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POWER
Low Carbon Economies

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Good Practices Catalogue: Community Engagement on Low Carbon Living

TrIsCo Project Findings

September 2011

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Contents

Introduction

In response to ambitious targets to reduce greenhouse gas (GHG) emissions governments across the European Union have introduced a number of low carbon initiatives. Early interventions through mass communications campaigns have been undertaken to support policy and promote low carbon lifestyles[1]. However, these initiatives are often perceived as being imposed on citizens who do not necessarily relate them to their own lives. In order to change this perception and bring about lasting changes in people's behaviour; communities need to be empowered through facts, direction and support to take specific action, adopt new technologies and work together to deliver CO_2 reductions.

TrIsCo (Transition Island Communities: Empowering Localities to Act) was a two year project – July 2009 to September 2011 - aimed at overcoming the barriers to implementing low carbon communities. With a focus on different 'islands'[2] of communities (households, businesses and public organisations) the project strived to identify and understand what works best to bring people together to encourage collective action and reduce CO_2 emissions.

Central to TrIsCo's impact was the exchange of experience, expertise, good practice and training by a multi-disciplinary team. The project was a joint venture between six organisations in six regions:

- the Environment Centre (tEC), an environmental charity from South East England, UK
- Stichting Brabantse Milieufederatie (BMF), an independent NGO from Noord-Brabant, the Netherlands
- Universídad de Sevilla, Andalucía, Spain
- ACER Reggio Emilia, a social housing operator in the Province of Emilia Romagna, Italy
- Region Gotland, a public body from Gotland, Sweden
- Viimsi Vallavalitsus, a rural public body from Estonia

The partnership explored good practices for behaviour change, community engagement, energy efficiency and CO_2 reduction across the project regions. Knowledge was exchanged through study tours, interregional events and local, regional, national and international working partnerships. This learning shaped the delivery of community engagement activities across the partnership.

This catalogue showcases the good practices identified in the partner regions; it is a catalogue of practical initiatives and techniques which aims to inform and inspire those looking to undertake community engagement activities. Whilst the catalogue focuses on the project partner regions we feel that there is good scope for transferability across the EU not only due to the geographical, political and socio-economic diversity of the partnership; but also because of the wide variety of initiatives undertaken.

A full project report containing more detail on the range of initiatives undertaken; a discussion of potential the transferability of good practices, as well as policy, strategy and community engagement recommendations is available on the tEC website : www.environmentcentre.com/trisco

1 Since 2007, several UK initiatives have been run under the 'Act on CO_2' brand combining provision of information with persuasive advertising.

2 The term 'island' refers to communities of distinct characteristics at different stages of engagement in the climate change agenda.

1. The TrIsCo Partnership

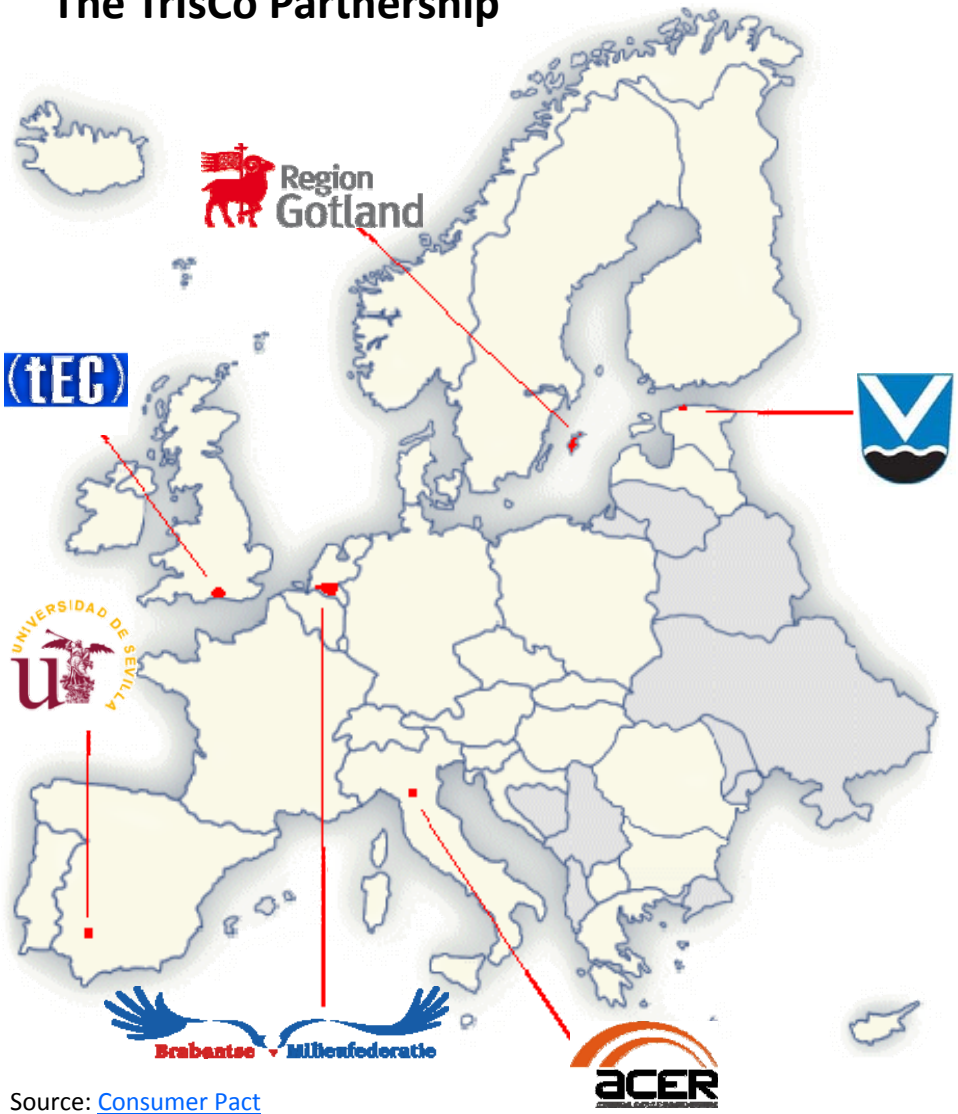
The TrIsCo Partnership

The Environment Centre (tEC) is an independent NGO with almost 20 years' experience in addressing environmental and sustainability issues. Based in Southampton, England tEC works with Local Authorities, businesses, community groups and educational bodies across Hampshire, the Isle of Wight and West Sussex.

tEC undertakes a variety of projects focusing on all levels of sustainability including: energy, waste, water, transport, construction, education and local food.

Brabantse Milieufederatie (BMF) is an NGO that strives for a healthy environment, vital nature and a varied landscape for all inhabitants in the province of Noord Brabant, The Netherlands. BMF works with 115 affiliated nature and environmental organisations, supporting them with access to relevant networks and knowledge.

BMF influences policy on a local and regional level by offering solid, independent and constructive advice or information. At the same time BMF initiates and participates in (pilot) projects that contribute to sustainability in Noord Brabant.



Source: Consumer Pact

Viimsi Vallavalitsus is a rural municipality in Northern Estonia which borders the capital Tallinn. Re-established in December 1990, the municipality provides the following key public services:

- healthcare, education, child and elderly care;
- building and maintenance of public roads and properties, parks and beaches;
- regulating planning and building
- environmental and waste management
- promoting cultural and sporting life

Region Gotland (formally Gotland Municipality) was founded in 1971 after a merger of several small municipalities on the island of Gotland, Sweden. The region is responsible for key services including public schools, health, child and elderly care, public transport, water, sewage and waste Infrastructure.

Gotland has set itself the challenge of achieving a climate neutral energy supply by 2025. Offering the highest possible efficiency and economy, the supply will be based on local, renewable resources and will contribute to local growth. Since 1995 the region has reduced CO_2 emissions (linked to fossil fuels) of its own operations by 50%.

The **University of Seville (UoS)** is the main public teaching and research institution in Andalusia with 60,000 students and 4,500 teachers. The UoS consists of more than 400 research groups, with nearly 7,500 scientific publications a year.

The UoS representatives working on TrIsCo are from the Schools of Architecture and Building Engineering. They are also members of the research group ARDITEC which focuses on sustainable construction, renewable energy installations in buildings, construction waste management and , recycled building materials.

ACER (Azienda Casa Emilia Romagna) Reggio Emilia is a social housing organisation is responsible for building and managing local authority housing stock in Reggio Emilia, Italy. ACER's key priority is to assist its tenants to live sustainably by searching for the best available solutions.

ACER is a leading figure in the development of regional housing policies and is an active member of FEDERCASA, the Italian national network of social housing organization and the European energy expert network CECODHAS.

2. Good Practice Matrix

The partnership identified a total of 32 good practices through their research and the delivery of engagement activities during the TrIsCo project. We defined a good practice as a tool, technique or interventions aimed at changing behaviour and reducing CO_2 emissions, which is considered successful, cost effective and easily replicable.

The matrix overleaf outlines the good practices identified by region and highlights the aims, objectives, location, target groups and results of these practices. This matrix is designed to enable the reader to identify the practices most relevant to them, at a glance; detailed descriptions of each good practice are subsequently explored.

Title and Aim	Objective/s	Location	Target Group/s	Results
Bite Size Training **Aim:** Delivery of key sustainability messages and information in a concise and simple manner	• To develop short information sessions to help residents find out how they can reduce their energy use and fuel bills, in a practical and informal way	Hampshire, UK	• The general public • Community champions	• 8 community champions received training • An increased demand in these training sessions across Hampshire • very positive feedback from participants
Free Phone Advice Line **Aim:** Overcoming barriers to the uptake of energy efficiency measures by the provision of free and impartial advice on energy efficiency and sustainability issues	• Provision of a free phone advice line covering a range of sustainability issues including energy efficiency and renewable energy options for the home • Signposting individuals or groups to grants, loans and other organisations for assistance • Assisting individuals and groups in accessing discounted/ free insulation and exploring renewable energy options	South East England, UK	• The general public	• Total number of enquiries - 1,466 • Number of installations (loft and cavity wall: 182 (loft), 160 (wall), 79 (both) • One 3.04 kW Mono Crystalline PV system installed • total CO_2 savings - 308.53 tCO_2 per annum
Energy Monitor Loan Scheme **Aim:** Empowering homeowners to reduce energy consumption in the home through the use of real time data	• To increase homeowners' awareness of energy use in the home • To reduce electricity 'waste', CO_2 emissions and utility bills • To allow homeowners to see which appliances and devices use the most energy and see the effects of switching these off	Hampshire, UK	• Homeowners • The general public	• 50 individuals took part
Front Line Staff Training **Aim:** Addressing a lack of knowledge on fuel poverty issues amongst front line staff	• Training and advising front line staff to recognise the signs of fuel poverty and know how to take action. • Encouraging staff to disseminate this knowledge to their peers.	Hampshire, UK	'Front line' Staff: • Local authorities • Trading Standards • Citizens Advice Bureau • Handyperson service • Home Improvement Agencies	• 58 members of staff attended the training sessions. • An additional 169 front line staff were reached by the attendees sharing their knowledge

Title and Aim	Objective/s	Location	Target Group/s	Results
Open House Days: showcasing an exemplar retrofit home **Aim:** Demonstrating practical examples of retrofit techniques and technologies in a 'normal' home	• Showcasing best practice in renovating a typical property in the area • Promoting the social, economic and environmental benefits of retrofit work	Southsea, Portsmouth, Hampshire, UK	• Local residents • Local authority staff • Suppliers • Contractors	• Over 250 people visited the house • Feedback from attendees was positive • Portsmouth City Council is currently developing a second phase to this work
School Education Programmes **Aim:** Equipping young people with the skills and knowledge to be able to adapt to a changing environment	• To develop and deliver school education programmes focusing on energy, sustainability and environmental issues • Increasing children's understanding of and concern for the environment • Encouraging students to develop environmentally friendly lifestyles as they grow older • Encouraging students to share this information with their families and the wider community	Hampshire, Isle of Wight, West Sussex, UK	• School children (5 to 11 years)	• 502 children took part in the school programmes • Positive feedback from students and teachers
Interactive resources for communicating sustainability messages **Aim:** Engaging with individuals to encourage a reduction in CO_2 emissions through the use of interactive resources	• Communicating sustainability messages in interesting and fun ways • Relating sustainability issues and actions to an individual's daily activities	Hampshire, UK	• The general public	• An increased interest in exhibits at events • Better interaction with children at school events
SME Seminar **Aim:** Addressing a lack of knowledge of local opportunities in emerging retrofit and renewable energy markets	• Raising awareness amongst local suppliers, contractors and trades people of businesses opportunities in retrofit and renewables • Encouraging a discussion on the drivers and barriers to expanding services offered • Networking between local training providers, local municipalities, local contractors and suppliers	Portsmouth, Hampshire, UK	• Tradespeople • Suppliers • Building contractors	• 16 staff from 13 businesses involved • The discussion provided insight to the SMEs' thoughts on retrofit and renewable technology opportunities

Title and Aim	Objective/s	Location	Target Group/s	Results
Shop Visits: offering sustainability advice and support **Aim:** Engaging with small retail outlets with little capacity to attend information seminars	• To provide bespoke advice to local SMEs on sustainability at their place of work • To signpost these businesses to grants, loans and other support available	Southampton, Hampshire, UK	• SMEs • Retail micro businesses	• 17 businesses were engaged • 20 'Top Tips' brochures were distributed within the village centre
SME Environmental Performance Review **Aim:** Assisting SMEs to improve their environmental performance	• Assessment of the environmental sustainability of an organisation and its activities • Advice on practical improvements to premises and operations to improve the environmental performance of the SME • To increase staff members' awareness of environmental issues, energy and resource use in their workplace	Hampshire, UK	• SMEs	• No and low cost interventions including behaviour change measures.
Climate Street Party competition **Aim:** Coordinating a nationwide competition to encourage collective action to save energy and reduce CO_2 emissions	• To make the general public more conscious about their energy consumption and how CO_2 emissions effect the environment • To stimulate people to take action both individually and as part of a community • Providing incentives to overcome habitual behaviour	Noord Brabant The Nether-lands	• The general public	• 2,193 households in Noord Brabant participated, forming 48 street networks (an average of 12.5 households per network)
Energy Cafés **Aim:** Provision of a forum to explore themes of energy efficiency and carbon reduction	• Increase energy awareness • To increase knowledge of technical solutions and practical actions to save energy • To provide access to expert advice in an informal setting	Noord Brabant The Netherlands,	• The general public	• 5 Energy Cafés were organised: ⇒ 3 in cooperation with Climate Street Party participants (50 attendees) ⇒ 2 with local municipalities (60 attendees, 5 businesses)

Title and Aim	Objective/s	Location	Target Group/s	Results
Golden Star Municipalities **Aim:** Encouraging engagement between local authorities and citizens on climate change issues	• To increase the visibility of existing local authorities' climate initiatives • To boost local climate policies and initiatives • To stimulate active involvement of local authorities in the Climate Street Party competition (CSP), by providing easy-to-use tools	Noord Brabant The Netherlands	• Municipalities • Citizens	• 13 municipalities participated • municipalities valued the opportunity to access the contact details of active citizens • 85% of respondents hosted an Energy Café • 80% of respondents said they would participate in future CSP competitions
KlimaTeams **Aim:** Increasing awareness on energy and energy saving measures amongst 'hard to reach' immigrant populations	• Raising awareness about energy use and energy reduction • Offering immigrant populations practical assistance with implementing energy saving measures in the home	Breda and Eindhoven Noord Brabant The Netherlands	• Dutch immigrants	• The project involved 7 coaches from Iran, Ghana, Morocco, Aruba, Sierra Leone and Congo • 56 members participated in the KlimaTeam meetings • the project reached an additional 392 citizens through a cascade of knowledge within the community.
Night of the Night **Aim:** Stimulating awareness on saving energy, light pollution and CO_2 reduction	• Raising awareness on (un)necessary energy use • Emphasising the importance of darkness for nature	Noord Brabant the Netherlands	• The general public • Local businesses • Municipalities	• 20 activities were organised, attracting approximately 5,500 visitors • Guided night-time walks in several natural areas • An art exhibition focused on darkness supported by a lecture on the importance of darkness for nature • Stargazing at observatories
Farmer meets Neighbour **Aim:** Overcoming the barriers to the uptake of solar energy in agricultural areas	• Providing access to external finance in order to fund the installation of renewable energy technologies • Engaging with participants on local food production and producers • Demonstrating how small contributions by consumers can make a difference in CO_2 reduction • Working towards climate neutral production processes • Stimulating energy awareness	Noord Brabant The Netherlands	• Farmers • Local citizens	• 26 farmers participated

Title and Aim	Objective/s	Location	Target Group/s	Results
Simple CO_2 Assessment Tool **Aim:** Development of a simple CO_2 Assessment Tool for homeowners	• To enable homeowners to assess the energy efficiency of their home and to relate this to the 'average' (Spanish) home • To promote good practice behaviour and technologies which lead to a reduction in energy demand and CO_2 savings	Spain	• The general public	• Over 100 students involved • 220 questionnaires answered
Incorporating a Sustainable Construction module into the Building and Engineering curriculum **Aim:** Embedding sustainability into building and engineering courses	• To train future architects, designers and building engineers on energy efficiency in buildings • To learn from good practice techniques and initiatives across Europe (lessons from TrIsCo)	Seville, Spain	• Students	• Over 300 students involved
Best Practices for Energy Efficient Buildings **Aim:** Identifying best practices for energy efficient buildings	• To promote good practices for use of technologies and behaviours within buildings which lead to a reduction in energy demand and CO_2 savings.	Spain	• Students • Architects • Building managers • Designers • Construction engineers	• Over 300 students involved • 17 best practices identified
Eco Day on Gotland **Aim:** Organising a large scale public event to promote energy and environmental best practices on Gotland	• To inspire the people of Gotland to live more sustainably • To focus particularly on solutions from Gotland – in 2010 the theme was energy and energy optimisation	Gotland, Sweden	• The general public • Region Gotland staff	• Approximately 1,000 people attended; 1.75% of the island's population
Environmental Calendar **Aim:** Mass communication campaign providing key information in a frequently used resource	• Provision of key local information on waste recycling systems, local energy and environment projects as well as useful tips on low carbon behaviour • Linking low carbon behaviour to the natural environment and promoting a sense of ownership amongst islanders	Gotland, Sweden	• The general public	• The calendar was distributed to 35,000 households on Gotland (28,000 permanent residents and 7,000 summerhouses)

Title and Aim	Objective/s	Location	Target Group/s	Results
Public Campaigns for Solar and Biomass Heating **Aim:** Promoting renewable heating systems to businesses and residents on Gotland	• To provide information on business opportunities within the renewable heat sector (solar and biomass) • To promote renewable heat to the general public	Gotland, Sweden	• The general public • National suppliers • Local SMEs (contractors and suppliers)	• 23 businesses were involved: 10 mainland suppliers, 13 local bio-energy and solar energy entrepreneurs
Changing Home Energy Use through School Education Programmes **Aim:** Promoting sustainable lifestyles to students and their families	• Educating children to save energy and lead sustainable lifestyles • To encourage the children to share this knowledge with their families and communities	Prangli Island and Püünsi, Viimsi, Estonia	• School children • Families	• 65 children were involved in Prangli and Püünsi schools
Home Visits **Aim:** Face to face advice for 'hard to reach' communities to promote energy efficient behaviour	• To provide local residents with information about sustainable energy use and renewable energy sources	Prangli Island, Viimsi, Estonia	• local homeowners	• 95 homes were visited
Partnership working with Co-operative Housing Associations **Aim:** Addressing a lack of knowledge amongst co-operative housing associations about alternative energy production, energy efficiency and environmentally friendly behaviour	• To provide local housing associations with practical advice and knowledge about renewable energy production, energy efficient measures and environmentally friendly behaviour	Viimsi, Estonia	• Cooperative Housing Associations (members and Chairs)	• 41 attendees (38 CHA managers) involved

Title and Aim	Objective/s	Location	Target Group/s	Results
Co-operation with village societies **Aim:** Engaging with island communities to gain trust and share knowledge about energy saving and environmentally friendly behaviour	• To provide local inhabitants with information about sustainable energy use and renewable energy resources	Viimsi, Estonia	• Rural village communities (village elders and villagers)	• Members from the villages of Prangli (island) and Lubja were engaged
Study Tour: Showcasing Renewable Technology Systems **Aim:** Showcasing examples of working technologies to overcome preconceived ideas on renewable energy production	• To promote and stimulate a debate about local renewable energy solutions	Viimsi, Estonia	• Municipality staff • Local citizens	• Four study tours were arranged with a total of 50 participants
ABC Energia **Aim:** Promotion of energy efficiency of local authority buildings.	• To achieve 500 TEP avoided of consumption in public buildings • To increase the visibility of energy efficiency initiatives for public buildings • To encourage direct involvement of local authorities in new energy policies • To stimulate interaction and communication between citizens and local authorities about energy efficiency issues and opportunities	Province of Reggio Emilia, Italy	• Local authorities • Local citizens	• 200 TEP has been avoided to date • Establishing 13 energy information points in the project area • Creation of a energy consumption monitoring system for the project
ACER Reggio Emilia: citizen involvement in retrofit **Aim:** Development of an instrument for citizens to assess the energy efficiency of their homes	• To promote the energy retrofit of social housing • To promote the scheme to tenants • To reduce energy consumption and energy bills, to improve the energy efficiency in buildings	Muncipality of S.Ilario d'Enza, Reggio Emilia, Italy	• Municipalities • Residents	• Building A - 35% reduction in gas consumption; 47% reduction in energy costs • Building B - 32.2 % reduction in gas consumption; 55% reduction in energy costs for tenants • 77 tenants, one municipality and the national union of tenants • Feedback from tenants was positive

Title and Aim	Objective/s	Location	Target Group/s	Results
Condomini Virtuosi **Aim:** Fuel Poverty – encouraging behaviour change among tenants to save energy and reduce CO_2	• To inform and raise awareness among tenants of the environmental impacts caused by everyday actions • To disseminate best practices in order to improve living conditions, save energy, reduce waste and stimulate virtuous actions	Municipality Reggio Emilia, Italy	Social Housing tenants	• 3 condominiums (200 tenants) directly involved to reduce their carbon footprint
Tavolo Anticrisi **Aim:** Tackling fuel poverty by improving the energy efficiency of social housing buildings	• To inform and raise awareness among tenants of the environmental impacts caused by everyday actions • To disseminate best practices in order to improve living conditions, save energy, reduce waste and stimulate virtuous actions	Municipality Reggio Emilia, Emilia Romagna, Italy	households in or at risk of fuel poverty	• Establishment of a permanent working group • Signed agreement with local enterprises to: ⇒ Facilitate refurbishments (energy efficiency measures) in the home ⇒ Promote individual metering and monitoring systems (energy consumption) ⇒ Promote individual energy supply contracts • Creating a guide to energy saving and virtuous behaviours for tenants • Identification of incentives and financial tools for private parties
ECOABITA **Aim:** Promotion of an energy certification instrument to enable citizens to assess the energy efficiency of their homes.	• To raise awareness on home energy consumption • To implement Energy Performance of Buildings Directive (2002/91/CE) • To implement energy saving actions	Emilia Romagna, Italy	citizens, local municipalities, utility companies, SMEs	• 309 ECOABITA Certifiers • 42 public authorities involved • 237 energy certificates issued with ECOABITA's system

3. Good Practices

Bite Size Training

Aim: Delivery of key sustainable messages and information in a concise and simple manner

Objective: To develop short information sessions to help residents find out how they can reduce their energy use and fuel bills, in a practical and informal way

Location: Hampshire, UK

Target Group: general public, community champions

Results: 8 community champions were involved in the bite size training sessions. An increased demand in these training sessions across Hampshire and very positive feedback from participants.

