Energy Efficiency & Micro-Generation Project

INTERRREG IVA programme

European Union
European Regional Development Fund
Investing in your future
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East Border Region Partner Councils

Louth County Council
Meath County Council
Monaghan County Council
Newry and Mourne District Council
Banbridge District Council

Craigavon Borough Council
Armagh City & District Council
Down District Council
North Down Borough Council
Newtownards Borough Council
Project Overview

- East Border Region – Interreg IVA funding
- Proposal put forward by the Energy Sub-Group
- Energy Efficiency and micro-generation Project
- Approval for the project from SEUPB in Jan 2011
- Available Grant Funding approved of €856,695 (stg. £778,813.64)
- Appointed 2 technical staff with expertise in the energy sector in May 2011. employed by Down District Council- lead partner
Project Overview

- Undertake detailed ‘iSBEM’ energy audits for 50 council buildings: producing detailed reports produced to evaluate the upgrading or micro-generation schemes.

- Undertake energy upgrades of 9 “Exemplar’ Buildings” to achieve 25% reduction in CO₂ emissions with building energy performance monitored for 5 years through partnership with DKIT.

- Each exemplar project spend will be €74,400- made up of €60,000 grant funding and €14,400 match funding from the receiving council. (80-20 %)
Project Key Objectives

- Employment and career development opportunities for 2 technical staff
- Detailed energy audits for 50 council buildings in the EBR
- Action plans for consideration by each council identifying reductions in CO2 emissions and cost benefits
- Thermal images of buildings illustrating heat losses and where improvements possible
- 9 ‘exemplar’ buildings upgrades: -utilising sustainable and energy efficient measures
- Monitoring of “exemplars” for 5 years DKIT post installation
Project Key Objectives

- Analysis and research based on the results of improvements achieved and effectiveness of technologies – will be available to the public including SME’s

- Sharing of information with schools, the public, environmentalists and research bodies
Project Benefits

- As employers, landlords, policy-makers, energy consumers and civic leaders, local authorities are key players in the shift to reducing the energy we use, getting more from renewable sources and tackling fuel poverty.

- To accurately assess the energy efficiency of partner council buildings and identify opportunities to reduce energy consumption, expenditure and CO2 emissions.

- To engage with SME’s and provide relevant information on the optimum energy saving measures for their buildings; sharing the experiences and lessons of the exemplar projects.

- Create 9 sustainability visitor experiences to showcase a local example of best practice, which the public, school groups and SME’s can visit and see a range of technologies in use.
Progress to March 2013

- 20 audits have been completed - in Library, Museum, Leisure Centre, Community Centres, Civic Offices. Protected structures, Listed Buildings, modern building built 2000, old buildings.

- 9 exemplars selected - range of technologies in renewable sector along with energy efficiency measures. Management is a factor in every building.

- Architect appointed to complete all statutory approvals and tender process.

- Reduce energy consumption, expenditure and CO2 emissions.

- Audit report findings have been implemented in a building not identified as an exemplar.
Energy Efficiency & Micro-Generation Project

9 Exemplar Buildings

Opportunities for Cost & Consumption Savings
The Palace - Armagh

Proposed Technologies/Upgrades
- Biomass Boiler (Pellet)
- Draft – Proofing
- Roof void Insulation

Estimated Savings per annum
- Running Cost £12,661
- CO₂ - 16% (67tonne)
Civic Offices - Banbridge

Proposed Technologies/Upgrades

- Cavity Blown Insulation
- Draft – Proofing
- Roof void Insulation
- LED Lighting

Estimated Savings per annum

Running Cost £4,814 (22%)

CO₂ 14% (18.7 Tonnes)

Average Pay Back Period 6.65 Years
Craigavon Civic & Conference Centre

Proposed Technologies/Upgrades
- LED Lighting Upgrade
- Roof Void Insulation
- Cavity Blown Insulation

Estimated Savings per annum
- Running Costs: £28,053
- CO2: 21% (92.9 Tonnes)
The Bridge Community Centre Killyleagh - Down

Proposed Technologies/Upgrades

✓ Roof Void Insulation
✓ Solar Thermal
✓ Heat Pump (Water Source)
✓ Heating Pipework Insulation

Estimated Savings per annum

Running Cost - £4,568
CO₂ - 39% (22 Tonnes)
County Library - Louth

Proposed Technologies/Upgrades

LED Lighting & PIR Controls
Solar Shading Devices
Condensing Gas Boiler
BMS / Heating Controls Upgrade

Estimated Savings per annum

Running Cost  €6,175 - 46%
CO₂  21 tonnes - 24%
Average Pay Back Period 5.8 Years
County Museum - Louth

Proposed Technologies/Upgrades

- LED Lighting & PIR Controls
- Solar PV (Photovoltaic Panels)

Estimated Savings per annum

Running Costs: €16,964 - 90%

CO₂: 61 tonnes - 54%

Average Pay Back Period: 5.15 Years
County Hall - Meath

**Proposed Technologies/Upgrades**
- Conversion to mains Natural Gas
- Condensing Gas boilers
- Heating Controls Upgrade
- Draft-proofing of windows

**Estimated Savings per annum**
- Running Costs: €12979, 19%
- CO₂: 23 tonnes, 7%

**Average Pay Back Period**: 4.8 Years
Council Offices - Monaghan

Proposed Technologies/Upgrades

Aluminium window replacement

Estimated Cost and CO2 Reductions per annum

Cost - €3,059
CO₂ - 4% (10.41 Tonnes)
Bangor Town Hall – North Down

Proposed Technologies/Upgrades
Conversion to mains Natural Gas
Condensing Gas boilers
Solar PV (inc. battery cell)
LED security lighting
Draft -proofing

Estimated savings per annum
Cost - £14,266
CO₂ - 8% (28 Tonne)
Louth County Museum - c.440no. 75W & 50W Halogen Spot Lights

Replace with LED / CFL equivalents

Cost €3,000 approx

Reduce Consumption from 42,200kWh to 9,500 kWh

Reduce Annual Cost from €5,480 to €1,235

Saving = €4,245 Payback = 0.7 years
Portable fans evidence of over-heating issues due to large number of halogen lighting.

Humidifiers & Dehumidifiers operating 24 hours/day!

$4 \times 1000W \times 8760\text{hrs} = €4000 \text{ approx. per year}$
Monaghan County Council Offices

Air Infiltration above suspended ceiling

Draft proofing
Cold Bridging

Moisture Ingress

Aluminium Single-glazed windows
Communication

• Our project extends the sustainandbuild website which was developed under a previous INTERREG IIIA project.

• We are now live on Twitter. The project officers regularly tweet information about the progress of the project and any upcoming events.

• We are now live on Facebook. The project officers will utilize this website to publish photos and videos documenting survey findings and project progress.