

Overview

In line with the Government's Greening Government Commitments (GGC), the Department for Environment, Food & Rural Affairs (Defra) is aiming to achieve savings, reduce carbon emissions and improve the operational performance of its sites.

Defra has responsibility for policy and regulations on environmental, food and rural issues and as a result its estate includes a mix of around 150 offices and laboratories located across the country. Re:fit's first phase included a series of offices, laboratories and research facilities dealing with a range of fields from fisheries to livestock.

Across central government, Defra has a reputation of leading the way in terms of sustainability. Since 2006 Defra has implemented a programme to reduce the environmental impact of its estate. Building on the strength of its sustainability and environmental credentials, the Re:fit programme offered a unique opportunity to help provide further cost and carbon efficiencies across the Defra estate.

Defra, supported by Local Partnerships, ran a mini-competition under the Re:fit programme in August 2015. Following appointment of a provider, initial feasibility studies were completed for a pilot phase of 14 selected sites in March 2016. One of the sites identified for improvements is Workington, a facility sprawling over seven interlinked buildings, four of which are single storey and three two storey. The site, originally built in the 1980s, has been developed and extended since 1998.

Project:	Workington, York	
Savings:	£78,128 energy spend reduction per annum (excl VAT) Energy savings of 431,033kWh	199.2 tonnes of CO ₂ per annum saved
Value:	£832,193 investment (excl VAT)	Simple payback of 10.6 years
Timescale:	Installation to commence summer 2017	



Defra is now in the detailed design phase, finalising Investment Grade Proposals (IGPs) before contract sign off with a view to starting works in summer 2017. Following on from the pilot phase, Defra is now working with Breathe Energy to roll out the programme and has undertaken initial feasibility studies at an additional 20 sites owned by the Environment Agency.

"Breathe Energy have been working with Defra for over 14 months and since early stages there has been a professional approach to the project. The team advising Defra are knowledgeable and have developed a programme of works that will deliver material savings to the Department. In my role of Project Sponsor I will recommend BREATHE Energy as a trusted and professional working partner.

Carolina Butler, Senior Programme and Project Manager, Defra

Summary of Energy Conservation Measures (ECMs)

The Workington project encompassed a number of energy-efficiency and renewable-energy measures, which are listed below.

Lighting retrofit and redesign

Replacement of a mixture of T5, T8 and CFL lamps with new LED luminaires, plus introduction of PIR controls throughout. Total savings of £14,676 a year (or more than £34,000 annual savings when maintenance and CRC savings are included), plus more than 74 tonnes of carbon saved annually.

Renewable energy generation – wind

Two new horizontal-axis wind turbines (HAWTs) proposed, both fitted with YAW controls to turn the blades to face the wind, so the maximum energy potential can be derived. The proposed sizes are 50kWp and 250kWp.

The larger one, which would be complete with battery storage for the electricity generated, is pending further investigation. Both are subject to planning permission and the works will include integration with current electrical systems, which have been mapped out already.

Since the Feed-in Tariff (FIT) levels are frequently reassessed and are subject to change, prior to implementation of this measure the current tariff levels will be reviewed to ensure the installation accreditation will occur prior to the next potential change in the FIT tariff.

According to current estimates, the 50kWp turbine could displace enough energy to save around £44,000 on energy and CRC cost, saving 124 tonnes of carbon annually. The larger turbine of 250kWp could, in turn, save Defra more than £180,000 and 324 tonnes of carbon annually (this second set of figures is pending Breathe's further review).

Energy efficiency and financial savings through Re:fit

Re:fit is a procurement framework and support service available to all public sector organisations in the UK. Since 2009 it has been helping organisations to deliver “spend-to-save” environmental retrofit projects that both improve their buildings and, importantly, make substantial guaranteed financial savings.

For more information about the National Re:fit Programme, contact robert.mckinnon@local.gov.uk or phone 07920 702 297.