Background

tEC has a long history of presenting information and advice to communities. In recent years, it has been noted that we are often 'preaching to the converted' and that our advice is not always reaching those that need it most.

In order to address this issue, tEC has looked at developing more effective ways of delivering key information to those who are perceived as 'hard to reach'.

Through our discussions with marketing and communications professionals it has become clear that environmental messages often contain too much information and that there is a need to break down messages into key themes. tEC has therefore, developed a series of 'bite size' training sessions which focus on delivering simple messages surrounding energy efficiency.

Thornhill Community Energy Champions

Thornhill Energy Focus, a resident empowerment project began in Thornhill, Southampton on 1st March 2010. The project was funded by Thornhill Plus You (part of the UK Government's New Deal for Communities Programme) and managed by the Radian Group.

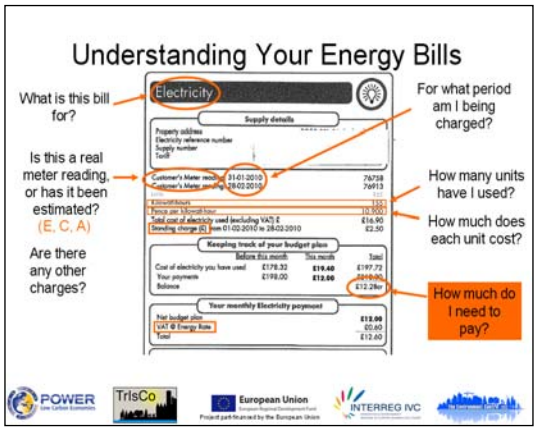
The project gave residents better provision and access to affordable warmth in their homes whilst reducing CO_2 emissions through energy saving and improved efficiency. Community Energy Champions (CECs) were recruited and trained to increase their ability to assist other residents, reach more people and continue to advise in the long term, helping their community to be prepared to face future energy challenges.

Development of training sessions

tEC delivered two bite size training workshops, based on a model developed in-house and delivered in the Test Valley area (of Hampshire). A key requirement of the sessions was that they would be interactive, short and focused on one or two themes surrounding energy efficiency. They were designed to last for two hours which was considered ideal to increase retention of key information and to fit within people's lifestyles.

Training Session A: *Understanding Energy- Bills, Meters and Tariffs*

The theme of the first session was to understand electricity and gas meters, utility bills, and the energy efficiency of appliances. There was an opportunity to discuss the range of tariffs available including social tariffs. Energy companies offer these tariffs to their most vulnerable customers, limiting their bills to less or equal to the energy companies' cheapest standard rate.



Location: Thornhill Date: 24th June 2010 Participants: 8

Training Session B: *Grants, Loans and Benefit advice*
The second session focused on providing information and advice on grants, benefits and the funding available for energy saving measures in the home such as free or discounted loft and cavity wall insulation or the Warm Front Grant (of up to £3,500) for replacement of failed heating systems.

Location: Thornhill Date: 28th June 2010 Participants: 6

Feedback from these sessions was very positive, 100% of attendees would recommend the training to other residents and many said that they had gained the confidence to advise other residents on the topics covered.

Evaluation
There has been an increased demand for tEC's bite-size training from local authorities and other interested parties in Hampshire. An additional eight training sessions have been booked in from 2011-2012.

Possible success factors
The training gave the community champions more confidence on the topics to then advise other residents on how to read bills, meters, etc. Thus allowing knowledge to cascade through the neighbourhood.

Lessons Learnt

Short sessions conveying simple messages and ideas work well. Feedback has been very positive and tEC is looking to extend this service. As a result of this work, tEC is revising its communications strategy paying particular attention to simplifying messages.

An important aspect of this work was ensuring that tone of these training sessions was not seen as patronising by attendees.

Contact Information

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Free Phone Advice Line

Aim: Overcoming barriers to the uptake of energy efficiency measures by the provision of free impartial advice on energy efficiency and sustainability issues.

Objectives:

- Provision of a free phone advice line covering a range of sustainability issues including energy efficiency and renewable energy options for the home
- Signposting individuals or groups to grants, loans and other organisations for assistance
- Assisting individuals and groups in accessing discounted/ free insulation & exploring renewable energy options.

Region: Hampshire, Isle of Wight, East Sussex, West Sussex —UK

Target Group: general public

Results:

- Total number of enquiries - 1,466
- Number of installations: 182 (loft), 160 (wall), 79 (both)
- 1 x 3.04 kW Mono Crystalline PV system installed
- Total CO_2 savings - 308.53 tCO_2

Background

tEC was contracted to run the Energy Saving Trust's energy efficiency advice free phone number for several years and covered Hampshire, the Isle of Wight and West Sussex.

The initiative was heralded as a great success due to the impartial nature of the organisation and the quality and breadth of advice offered. Regionally, tEC is seen as a 'sustainability broker', employing highly qualified energy efficiency and renewable technology advisors. These advisors have a thorough understanding of a broad range of sustainability issues. tEC does not sell any products or services through this advice line.

When the Energy Saving Trust contract ended in 2009, tEC decided to continue this service using its own funding.

Communications

tEC works closely with the local authorities and third sector organisations (TSO) in the region who advertise the free phone number via their websites and customer contact centres. These include:

- Hampshire County Council (through the Trigger Tool)
- Local Authorities
- Transition Networks
- SHECANe (Southern Home Energy Carbon Action Network)
- PUSH (Partnership for Urban South Hampshire)
- SWAP (Southampton Warmth for All Partnership)
- Safe Warm Secure

tEC's free phone is listed on the Hampshire County Council's Trigger Tool database. The Trigger Tool is a Hampshire wide information tool for staff and volunteers who visit older people in their homes. The Trigger Tool contains a list of contact details for a range of agencies and organisations that may be able to

help vulnerable older residents.

When staff and volunteers visit residents in their homes they may become aware of issues which are not in their remit but that raise concern. The Trigger Tool allows staff and volunteers to signpost residents to the relevant organisations. Through this signposting, residents will receive other help and support they would not normally receive.

'Screen Shot' of the tEC Homepage

Advice and Referrals

The free phone number is promoted at all of tEC's activities: school visits, training sessions and community events. The service is also promoted through flyers, posters, and literature, as well as on tEC's website.

tEC's qualified and experienced energy and renewable technology advisors provide advice on a variety of topics, including energy efficiency, renewable technologies; as well as; sustainable transport, behaviour change, waste and water efficiency.

tEC 'signposts' individuals to the grants and loans they are entitled to them and uniquely provides other sources of local assistance (local authorities, Environment Agency, handyman services, loft clearance schemes etc.) tEC records details of all enquiries made and acts as a contact point for customers with further queries.

As well as advising customers, tEC offers a referral service where insulation or renewable technology companies carry out feasibility surveys and provide obligation free quotes to carry out the recommended measures.

Loft and Cavity Wall insulation referrals are sent to a consortium of approved local installers who specialise energy efficiency products and services. The consortium has a network of more than 80 BBA (British Board Approved) local installers across the UK and Ireland. The group is ISO 9001, CIGA (Cavity Wall Insulation Guarantee Agency) and EST recommended.

tEC currently has a group of four renewable energy installers it refers to. Customers are advised to seek two or three quotes as a minimum.

These companies are registered with the Microgeneration Certification Scheme (MCS), allowing their customers to benefit from the UK government's Feed In Tariff.

A quality management system is in place to ensure that the customers' experience is satisfactory.

People Reached through TrIsCo: 1st October 2009 – 31st August 2011

- Total Free Phone Advice Line enquiries in Hampshire - 1,466

Cavity Wall and Loft Insulation
Successful installation for loft and/ or cavity wall insulation in Hampshire:

- Loft Insulation: 182
- Cavity Wall Insulation: 160
- Loft and Cavity Wall Insulation: 79

This results in combined lifetime savings of 308.53 tCO_2

Renewable Energy Technology Installations
Successful installation of renewable energy technologies in Hampshire – 1 x 3.04 kW mono crystalline PV system

Legal framework
tEC is an independent, not for profit organisation providing free and impartial advice. The information shared by tEC's qualified energy advisors is from reliable sources for instance the Energy Savings Trust, National and Local government, etc. tEC operates a strict data protection policy and operates to the Energy Saving Trust (EST) approved code of practice.

The insulation and renewables companies tEC refers to are registered with the relevant industry bodies, for example, CIGA (Cavity Wall Insulation Guarantee Agency) and MCS (Microgeneration Certification Scheme).

Financial framework
tEC no longer receives core funding (from the Energy Saving Trust) for its free phone advice line. It is partly funded by small referral fees generated from accredited insulation and renewable technology companies.

Evaluation
tEC records all enquiries to its free phone advice line and monitors the number of successful insulation and renewable technology installations. These records are used to calculate the amount of CO_2 saved and profile areas of interest.

Possible success factors include:

- tEC is an impartial charity providing free advice as a "one stop shop" for sustainability issues.
- tEC is not selling a service, we primarily provide information and advice that individuals can then act upon
- Advantage of having a team of highly qualified staff with wider experience of energy efficiency, renewable technologies and sustainability issues
- Supporting a network of local tradespeople and service providers

Difficulties encountered

- In July 2011, Hampshire County Council has implemented a Hampshire wide area insulation scheme (excluding Southampton and Portsmouth) which also has a free phone advice line. However, tEC still receives a large number of calls from Hampshire residents looking for impartial advice.
- Seasonal call volume- autumn/winter is the busiest time
- Possible changes to grant and loans eligibility during periodic reviews
- CERT (Carbon Emmissions Reduction Target) is scheduled to finish in December 2012 - the UK government is currently in consultation on the Green Deal and Energy Company Obligation which is designed to replace it. Currently there is still uncertainty as to the specifics of this initiative.

Lessons Learnt

Despite wide spread campaigning and marketing, there still seems to be a lack of awareness amongst much of the general public. This is focused in two key areas:

1. The benefits of insulating a home
2. subsidies available

Lessons learnt from the TrIsCo project have allowed tEC to improve its awareness raising campaigns in an attempt to address these issues.

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Energy Monitor Loan Scheme

Aim: Empowering homeowners to reduce energy consumption in the home through the use of real time data.

Objectives

- To increase householders' awareness of energy use in the home
- To reduce electricity 'waste', CO_2 emissions and utility bills
- To allow householders to see which appliances and devices use the most energy and see the effects of switching these off

Region: Hampshire, UK

Target Group: homeowners, general public

Results: 50 individuals took part in the scheme

Detail

Energy monitors enable residents to easily measure their real time energy usage. These easy to install wireless electricity monitors show how much electricity is being used, how much it is costing and how much carbon is being generated.

Energy monitors are a useful tool to engage whole families in becoming more aware of their energy use within the home. Typically once a monitor has been installed residents will switch off different household appliances to see which ones use the most energy. Generally this leads to a more sophisticated use of the equipment whereby a households' electricity use is monitored over a prolonged period, and lasting changes are often observed.

Through TrIsCo, tEC purchased OWL wireless Electricity Monitors with the aim of developing a loan scheme within Hampshire to enable and encourage individuals to:

- reduce household electricity bills
- increase their awareness of energy use in the home
- reduce CO_2 emissions

The monitors were lent out for a period of 6 months to individuals across Hampshire. In order to ensure maximum benefit from the scheme tEC developed a support package consisting of:

- *A short information session* - focussing on how to read bills, understanding and installing the monitors
- *An information pack including*: an easy installation guide, step-by-step guide (what residents should be doing), and a data recording sheet
- *A feedback session* at the end of the scheme to discuss experience, find out how much energy, CO_2 and money was saved

Alongside this tEC carried out a communication campaign which incorporated a:

- Free phone advice line for tips about energy saving in the home
- TrIsCo web pages- where participants could submit meter readings and post comments about their experiences
- E-shots with useful tips, recommendations and reminders

In order to demonstrate changes in energy consumption tEC recommended that all participants baseline energy use in their homes. As such they were encouraged to:

- Review previous electricity bills
- Dedicate an initial period where participants maintain their usual behaviours

tEC engaged with 50 participants across Hampshire.

Legal framework

Participants were advised to seek expert help if they encountered any difficulties installing the monitor. Furthermore, tEC promoted the scheme as a way of making potential savings, no guarantees were made.

Financial framework

tEC purchased the OWL monitors utilizing part of the TrIsCo budget. The OWL electricity monitors were selected as a result of research and reading an independent review of models on the market by *Which?* an independent consumer group.

Evaluation

Possible demonstrated results:

Through baselining and calculating changes in electricity use - % changes in kWh usage can be clearly demonstrated.

Possible success factors:

- The real-time display allows individuals to see actual energy consumption and understand what this means in CO_2 emissions and costs.
- The householder can identify appliances with high consumption, by turning appliances on and off.
- Feedback has shown that the participants benefited from using the monitor irrespective of their previous knowledge of energy efficiency in the home. The monitor either confirmed their expectations of energy use or helped to identify areas that had previously been overlooked.

Difficulties encountered

- Difficulties in 'setting up' the monitor
- Some participants did not provide all the required data. As the design of the scheme was voluntary and relied upon active participation, tEC had less control and access to the required data.
- Similarly, some participants did not baseline their energy use. This meant that comparisons of energy use were limited.
- A key area of interest for the participants were possible financial savings. However, it is important to note that allowances must be made for variations in regional weather, fuel prices, tariffs and standing charges.
- Timing of the scheme—the scheme was operational between October 2010 and April 2011 in order to cover the winter months, where the majority of electricity is used in UK homes. Any future scheme would benefit from running for a calendar year, however, this was not achievable within the TrIsCo timescale.
- Relatively small sample size
- Stimulates a limited range of behavioural change—changes occurred early on during the scheme.

Lessons Learnt

A scheme such as this may benefit from additional incentives, a longer loan period and a more formal arrangement to ensure complete data collection. However this last point may discourage some participation.

Although the energy monitor is a useful tool in itself, we would strongly recommend that it be used as part of a wider initiative incorporating regular email reminders and informal progress meetings. It may also be useful to ask participants to use a carbon calculator at the beginning and end of the scheme to observe any changes in total energy use.

Through our research we have come across a scheme (within Hampshire) where residents enter into a contract to provide regular data in return for free insulation measures.

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Front Line Staff Training

Aim: Addressing the lack of knowledge on fuel poverty issues amongst front line staff

Objectives

- Training and advising front line staff to recognise the signs of fuel poverty and know how to take action.
- Encouraging staff to disseminate this knowledge to their peers.

Region: Hampshire, UK

Target Groups: 'Front line' Staff from local authorities (Children's Information Service, Social Services, Adult Services, Community Services, Private Sector Housing, Housing Services, Environmental Protection, Climate Change Officers), Trading Standards, Citizens Advice Bureau, Handyperson service, Home Improvement Agencies

Results: 58 members of staff attended the training sessions. The project reached an additional 169 front line staff through a cascade of knowledge within organisations.

Background

A household is said to be in **fuel poverty** if it needs to spend 10% or more of its income on fuel to maintain an adequate level of warmth. Adequate level of warmth follows World Health Organisation (WHO) guidelines of 21°C in the main living area, and 18°C for other occupied rooms. Although the emphasis in the definition is on heating the home, fuel costs in the definition of fuel poverty also include spending on water heating, lights and appliance usage and cooking costs.

Source: Annual Report on Fuel Poverty 2010, DECC

If this ratio is greater than 0.1 then the household defined as is fuel poor. The table below shows the number of fuel poor households in England in each year it has been measured:

Table 1 – Fuel poverty in England and the UK[3], 1996-2008

	No. of fuel poor households (m)	
	England	UK
1996	5.1	6.5
1998	3.4	4.75
2001	1.7	2.5
2002	1.4	2.25
2003	1.2	2
2004	1.2	2
2005	1.5	2.5
2006	2.4	3.5
2007	2.8	4
2008	3.3	4.5

Tackling fuel poverty is a key priority for the UK government, who established a UK Fuel Poverty Strategy in November 2001. The strategy contains a number of policies to target the three main factors that influence fuel poverty:

- Household energy efficiency
- Fuel prices
- Household income

3. Fuel poverty figures for England (and the UK) in 1998 and 2002 figures are estimates based on movements in energy prices, incomes and energy efficiency.

A package of programmes and measures has been put in place to address these concerns including Warm Front, Carbon Emissions Reduction Target (CERT) and the Decent Homes Initiative. These primarily address the energy efficiency of households with Winter Fuel and Cold Weather Payments provided to increase household incomes. *Source: DECC website*

Detail

tEC has a long history of helping people access the funds and assistance available to them through the programmes aimed at tackling fuel poverty.

tEC's traditional methods for providing energy efficiency advice (road shows and telephone advice) tend to reach people who actively seek this information. Some vulnerable people, for example the elderly and those with disabilities or long term medical problems, are unlikely to hear about or be able to access this advice.

tEC identified the potential for front line staff to provide a link between its energy advisors and vulnerable people who may be suffering from fuel poverty. As a result, tEC developed a training programme targeted at staff and volunteers who, as part of their daily work would be likely to visit residents in their homes, or who would otherwise come into contact with potentially vulnerable fuel poor residents.

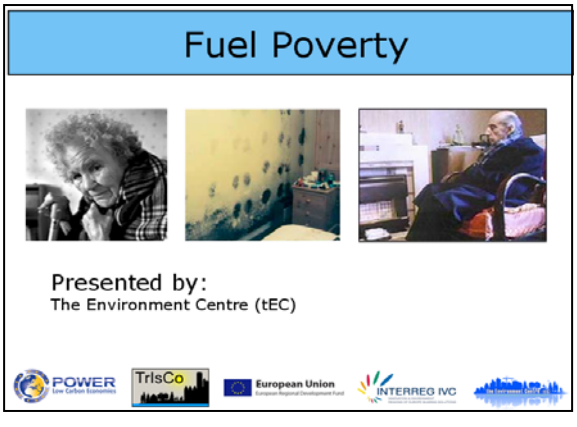
The aim of the training was to equip these staff with the knowledge to be able to identify someone who may be fuel poor and subsequently signpost them to an appropriate source of help.

A two hour training session was developed comprising of a PowerPoint presentation and group discussions. Learning was consolidated at the end of the session by a discussion of a range of theoretical case studies. The attendees were encouraged to disseminate their knowledge of fuel poverty to their colleagues.

Target groups:

- Local authority staff (Children's Information Service, Social Services, Adult Services, Community Services, Private Sector Housing, Housing Services, Environmental Protection, Climate Change Officers)
- Trading Standards
- Citizens Advice Bureau
- Handyperson service
- Home Improvement Agencies

Initially the sessions were promoted to local authority staff, in particular housing officers. However, it was found that wider promotion to other organisations significantly increased the number of attendees. tEC has carried out four training sessions for front line and tEC staff.



Date	Attendee Organisations	Number of Attendees	Number of indirect beneficiaries*
28th May 2010	Southampton City Council	15	79
23rd July 2010	Southampton City Council	6	2
7th October 2010	Portsmouth City Council	11	88
7th July 2011	Southampton City Council	11	---

*This is the estimated number of colleagues or other volunteers to whom the training would be cascaded. It does not include members of the public who would be assisted by the attendees

Participants gave excellent feedback on the training. An unexpected benefit highlighted by attendees was the opportunity to network with organisations working in similar fields which do not necessary interact frequently.

Evaluation

Possible success factors:

- Increased recognition and support given to those in fuel poverty, especially those previously considered hard to reach.
- Increased demand for the training sessions
- Excellent networking opportunity for a wide range of attendees from local authorities and NHS Trusts to Third Sector Organisations.

Difficulties encountered:

Despite excellent feedback from attendees and interest from local authorities there are difficulties in accessing funding streams for the development and delivery of these sessions.

Lessons Learnt

Some vulnerable people: the elderly, those with disabilities or long-term medical problems, are unlikely to be able to access the information they need. There is huge potential for front line staff to provide a link between energy advisors and those susceptible to fuel poverty.

This work through TrIsCo has complemented a larger initiative which sought to address fuel poverty issues within Hampshire and West Sussex[4]. Lessons learnt from the projects have enabled tEC to submit recommendations to the Hills Fuel Poverty Review which is currently analysing the effectiveness of the UK National Fuel Poverty Strategy.

In particular we have highlighted the benefits of adopting a multi-agency approach to reach and assist vulnerable, hard to reach groups. In addition these projects have provided the opportunity to present our fuel poverty work to other organisations in the European Union. This has generated significant interest and contributed to cross border knowledge exchange.

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4. Fighting Fuel Poverty in Southern England, funded by The Scottish Power Energy People Trust

Open House Days: showcasing an exemplar retrofit home

Aim: Demonstrating practical examples of retrofit techniques and technologies in a 'normal' home

Objectives:
- Showcasing best practice in renovating a typical property in the area.
- Promoting the social, economic and environmental benefits of retrofit work

Location: Southsea, Portsmouth, Hampshire, UK

Target Group: local residents, local authority staff, contractors, suppliers

Results: Over 250 people visited the house. Feedback from attendees was positive. Portsmouth City Council is currently developing a second phase to this work.

Background

Portsmouth City Council's Housing Partnership of the LSP (Local Strategic Partnership) has adopted the Warm Homes, Greener Homes strategy. The priority of the strategy is to improve the environmental performance of existing housing, within a context that addresses other sustainability issues. One of the key actions is to develop a network of exemplar retrofit properties.

Portsmouth City Council has a programme of improvement both for its own housing stock and for privately rented and privately owned homes. The city council owns 725 dwellings constructed prior to 1930. Generally these have been improved to achieve good standards.

