure can erode the character of historic buildings and their character. There can also be an impact on landscape quality, particularly if there is a loss of sensitive open space.	Development and refurbishment provide the opportunity to enhance the built environment and bring heritage assets back to productive use.
<b>Land and soil</b>	Productive agricultural land can be lost to new development. Operational impacts associated with businesses can also cause contamination of the ground and affect soil quality/function.	Brownfield land and vacant buildings can be regenerated through development. Often, this is the only way that funds can be gathered to clean-up contamination from sites.
<b>Water quality and flooding</b>	An increased amount of hard standing (in place of green space) can lead to increased rates of surface water run-off, leading to higher flood risks. Development can also affect water quality by increasing the amount and reducing the quality of water discharged into surface drains and local rivers.	Reducing the amount of surface water and improving its quality can be achieved by providing SuDS and reducing the amount of hard standing on brownfield sites in particular. Any potential contamination issues need considering early in the project design stage.  Water efficiency measures can reduce pressure on water supply and discharge into the sewers. Development can contribute to waste water infrastructure improvements.
<b>Human health</b>	Development could have an impact on the health and wellbeing of communities by increasing nuisance (noise, light vibration). It might also lead to the loss of valued community facilities.	Development can create job opportunities and improve access to homes. Environmental enhancements can also improve access to good quality open space, having a positive effect on wellbeing.
<b>Resource use</b>	Economic growth and development is traditionally associated with increased waste generation and the use of energy and water.	New development can provide opportunities to replace inefficient building stock with more sustainable alternatives. Lifetime carbon savings from renewable energy technologies outweigh the emissions caused by the production of technologies and construction processes.

---

## About ESTA

The Environmental Sustainability Technical Assistance (ESTA) project is funded by the Environment Agency (EA) and ERDF to support the five North West LEP areas to embed environmental sustainability into their economic development priorities and work streams; it runs from April 2012 to December 2014.

For more information visit

[www.enworks.com/ESTA-intro](http://www.enworks.com/ESTA-intro)

---

## URS Infrastructure & Environment Ltd

URS is a leading provider of engineering, construction, and technical services for public agencies and private sector companies around the world. With over a century of experience in multidisciplinary consulting, URS is a market leader in the provision of planning services, sustainability solutions, high quality research and assessment, and the facilitation of sustainable economic development.

From an economic development perspective, URS has particular expertise in policy research, providing strategic advice and project development. This includes defining and supporting projects from early concept and appraisal, through to design, implementation, delivery and monitoring.

For more information contact

### URS Infrastructure & Environment Ltd

4th Floor, Bridgewater House,  
Whitworth Street,  
Manchester  
M1 6LT

**Ian McCluskey** BSc(Hons) MA DMS  
Senior Sustainability Consultant  
Email: [ian.mccluskey@urs.com](mailto:ian.mccluskey@urs.com)

**Claire Lawless** BA(Hons) Econ  
Technical Director  
Email: [claire.lawless@urs.com](mailto:claire.lawless@urs.com)



Environmental Sustainability  
Technical Assistance

This briefing note has been produced from  
research undertaken for the ESTA project.