Portsmouth City Council (PCC) is undertaking a retrofit pilot project at 84 Jubilee Road, Southsea. The area has a strong need for the work based on the quality of the housing stock, its environmental performance and issues of fuel poverty. The purpose of the initiative is:

- To develop, implement and monitor for effectiveness a scheme for refurbishing a typical Portsmouth brick construction early twentieth century terraced house owned by the city council.
- To use the house as a focus for learning, for retrofitting and refurbishment techniques and technologies for local residents, professional staff, contractors, suppliers etc and to assess the effectiveness of this work.
- For the learning to be concentrated in a defined part of the city around the house, but to be available to other city residents

tEC formed part of the Southsea Retrofit Initiative Management Group (alongside Portsmouth City Council and the Environment Agency) which steered and delivered a number of community engagement activities under the brand 'Jubilee Eco Terrace':

- open days to showcase the retrofit exemplar home
- school education work
- a business event for local SMEs focusing on retrofit and renewables opportunities in the area.

A series of open days at the property were arranged in order to showcase the replicable nature of the work and to promote and encourage sustainable living amongst members of the public, PCC staff, local businesses and school groups. PCC also wanted to promote future council projects.

PCC secured additional support from the local branch of the Co-operative, a national supermarket chain, whose volunteers supported the open days.


Source: Portsmouth City Council

The Open House Days were designed to allow visitors to explore the property. Key information was displayed in a variety of ways to engage with a variety of different audiences:

- Information boards were positioned above key installations for example, showing water savings resulting from installation of low flow taps
- Demonstration kits of insulation materials and water saving devices used in the property were available
- Interactive exhibits could be explored such as a retrofit dolls house and renewable energy kits
- Advice leaflets with top tips and a contact numbers

Further details about the work completed and other advice was offered by United House (main contractor), the Environment Agency, Co-op volunteers and local residents.

tEC was on hand, offering energy efficiency advice for the home and information about loans and grants available. tEC also made use of the interactive display board and retrofit dolls house (above).

Evaluation

The open days were very successful with over 250 people visiting the home. Feedback from visitors was very positive with numerous requests for further information:

> *"A very good initiative. I hope more council properties will follow the same path*." - **Visitor**
>
> *"I think you hit the spot – there was genuine interest from private landlords on how they can improve their properties*" **– Volunteer**

Portsmouth City Council has concluded that this initiative has been a successful pilot project which will inform future works across the city.

Difficulties encountered

The costs of retrofitting the home was £58,000; approximately £7,900 of which can be apportioned to energy saving measures.

The short time available to have open days due to the high demand for the property. Upon completion of the work, the property remained vacant for a month to allow for the open day events to take place.

The complexity of working with a variety of partners to deliver a range of activities, in terms of differing time pressures, resources and agendas.

The completed retrofit demonstrated no significant changes to the external appearance of the building. This can be seen both as an advantage (i.e. demonstrating that retrofit does not significantly alter the appearance of a home or the way a property is used) and a disadvantage (it doesn't raise awareness of the environmental message unlike if the property had solar PV or thermal installations or cladding).

Lessons Learnt

There are very few retrofit homes available to view in Hampshire. It is important for people to see

working examples and talk to contractors and homeowners about their experiences.

Information on the costs of installation, possible savings and access to support and advice are key. Also it is important to reinforce the energy hierarchy for example; improving the building envelope before considering the installation of renewables.

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School Education Programmes

Aim: Equipping young people with the skills and knowledge to adapt to a changing environment

Objectives:

- To develop and deliver school education programmes focusing on energy, sustainability and environmental issues
- Increasing children's understanding of and concern for the environment
- Encouraging students to develop environmentally friendly lifestyle as they grow older
- Encouraging students to share this information with their families and the wider community

Region: Hampshire, Isle of Wight, West Sussex, UK

Target Group: 5-11 year old school children

Results: 502 children took part in the school programmes. Positive feedback from students and teachers.

Detail

tEC has a long history working with primary schools (children aged 5-11 years) in Southern England. tEC's environmental education workshops are designed to complement several areas of the national curricula, providing additional learning opportunities in geography, science, citizenship and personal, social and health education.

A range of workshops for primary schools have been developed over a period of several years. tEC predominantly works with primary school children as the rigours of the secondary school curriculum makes its difficult to allocate time to external organisations. A secondary school education programme is being developed as part of a separate project.

Primary school children are engaged with the aims of:

- Increasing their understanding of and concern for the environment, and encouraging them to develop environmentally friendly lifestyles as they grow older
- Encouraging them to take information home to their families, thus spreading the sustainability message to the wider community

Primary school workshops are designed to be interactive, fun, informative, linked to the school's curriculum or scheme of work, and fit in to the daily timetable.

Interactive and fun: tEC adds value to ordinary lesson-style workshops by the use of specialised equipment and practical activities that children can take part in. This approach engages the children and reinforces their learning. It adds value to the sessions by providing opportunities that teachers themselves are usually unable to provide.

Informative: tEC recognises the importance of providing accurate and up-to-date information to children. Therefore it is essential that all information is well researched prior to delivery.

Linked to the curriculum/scheme of work: The outcomes of the environmental workshops are cross referenced with the national curriculum to ensure relevance. These workshops can be adapted to the requirements of the school in terms of timing and specific year group/s involved. Many schools are taking

part in the international Eco Schools initiative, and workshops are often seen as a means of complementing this work.

Daily timetable: Schools usually want all of the pupils to benefit from the visit, but for certain classes to receive a more in-depth learning experience. tEC has found that a half day visit comprising one whole school assembly, followed by two one-hour long class-based workshops fulfils this objective.

Schools are interested in a range of sustainability issues and often embed these into their curriculum based work. tEC has developed workshops on a range of topics in order to tailor to the needs of different schools (see text box 1.) The topics covered include:

- Climate change, energy saving and renewable energy
- Food production and sustainable farming
- Water conservation
- Biodiversity

Tailoring tEC's activities

During the booking process the school is asked if there are any particular links to current work which they would like to focus on. This adds value to their learning and enables us to develop upon topics they have already covered and are interested in.

Weston Infant School, Southampton had recently installed solar photovoltaic panels when the workshops were carried out. To capitalise on this, the activities with the children concentrated on the solar energy and links were made to the school's PV system using a working mini solar panel which powers a light bulb.

Thornhill Primary School, Southampton
Thornhill Primary School is registered with the Eco-Schools programme - a worldwide sustainable schools programme - and is beginning to work towards achieving their Eco-School status. tEC assisted the school in their efforts by delivering activities which link with the programme.

The first step of the Eco-Schools programme is to establish an action team and carry out an 'environmental review' of the school. During the visit the schoolchildren (some of whom are in the Eco Team) carried out a simple energy audit of the school. The audit, "Mission Energy", focussed on heating, lighting and behaviour, such as leaving computers and lights on, within the school. The aim of this activity was to get the school started and thinking more about the Eco-Schools awards.

Examples of activities

Assemblies take the form of a game show style quiz, which are run as girls versus boys, to encourage enthusiastic competitiveness. Questions are read out and multiple choice options appear on animated PowerPoint slides. Questions are interspersed by brief explanations of the topic, allowing the children to develop their knowledge.

Classroom activity stations
The session begins with a short presentation. Children are then divided into small groups of approximately 5. They work their way around the activity stations, spending approximately 5 – 10 minutes at each. Examples of activity stations include:

- Investigation of an eco-dolls house (looking at insulation, energy efficient appliances, solar power, rainwater harvesting, composting and recycling)

- Construction of simple solar electricity circuits
- Use of miniature wind turbines and measurement of wind speed
- Construction of plant pots from recycled paper and planting of seeds
- Sorting of rubbish into different recycling bins and investigation of a range of recycled products

TrIsCo Activities

Through TrIsCo tEC has visited 8 schools reaching more than 500 children by delivering workshops on a variety of environmental topics, including:

- climate change
- water conservation
- energy saving
- renewable energy
- local seasonal food and packaging.

tEC often receives requests to carry out return visits to build upon the initial workshops and through the TrIsCo project tEC has been able to do so. During these return visits we reiterated themes previously discussed, explored new ideas and evaluated learning.

Jubilee Eco Terrace: TrIsCo School Visits

tEC worked in partnership with Portsmouth City Council and the Environment Agency on a retrofit and community engagement initiative: Jubilee Eco Terrace in Southsea, Portsmouth. The project aimed to deliver a range of community activities: open days to showcase the retrofit exemplar home, school education work, and a business event for local businesses focusing on retrofit and renewables opportunities in the area.

As part of Jubilee Eco Terrace, tEC visited two local schools (Devonshire Infants and Fernhurst Juniors) and presented a variety of workshops focusing on environmental issues.

In consultation with the Southsea Retrofit Initiative Management Group tEC adapted its schools education programmes take advantage of the retrofit work being carried out in Jubilee Terrace. This resulted in the development of an interactive display board (used with the schools and during the open day events) which showcased retrofit measures, and introduced themes of sustainable lifestyle: water conservation, local food, transport, waste and recycling, energy efficiency, renewable energy.

Fernhurst Junior School

Date of Visit:	21st May 2010
School Children Involved:	60
School Year & Ages	Year 5 – 9/10 years old

The junior school children took part in tEC's game show style quiz, *Who Wants to be an Energy Extraordinaire?* to test, and increase, their knowledge of energy efficiency and the steps they can take to be more environmentally friendly.

Following this the children took part in *Professor Switchitov's Exam of Energy Excellence.* The classes were separated into small working groups to carry out a variety of tasks. This included:

- Reviewing the principles behind renewable energy
- Identifying energy saving measures through the example of an eco dolls house

Date of Return Visit: 5th April 2011
School Children Involved: 58
School Year & Ages Year 6 – 10/11 years old

During tEC's return visit students focussed what they can do to help the environment. Through the use of the interactive display board they identified where electricity, water and heat are lost in the home and then savings can be made. This work was supported by carrying out a mini energy audit of their school. This provided links to energy in the home and at school.

Devonshire Infant School
Date of Visit: 17th June 2010
School Children Involved: 58
School Year & Ages Year 1 – 5/6 years old

During tEC's first visit, staff told the 'Story of the Six Sunbeams' focuses on rising global temperature, resource use and energy savings. The children are an active part in the story telling, playing key roles within the story. The children also took part in a Key Stage 1 version of *Who Wants to be an Energy Extraordinaire?*

Date of Visit: 1st April 2011
School Children Involved: 51
School Year & Ages Year 2 – 6/7 years old

Evaluation
tEC has worked with 502 school children through TrIsCo and has received positive feedback from both students and teachers . This work has benefited from the opportunity to work with the same school and classes over two years to offer on-going support and reinforce learning.

Many of the children (those who could read and write) were asked to complete a simple questionnaire to gauge whether they considered sustainability important; to review their current actions at home and to record their intention to make changes to these actions. tEC acknowledges the difficulties in formally quantify learning in this age group; however, there have been positive results.

Lessons Learnt
Currently in the UK schools are able to make their own choices about how to teach issues of climate change. They can however, suffer from lack of expertise and resources; therefore there is a risk that a generation of young people will enter adulthood without the knowledge and ability to adapt to their changing
circumstances. It is also important to recognise that if the UK is to move towards a low carbon economy it will need a skilled workforce with the ambition to contribute to sustainable growth.

Furthermore, it is vital that we do not underestimate the influence that young people can have on their families and their communities. Organisations should make good use of the groundswell of support that young people can generate as a catalyst for widespread behaviour change within the families and communities they are part of.

tEC recommends that EU and national funding be allocated for the development and promotion of environmental education programmes with cross-border partners as there is much to learn from shared experience and best practice from different regions.

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Interactive resources for communicating sustainability messages

Aim: Engaging with individuals to encourage a reduction in CO_2 emissions through the use of interactive resources

Objectives:
- Communicating sustainability messages in interesting and fun ways.
- Relating sustainability issues and actions to an individual's daily activities.

Location: Hampshire, UK

Target Groups: the general public

Results: An increased interest in exhibits at events. Better interaction with children at school events

Overview

tEC's longstanding experience of providing advice at energy awareness events has shown that whilst the provision of facts and figures, booklets and leaflets is important in informing people about sustainability, they can have their limitations.

To get the message across, to make it stand out and to make it memorable; environmental communications need to be interesting, innovative and interactive. It is important to understand that different people learn in different ways and that sustainability issues are by their nature complex. It is therefore sometimes necessary to simplify key issues and ideas.

Detail

tEC has a range of interactive exhibits which make learning fun; reinforce key ideas of sustainability through physical and mental activities; and allow individuals to 'learn by doing'. These have been developed for use at public events and during school visits.

Energy Monitors

100 energy monitors have been purchased to enable residents to measure their real time energy usage. These easy to install wireless electricity monitors show how much electricity is being used, how much it is costing and how much carbon is being generated.

Energy monitors can be seen as a useful tool to engage whole families in becoming more aware of energy use in the home. Typically once a monitor has been installed residents will switch off different household appliances to see which ones use the most energy. Generally this leads to a more sophisticated use of the equipment whereby electricity use is monitored over a prolonged period, and lasting changes are often observed.

tEC has organised an Energy Monitor loan scheme as part of the TrIsCo project. Further information can be found in the good practice: Energy Monitor Loan Scheme.

Retrofit Dolls House

The retrofit dolls house shows the range of measures residents can install to improve energy efficiency of their home. These include: additional loft insulation, cavity wall insulation, solar panels, double glazing, draught proofing and water saving devices. The house also has energy efficient (A-rated) appliances, such as a boiler, fridge and washing machine.

A break down of heat loss percentages from an average home is highlighted on the houses, to convey this simple message. Money and energy savings from the installed energy saving measures and appliances are also shown.

The house is taken into schools as part of tEC's education programme. It shows the potential energy losses from a house in a visual, 'hands on' way, rather than just telling the children. The children can re-late these ideas and suggestions to their own homes. Feedback has shown that this is a key activity which is well remembered by the children.

The retrofit dolls house is also taken to community events to engage both adults and children. The clear labelling and simple messages imparts information at a glance.

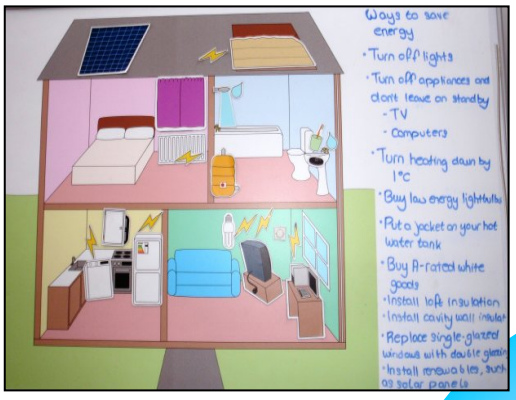
Eco Dolls House

This house successfully shows two working examples of renewable technologies; solar photovoltaic panels and wind turbines. This house allows the children to create circuits to make the lights work in the house, powered by either the wind turbine or the solar photovoltaic panels.

In addition to the renewable technologies, the house has recycling bins, a water butt, wall and ceiling insulation, draught proofing, a two-way meter for exporting energy to the National Grid, and an Energy Performance Certificate (EPC) showing the energy rating of the house.

This house is engaging for children and adults alike. In a similar way to the retrofit dolls house it attracts people to tEC's information stand at events.

Interactive Display Boards



In consultation with the Southsea Retrofit Initiative Management Group tEC developed an interactive display board to be used during school visits and at community roadshows. The board showcases retrofit measures and introduces themes of sustainable lifestyles: water conservation, local food, transport, waste and recycling, energy efficiency and renewable energy.

Two A1 sized magnetic boards with the outline of a house (one showing the exterior, one showing the interior) were produced. The board was designed to represent a simple (two up, two down)

home, easily recognisable by both young and old. Magnetic cut-outs were produced to show potential energy saving measures such as loft insulation, A-rated appliances, energy efficient light bulbs etc. The boards have a 'free' writing space to aid learning which has increased its versatility not only as a class-room resource but also as a static display. It also incorporates different teaching styles: graphic display, facts and figures and interactive learning.

Dynamo Bike

The dynamo bike is used to power a hand-held games console, a lamp and a radio. It demonstrates the different amounts of energy needed to power a variety of appliances. The key message is that energy is not free; it requires effort.

The dynamo bike is key to attracting people at events, especially groups, such as teenagers, who would not normally approach our information stand.

'The dynamo bike has proved invaluable in drawing people to the display and providing them with something to do. This has proved especially useful with teenagers and young adults who tend to be quite shy about conversing with exhibitors. Getting them engaged in an activity has enabled exhibitors to open up a conversation with them that in most instances leads to a raised awareness and a new level of interest. Proof of this can be found in the number of people signing up for the newsletter or requesting further information on energy monitor loans, etc. We are very grateful to the Environment Centre for lending us the dynamo bike for use at our events.' **Ellie Bolton, WinACC**

Food Miles map

This activity was developed to explain to concept of food miles to children. Children are encouraged to identify the country of origin for a number of typical food stuffs (using the map for guidance). They then have to decide how the food is transported from the country of origin to their dinner plates. This leads to a discussion about food transportation, the impact this has on the environment and alternatives for instance local, seasonal produce.

Hook an Environmental Duck

Hook an Environmental Duck was developed for an event where small children would be in attendance. The ducks all have different energy saving measures on the bottom and were used as a fun way to pass the energy saving message onto children. These tips varied from turning the tap off when brushing your teeth to walking to school.

Renewable Energy Pairs

This game is based on the traditional game pairs, where the player has to match two identical picture or number cards. In this instance the game has been modified so that players must match the natural energy source (sun, wind, water, wood) to the renewable energy technology (solar panel, wind turbine, hydroelectric dam, wood burner). The game endorses the use of renewable energy technology.

Legal framework
Health & Safety risk assessments are carried out for all activities and equipment. CRB (Criminal Records Bureau) checks are required for all tEC staff who work with children and vulnerable adults.

Financial framework
The interactive activities and gadgets vary in cost with funding coming from a variety of sources.

The OWL electricity monitors were bought at a cost of £21.70 per monitor. Funding for this equipment was available through ERDF financing through the TrIsCo project and tEC's accounts.

The interactive display board was designed in cooperation with Portsmouth City Council and the Environment Agency. Jubilee Eco Terrace Initiative funds were made available by the council to produce the board in-house.

The retrofit dolls house is an existing exhibit which has been updated at various intervals.

The eco dolls house was bought specifically for a schools project at £100 through The 'Awards for All' fund for a current tEC schools project.

The bike, stand and dynamo were donated to tEC and the work carried out to convert the bike was donated through volunteers' time.

Evaluation
Possible demonstrated results:
- The energy monitors can record baseline levels and record and calculate annual spend (money, kWh and CO_2 emissions).
- Data collected on these monitors can be compared with previous energy bills to measure changes (money, kWh and CO_2 emissions) achieved.

Possible success factors:
- The *Energy Monitors* have real-time displays which allows individuals to see actual energy consumption and understand what this means in terms of CO_2 emissions and monetary savings.
- The homeowner or tenant can identify appliances with high consumptions, by turning appliances on and off. This could encourage a change of behaviour in and around the home.
- By riding the *dynamo bike* individuals are encouraged to realize that energy is not free; it requires effort.

Dolls Houses
- Feedback has shown that this is a key activity well remembered by children involved in our school visits
- Encourages people over to the stand; children and adults alike
- Despite being generic, the house is easily recognisable making it simple for people to relate sustainability issues to actions they can take at home.

The interactive display boards' simple design and incorporation of different teaching styles: graphic display, facts and figures and interactive learning, have proved popular and successful with students and teachers alike.

Difficulties encountered:
tEC faced difficulties in designing a interactive display board relevant to a variety of audiences. It had to

be simple and easily recognisable to small children as well as containing enough information to retain an adult's interest. tEC decided to maximize the versatility of the boards by designing it for use as an interactive classroom learning resource and for use as a static display at events.

- The main difficulty encountered with the interactive activities is damage to the equipment, particularly the dynamo bike, due to overenthusiastic peddling or during transportation.
- Equipment can be expensive and requires regular maintenance. These hidden costs are difficult to anticipate.
- Some equipment is heavy and cumbersome.
- Health and safety issues: some items, for example the dynamo bike, require a risk assessment and constant supervision.

Lessons Learnt

- Different methods of communicating sustainability messages are essential
- Different people learn in different ways: verbally, visually and through interaction
- Think about the practicalities of use & transport
- Learning by doing helps to reinforce key messages
- Designing exhibits or resources for a range of audiences
- Use of colour
- Use of less formal text and images
- Visual representation: simplify ideas to places or actions recognisable to all.
- Activities which encourage young children to come over to tEC's information stand, often results in their parents accompanying them. This allows advisors to engage them in conversation.

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SME Seminar

Aim: Addressing a lack of knowledge of the local opportunities in the emerging retrofit and renewable energy markets

Objectives:

- Raising awareness amongst local suppliers, contractors and trades people of businesses opportunities
- Encouraging a discussion of the drivers and barriers to expanding services on offer
- Networking between local training provider, local municipality, local contractors and suppliers

Location: Portsmouth, Hampshire, UK

Target Groups: building contractors, tradespeople and suppliers

Results: 16 staff from 13 businesses attended the event. The discussion provided insight to the businesses' thoughts on retrofit and renewable technology opportunities. It was agreed that there are huge opportunities, however many felt that in the short term these were outweighed by numerous risks and concerns.

Background

tEC worked in partnership with Portsmouth City Council (PCC) and the Environment Agency on a retrofit and community engagement initiative: The Jubilee Eco Terrace in Southsea, Portsmouth. The project aimed to deliver a range of community activities: open days to showcase the retrofit exemplar home, school education work, and a business event for local SMEs focusing on retrofit and renewables opportunities in the area.

The Eco Terrace management group identified opportunities presented through the emerging retrofit and renewable energy markets and its relevance to old and inefficient housing stock. It was also recognised that there is a lack of experience and knowledge in retrofit techniques and technologies amongst local contractors and suppliers.

Work within the retrofit and renewable technology sectors is essential for the UK's low carbon future. The UK Government sees retrofitting existing homes as a key tool to achieving its 80% CO_2 emissions reduction goal for 2050, with housing the single biggest contributor to the nation's CO_2 emissions. A comprehensive package of measures is required at a rate of 1.8 million houses per year by 2020. This is needed to ensure the UK's entire housing stock is operating more efficiently by 2030 in order to reach the CO_2 reduction targets. (DECC)

There is massive potential for CO_2 savings and huge business opportunities in this sector. At present CERT funds are available for heavily discounted loft and cavity wall insulation. The forthcoming Green Deal will allow for more flexibility in the measures adopted.

Detail

The event was designed not only to raise awareness and showcase best practice but also to bring together stakeholders from across the sector who will be instrumental in delivering the retrofit services required to address the local and national targets.

Communications

To maximise the audience range, a series of promotional measures were undertaken:

- An article was placed in Flagship, the council's free magazine, with an approximate circulation of 100,000 people
- Express FM, a local community radio station with between 30,000 and 50,000 listeners promoted the event
- Leaflets were distributed to local builders' merchants
- The event was publicised on the PCC and tEC website as well as through the Hampshire and Isle of Wight Sustainable Business Partnership (SBP) events page

The event focused on the following key areas:

1. Future council work programmes and opportunities for work - *Meredydd Hughes, Portsmouth City Council*
2. The business case for renewable technologies – *Luke Tilley, 1Sunpath*
3. Retrofit of 84 Jubilee Road (Jubilee Eco Terrace) – *Paul Greenwood, United House*
4. Local training opportunities at Highbury College – Eddie Bergin and Alan Harbord*, Highbury College*
5. Discussion of the barriers to uptake within the retrofit and renewables sector

Evaluation

A total of 13 businesses and 16 staff attended the event, a reasonably good turnout for this target group. The discussion aspect of the event provided insight to the businesses thoughts on retrofit and renewable technology opportunities. It was agreed that there are huge opportunities presented in these markets, however many felt that in the short term these were outweighed by numerous risks and concerns. These included:

- Lack of awareness of local opportunities and lack of a relevant network for the businesses
- A general consensus that larger companies would be in a better position to absorb the costs and uncertainties surrounding the retrofit market and the Green Deal.
- A general consensus that training was expensive and requirements changed too regularly
- Costly nature of the accreditation necessary for the businesses (some require multiple accreditations to offer a range of services.

Possible success factors

- There was an exchange of knowledge on retrofit building techniques and materials between attendees.
- Discussion and networking opportunities for a range of stakeholders within the retrofit sector: PCC Housing Management, local training providers (Highbury College), local builders merchants (Howdens) and small building contractors.
- Many of the businesses asked Portsmouth City Council to keep them informed of future retrofit opportunities available in the area.

Difficulties encountered

Lower than expected attendees. This can possibly be attributed to timing:

- the event took place during schools holidays
- a short lead time for promotion of the event
- micro SMEs have a limited amount of time to take part in these types of events

Lessons Learnt

It is important to have dialogue and discussions with the businesses that will be expected to deliver retrofit services.

Provision of tips, advice and promotion of the business event through the radio broadcasts was an extremely useful tool for mass communication. The public can listen to the series again via Jubilee Eco Terrace Initiative website. This communication technique should be considered for future involvement of local SMEs who have significant time and resource pressures.

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Shop Visits: offering sustainability advice and support

Aim: Engaging with small retail outlets with little capacity to attend information seminars

Objective:

- To provide bespoke advice to local SMEs on sustainability at their place of work.
- To signpost these businesses to grants, loans and other advice available.

Location: Southampton, Hampshire, UK

Target Groups: Retail Micro businesses and SMEs

Results: 17 businesses were engaged within the centre of Hythe. 20 'Top Tips' brochures were distributed within the village centre.

Background

Hythe and Dibden is the fifth largest parish council in Hampshire. The parish comprises of three communities: Hythe, Dibden and Dibden Purlieu. The parish lies on the western shore of Southampton Water abutting the New Forest. The parish covers an area of approximately 6 square miles with a resident population of approximately 20,000 living in some 8,600 dwellings.

Source: Hythe & Dibden Parish Council Website

tEC has been working in partnership with Hythe and Dibden Parish Council to deliver a community engagement initiative working with schools, local SMEs and the wider community on sustainability issues.

Detail

The majority of businesses in Hythe village centre are predominantly small independent retail outfits. Following discussions with Hythe and Dibden Parish Council, it became clear that previous attempts to engage with the SMEs had failed to attract significant audiences. This had been attributed to the fact that many of the businesses are very small (owner-run, or having 1-2 employees) and consequently have difficulty finding time to attend events. Moreover a local business association had recently closed within recent years due to a lack of attendance.

In consultation with Hythe and Dibden Parish Council, it was decided that tEC would allocate sufficient resources to run a 'drop in session' where tEC staff would visit individual retail premises. A session was designed to provide information on potential cost savings through adopting more sustainable practices and low cost investments (i.e. energy efficient light bulbs, water displacement devices etc.).

tEC produced a 'Top Tips' resource providing basic recommendations on:

- heating
- lighting
- insulation
- water conservation
- waste minimization and recycling
- grants, loans and support organisations

As an incentive the brochure also offered a free environmental review for one business within the area. The event was supported by an introductory email by the Parish Project Officer and an event flyer with tEC's free phone advice line number.

Evaluation

tEC visited businesses in Hythe village centre on the afternoon of 21st October 2010. The timing was designed to miss the busy lunch period, therefore maximsing the employer and employees attention.

During the visits tEC distributed copies of the 'Top Tips' brochure, offering advice to the businesses and promoted a 'prize-draw' for an environmental review. During the session tEC visited 17 local businesses and left copies of the 'Top Tips' brochure with a further three SMEs that were closed.

Possible success factors

- This type of initiative focuses on engaging with the smaller end of the SME group who can be hard to reach
- The one-to-one nature of the visits meant that the businesses didn't have to way up cost savings against time taken out of the working day
- It also allowed the advisor to have a brief look around the premises and offer tailored advice and examples during their discussions
- This engagement technique is informal and friendly, providing a relaxed environment and encouraging questions.

Difficulties encountered

- Expensive in terms of resources and staff time for delivery in this way.
- Issues of health and safety, and loan working.
- Potential trust issues if the organization delivering advice is relatively unknown. Some businesses first reaction was that tEC staff were trying to sell them something.
- Danger of disrupting business. tEC was sensitive to the importance of local trade.

Lessons Learnt

This is a valuable initiative especially as people don't have to take time out of their day to attend events. This type of initiative could be strengthened by the involvement of a local economic development business support officer or trusted local official.

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SME Environmental Performance Review

Aim: Assisting SMEs to improve their environmental performance

Objectives:

- Assessment of the environmental sustainability of an organisation and its activities.
- Advice on practical improvements to premises and operations to improve the environmental performance of the SME
- To increase staff members' awareness of environmental issues, energy and resource use in their workplace

Location: Hampshire, UK

Target Group: SMEs

Results: No and low cost interventions including behaviour change measures

Detail

Increasingly SMEs are looking to improve their environmental performance in order to minimise costs and to demonstrate their commitment to the long term sustainability of their operations. An environmental performance review (EPR) can be seen as an initial step towards this goal.

An EPR is a means by which an organisation can identify its current environmental baseline and from their plan and implement a programme to improve their environmental performance. The work involves:

- a desk study of existing activities and procedures
- an on-site environmental audit of the organisations operations
- interviews with relevant staff
- analysis of the organisation's processes

Key areas for consideration throughout the process are:

- Site based operations and practices
- Off-site operations
- Procedures associated with existing management systems
- Waste practices
- Energy and water use practices
- Transport practices
- Purchasing practices
- Current levels of measurement and monitoring
- Insulation
- Renewable technologies
- Behaviour change

Following the site visit and interviews with staff, the auditor produces a report stating the current situation of the SME (including analysis of energy and water bills), and makes recommendations for improvement (including sources of grants/loans/other funding initiatives to aid with the financial implications of implementing efficiency measures).

The client may contact the lead auditor following receipt of the report with any questions.

Evaluation

Possible success factors

These simplified audits can be seen as a springboard to a more comprehensive assessment and environmental management programme.

Difficulties encountered

Access to real energy data is essential for providing an accurate profile of an organisation's energy demand and thus potential savings

Lessons Learnt

Recommendations for improvement must be within the capabilities (both financial and operational) of the SME. In most cases, it is far more important to focus on heating, lighting, insulation and efficient use of appliances, rather than on micro-renewables.

Measures for behaviour change are limited by the users of the premises. It can be difficult to incentivise staff to adopt best practice as savings can be perceived as of no benefit to them.

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Climate Street Party Competition

Aim: Coordinating a nationwide competition to encourage collective action to save energy and reduce CO_2 emissions.

Objectives:

- To make the general public more conscious about their energy consumption and how CO_2 emissions effect the environment
- To stimulate people to take action both individually and as part of a community
- Providing incentives to overcome habitual behaviour

Region: Noord Brabant, The Netherlands

Target Group: the general public

Results: 2,193 households in Noord Brabant took part in the Climate Street Party competition (12,425 across The Netherlands). These households formed 48 street networks (an average of 12.5 households per network).

Introduction

The national climate street party competition (CSP) is an initiative within the 'HIER' Climate campaign and is all about conserving energy together (with the emphasis on "togetherness"). The set-up is in the form of a climate competition and success depends on the initiatives and activities of the people that participate are motivated to take. The aim is to make the general public more conscious about their energy consumption and how CO_2 emissions affect the environment and to stimulate them to take action.

Who is "HIER"

HIER (Dutch for 'Here') is the name of a large Dutch climate program whose fundamental idea it is to stress the immediate necessity to implement adaptation projects and initiatives to climate change. HIER introduces a new brand uniting and representing all initiatives that reduce the risk of climate change. This campaign involves not only over 40 national charitable organisations, but also government and businesses.

Communication and project coordination for the HIER climate campaign are handled by an organization called 'Het Klimaatbureau' (the Climatebureau). Het Klimaatbureau is also responsible for organizing the Climate Street Party competition.

Background

The first Climate Street party was successfully organised in 2008-2009. From the 1st of September 2009 until the 29th of May 2010 the second edition took place. The Climate Street Party Competition reaches out to ordinary consumers to make them aware of the effects of CO_2 emissions on the climate and the importance to reduce energy consumption. The set up is meant to stimulate people to take action and involve other people around them in the competition as well.

People can register as a participant in the action website www.klimaatstraatfeest.nl (see figure 1) and for each measure they take to improve the environmental quality of their homes or streets, points are awarded. Neighbours in the same street can join the team (which gives extra points per new participating household) and with each other boost the collective score. In the end the street with the

highest score wins the Super Climate Street Party with a performance of a famous Dutch singer. The 499 runners up win a smaller scale street party to reward their efforts and celebrate the results.

Tools and Techniques

One of the most important tools in the competition is the Climate Street Party website www.klimaatstraatfeest.nl. Besides for registration, the website is used to give the participants tips on actions that can be taken to cut down on energy use, either individually or together with their neighbours. It also has some fun tests to make people aware of their own energy consumption. Each action the participants take earns them points for the competition. To receive the points, any progress must be posted online, together with photographic evidence through the special participants login page (see figure 2).

The actions that are suggested on the website address both technical measures as well as behaviour change related measures in order to accommodate both house owners and those who rent a house. To motivate people to take action not only 'green' arguments are used, but also the potential financial incentives of energy reduction are stressed.

Communication

To increase the awareness of the event the Climate Street Party competition was organised in partnership with a national broadcast network. Because of this, it was possible to have large scale commercial campaigns and exposure on national TV. However, participants were also stimulated to increase visibility as well by rewarding any publicity generated with points for the competition.

Actions and activities

Within the website, the following suggestions to save energy and reduce CO_2 are addressed:

1. *Activities together with your Neighbours* – Suggestions of activities in different categories, for examples of activities see ad. 1 below.
2. *Situation in your own home* – Questions that assess the energy use situation in your home, for examples of questions see ad. 2 below
3. *Monitor your electricity and water meters*: a tool to motivate people by visualising any energy savings achieved (see figure 3 below).
4. *Measure your CO_2 footprint* – internet based awareness tool based on gas and electricity use, car kilometres, flying behaviour and public transportation use.
5. *Check your driving-style* – web based tool to check your knowledge about driving style and fuel use. http://www.adviesmodule.nl/ask?acor=testuwrijstijl&role=test&partner=klimaatstraatfeest&UID=35ff606e4148c4c08b129d2245784e86
7. How to decrease your energy costs? Web based tool to get a situation specific advice on possibilities to reduce energy use, taking into account technical specifications of your house and equipment.http://www.energielastenverlager.nl/ELV/Energielastenverlager/Kb?init=true&partner=klimaatstraatfeest#

Ad. 1: Examples of activities CSP participants can take together with their neighbours to earn points for the competition:

1. Awareness
   - Appoint a street team leader – 500 points
   - Form a Climate street team to inform neighbours – 1000 points
   - Organise meetings with the neighbours to discuss ways to save energy – 750 points
   - Organise an energy activity for children – 750 points or make a presentation about energy for your school – 780 points

   Organise a film evening (e.g. An inconvenient truth) – 1000 points
   - Organise an information day about energy – 1000 points
   - Make your own neighbourhood energy newsletter – 1000 points
   - Participate in local energy discussions – 1000 points
   - Ask your housing cooperation to improve isolation of your house – 2000 points
   - Ask your Local Municipality to join the Climate Street Party competition – 2500 points
   - Organise an Energy Café amongst neighbours – 1500 points
   - Buy an energy meter to measure energy consumption of appliances – 1000 points
   - Participate with your street in the 'Warm Sweater day' – 1000 points
2. Gas
   - Get a (collective) professional advice on how to insulate your house – 1500 points
   - Make an infrared scan of the houses in the street – 2000 points
   - Apply radiatorfoil – 500 points
   - Start using the shower coach hourglass to reduce shower time and therefore hot water use – 100 points
   - Install water saving shower heads – 300 points
   - Close gaps near windows and doors – 500 points
   - Insulate central heating pipes – 200 points
   - Get a collective quote for installing double glass in the street – 2000 points or install double glass – 1000 points
   - Insulate the roofs – 1000 points
   - Get a collective quote for high efficiency central heating – 2000 points or install high efficiency central heating – 1000 points
   - Get a collective quote for wall insulation – 2000 points or insulate walls – 1000 points
   - Get a collective quote for floor insulation – 2000 points or insulate floors – 1000 points
   - Get a collective quote for sun powered boiler – 2000 points or install sun powered boilers– 1000 points
3. Green
   - Plant a tree during het National Tree Planting Day – 500 points

   Participate in an activity organised by a Nature conservation organisation – 500 points
   - Switch to an energy company that supplies green gas – 3000 points
   - Support a CO2 compensation initiative – 4000 points
4. Publicity
   - Get press exposure in a newspaper, magazine or (local) TV with activities in your street – 1000 points
   - Organise a public activity around energy and CO2 – 1500 points
5. Energy
   - Start using stand-by killers in all houses in the street – 3000 points
   - Switch to energy efficient or LED lamps – 5000 points
   - Install motion sensors for exterior lighting – 3000 points

- Ask your local authorities for energy efficient street lights – 3000 points
- Start using a drying frame instead of a tumble dryer – 750 points
- Buy LED Christmas lights – 750 points
- Share a washing machine with neighbours – 300 points
- Start washing at low temperatures – 1000 points

6. Transport
   - Organise a meeting to discus how to minimize fuel use and CO2 emissions by changing your driving style – 750 points
   - Check the tyre pressure of all vehicles in the street – 1500 points
   - Organise a car-free day – 2000 points
   - Sharing a car with your neighbours – 3000 points
   - Start carpooling – 1000 points
7. Food
   - Organise a dinner to raise awareness for the relation between food and climate change

Ad. 2: Examples of questions to assess energy use in your own home:

1. Electronics - In my home I:
   Have [fill in number] energy efficient light bulbs
   Have a fridge with energy label A+ or A++
   Have a washing machine with energy label A+
   Don't have a dishwasher or if I do, it has energy label A
2. Holidays - This year I:
   Spent my holidays in Holland
   Did not travel by airplane
   Travelled by airplane but compensated my CO2 emissions
3. Laundry & bathroom - In my home I:
   Wash coloured clothes at 30 degrees
   Use a drying rack
   Have a tumble dryer with energy label A+
   Use a water saving shower head
4. Heating - In my home I:
   The heating never exceeds 20 degrees
   Don't heat spaces that are not used
   Know the energy label that applies to my house
   I took measures to improve the energy label of my house
5. Transport - With regard to transportation I:
   Decided not to have a car anymore or never owned one
   Decided not to use the car for short distances
   Decided to buy an A label car
   Make an effort to drive fuel efficient
6. Green energy - In my home I:
   Am using 'green' electricity
   Am using 'green' gas
   Have a sun powered boiler or heat pump
   Have solar panels

Evaluation

The Climate Street Party competition 2009/2010 was a huge success. Results from Noord Brabant:

- Total number of participants nationwide - 12,425
- Total number of participants in Noord Brabant - 2,193
- Total number of networks in Noord Brabant - 48
- Average number of households/street network – 12.5
- Number of street parties held on 29th May 2010 - 101

Possible success factors:

- The competition element of the Climate Street Party stimulates people in a fun way to actively work to reduce their energy consumption
- Social cohesion in streets is strengthened because of all the collective activities.
- People are stimulated to involve other people around them in the climate debate and the necessity of reducing energy consumption.
- Increased chances of structural behaviour change as the people participating engage in suggested actions and activities and will choose those that appeal most to them.

Difficulties encountered:

The way in which points are awarded should be revised. As every neighbour that joins the street team is worth extra points, it is possible to advance considerably in the ranking just by convincing new neighbours to join, without taking actual actions. This favours large streets and apartment buildings and is does not really stimulate behaviour change.

The CSP competition has been organised in its current form twice now. It is possible that the next competition will have to be set up slightly differently or with a different media partner in order to reach new households that still are at the early stages of energy awareness.

Lessons Learnt

Translating a serious topic into a fun activity helps to get the message across to the wider public. The competition element really stimulates actual actions being taken.

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The Climate Street Party competition is part of BMF's TrIsCo activities and was transferred to 2,193 households in Noord Brabant.

Figure 1: Homepage CSP website

Figure 2: CSP participant's login page

Total of points scored by all participants in the street

Menu with tips and activities to reduce energy and earn points for the competition. Also includes fun test to raise awareness.

The place to check which neighbours (house numbers) are participating in the CSP competition

Short instructions on how to participate in the CSP competiton

Figure 3: Webbased tool to monitor electricity and water meters

Energy Café

Aim: Provision of a forum to explore themes of energy efficiency and carbon reduction

Objectives:
- To increase energy awareness
- To increase knowledge of technical solutions and practical actions to save energy
- To provide access to expert advice in an informal setting

Region: Noord Brabant, The Netherlands

Target Group: the general public

Results: 5 Energy Cafés were organised in Noord Brabant: three in cooperation with Climate Street Party participants (50 attendees); two with local municipalities (with 5 businesses and approximately 60 attendees).

Introduction
The 'Energy Café' concept is an initiative of Brand New Energy, Stichting Collusie and Essent and is part of the Climate Street Party (CSP) competition 2009/2010. However this concept could also work very well as a stand-alone project. Energy Cafés offer people a chance to come together with a professional energy advisor to exchange knowledge on energy reduction and energy saving techniques and to find answers to questions they might have about energy issues.

Who is "Brand New Energy"
"Brand New Energy" is an energy consultancy company with a network of advisors that deliver bespoke advice on energy reduction, sustainable energy and energy purchase.

Who is "Stichting Collusie"
"Stichting Collusie" is a non-profit organization that trains people that are long term unemployed or have other constraints to become professional energy advisors.

Who is "Essent"
"Essent is a Dutch energy company that delivers gas and electricity to consumers and businesses.

Background
Evaluation of the first edition of the Climate Street Party showed that despite all the tips and examples for energy saving activities on the CSP website, too many participants got stuck at the level of subscription. It was also felt that the step to start involving neighbours seemed to big.

Therefore an activity was introduced in the form of an Energy Café to help people to become active and at the same time offer an informal, low key platform to meet and involve the neighbours.

The set-up of the Energy Café is more or less derived from the Tupperware party concept. At a Tupperware party friends, family and/or neighbours come together in somebody's home, where a Tupperware consultant then presents and discusses the different products.

Key success factors are:

- The informal setting
- The venue is usually close to home
- Participants are invited by somebody they know
- The presence of a professional to answer questions and discuss options

These key ingredients also form the backbone of the Energy Cafés, with the difference that in this case practical ways and opportunities to save energy are presented and discussed amongst the people present.

Tools and techniques

For the best results, the initiative to organise an Energy Café has to come from the participants. To stimulate this, organising an Energy Café will add 1500 points to the collective score of the street in the CSP competition.

Through the CSP website the participants can apply online for an Energy Café. They are then contacted by one of the competition partners who assists them with practical matters like organising the program for the evening and organising the presence of an (free) energy consultant.

The programme of an Energy Café generally follows this structure:

- Introduction by the local host (which normally is the one that applied for the Energy Café), of the CSP competition for those who are new to it and a short explanation of the purpose of the evening (discussing options and actions to save energy)
- Presentation by the energy consultant on practical energy saving measures and techniques tailored to the needs of the group (house owners, people who rent etc.)
- Discussion between the participants and exchange of tips and ideas. If possible agreement on joint street/ neighbourhood actions.

Evaluation

In Noord Brabant in total 5 Energy Cafés were organised:

- 3 in cooperation with CSP participants
- 2 on the initiative of local municipalities that saw an opportunity to provide a service for their citizens.

The two kinds of Energy Cafés differed in scope and atmosphere. The street Energy Cafés were organised as originally intended in the CSP competition and set up as described above. The ones organised in co-operation with local municipalities were held in a more formal setting in terms of venue, with more (unrelated) visitors from different parts of the city and in one case in combination with an energy market where suppliers of green energy technologies (solar panels, energy efficient glass) were present. Another difference was that at the municipal Energy Cafés the energy consultant was a representative from a large energy company, whereas the energy consultant at the street Energy Cafés was an independent expert.

Possible success factors street Energy Cafés:

- The informal atmosphere triggered a lot of useful discussions amongst the participants.
- Providing an organised platform made it easier for the neighbours to get in contact with each other which was beneficial for future collective activities.
- The street Energy Cafés contributed to social cohesion in the streets.

- To get the discussion going the energy expert used an energy quiz in which people had to answer all kinds of energy related questions. This turned out to be a good introduction to discuss all kinds of facts, figures and myths about energy use and saving energy.

Possible success factors municipal Energy Cafés:

- this set-up managed to attract a wider audience, which also included people that were not participating in the CSP competition
- the energy market in combination with an Energy Café was valued by visitors as they had an opportunity to ask suppliers detailed technical questions, specific to their situation.

Difficulties encountered in municipal Energy Cafés

- the experts from the energy company were not perceived as independent advisors and people sometimes were reluctant to answer questions about their energy consumption as they were afraid of a hidden agenda.
- The main interaction was with the energy expert that presented the evening and not between the visitors themselves, because of which there was little sharing and exchange of experiences.
- In one event failure to make clear agreements on who was responsible for the promotion of the Energy Cafés lead to a disappointing attendance of the event.

Lessons Learnt

Both the street Energy Cafés and municipal Energy Cafés proved to be valuable instruments. Each set-up in its own way helped to make people aware about their energy consumption and to provide them with concrete possibilities to reduce their energy footprint.

However where results of the municipality Energy Cafés were more informative by nature, the street Energy Cafés led to actual applications for an energy label research and requests for proposals for energy measures.

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The Energy Cafés are part of the Climate Street Party competition. The three street Energy Cafés reached 50 people. The two municipal Energy Cafés involved five local businesses and had an estimated amount of 60 visitors.

Golden Star Municipalities

Aim: Encouraging engagement between local authorities and citizens on climate change issues.

Objectives:

- To increase the visibility of local authorities' existing climate initiatives
- To boost local climate policies and initiatives
- To stimulate active involvement of local authorities in the Climate Street Party competition (CSP), by providing easy-to-use tools

Region: The Netherlands, Noord Brabant

Target Group: local authorities

Results: 13 municipalities participated in the Golden Star Municipality project in Noord Brabant (58 nationwide). Feedback from the participating municipalities showed:

- they valued the opportunity to engage with and access the contact details of citizens active in the CSP competition
- 85% of the responding Municipalities used the opportunity to host an Energy Café.
- Approximately 80% of the respondents said they would participate in the project during future

Introduction

The 'Golden Star Municipalities' concept is an initiative of the Dutch Climate Alliance 'Het Klimaatverbond' and is part of the Climate Street Party competition 2009/2010. It provides local authorities with knowledge and tools to promote interaction between municipalities and citizens with respect to CO_2 reduction and saving energy.

Who is "Het Klimaatverbond"

"Het Klimaatverbond" is an NGO founded in 1991 to stimulate and support local authorities in their climate policies. Amongst its members are 140 municipalities, 12 provinces and 1 Water Authority.
The members of "Het Klimaatverbond" represent a total about 7 million citizens. The main themes within the organisation are mobility, saving energy, sustainable procurement, climate & spatial planning and citizen participation.

Background

Following experiences and feedback from their membership, "Het Klimaatverbond" established that local authorities experienced difficulties in translating their climate ambitions into suitable activities. Furthermore they found that local authorities had trouble finding good ways to communicate their existing climate efforts to the larger public.

In the Climate Street Party competition, "Het Klimaatverbond" saw an opportunity for their members to either start or advertise their own climate projects and to get into contact with their target group (climate minded citizens within their own town), while benefiting from the high visibility and publicity generated by the project.

With the Golden Star Municipalities initiative, "Het Klimaatverbond" aimed to:

- increase the visibility for climate initiatives of local authorities
- stimulate interaction and communication between locals and local authorities
- stimulate active involvement of local authorities in the competition, by promoting easy-to-use tools

Tools and techniques

To become a Golden Star municipality, local authorities can purchase the Golden Star Municipality package, with a fee based on the number of citizens.

Number of citizens	Costs
<30,000	€400
30,000 – 80,000	€1,000
80,000 – 130,000	€2,000
130,000 – 200,000	€3,000
>200,000	€4,000

In terms of visibility the package offers local authorities:

- A sub-page within the national Climate Street Party (CSP) website (see figure 1). The sub page is accessible by local authorities through a simple back office structure to upload photos, texts and links to their own municipal website and their own municipal climate activities and agendas. The page also included: a list of highest ranking of municipalities nation wide and highest ranking streets within the municipality in question to increase visibility of the results and to stimulate competition.

- The list ranking participating streets can also be added to local municipal websites. Visitors can then see the most up-to-date score of the streets in their municipality and click to enter their own street into the competition. Changes in the higher ranks of the list provides local authorities with an opportunity to create publicity and media exposure.

- High achieving municipalities get a golden star on the map of The Netherlands on the (most visited) home page of the Climate Street Party competition website (See figure 2). Clicking on the star opens a pop-up box where local authorities can display a text of their choice, e.g. a quote from the municipal Councillor or an example of good climate initiatives within the municipality.

Mechanisms to promote interaction between municipality and citizens:

- Through the CSP website, participants can send their local authorities an automated invitation to become actively involved in the Climate Street Party competition. Taking this action will add 2,500 points to their personal score in the CSP competition. As soon as a municipality decides to respond to that invitation by becoming a Gold Star Municipality (paid option, incl. benefits) or by becoming a CSP supporter (no charge, just listed on CSP website), this will add 2000 extra points to each existing and future CSP participant's competition score.

- As a result there is more visibility for the municipality in question, as each participant will receive an email explaining why they received the extra points. Furthermore, the bonus points are an opportunity to create publicity and media exposure for the local authorities.

- The Golden Start Municipality package includes access for local authorities to address information and contact details CSP participants in their municipality in order facilitate contact and exchange of information between the authorities and participating streets.

- The Golden Star Municipality package includes an offer for local authorities to host a fully organised, free of charge Energy Café: an informal get-together for Climate Street Party participants to exchange information and tips on energy saving measures and CO_2 reduction possibilities.

The Golden Star Municipalities package offers the following tools:

- Proportional to the package fee each Golden Star Municipality receives a number of 'Energysavingboxes', a gift box with practical energy-saving products for consumers (see figure 3). Handing out the 'Energysavingboxes' to selected CSP participants creates a ready-made opportunity for municipalities to create their own climate activity and publicity moment.
- To facilitate active involvement of municipalities in the CSP competition and to reduce the amount of time and effort invested in the project, the Golden Star Municipality package includes a handbook with includes:
  - a short summary of the rules and procedures of the CSP competition
  - time saving communication templates with respect to press invitations and press releases
  - a publicity agenda detailing the general CSP communication plan and highlighting the best opportunities for local authorities to take advantage of the resulting publicity.
  - an example how to fill out the application form for a national subsidy to financially support climate initiatives by local authorities (SLOK, http://www.senternovem.nl/rgo/klimaatbeleid/slok/
  - examples of climate websites and climate policies in other municipalities

Evaluation

Nation wide 58 municipalities participated in the Golden Star Municipality project, of which 13 were in Noord Brabant. An evaluation amongst the Golden Start Municipalities showed the following:

Possible success factors:

- Local authorities valued the fact that they could get access to contact details of inhabitants that were active in the Climate Street Party competition
- 85% of the responding municipalities used the opportunity to host an Energy Café.

About 80% of the respondents said they would make use of the Golden Star Municipality option again if a new edition of the Climate Street Party competition were to take place.

Difficulties encountered:

- Local authorities experienced difficulties with the navigation of the website and operation of the back office.
- Because of organisational issues with the Climate Street Party competition, there was not much lead time for local authorities between the start of the competition and becoming a Golden Star Municipality. Because of time constraints some municipalities failed to use the package to its full potential
- For some local authorities it was unclear how their actions would help CSP participants to gain extra points in the competition and how they were calculated.
- The handbook was judged to be too general. Municipalities would value specific information for their situation, for instance examples of activities they can organise together with existing participants.

Lessons Learnt

Municipalities are positive about the Golden Star Municipality concept within the Climate Street Party. In general staff are pressed for time. Therefore materials, explanations etc. should be short, clear, and easy-to-use. The handbook should be tailored more specifically to the needs of municipalities. Municipalities want more time to prepare in advance.

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Figure 1: Local authority sub-page on the CSP competition website

Figure 2: CSP competition homepage

Map of The Netherlands with indication of Golden Star Municipalities

Figure 3: Energysavingbox

Example of the Energysavingbox

Examples of products in the Energysavingbox:

- a shower coach: Average shower time is 8,5 minutes. The Shower Coach stimulates people to take shorter showers, which will save 42 litres of hot water each time.

- energy efficient lamp: saves 80% of the energy of a normal light bulb

- wind-up LED light for on your bike: fun gadget to promote the energy efficient LED technique

- standby killer: eliminates stand-by energy consumption from appliances like TV, Dvd player, mobile phone chargers etc., which can take up to 13% of your energy bill.

KlimaTeams

Aim: Increasing awareness on energy and energy saving measures amongst 'hard to reach' immigrants populations

Objectives:

- Raising awareness about energy use and energy reduction
- Offering immigrant populations practical assistance with implementing energy saving measures in the home

Region: Breda and Eindhoven, Noord Brabant

Target Group: Dutch Immigrants

Results: The project involved 7 coaches in Breda and Eindhoven from Ghana, Morocco, Aruba, Iran, Sierra Leone and Congo. A total of 56 team members participated in the KlimaTeam meetings with the project reaching an additional 392 citizens through a cascade of knowledge within the community.

Introduction and background

Because of language and/or cultural barriers immigrants in the Netherlands are a difficult group to reach through educational programs, communication and/or activities by government, or municipalities.

The KlimaTeam project is a Brabantse Milieufederatie initiative that reaches out to immigrants using a train-the-trainer set up with trainers from within the immigrant communities. People with different cultural backgrounds are educated on energy efficiency issues, after which they are empowered to disseminate this knowledge within a group of people from within their own network and community.

Who is 'Brabantse Milieufederatie' (BMF)

Brabantse Milieufederatie is an organisation that advocates a clean environment, vital nature and a varied landscape in the province of Noord Brabant. In addition the BMF promotes sustainability and a sustainable society.

Tools and Techniques

The project has 2 main components:

1. The train-the-trainer course, where people from within an immigrant community are educated and trained to become a KlimaTeam coach. The training consists of 6 afternoon sessions in which potential coaches receive information on energy efficiency measures, and in addition learn how to present in front of a group and to work with the presentation material
2. The coaches form KlimaTeams of 8-10 immigrants from within their own network. Per KlimaTeam the coach will organise 3 sessions in which the knowledge is transferred. The sessions are set up in an interactive way to stimulate dialogue between the team members.

Materials

- Coach training started with information on energy efficiency measures, an instruction book on how to set up the 3 KlimaTeam meetings and several handouts to help actively engage the KlimaTeam members in the sessions
- Low-tech presentation material to be used in the KlimaTeam sessions consisting of a roll-up projection screen and stick-on photo's to visually support the information on energy efficiency. This eliminates the need for expensive equipment like projectors and laptops to illustrate the KlimaTeam sessions.

- Materials to hand out to KlimaTeam members to stimulate them to be active, e.g. to register meter readings and calculate their average energy footprint.

Themes covered
As most immigrants are not homeowners, so the teaching material focuses on measures that can easily be implemented in their day-to-day routines and do not require big investment to make structure changes. Themes covered are:

- energy: e.g. electricity and appliances (standby current, energy efficiency bulbs, energy label), heating, cooking, drying laundry etc.
- water: e.g. showering/bathing, washing etc.
- a healthy indoor climate (ventilation)

A part of the course is dedicated to increasing the participants understanding of sustainability by placing individual behaviour in a larger context. There is an explicit focus on how much money can be saved when taking certain measures; this provides a financial incentive for behaviour changes .

Monitoring
To monitor progress, team members are asked to register their meter readings in between sessions, which then are used to calculate total energy use and possible reductions. Also, the team members document a number of energy saving activities they will implement, which is then checked in the subsequent session.

Evaluation
The project involved seven coaches in Breda and Eindhoven from Ghana, Morocco, Aruba, Iran, Sierra Leone and Congo. In total 56 team members participated in the KlimaTeam meetings. Experience with comparable projects shows that for each member of the KlimaTeam it should be possible to achieve an average reduction of 50 m^3 gas, 300 kWh electricity and 10 m^3 water. In terms of raising awareness, the number of people that use energy more consciously exceeds the number of KlimaTeam members, as each member on average informs four family members, who in turn reach two more people. The KlimaTeam project also had a positive effect on the social cohesion in the neighbourhood.

Possible success factors:

- An important success factor was the volunteer allowance for the coaches. To get the training and to form and lead a KlimaTeam is a big commitment for the coaches. Having a volunteer allowance shows appreciation for their efforts and can be a motivating factor.
- It is also important to have some budget for the coaches to organise their KlimaTeam meetings.
- For many immigrant groups these gatherings are a social event where offering food and drinks is culturally expected.

Difficulties encountered:
The training course was quite elaborate and requires commitment from the coaches in terms of availability and doing homework. One of our coaches for various reasons was not able to live up to the expectations and dropped out. It is important to make sure that potential coaches fully understand the workload the project involves.

Lessons Learnt
Because of the different cultural backgrounds, the project requires a lot of management and guidance. It is important to have a good rapport with the coaches in order to make sure all team meetings are organised in time and that all the documents for the project administration (mainly finances) are filled in correctly.

The KlimaTeam project is a successful way to reach immigrants. However the peer-to-peer nature of the project is suitable for many more target groups with a specific lifestyle or that can be motivated by extra income.

The KlimaTeam project reached 56 immigrants in Breda and Eindhoven directly and had an indirect reach of 392 more persons.

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Figure 1: examples of low-tech presentation materials

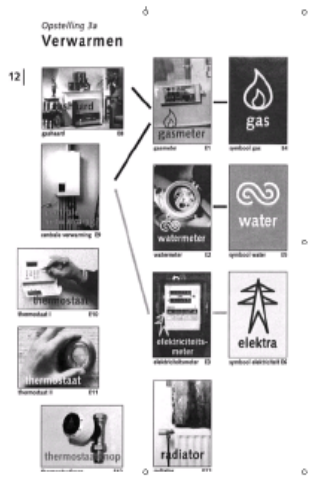
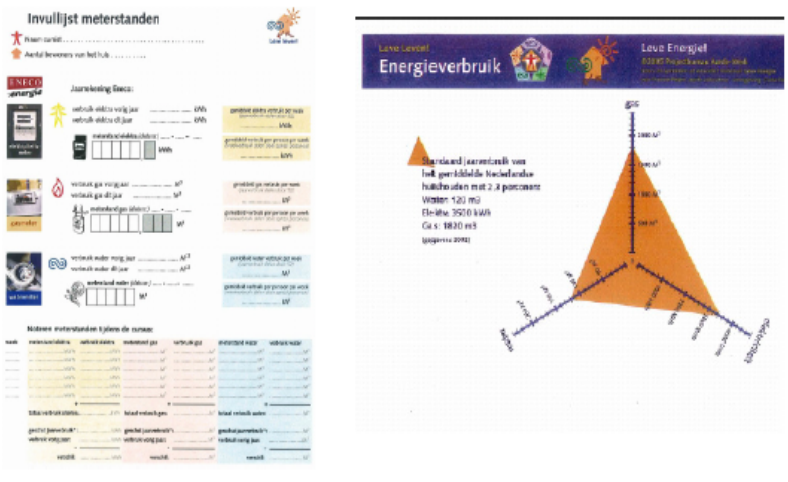


Figure 2: examples of materials for the KlimaTeam members (meter readings and energy footprint



Night of the Night

Aim: Stimulating awareness on saving energy, light pollution and CO_2 reduction

Objectives:
- Raising awareness on (un)necessary energy use
- Emphasising the importance of darkness for nature

Region: The Netherlands, Noord Brabant

Target Groups: the general public, local businesses, local municipalities

Results: 20 activities were organised in Noord Brabant, attracting approximately 5,500 visitors.
Activities included:
- Guided night-time walks in several natural areas in combination with story tellers, treasure hunts, owl searches, poetry recitals etc.
- Opening of an art exhibition with darkness as theme supported by a lecture focusing on the

Introduction and background

The Netherlands is one of the most illuminated countries in the world and the light intensity keeps increasing. Since 2005 the 'Provinciale Milieufederaties' and 'Stichting Natuur en Milieu' have organized a campaign to raise awareness of the importance of darkness for the natural environment and stimulate the debate on the necessity of lighting and (un)necessary energy use. The Night of the Night (www.laathetdonkerdonker.nl) is the highlight of the campaign, taking place at the end of October. It is a national event coordinated at the provincial level. In the province of Noord Brabant 'Brabantse Milieufederatie' is responsible for coordinating and promoting the Night of the Night activities.

Who are the "Provinciale Milieufederaties"

The 'Provinicale Milieufederaties' are 12 collaborating environmental organisations that—individually in their own province and together on a national scale—advocate a healthy and diverse natural environment and promote sustainability.

Who is 'Stichting Natuur en Milieu'

Stichting Natuur en Milieu is a foundation that aims to protect nature and the environment by influencing public policy, coordinating third party initiatives and mobilising public opinion.

Who is 'Brabantse Milieufederatie' (BMF)

Brabantse Milieufederatie is an organisation that advocates a clean environment, vital nature and a varied landscape in the province of Noord Brabant. In addition, BMF promotes sustainability and a sustainable society.

Tools and Techniques

The main role of the 'Provinciale Milieufederaties' and 'Stichting Natuur en Milieu' and more specifically BMF in the Night of the Night is:

1. To stimulate the organisation of nightly activities for the general public.
2. To encourage local authorities to become active participants in the Night of the Night and to raise awareness of the problem of light pollution.

Ad 1.
BMF is supported by 115 volunteer organisations in the field of nature, environment and landscape. Preceding the Night of the Night the BMF encourages and supports these local groups, as well as other partners like observatories and rangers to organise a nightly activity during the Night of the Night such as night walks in the woods or nature reserves, searching for stars, night photography, searching for night animals, night poetry or making a boat ride in the dark. The main aim is to offer visitors the opportunity to experience the darkness

Ad 2.
BMF approaches all municipalities in Noord Brabant to invite them to actively join the Night of the Night by:
- extinguishing decorative lighting, illuminated signs and lighting in municipal buildings
- organising nightly activities for its citizens to experience darkness

Asking local authorities to address companies in their municipality to extinguish their lighting as well.

Night of the Night in Den Bosch

An example of an activity is the Night of the Night as organised by BMF and the municipality of Den Bosch, one of the five largest cities in Noord Brabant. Together with guides from local nature preservation organisations a night-time walk was organised in 'Bossche Broek', a unique protected natural area right at the edge of the town. The aim was to show visitors the beauty of the night. Halfway through the walk the city lights in Den Bosch are turned off to show the impact of city lights and decorative lighting.

At the point where the walks start a small information market is organised where the general public is informed about the importance of darkness for nature, and the consequences of light pollution. BMF has a stand at this market to raise awareness for (un)necessary lighting and energy use. Amongst others, an activity is organised for children in the form of a game where they race against each other with hand-powered toy racecars on a mini race track. This to get across the idea that it takes effort to generate energy/electricity and that its not a 'free' resource.

Star count

Another specific activity that BMF promotes is a nation wide 'star count' campaign. Citizens are called upon to help determine the 'darkness factor' in their own city or town by comparing the sky and the stars they see at a clear night to a set of 7 star-maps that each show the constellation Cassiopeia and surrounding stars with different grades of star visibility. The less stars you see, the more light pollution there is. The star count lasts for a month and in the end the darkest municipality in Brabant receives a prize.

Evaluation

A total of 20 activities were organized in Noord Brabant which attracted approximately 5,500 visitors. Activities included:

- Guided night walks in several natural areas organised in combination with other activities like story tellers, treasure hunts, owl searches, poetry recitals etc.
- The opening of an art exposition with darkness as theme supported by a lecture about the importance of darkness for nature
- Stargazing at observatories

Possible success factors:

- The Night of the Night is an activity (held on a weekend) that is a fun and suitable outdoor experience for the whole family
- There is a great variety in activities, which all have the unique and (often for children) exciting characteristics of being held in the dark
- The Night of the Night has been organised for the last six years; because of this continuity every year more people learn about the event and each year the media attention for the activities increases.
- The Night of the Night promotes sustainability, but in a very easy and accessible way that appeals to the general public; not only to people with specific interest in nature and the environment.

Difficulties encountered

In previous years a regular letter was sent to the municipalities to invite them to participate in Night of the Night activities. However it seemed that these letters were not being noticed anymore by the people that were targeted. To draw new attention to the Night of the Night and ways in which a municipality can join the activities, this year the mailing was sent in an original new format with the message displayed in 'postcard' style with a glow in the dark star attached to the front (see example below).

Sometimes it proves to be difficult to persuade organisations to extinguish the lights for one night. For instance construction companies do not want to leave their building sites in the dark out of fear for theft of equipment or vandalism. Often it is forbidden to extinguish street lights because of safety reasons or it is impossible to extinguish them because by providing power for street lighting energy companies are able to regulate the nightly overcapacity of their facility.

Lessons Learnt

Despite the new and traditional attempts to stimulate local authorities to get involved in the Night of the Night it proves difficult to actually activate municipalities as they often feel they are already doing their fair share regarding this topic. It is however important to keep looking for new ways to involve municipalities to maximise the impact of the Night of the Night message. A way to increase the 'pressure' on local authorities is to keep stimulating public activities by nature conservation organisations, observatories and other groups, because the more people that show an interest in the subject the more important it will become for local political parties to address the issue in local policy plans.

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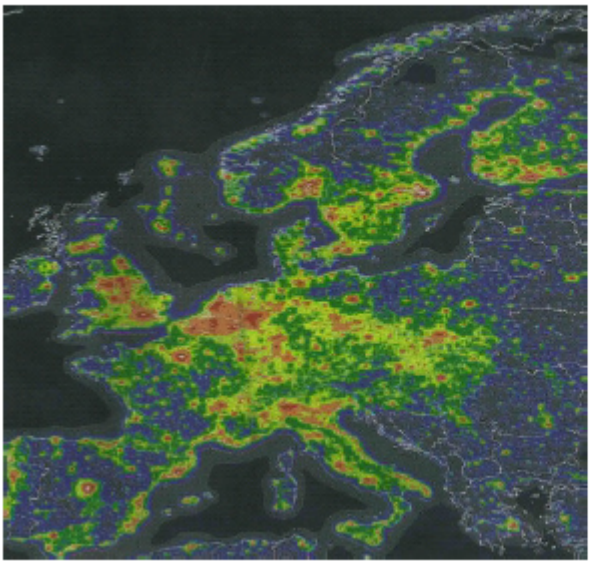
Figure 1: Night of the Night website www.nachtvandenacht.nl

Figure 2: Front of the 'postcard style' letter to municipalities

Figure 3: Pictures of the Night of the Night Den Bosch with lights on and lights off

Figure 3: Light intensity map of Europe (source: First Atlas of Artificial Night Sky Brightness)



Farmer Meets Neighbour

Aim: Overcoming the barriers to the uptake of solar energy in agricultural areas.

Objectives:

- Providing access to external finance in order to fund the installation of renewable energy technologies
- Engaging with participants on local food production and producers
- Demonstrating how small contributions by consumers can make a difference in CO_2 reduction
- Working towards climate neutral production processes
- Stimulating energy awareness

Region: Noord Brabant, The Netherlands

Target Group: farmers, local citizens

Results: 26 farmers participated in the project

Introduction

The idea for 'Farmer meets Neighbour' (www.boerzoektbuur.nl) originates from an initiative called Farmer and Neighbour and is in practical terms managed by Stichting Triple I-S. It enables farmers to cover the roofs of their out buildings with solar panels and reduce the CO_2 emissions of their production processes and at the same time offer consumers a green energy investment opportunity and a chance to work towards sustainable consumption.

What is "Farmer and Neighbour"

Farmer and Neighbour is an initiative that promotes Community Supported Agriculture and aims to reconnect consumers with the origin of their food and farmers with their customers.

Who is "Stichting Triple I-S"

"Stichting Triple I-S" stands for the International Institute of Inclusive Science and was created in 2001 for those interested in combining scientific information and experiential learning in an ongoing process of development.

Triple I-S offers education programs like the one-year postgraduate courses on Co-creation and Co-creation Sciences as well as research programmes like learning from farmer-consumer connections

Background Farmer meets Neighbour

The Farmer and Neighbour initiative looks to strengthen the relationship between farmers and consumers. The Farmer meets Neighbour project is a practical example of how a direct link between farmers and consumers can be established.

Tools and techniques

Farmers that participate in the project invest in solar panels (to place on their roofs). The funds are provided by 'neighbours'; people willing to support local farms and that have an interest in sustainability. Every neighbour can invest in 'shares' of €250 each. Each share entitles the buyer to products and services from the farm (meat, vegetables etc.) for a total amount of €300, to be consumed in batches of €50 over six years.

The farmer sells the electricity he/she produces back to the energy network of the (green) energy supplier. However, the money he makes this way is not enough to earn back the initial investment within a reasonable amount of time. To overcome this problem the SDE subsidy scheme by the Dutch central government compensates for the difference between production costs and the price farmers receive for their electricity.

The compensation is calculated using the following two basic figures

1. production cost: the average cost of producing solar energy in €/kW/h (sum of the investment and exploitation costs + a reasonable profit margin divided by the expected amount of green energy produced). This amount is calculated per type of installation and fixed for a period of 15 years.
2. price of electricity: this figure is calculated annually in €/kW/h by the central Government and should be equal to the average price farmers get paid for their electricity. The actual subsidy a farmer gets per kW/h is the production costs minus the price of electricity.

Evaluation

In total 26 farmers participated in Farmer meets Neighbour. An evaluation of the scheme highlighted the possible success factors and difficulties encountered:

Possible success factors:

- Farmer meets Neighbour offers farmers and consumers a new way to interact and to decrease the gap that has grown between the production and consumption of food.
- Farmer meets Neighbour is an alternative for Individuals that want to contribute to a sustainable society by investing in green energy but are not in the right circumstances to install solar panels themselves.

Difficulties encountered:

- There is only a limited amount of money available for the SDE subsidy per year, which is essential for farmers to enter the project. Granting the subsidy comes down to a “lottery”. This means that only a restricted number of farmers with the desire to participate in the scheme can do so. Thus the full potential of the scheme has not been reached.
- The calculation of the basic figures for the subsidy is a complicated procedure and amounts can vary to such an extent that the compensation is no longer sufficient E.g. in the calculation of the production cost (fixed for 15 years) a certain total production in kW/h is assumed. However because of external factors like total sun-hours per year achieved, the total production is not reached.
- In some cases it proved to be hard to find neighbours to invest in the solar panels. This possibly has to do with the fact that with the current financial crisis, some people find it hard to invest €250 at once in food with a return period of 6 years. Another reason is that the farm sometimes is too far away from a populated area to be appealing to enough potential investors.

Lessons Learnt

In practice the Farmer meets Neighbour project works best for farmers who have a commercial activity (e.g. a biological farm shop) alongside their day to day farming activities. It is easier to reach potential investors and the project can draw more customers to the store while at the same time potential investors have a good selection to choose from when they come to collect their ‘share’.

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Figure 1: Participants Farmer meets Neighbour

Simple CO_2 Assessment Tool

Aim: Development of a simple CO_2 Assessment Tool for homeowners

Objectives:

- To enable homeowners to assess the energy efficiency of their home and to relate this to the 'average' (Spanish) home
- To promote good practice behaviour and technologies which lead to a reduction in energy demand and CO_2 savings

Location: Spain

Target Group: the general public

Results: Over 100 students involved, 220 questionnaires answered

Under the leadership of the University of Seville (technical partner for TrIsCo) the partnership has developed a Simple CO_2 Assessment Tool aimed at enabling individuals to calculate the energy efficiency of their home. This tool engages participants by base-lining their current energy demand.

A tool such as this can help individuals understand how their behaviour has an impact on their environment, economy and society. Data such as energy demand, CO_2 emissions, Euros saved etc. are measures to demonstrate this. The development of a simple CO_2 assessment tool is important, particularly in Spain, where currently there is no tool available for the general public.

For a more detailed review of the assessment tool's development please read: Simplified CO_2 Assessment Tool for Dwelling Evaluation, *José Carlos Claro Ponce, Madelyn Marrero and Jaime Solís-Guzmán* (Annex 2)

Key Stages of Development

1. Benchmarking: Analysis of home evaluation tools currently available in the UK, Sweden and The Netherlands
2. The Environment Centre's questionnaire evaluation
3. Transformation of the social questionnaire into a SEAT
4. Making the calculations and correction factors definitions
5. Analysing results from over two hundred users.
6. Analysis of findings from the UK and Spain

Benchmarking Evaluation Tools (Stage 1)

The first stage was to analyse current professional evaluation tools, comparing their application and legal frameworks. Several professional evaluation tools have been developed by European counties to determine the energy demand and CO_2 emissions generated by the building sector. This is achieved through the use of computer simulation tools or energy certification systems, which are used by engineers, architects or other professionals, see table 1. This work was complemented by a review of carbon or sustainability calculators currently used by homeowners.

Table 1: Energy certification in Europe (UK, France, Germany and Spain)

Characteristic	European Union (2002/91/EC)	United Kingdom	France	Germany	Spain
Compulsory	NO (only public buildings > 1.000 m2)	YES, mandatory in new buildings	YES, mandatory in new buildings	YES, mandatory in new buildings	YES, mandatory in new buildings
Software	NO	YES (SAP)	NO	NO	YES (CALENER)
Authorized certification	--------	Certified Profession-als	AFNOR+ CSTB	Certified agency by DENA	Administration
Public institu-tion	European Union Council	--------	ADEME (Energy and Environment Agency)	DENA (German Energy Agency)	IDAE and Ministry of Public Works

Simpler tools:

- Carbon calculator, UK: http://carboncalculator.direct.gov.uk/index.html)
- Green Street, UK: http://envirowise.wrap.org.uk/uk/Our-Services/Tools/Green-Street.html)
- Water Energy Calculator, UK: http://www.energysavingtrust.org.uk/watercalculator/flashcalculator
- Energielastenverlagen, The Netherlands: http://www.energielastenverlager.nl/ELV/Energielastenverlager/Kb?init=true#)
- Energikalkylen, Sweden: http://www.energimyndigheten.se/hushall/Energikalkylen/)

From questionnaire to web-based SEAT (Stages 2-4)

A questionnaire used to calculate reduced SAP from the Environment Centre (UK) was analysed and adapted:

- to meet other countries requirements – including or removing questions for example; ventilation and cooling systems (used in Spain), alternative building materials
- for the general public or non-technical user – simplifying the language
- the calculation procedure - Fixing results for easier calculations

CO_2 calculation

Picture 1: Progress of questions to CO_2 calculation

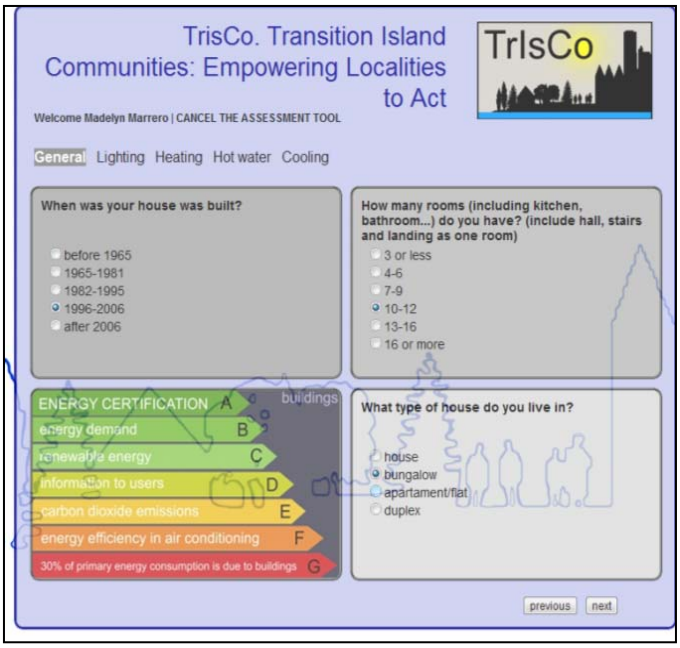
Total CO_2 emissions for a building were calculated as follows:

- dwelling surface (m^2),
- energy consumption per building shape
- correcting factors (Fr)
- average energy consumption
- calculation of CO_2, depending on energy sources

The tool was developed with reference to key guidelines and software tools used in Spain:

- the Building Technical Code (Código Técnico de la Edificación)
- LIDER – a tool used during the design phase to calculate (and limit) the energy demand of a building

- CALENER – a tool calculating the energy rating of a building. It compares the modelled building against a 'standard' building of similar characteristics analysed in a field study.



The web based asessment tool enables the user to select the required language: Spanish, English or Italian. Users are able to request a response to their calculation with hints and tips of measures and behaviour that can improve the energy efficiency of the building, reduce energy demand, save CO_2 and save money.

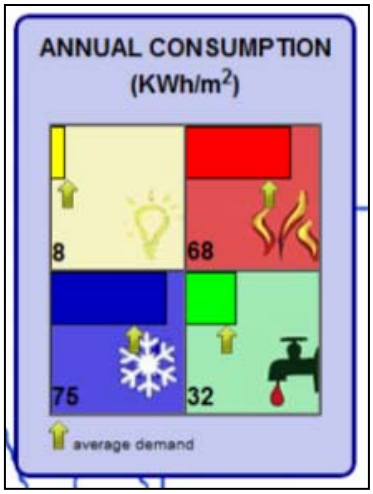
Questions are colour coded depending on the key areas needed to calculate the CO_2 emissions: general (building characteristics), lighting, heating, hot water and cooling.

Picture 2: Simple CO_2 Assessment Tool, web interface

As progress is made, the tool updates the calculation — annual energy consumption of the building (kWh/m^2) in terms of lighting, heating, cooling and hot water. The user can compare the calculations for their home against the average demand a similar building (yellow arrow), see picture 3.

Once the questionnaire has been completed, final calculations of the annual energy consumption (kWh/m^2) and the annual CO_2 emissions (kgCO_2) are shown.

For graphic representation the user's CO_2 emissions of the home are shown on a scale from good (green houses) to bad (red houses). A link is made between the annual CO_2 emissions of the home and the size of forest (in terms of football pitches) needed to offset the emissions, see Picture 4.



Picture 3: Annual energy consumption

Picture 4: Final CO_2 emissions calculation

Tool Management and adaptation

A password protected administration area of the tool has been created to ensure flexibility of the tool. Administrators can adapt the tool: edit questions, the formulas which calculate the energy consumption and emissions and the coefficient (correcting factors). Copies of the completed questionnaires can be accessed from the back-end of the tool.

Testing and Evaluation (Stages 5 – 6)

After several refinements, partners were asked to complete questionnaires in their region to provide an initial data set for evaluation. Partners sent the completed questionnaire to the university for analysis.

Over a 100 students from the University of Seville's Sustainable Construction course were involved in completing the questionnaire making recommendation to simplify the questionnaire language (May 2010), and by trialling the web based version of the tool (May 2011). Findings from the trial suggest the tool is easy to use and understand.

Conclusions and Reflections

- It is difficult to determine energy demand from statistical data
- It is difficult to adapt questions for the non- technical user
- The calculations are based on an 'average' dwelling
- Currently deviations from the tool compared to official CALENER calculations is 30%
- The tool can be even simpler. Some questions can be combined and some more experiments will be performed in order to identify the most important questions.
- A PhD thesis will be developed in the next two years to investigate a simpler way of calculating the CO_2 emissions and energy demand in dwellings.
- Masters students in the School of Building Engineering in the University of Seville will do research work on the tool results and other official energy certification tools.

Contact and Further Information

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The Simple CO_2 Assessment Tool can be accessed here: http://triscoproject.perezmon.com/start.php

Publications:

1. Simplified CO_2 Assessment Tool for Dwelling Evaluation, *José Carlos Claro Ponce, Madelyn Marrero, Jaime Solís-Guzmán*
2. Transformation of a Social Questionnaire into a CO_2 Assessment Tool for Dwellings, *José Carlos Claro Ponce, (under evaluation)*
3. Assessment of International Initiatives Aimed to Promote Energy Saving in Buildings, *Mª Desirée Alba Rodríguez, Madelyn Marrero, Jaime Solís-Guzmán, Rafael Llácer Pantión,* delivered at the Congress on Energy and Environment Engineering and Management (CIIEM), 26th and 27th May, 2011, Mérida, Spain.

Incorporating a Sustainable Construction module into the Building and Engineering Curriculum

Aim: Embedding sustainability into building and engineering courses

Objectives:
- To train future architects, designers and building engineers on energy efficiency in buildings
- To learn from good practice techniques and initiatives across Europe (lessons from TrIsCo)

Location: Seville, Spain

Target Group: Students

Results: Over 300 students involved each year

The **University of Seville** has recently embarked upon a new Building Engineering degree course and identified the opportunity to incorporate a sustainable construction module into the curriculum. The TrIsCo project presented an opportunity to learn from practical examples and case studies for the students. As part of the Sustainable Construction module they undertook a range of activities including:

- Participating in study tours in the Andalusian region
- Assisting in the development of a simple CO_2 assessment tool
- Research good practices, policies and initiatives for energy efficiency across Europe
- Analysis of case studies from TrIsCo partner regions
- Feasibility study: renewable energy options for Viimsi Rural Municipality, Estonia

Study Tours

Students participated in several study tours to learn from practical examples of passive strategies for energy saving in buildings and the University Solarkit Project which competed in the 2010 European Solar Decathlon in Madrid, Spain.

Passive strategies for Energy Saving in Buildings – Language Institute, University of Seville

The students visited the university's Instituto de Idiomas (Language institute). Built ten years ago (2001), the institute's design incorporates sustainability and energy saving strategies focusing on building use, natural lighting and ventilation, ventilated facades, shading and vegetation.

The architect guided the students who were encouraged to evaluate the effectiveness these strategies. Strategies identified as not working were related to the actions of the building users and distribution changes during the lifespan of any building.

Solarkit Project, Seville

Students had the opportunity to visit Solakit an ambitious university research project located by the Guadalquivir River in Seville. The project – led by the School of Architecture – developed a removable house prototype that was low cost, energy self-sufficient and adaptable to different locations. The project competed in the 2010 worldwide competition Solar Decathlon Europe coming in 12th place.

Development of a simple CO_2 assessment tool

The University of Seville has developed a web-based CO_2 assessment tool which uses a simple questionnaire to calculate annual energy demand and CO2 emissions for a domestic property (see **Simple CO_2 Assessment Tool pg. 74** for more information).

An initial evaluation of the tool (May 2010) was performed by over a hundred students completing the questionnaires for their dwellings. Students also made recommendations to simplify the language used in order to make it more accessible for a non-technical user. Through this, the students learnt about the different aspects of a home that determine its energy consumption.

The students took part in a second evaluation in May 2011 discussing the adapted questionnaire with approximately 100 students' trialling the web application version of the tool. The findings show that the tool is easy to use and understand. Data from this second evaluation will be used for the future development of the tool.

Best Practices for Energy Efficient Buildings

Over 300 Sustainable Construction students undertook a research project to identify good practices for energy efficiency in buildings across Spain. 17 best practices have been identified as of June 2010. (See **Best Practices for Energy Efficient Buildings pg. 81)**

Feasibility study: renewable energy options for Viimsi Rural Municipality, Estonia

Viimsi Vallavalitsus (Viimsi Rural Municipality) in Estonia is seeking to find sustainable energy solutions for off-grid communities in the region. As technical partner for the project, the University of Seville undertook a feasibility study to assess renewable energy options for the region. The study analyses the most significant impacts: technological, economical, environmental and social, and compares different possible solutions.

Key Recommendations

- Reduce high energy demand by improving the building envelope in terms of wall and loft insulation and glazing.
- Further reduce fuel consumption by using renewables for generating electricity
- Photovoltaic systems were considered not viable due to prevailing weather conditions (not enough sunshine hours)
- Geothermal systems were also considered inappropriate due to the highly saline nature of the soil (which reduces heat pump lifespan)
- Return of investment of photovoltaic and geothermal systems will be considerably longer than for the other two alternatives analysed.
- The report proposes further testing of micro wind turbines. Currently there is little information on performance of these systems in difficult weather conditions.
- The use of domestic biomass boilers is recommended; analysis has shown positive impacts not only in terms of energy generation but also in social and economic development.

Evaluation and Lessons Learnt

The course has been significantly improved by the lessons learnt through TrIsCo. Students have benefitted greatly from access to real data and the experiences of partners across Europe; the practical element of the course was particularly successful.

Through the analysis of best practices (across Europe) students have become aware of the similarities between different countries and their initiatives; and how they can be incorporated into their future construction projects.

Finally using a simple dwelling evaluation tool, SEAT, students gained a better understanding of the more complicated professional software which they will use to calculate energy demand and certifications of buildings.

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Best Practices for Energy Efficient Buildings

Aim: Identifying best practices for energy efficient buildings

Objective: To promote good practices for the use of technologies and behaviours within buildings which lead to a reduce energy demand and CO_2 savings.

Location: Spain

Target Group: Students, construction engineers, building managers, designers, architects

Results: Over 300 students involved and 17 best practices identified

The European community is committed to the unquestionable need to reduce CO_2 emissions and other greenhouse gases related to energy consumption. Approximately 30% of EU energy demand is attributed to residential and commercial buildings. As a means of promoting responsible energy consumption, public and private sectors have launched good practices that reduce energy consumption by encouraging more efficient energy usage and by promoting the use of renewable technologies.

Sustainable Construction students (over 300) from the University of Seville undertook a research project to identify good practices for energy efficiency in buildings across Spain. 17 best practices have been identified as of June 2010.

1. Good Practice Manual for Building Users

Users are provided with information about their own homes in a manual that encourages behaviour of the occupants in accordance with the requirements for the proper operation of installed systems and the building. This manual offers various techniques that help users to reduce energy consumption, for example:

- The use of natural ventilation
- The adjustment of the temperature of the heating thermostat in accordance with the season.

With the proper use of the house and its facilities, significant savings in energy consumption can be achieved.

Further Information

http://www.eco2site.com/arquit/practicas.asp
Guide to Environmentally Good Practices in Building Construction, Website:
http://www.ambiente.gov.ar/archivos/web/MBP/File/Buenas%20Practicas%20en%20la%20Construccin%20y%20Demolicin.pdf

2. Solar City of Seville: Photovoltaic Network on Municipal Buildings

A network of PV-grid installations is to be located on municipal buildings in Seville. The installation of 53 PV systems is planned for public buildings, alongside this a series of informative and educational actions and campaigns is planned. The campaigns will be delivered in order to raise public awareness of these technologies based on renewable energy sources and of the proper use of energy.

The use of these or other clean sources of energy is promoted through publicity campaigns. Users see a key institute in this case the local authority leading by example.

Further Information

- http://www.redciudadesclima.es/
- http://www.agenciaandaluzadelaenergia.es/agenciadelaenergia/nav/com/portada.jsp

3. Training and informing employees on environmental issues

Informing workers through training and examples of good practice (including manuals and brochures with illustrations). It is intended that the courses will be held during working hours or workers will be compensated if they are held outside of core hours.

A greater environmental awareness by workers encourages the implementation of an environmental management system in the company. (ISO 14001)

Financial framework

The European Social Fund has contributed to the development of a framework through which construction companies have access to educational tools that enable them to address the environmental challenges facing the construction industry.

Further Information

- http://www.sogama.es/pdf/sensibilizacion-ambiental/manuais/edificacion.pdf
- http://www.croem.es/Web/CroemWebAmbiente.nsf/0/9666a8e6778c090341256c5b00441ae2?OpenDocument
- http://www.construmatica.com/construpedia/Categor%C3%ADa:Buenas_Pr%C3%A1cticas_Ambientales_en_las_Obras_de_Construcci%C3%B3n

4. Energy Certification

Energy Certification for newly constructed buildings has been a legislative requirement since 2007, with a certificate required for major building renovations since 2009. This requirement has come from the European Commission and is overseen in Spain by the Ministry of Industry, Tourism and Trade.

European Legislative context

- Directive 93 / 76/CEE. Policy intended to reduce CO_2 emissions by improving energy efficiency.
- Directive 2002 / 91/CE. Energy efficiency of buildings. Progress and concretion of the lines of action set out in Directive 93 / 76/CEE.

Spanish legislative context

- ROYAL DECREE 47/2007, of 19 January, by which the Basic Procedure is approved for the certification of energy efficiency of newly constructed buildings
- Building Technical Code (Código Técnico de la Edificación (CTE). Basic Document "DB HE Energy saving**"**

Detail

A certificate and energy efficiency rating is required when any building is sold. In order to achieve this, the building's energy consumption must be modeled.

During a building's design phase, the energy demand of the building is calculated. Currently, the only recognised program in Spain is LIDER. The program models the total electricity consumption data from a description of the building which includes characteristics of the surrounding area, ventilation and orientation, indoor climate, the existence of passive solar systems and solar protection, heating facilities,

and lighting.

The next step is to calculate the energy rating of the building; the only recognised program in Spain is CALENER. This tool compares the modelled building against a "standard" building of similar characteristics, located in the same geographical area, whose energy performance has been analysed in a field study.

Finally, using this category rating, (from G to A, G being the least energy efficient and A being the most energy efficient), the energy certificate and provisional label are issued. Once the building has been completed, the provisional certificate and energy rating are compared to the actual energy performance.

The result of the energy rating of the building will be expressed in the energy efficiency label: these labels must be included in any promotion on the sale, thereby enabling buyers to compare energy efficiency of prospective purchases.

It is difficult to implement a verification system that demonstrates the proper energy operation of the building due to the large number of variables that characterise buildings. Thus such verification may be possible by means of major simplifications that do not faithfully reflect reality.

Energy labelling can stimulate awareness amongst building users and designers. This can has a positive effect on consumption and building design.

Financial framework
There are a variety of grants and subsidies available:

- Advance Energy Efficiency Grants are available in Madrid and managed by the Ministry of Economy and the Treasury.
- Public subsidies for energy efficiency and audits are available in Catalonia and managed by the Department of Economics and Finance of the Government of Catalonia.
- Energy efficiency subsidies are available in Andalusia and managed by the Andalusian Energy Agency.

Further information (available in Spanish)
Energy efficiency certification of newly constructed buildings:

- http://es.csostenible.net/legislacion/rd-472007-certificacion-de-eficiencia-energetica-de-edificios-denueva-construccion/
- Energy efficiency rating for buildings: http://www.arquibio.com/calificacion-de-eficienciaenergetica-para-edificios/
- R.D. 47/2007: http://www.coasevilla.org/raiz/visado/pdf/rd_47_2007.pdf
- Energy Certification of Buildings: http://www.terra.org/articulos/art01870.html

5. Solar Thermal Energy Systems on Buildings

Installation of solar thermal energy systems on buildings has been a legislative requirement for newly constructed buildings since 2006. This requirement originating from the European Commission is overseen in Spain by the Ministry of Industry, Tourism and Trade.

Under the Technical Building Code, the Basic Document on Energy Saving comes into force, which, through its basic requirement, HE 4, provides a minimum solar contribution for solar water heating. Its operation is simple: an element called a receiver allows a fluid to circulate within its interior, which will carry out the solar heat transfer to wherever the heat is to be used.

Hot water production is the application of solar energy which, on a daily basis, is proving itself to be more profitable and widespread. The constant demand for hot water throughout the year allows a faster payback than for space heating. The optimum solar element is determined by establishing a balance between the cost of the receivers, the economic savings provided by the installation, and the repayment period of the installation.

European legislative context: Directive 2009/28/CE Promoting the use of energy from renewable sources.

Spanish legislative context

- Technical Building Code (CTE). Basic Document, "DB HE Energy Saving"
- National Plan of Action for Renewable Energies in Spain (PANER) from 2011 to 2020
- Municipal Bylaws
- Laws at a Regional level

Incorporating thermal solar energy systems in a construction project raises the budget by 5%; which some may find undesirable. However, increasing electricity and gas prices will result in shorter return on investment.

Further Information

- Energy and sustainable development. Renewable Energy Plan: http://www.mityc.es/energia/desarrollo/EnergiaRenovable/Plan/Paginas/planRenovables.aspx
- National Plan of Action for renewable energy in Spain:
- http://www.ebbeu.org/legis/ActionPlanDirective2009_28/national_renewable_energy_action_plan_spain_es.pdf
- Andalusian Energy Agency: www.agenciaandaluzadelaenergia.es

6. Pale Colours and Dimmers

Painting interior walls with light colours can reduce the demand for artificial light. This can be complemented by the installation electronic dimmers to regulate the light intensity required in accordance with the time of day and the rooms.

Further Information

- www.diputacionavila.es/fcst/apea/ahorro.php
- www.invenia.es/oepm:e01104817
- www.miliarium.com/Monografias/Energia/Eficiencia_Energetica_Renovables.htm

7. Installation of motion detectors in new buildings

Motion detectors provide functionality and security, in addition to significant energy savings. When these are placed in locations such as stairs, hallways, lobbies, and entrances to houses, they can represent an energy saving of up to 20%. The investment required for these products is relatively low; therefore the return on investment is short.

However, these detectors are not recommended for installation in places where the occupation is prolonged, such as offices, and living rooms.

Legislative framework: CTE. HE DB. Energy saving, requires the installation of motion detectors in areas of sporadic use.

Further Information

- http://www.consumer.es/web/es/bricolaje/electricidad/2003/01/13/56341.php
- http://www.coati.es/brico7.asp

8. Installation of double-glazed windows (i.e. Climalite Plus) in new builds)

Climalit Plus is an innovative glass with a very high light transmission (allowing individuals to enjoy the natural light) that is designed to greatly reduce energy losses through the glazing. This can improve indoor comfort and reducing drafts during winter months. Conversely, in the summer solar gain can be halved through using this product; helping to maintain a comfortable temperature inside the room. It is a product that helps to reduce energy demand in the home and contributes to reducing greenhouse gas emissions.

Currently there are plans to establish subsidies to replace inefficient windows in Madrid (Plan Renove).

Further Information

- http://www.climalit.es
- http://www.aislayahorra.es/13.html

9. Use of materials with eco-labels and environmental statements

When opting for a specific product, consumers should know that they are faced with both regulated and unregulated eco-labels. The former are awarded by a government agency and therefore offer greater credibility, while the latter are self-declared environmental credentials promoted by manufacturers.

Eco-labeling and statements are used to promote the environment benefits of a product and can raise the consumers' awareness of such materials. It is important to highlight the difference between legitimate eco-labeling and the self declaration of materials by manufactures.

Legal framework

- ISO Standard 14024:1999: Environmental labels and declarations - Type I environmental labelling - Principles and procedures.
- ISO Standard 14021:1999: Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling)

Further Information

- http://www.construmatica.com/construpedia/Ecoetiquetas_y_Declaraciones_Ambientales
- http://www.eco2site.com/arquit/practicas.asp
- Guide to Environmentally Good Practices in Building Construction: Website: http://www.ambiente.gov.ar/archivos/web/MBP/File/Buenas%20Practicas%20en%20la%20Construccin%20y%20Demolicin.pdf

10. Installation of rainwater tanks to supply toilets

This involves a system for the collection of rainwater and for its channelling into a reservoir tank that supplies the toilet cistern. An auxiliary water inlet pipe is connected to the supply network of the building, so that in the case of supply failure from the rainwater tank, water is still available. This system is used mainly in areas of abundant rainfall.

Using a rainwater system can reduce demand (from a water company), resulting in cost savings in the medium to long term.

Further Information:

- http://www.eco2site.com/arquit/practicas.asp
- Guide to Environmentally Good Practices in Building Construction, Website: http://www.ambiente.gov.ar/archivos/web/MBP/File/Buenas%20Practicas%20en%20la%20Construccin%20y%20Demolicin.pdf

11. Installation of biomass boilers for heat generation in schools

The use biomass boilers in newly constructed buildings has been mandatory since 2007. The Building Technical Code (CTE) allows the use of biomass boilers in place of solar energy and is therefore similar to the energy supplied by solar receivers required by CTE in Section HE. The Junta de Andalucía and Ministry of Industry, Tourism and Trade oversee this policy.

Biomass boilers are fuelled by pellets of wood, dry olive pits, and crushed almond shells: in general with a dry biomass particle size no greater than 8 mm. The heat produced with this fuel is utilized to meet the heating demands of building.

Burning biomass is CO_2 neutral (there is no increase in atmospheric CO_2 since the carbon released is the same as that which will revert back in a natural way, through photosynthesis, to plants). However, the carbon emitted by petroleum fuels (including natural gas) comes from carbon that has spent millions of years underground, releasing it back again into the atmosphere and thereby increasing levels of CO_2.

This type of boiler requires the installation of storage containers for fuel, located near the boiler. The maintenance and operation of the boiler requires constant, skilled supervision in the form of a person responsible for the acquisition and quality control of biomass, for the system control and for the periodic cleaning and removal of ash.

The Ministry of Innovation has established a €30 million fund to boost the use of renewable energy (installation of biomass boilers). Subsidies vary between 30% and 50% of the total cost of the installation, depending on the region.

Further Information

- http://www.innovasolar.com/
- http://www.cecu.es/campanas/medio%20ambiente/res&rue/htm/dossier/5%20biomasa.htm
- http://www.idae.es/
- http://inove-ecoenergia.com/

12. Installation of air injector systems in tap fittings

This device consists of a fine grid overlay and a small side vents where the air is absorbed. The system is based on the Venturi effect, whereby fluid passing at high speed creates a vacuum and sucks in air. The grids mix this air with the water which results in a slower flow used despite giving the impression of supplying a greater quantity of water. Moreover this method reduces splash.

This change in the tap fittings requires very little maintenance, only occasional cleaning, and causes very little discomfort to the user. According to calculations by the Sustainable Living Foundation, the

consumption of a family of four is approximately 220 m^3 per year and, if these devices are used, this can be reduced to 130 or 140 m^3; a saving of between 30 and 40%.

Further Information

- http://www.alquienvas.com/productoNew0.asp?id=716&idioma=sp&item=21
- http://www.cicloverde.org/aireador-estabilizador-grifo.html
- http://www.vidasostenible.org/observatorio/f2_final.asp?idinforme=658
- http://www.vidasostenible.org/observatorio/f2_final.asp?idinforme=510

13. Installation of window frames with a thermal bridge in new buildings (residential and commercial)

By equipping new buildings window frames with a thermal bridge break, the interior temperature becomes less affected by the outside temperature, which results in significant energy savings for the users of these buildings.

Legal framework - CTE. DB. Energy Saving and DB. Protection against noise pollution

Further Information

- http://www.technal.es/
- http://www.cortizo.com
- http://www.extruperfil.com
- http://www.idae.es

14. Installation of A (energy) rated appliances in new build homes

Nowadays, the economic crisis is leading construction companies and developers to search for new business strategies, amongst these are the sale of homes with fitted kitchens that include a series of appliances. The intention is that all appliances installed are of energy rating A and that induction hobs are chosen instead of glass-ceramic hobs. These energy efficient appliances have lower running costs.

Users receive class-A appliances, which clearly indicate the benefits of energy savings. Moreover, at a future date at when renewing these appliances, the users will be well aware of the new appliance purchase classified as Type A. Users quickly identify these appliances through the current official labelling system. However, A (energy) rated appliances tend to be more expensive than less energy efficient alternatives.

Further Information

- http://www.idae.es/
- http://www.mma.es/portal/secciones/formacion_educacion/recursos/rec_documentos/vida_cotidiana.htm

15. The use of low consumption light bulbs

Compared to traditional incandescent bulbs, low consumption bulbs present many advantages:

- They are more efficient, in that they consume 80% less energy than traditional incandescent bulbs
- They are cheaper, lasting at least 6 times longer than traditional bulbs
- Their cost is recovered in less than 1 year
- They are more environmentally friendly since, in comparison with traditional incandescent bulbs, they substantially reduce CO_2 emissions that are harmful to the environment.

ENDESA is a voluntary programme where companies sign agreements to install these light bulbs.

Further Information

- http://www.idae.es/index.php
- http://www.juntadeandalucia.es/index.html
- http://www.amiasociacion.es/
- http://www.cenifer.com/
- http://www.censolar.es/

16. Replacement of traditional power sockets with modern sockets which incorporate an on-off switch

The standby mode often means that televisions, VCRs, DVD players, sound systems, and computers continue to consume energy even when not in use. By installing power bases with cut-off switches, electronic equipment can easily be completely switched off, thereby preventing unnecessary expenditure of energy otherwise caused by the residual energy consumption of electronic devices.

The use of these types of power sockets can results in an average saving of €40 a year per household.

However, the user must remember to shutdown the equipment from the cut-off switch. In the same way as the light switch can turn off the lights when required, the cutoff switch will leave the appliance without power.

Further Information

- https://www.facua.org/es/facua.php
- http://www.ugr.es/~gabpca/vida-diaria.pdf
- http://www.camaramadrid.es/asp/pub/docs/guiabuenaspracticasccimadrid.pdf

17. Construction of roof gardens on flat roofs

The construction of roof gardens increases the insulation of buildings in a natural way by increasing the thickness of the flooring and by incorporating natural vegetation, thereby offsetting the CO_2 production from the construction activity itself. By improving thermal insulation in the flooring, a reduction in energy consumption is achieved. Roof gardens require a lot of maintenance and a good knowledge of the system by the user.

Further Information

http://www.zinco-cubiertas-ecologicas.es/

Evaluation

The identification and analysis of best practices (across Europe) has resulted in the students becoming aware of the similarities between different countries and their initiatives; and how they can be incorporated into their future construction projects.

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Eco Day on Gotland

Aim: Organising a large scale public event to promote energy and environmental best practices on Gotland

Objectives:

- To inspire the people of Gotland to live more sustainably
- To focus particularly on solutions from Gotland – in 2010 the theme was energy and energy optimisation

Region: Region Gotland, Sweden

Target Groups: the general public, Region Gotland staff

Results: Approximately 1,000 people attended the event, 1.75% of the island's population.

Background

Region Gotland hosts an annual Eco Day event for the region's staff and the general public. The development of this type of initiative has arisen from the need to inform and engage locals and provides a valuable opportunity for the municipality to spread local information to its inhabitants.

Detail

The Eco Day's main purpose is to inspire all inhabitants on Gotland to live in an environmentally and climate-friendly way. Focusing on solutions from Gotland the theme of 2010 event was energy and energy optimisation. The day was divided into an afternoon and evening session: the former for municipal employees, the later for the general public.

Two panel debates were held during the event. The afternoon debate focused on the position of the two dominant energy sources on the land: wind power and bioenergy, and what the municipality can do to facilitate the transition to renewable energy. The panel was led by Jonas Nilsson, Eco-strategist of the executive office and was comprised of Gunnar Gustafsson (wind power), Johan Malmros (solid biofuels) and Anders Lindholm (biogas). Gunnar and Johan are from Region Gotland's Urban Planning department; Anders is from the Region's Executive office.

The evening panel debate focused on how the transition to renewable energy will affect everyday life on the island and what development potential there is. The evening panel was comprised of representatives from the growing band of companies with ties to Gotland's renewable energy sector: Andreas Wickman (Wickman Wind AB), Magnus Ahlsten (Biogas Gotland AB) and Ola Wiman (GOTFire AB).

The debate particularly focused on the voluntary agreements Region Gotland has entered in to: (the Pact of Islands and the Covenant of Mayors), Bengt-Olof Grahn (Urban Planning department) and Helena Andersson (Executive Office) gave details of the municipality's undertakings to achieve the EU's climate goal for 2020. Many people feel that voluntary agreements (entered into by EU regions and municipalities) are driving climate initiatives forward.

Later in the day, Johan Malmros spoke about energy optimization in the municipality's properties. Over the last ten years, Gotland has worked methodically to lower energy consumption by reviewing heating, lighting ventilation, equipment etc. This work has saved Region Gotland 167 million SEK (approximately £15.8 million) since 1998.

Other presentations on renewable energy, energy optimization and fair trade (Gotland was awarded FairTrade status in October 2010) were made throughout the day. Guest Speaker Vera Simonsson, '*Female Adventurer 2009*' gave a fascinating talk about her latest expedition: an 80 day, 1,200km ski trek with three friends along the spectacular coast of Baffin Island, Canada.

Financial framework

The event was funding by the municipality and environmental/event project funding.

Evaluation

Evaluation was carried out as a web-based survey amongst the municipal employees who had announced their participation in the event, the results will be used for Eco Day 2011:

- 1.75% of all inhabitants on Gotland participated in the event (almost 1,000 people)
- *Possible success factor* – people feel involved and interested in local works
- *Difficulties encountered* – finding the right keynote speaker

Lessons Learnt

This has become a much appreciated event that brings together those already engaged in environmental issues and those who are not. Region Gotland provides free transport (buses) from the countryside. This is important for enabling people from across Gotland to attend the event.

This kind of inspiration and education event should be hosted by a municipal organisation, but could also be carried out by other organisations.

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Region Gotland

Environmental Calendar

Aim: Mass communication campaign providing key information in a frequently used resource

Objectives:

- Provision of key local information on waste recycling systems, local energy and environment projects as well as useful tips on low carbon behaviour
- Linking low carbon behaviour to the natural environment and promoting a sense of ownership amongst islanders

Region: Region Gotland, Sweden

Target Group: the general public

Results: The calendar was distributed to every home on Gotland, 35,000 properties (28,000 permanent residents; 7,000 summerhouses)

Detail

The municipality identified the need to engage with every household on the island. The provision of a free calendar was seen as an excellent opportunity to share a range of information which can be accessed in one place: municipality services, upcoming events and top tips.

Through the inclusion of useful tips on low carbon behaviour and pictures of the local natural environments links can be made, promoting a sense of ownership amongst islanders.

A key factor in the development of the calendar was to provide a non-commercial product.

Various departments within the region are involved in the development of the calendar. As such a working group was established which was responsible for the annual theme of the calendar as well as:

- Choice of information per month
- Sourcing the design and layout
- Sourcing pictures (if not available within the organisation)
- Printing
- Distribution of the calendar

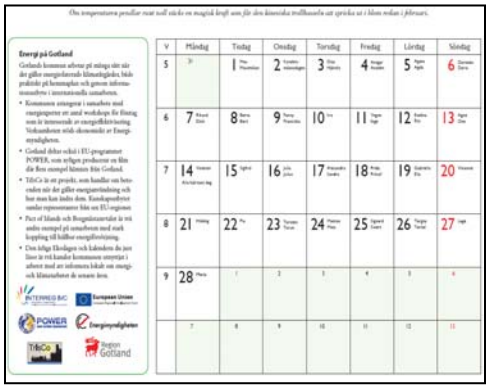
Financial framework - the calendar is financed by Region Gotland.

Evaluation

The 2011 calendar was distributed to 35,000 households on Gotland (28,000 permanent residents; 7,000 summerhouses). The calendar is a much appreciated, widely read item from the municipality which covers information on different environmental issues. An advantage of the calendar is that it will be used

by many householders for 12 months compared with other hand-outs which may end up in the recycling bin the next day.

The production of a local environmental calendar could also be carried out by other organisations within the TrIsCo partnership.



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A copy of the calendar (in Swedish) is available for download:
http://www.gotland.se/imcms/54900

Public Campaigns for Solar and Biomass Heating

Aim: Promoting renewable heating systems to businesses and the residents of Gotland.

Objectives:

- To provide information on business opportunities within the renewable heat sector (solar and biomass)
- To promote renewable heat to the general public

Region: Gotland, Sweden

Target Group: the general public, local SMEs (contractors and suppliers), national suppliers

Results: 23 businesses were involved: 10 mainland suppliers, 13 local bio-energy and solar energy entrepreneurs.

Background

Several ambassadors for solar and biomass heating systems exist on Gotland and there are good examples of these systems in place. For example the municipality is part way through a 15 year programme to upgrade its building stock (about 500,000 m^2) of fossil fueled heating systems with biofuel ones.

The municipality views public campaigns as in important step in this programme. Every year Region Gotland organises public demonstration and information campaigns, either in the autumn, when householders are more aware that a change of heating system for the coming winter is urgent; or in the spring, giving them an opportunity to install new systems in preparation for the following winter.

Detail

Gotland identified the need to support homeowners to install renewable energy heating such as solar heating in combination with biofuel (wood logs, chips or pellets). These types of heating systems contribute to a reduced dependency upon electricity and oil for heating.

Bengt Eric Löfgren in action

A 'Climate Entrepreneurs' Fair: Solar and biomass heating systems was organised for the 7th and 8th May 2010. The fair had an exhibition of renewable heating systems and seminars (one for the general public, another for the exhibitors only). Bengt-Eik Löfgren, AFAB, a well-known expert on solar- and bio fuelled heating system agreed to be the keynote speaker at the seminars.

The municipality encouraged cooperation between mainland suppliers and local plumbers and retailers. Suppliers of solar, wood logs, woodchips and wood pellet heating systems together with local WHS installers, fuel producers, wood fuel retailers and suppliers were invited to participate in the fair as exhibitors. The municipality established a local network of entrepreneurs who were invited to planning meetings. The local businesses were encouraged to contact their mainland suppliers to involve them.

A marketing campaign in local papers and direct contact with the local SMEs and their mainland suppliers continued, encouraging them to take part in the fair.

The fair was held at Töftagarden, a hotel with renewable energy profile, on Gotland. The fair offered public seminars from Mr Löfgren. The event was financed by the municipality and the exhibitors.

23 companies were involved in the fair: 10 mainland suppliers, 13 local bio-energy and solar energy entrepreneurs. Feedback from the businesses was positive.

Picture above: Selling bio fuel boilers!

Evaluation
Timing and planning are critical to the success of an event such as this.

Possible success factors - Exhibitors that find events such as this useful to widen their markets and develop more renewable energy heating demand.

SWOT Analysis

***S**trengths:* A 100% renewable energy heating system which will be economically competitive compared to oil fuelled or electrical system.

***W**eaknesses:* Lack of knowledge of the advantages of the combined systems. Higher installation costs.

***O**pportunities :* A better regional economy thanks to less imports of fossil fuel and the development of a local energy market. Lower heating costs.

***T**hreats:* Lack of entrepreneurs and reliable information can lead to unwillingness to install combined system where one system can do, but with less environmental and economic performance.

Lessons Learnt
Engaging local SME's is a key factor for stimulating a solar and biomass heating market. Campaigns such as this can be supported by feasibility studies of biomass and solar heating systems.

A wide range of suppliers and contractors were involved in the campaign: WS (water, heating & sanitary installations), electricity, wood pellet heating equipment, solar panels, suppliers and distributors of pellets. SME's within the construction and consultancy sector are also an important group to engage. There is also potential to engage other business sectors i.e. tourism or architecture.

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Region Gotland

Changing Home Energy Use through School Education Programmes

Aim: Promoting sustainable lifestyles to students and their families

Objectives:
- Educating children to save energy and lead sustainable lifestyles
- To encourage the children to share this knowledge with their families and communities

Region: Prangli Island and Püünsi, Viimsi, Estonia

Target Groups: school children, families

Results: 65 children were involved.

Viimsi Vallavalitsus (Viimsi Rural Municipality) has developed a school education programme to promote sustainable lifestyles to students and their families. The programme was designed to educate and encourage children to save energy, lead sustainable lifestyles and to share this knowledge with their families. Links are made between lifestlyes (actions in and around the homes) and the environment.

The programme was trialled at the school on the island of Prangli. As islanders the students have a common lifestyle, one that is close to nature; they already have some knowledge of sustainable living. This was built on, with the programme exploring the following themes:

- Water conservation in and around the home – kitchen, bathroom, garden
- Energy conservation – saving electricity; saving and collecting heat
- Waste reduction and segregation

Prangli Harbour

The programme was delivered to school children on the island of Prangli on 5th November 2010. The children were taken to the new diesel generator station in Prangli Harbour.

The island's electricity is produced using diesel generators. Fuel is transported (in 20 ton shipments) from mainland three times a year. The generators replaced an undersea electricity cable connected to the mainland grid that in 2001 was damaged by a ship's anchor only four months after installation. It was considered unviable to repair the cable.

The children already understand the workings and purpose of the station, however they were unaware of the potential environmental hazards (spillage in the sea could damage a variety of sea life) caused by the transportation of diesel by sea.

Moving to the schoolroom the children eagerly discussed their actions in and around the home and how things could be improved. Many of them commented that they would share this information with their parents and family.

The success of the first programme resulted in Viimsi working with Püünsi schoolchildren. In total 65 children were involved in the education programme.

5. The programme was developed using information gathered from Estonian water, energy and waste management companies/government departments.

Evaluation

The school visit was very successful with the children asking for a return visit in order to discuss what improvements they had made. Viimsi Vallavalitsus is looking to build on the programme for other schools within its district.

Lessons Learnt

Even if children can't get the message through to their parents who are making financial decisions, they have more knowledge to make their own decisions about little things that they can change immediately.

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Home Visits

Aim: Face to face advice for 'hard to reach' communities to promote energy efficient behaviour

Objective: To provide local residents with information about sustainable energy use and renewable energy sources

Region: Prangli Island, Viimsi, Estonia

Target Group: local homeowners

Results: 95 homes were visited

Many residents are not interested in attending energy saving fairs or technology demonstrations, but there are many small-scale actions that individuals can take to save energy. With this in mind Viimsi Vallvalitsus adapted a home energy assessment questionnaire[6] to meet the needs of the region and undertook a series of home visits; assisting homeowners answer the questionnaire, discussing ways to save energy and introducing renewable energy technologies.

The initiative was piloted on the island of Prangli, where most buildings are constructed in the traditional Estonian farmstead style. Insulating homes would lead to more energy efficient homes; however, this is an expensive measure, one which locals do not always consider as their first option.

Typical house construction on Prangli

The walls are constructed from timber sleepers with insulating filling between them. Common roofing materials are eterniit (asbestos), wooden shingles or lath and corrugated metal with seemingly no insulation. Most houses are one storey or have a sun tunnel. The main heating material on the island is timber.

Representatives from Viimsi municipality visited homes carrying out the questionnaires and discussing the low and no cost actions that homeowners could take such as replacing old light bulbs with energy efficient alternatives, investing in more energy efficient appliances when current appliances reach the end of their life and water saving actions and measures.

Evaluation

95 homes were visited and feedback from the homeowners was very positive. Many local inhabitants expressed an interest in learning more about sustainable living and have become aware that changes to their behaviour can make a difference.

Difficulties encountered:

Some people did not want 'officials' coming into their homes and looking at their lifestyles. However, only a few declined the visit offered.

6. The programme was developed using information gathered from Estonian water, energy and waste management companies/government departments.

Lessons Learnt

An initiative of this type can reach homeowners who would not be interested in attending a formal consultation or advice event. By carrying out home visits, advice can be tailored to the specific circumstances of the home and a friendly conversation can be initiated by the advisor. This could lead to

the development of a good relationship between the local municipality and their citizens.

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Partnership working with Co-operative Housing Associations

Aim: Addressing a lack of knowledge amongst co-operative housing associations about alternative energy production, energy efficiency and environmentally friendly behaviour

Objective: To provide local housing associations with practical advice and knowledge about renewable energy production, energy efficient measures and environmentally friendly behaviour

Region: Viimsi, Estonia

Target Group: Cooperative Housing Associations (members and Chairs)

Results: 41 attendees (38 managers of co-operative housing associations) at the National Conference

Background

37% of home owners in Viimsi live in apartments; approximately half of which were built during Soviet times, the other half within the last ten years. The materials and technologies used in these homes are not very efficient for energy or heating: Apartment blocks built during Soviet times are often dilapidated and new houses were built quite inexpensively to secure maximum profit. With the increase in fuel and energy prices and the effects of the recent economic downturn, many home owners have become more aware of the high costs of heating their homes and are looking for alternative methods for providing hot water and heating.

Home owners in apartment blocks have formed Cooperative Housing Associations (CHA), and many have joined the Estonian Union of Co-operative Housing Associations. Typically, one of the homeowners is elected to chair the association with a remit of building maintenance and repairs. Many of the members and association chairs have no real experience of estate management or maintenance.

Detail

Viimsi Vallavalitsus (Viimsi Rural Municipality) identified the need to inform members of the housing associations about energy saving measures, environmentally friendly behaviour and renewable energy production; inspiring them to take action.

Viimsi initially made contact with the National Union of Co-operative Housing Associations to investigate the issues of cooperative housing associations in Viimsi. Similar to the rest of Estonia, the associations are concerned that heating is too expensive; district heating in Viimsi is one of the most expensive in Estonia.

Enno Selirand of Viimsi Vallavalitsus

An amendment has been made in the recent National District Heating Law (01/11/2010), allowing for renewable energy heating systems in district heating areas, which was previously prohibited. Viimsi Vallavalitsus has had several meetings with the Green Party in the Estonian parliament to investigate ways of making this happen in the region.

Viimsi has worked closely with the Estonian Union of Co-operative Housing to offer local CHAs training and advice on refurbishment of houses including insulation as well as sustainable heating and hot water systems:

- allocating warmth from outgoing ventilation
- using air-water heating pumps
- and using solar batteries

Viimsi approached the Estonian Technical University to deliver a presentation focusing on cost-effective renovation techniques for apartments and introducing different technologies and materials suitable for the range of houses in the region.

An information seminar was piloted during the Estonian Union of Co-operative Housing Associations Conference in Tartu, 19th February 2011. This seminar was held to assess how this information was received by the CHAs. 41 people attend, 38 of whom were managers of co-operative housing associations.

Building on this success, Viimsi Rural Municipality is planning to host a similar information seminar for local CHAs in the autumn 2011. This event will be timed to increase members' awareness of energy saving measures and heating systems prior to winter.

Evaluation

This information seminar has been successful in raising awareness and informing cooperative housing associations of measures, products and actions to improve the energy efficiency of buildings, save money and reduce CO_2 emissions. Of particular importance was advising these groups on the advantages of installing renewable heating (space and hot water) systems. Installation of these systems would mean independence from the district heating scheme (using fossil fuels), resulting in money and CO_2 emissions savings.

Lessons Learnt

Implementing an initiative engaging cooperative housing associations to network and share knowledge on renewable energy production and the district heating system has led to increased engagement between the municipality and the CHAs. The event have stimulated a debate between these organisations focusing on the need to find better solutions to save energy and reduce money spent on heating the home.

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Co-operation with Village Societies

Aim: Engaging with island communities to gain trust and share knowledge about energy saving and environmentally friendly behaviour

Objective: To provide local inhabitants with information about sustainable energy use and renewable energy resources

Region: Viimsi, Estonia

Target Groups: Rural village communities (village elders and villagers)

Results: Members from the villages of Prangli (island) and Lubja and Soosepa were engaged through this pilot engagement initiative.

A public information campaign – consisting of a series of articles published in local newspapers- focusing on sustainable lifestyles and low carbon behaviours has been initiated by Viimsi. The campaign was designed to encourage the community to contact the municipality for more information and has resulted in a variety of individuals and organisations becoming more aware of energy saving actions and products. However results have been mixed, with fewer than expected members of the community contacting the municipality.

Many of the people living in Estonia still believe in the adage that "Good products are bought – bad products are advertised", this belief originates from Soviet times. Generally speaking, there is a mistrust of outsiders who come into the community to sell products or services.

In order to address this Viimsi municipality has worked closely with village elders (trusted members of rural communities) with a view to informing them on sustainable living and making the case for adopting new behaviours and technologies. Village elders could then cascade this knowledge their community networks.

Representatives from Viimsi municipality have attended several village elder meetings to introduce the TrIsCo project and share knowledge on energy saving and renewable energy sources for lighting, heating and hot water.

It was essential that a good relationship between the village elders, Viimsi municipality, and the villagers themselves was established over time. As such, Viimsi staff attended community events and activities prior to discussing the project or offering any advice on sustainable living.

This engagement initiative was piloted in three villages: the island of Prangli and the villages of Lubja and Soosepa (on the mainland).

After the initial meetings with village elders, Viimsi staff attended a village society meeting (15th June 2011) on the island of Prangli (145 inhabitants). Subsequently the villagers were introduced to the municipalities proposed actions for using alternative energy sources and saving energy. Many of the locals were already involved in the TrIsCo project through the Home Visits initiative.

The villagers were introduced to the project and heard about the experiences of the European partners and their efforts to reduce energy demand and promote renewable energy sources. An overview of an interregional event hosted by Viimsi (19th May 2011) was also given.

In Lubja village (428 inhabitants), there are about 70-80 members in Lubja village society. A good opportunity to engage with the village came during the summer festivities (22nd June 2011). Local people were easily reached with Viimsi staff able to strike up one-to-one conversations in an informal setting. After becoming acquainted, information and materials about alternative heating and hot water systems suitable for their local environments as well as an overview of the key achievements through TrIsCo were covered.

Viimsi staff attended a village society meeting on 28th June 2011, upon the request of the village elder who had received many queries about energy saving measures and alternative energy sources. The community was introduced to the project; measures for reducing energy needs and using alternative energy sources.

Village elders and community members agreed to provide Viimsi municipality the village society mailing-list so presentations from the recent interregional event and other relevant information could be shared with the society to stimulate discussions on possible actions and for future events.

Evaluation

This method for engaging 'hard to reach' communities has been successful. Engaging with trusted member of the community (village elders) and taking the time develop trust with village members has resulted in a good relationship with the municipality.

By making use of the existing community networks, Viimsi municipality is able to provide information on energy saving and environmentally friendly behaviours to a wider audience.

Lessons Learnt

Joining village societies to build trust and develop relationships has increased the likelihood that these hard to reach communities will change their behaviour and consider renewable energy technologies for their needs. Whilst this type of initiative has proved to be effective, it is resource intensive requiring significant staff time and a long lead-in time to affect change.

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Study Tours: Showcasing Renewable Technology Systems

Aim: Showcasing examples of working technologies to overcome preconceived ideas on renewable energy production

Objective: To promote and stimulate a debate about local renewable energy solutions

Region: Viimsi, Estonia

Target Groups: municipality staff, local citizens

Results: Four study tours were arranged with a total of 50 participants

Viimsi municipality has been working with local communities to promote and stimulate a debate about local renewable energy systems suitable for the region. As part of a wider initiative to engage the region in low carbon behaviours, the municipality identified the need to show interested parties working examples of renewable technologies. Initially the municipality investigated renewable technology systems in operation within the Viimsi region that may be of interest to citizens and municipality staff. These systems were identified through the municipality's building department, by engaging with local people and by travelling around the region. The municipality approached the owners of the systems and buildings seeking their agreement to showcase these technologies and share their knowledge and experience of using alternative energy systems.

The second phase was to promote the study tour opportunities to the community and municipality staff via e-mails, flyers and word of mouth. A total of four study tours were arranged, three of which included visits to the islands of Prangli or Naissaar. Cooperation between the municipality and local companies ensured the necessary transportation was available (boats and local cars/buses).

Study Tour #1: Prangli, 28th April 2010

EU project partners from the UK and the Netherlands participated in the study tour to Prangli. Attendees learnt about typical building construction, the history and industries of the island; its energy system and witnessed the switch from old diesel generators (for producing electricity) in the village of Idaotsa to the new generator station in Prangli Harbour.

At Idaosta's community centre, project partners met with local island elders and citizens to discuss island life and the priorities for the future of the island which included securing a constant electricity supply and encouraging more tourists to the island.

Study Tour #2: Naissaar, 11th-12th September 2010

Local municipality staff and Viimsi citizens participated in the tour which was organised to stimulate a debate about energy provision for islands such as Naissaar, and the need and opportunities to influence the national governments and environment agencies.

Key sites on the tour included:

- *Naissaar lighthouse and radar station (Estonian Coast Guard):* Previously fuelled by a diesel generator, the buildings are now powered by renewable energy. The lighthouse by solar batteries and a 5kW wind turbine; the radar and Coast Guard station by a 10kW wind turbine.

- *Dis-used Soviet military battery and sea mine platform:* The owner of the island's guesthouse is interested in developing the area for tourists
- *Naissaar Guesthouse, Männiku*: Energy production for the guesthouse is currently via a diesel generator. The owner is interested in changing this supply to a renewable source.
- *Conductor Tönu Kalijuste's 'Opera House'*: Electricity is produced by a small, 3kW wind turbine and heating is produced by solar batteries. The system was built 5 years ago and works well for a small household.

Study Tour #3: Naissaar, 20th May 2011
The focus of this study tour was more on the potential of civil and military structures to be used for tourism and to investigate possible renewable energy solutions.

Study Tour #4: Viimsi and Jõelähtme, 21st June 2011
Participants visited renewable energy systems in the municipalities of Viimsi and Jõelähtme. Sites visited included horizontal and vertical wind turbines (Viimsi) and a Passiv house in Jõelähtme.

Evaluation
A total of 50 attendees have been involved in the study tours including EU project partners (from The Netherlands, Sweden and the UK), local municipality staff, islanders and local citizens. The study tours have been very successful with positive feedback from all attendees.

Showcasing existing renewable energy systems to local citizens and municipality workers gives them the confidence that these systems work in local conditions and that it is a low risk investment for the benefits. Some small wind turbines and solar batteries are to be installed on Naissaar.

The study tours to Naissaar were hosted by the Guesthouse owner who is very interested in an alternative energy supply. As the island lacks an electricity cable linking it to the mainland, power is supplied by a diesel generator, which releases a lot of CO_2 and is quite noisy. Viimsi municipality has assisted the guesthouse owner in choosing suitable solar batteries and a small wind generator to produce electricity for the guesthouse. A project proposal (requesting money for the installation of these systems) has been submitted to a local LEADER group which supports the development of not for profit organisations and small businesses in rural areas.

Lessons Learnt

Showcasing working installations of renewable energy systems such as small wind turbines and solar batteries to people interested in alternatives sources for generating electricity and heating is often more useful than presenting lectures or attending fairs.

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ABC Energia

Aim: Promoting energy efficiency in local authority buildings.

Objectives:

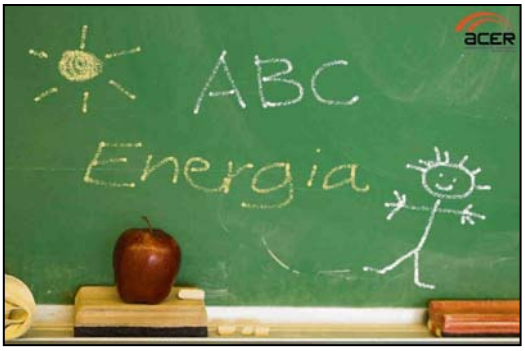
- To achieve 500 TEP avoided of consumption in public buildings
- To increase the visibility of energy efficiency initiatives for public buildings
- To encourage direct involvement of local authorities in new energy policies
- To stimulate interaction and communication between citizens and local authorities about energy efficiency issues and opportunities

Region: Province of Reggio Emilia, Italy

Target Groups: Local authorities, local citizens

Results:

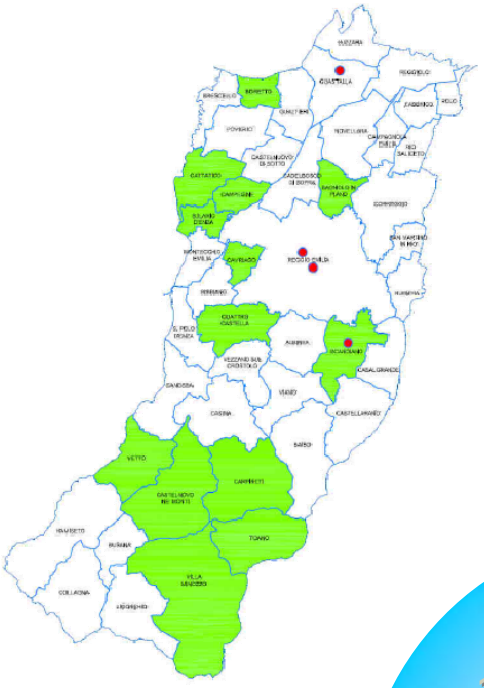
- 200 TEP has been avoided to date.
- Establishing 13 energy information points in the project area
- Creation of a energy consumption monitoring system for the project



The 'ABC Energia' Project is an initiative designed to stimulate local authorities to promote energy efficiency of public buildings. The project is coordinated by ACER Reggio Emilia.

A target of 500 TEP (tonnes equivalent of petroleum) avoided was set by the Provincia di Reggio Emilia and 13 municipalities with a programme of interventions to improve the energy efficiency of public buildings. 30% of the required funding was secured from the Emilia Romagna Region. With such a high target, it was necessary to streamline different municipalities' projects under the control of the Reggio Emilia Province.

Municipalities in Reggio Emilia



Members of the project - Reggio Emilia Province and 13 local municipalities:

1 - Provincia di Reggio Emilia – (Project Coordinator)
2 - Comune di Bagnolo in Piano
3 - Comune di Boretto
4 - Comune di Campegine
5 - Comune di Cavriago
6 - Comune di Sant'Ilario d'Enza
7 - Comune di Scandiano
8 - Comune di Toano
9 - Comune di Vetto
10 - Comune di Villa Minozzo
11 - Comune di Castelnovo ne' Monti
12 - Comune di Carpineti
13 - Comune di Quattro Castella
14 - Comune di Gattatico

ABC Energia has created a program of interventions to improve the energy efficiency in public buildings owned by the 14 public authorities. The programme (which will be completed in the next 6 years) will incorporate the challenges faced by the municipalities' portfolio of buildings: schools, offices, leisure centres including swimming pools and community buildings.

Initiatives within the project include improved maintenance of energy plants and generators as well as installation of renewable energy systems (i.e. biomass boilers). Alongside this, the project aims to establish 13 energy information points and an energy monitoring system to record consumption across the municipalities.

ABC Energia provides an opportunity for municipalities to increase the visibility of their climate initiatives and to increase their engagement with schools and local citizens.

Tools and techniques

Citizen information and training:

The ABC Energia project aims to stimulate a good relationship between the municipality and its citizens through a range of engagement activities:

- the creation of an energy information point in 13 municipalities
- offering training opportunities and inviting citizens to meetings

These activities will facilitate an exchange of information between the two groups.

Energy Retrofit Package

ACER RE offered an energy retrofit package to the public authorities participating in the project. This pack includes a preliminary project proposal as well as details of possible financial mechanisms available and potential third-party investors. This package allows the public authorities to develop an energy retrofit programme for their public buildings and is used throughout the entire project.

Evaluation

The project began in 2009 and is currently at the stage of developing executive projects for energy saving. In line with the regional programme, all work will be completed in the next 24 months, after which the performance of the buildings will be monitored for a further three years. 200 TEP has been avoided to date.

It will be necessary to monitor savings achieved throughout the project and to share the results (reduced CO_2 emissions, environmental benefits, TEP avoided) with the local municipalities and the provinces of Emilia Romagna and Reggio Emilia.

Difficulties encountered

Local authorities valued the fact that they could receive 30% of funding for the project, however, many municipalities will find it difficult to secure the remaining 70% funding required and will therefore require a third-party investor.

Many local municipalities were unclear of the energy consumption of their public buildings.

Lessons Learnt

Municipalities are positive about the opportunities to know the real consumption situation and to improve the energy efficiency of their buildings.

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ACER Reggio Emilia: Citizen Involvement in Retrofit

Aim: Development of an instrument for citizens to assess the energy efficiency of their homes

Objectives:
- To promote the energy retrofit of social housing
- To promote the scheme to tenants
- To reduce energy consumption and energy bills, to improve the energy efficiency in buildings

Region: Muncipalitiy of S.Ilario d'Enza, Reggio Emilia, Italy

Target Group: municipalities, residents

Results: 77 tenants, one municipality and the national union of tenants were involved in the retrofit project. Tenants reported a very good level of satisfaction about the works carried out.

Building A – after the retrofit there was a 35% reduction in gas consumption and a 47% reduction in energy costs for tenants

Building B - after the retrofit there was a 32.2 % reduction in gas consumption and a 55% reduction in energy costs for tenants

Detail

This pilot initiative tackles a lack of public financing for energy efficiency refurbishment of social housing properties. The initiative aimed to reduce energy consumption, reduce energy bills and to improve the energy efficiency of the buildings with the involvement of residents.

Number of buildings: 2

Year of construction: 1952

Year of refurbishment: 2007

Number of dwellings: 44

Preliminary studies (system analysis and energy consumption) were undertaken in order to select the best measures according to a cost/benefit balance and reduction costs/payback period. An integrated building-system approach was applied to the retrofit.

Step 1 – Energy audit: to optimise the building management system, to reduce management costs, to improve the well-being and comfort of the occupants.

Key phases of the energy audit:
- survey of the building and the lodgings and interview with tenants
- survey of the systems

- survey energy consumption (gas and electricity)
- analysis of the data with development of a primary energy index

Actions

- simulation of energy savings after the refurbishment (evaluation of consumption and the primary energy index)
- development of a financial plan based on the simulation results

Step 2 - System-building integrated approach: The results and analysis of the energy audit are then incorporated into a preliminary project which applies an integrated building systems (mechanical and electric plants and building structure) approach.

Step 3- Interview with tenants: a technician interviewed tenants to identify and understand the key issues of concern to them. Generally these were adequate (sanitary) hot water and high heating costs.

Agreement with tenants, the local authority and ACER Reggio Emilia

An agreement from all tenants to share the cost of refurbishment with thelocal authority was necessary for this project to be undertaken. Tenants and local authority agreed to:

- replace existing gas boilers with a condensed boiler
- install energy meters and thermoregulation
- install roof insulation

Initially, ACER Reggio Emilia acted as the third-party to financially assist the initiative (with a return of investment in 7-8 years). Subsequently the municipality contributed two thirds of the investment partially recovering it's expenses through a 15% saving on energy costs/consumption. The tenants agreed to share one third of the refurbishment costs by forgoing part of the energy savings. The tenants' energy bills are lower than before the refurbishment, even including their contribution to the work carried out.

Management

ACER RE is now responsible for the maintenance and management of the heating systems within the two buildings. This change in authority arose from the fact that the previous manager was overcharging tenants for their energy use (see table 1.1 below).

Table. 1.1 Energy Consumption in relation with Energy Costs (2005-2006)

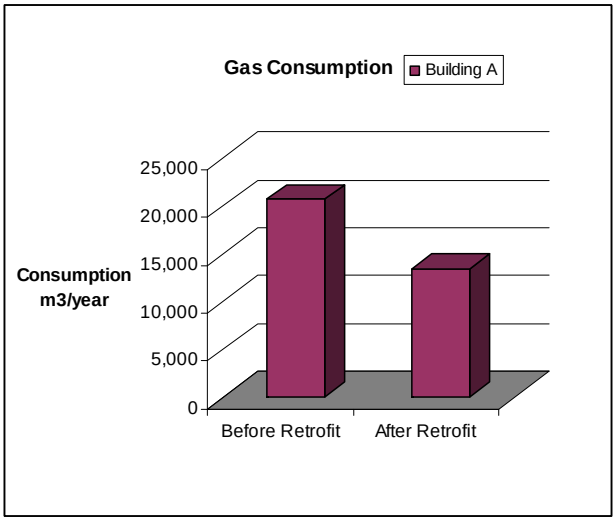
	Consumption (m3)	Estimated Cost (€)	Cost (€)	Difference (€)
Building A	20,716	14,169	19,428	5,285
Building B*	18,057	12,350	17,105	4,755

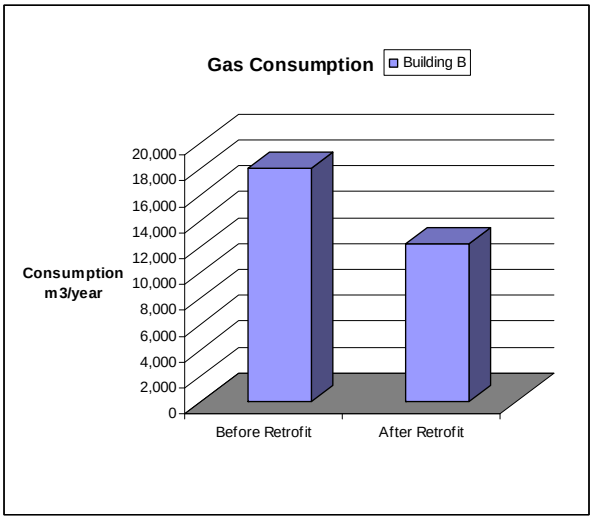
*Three apartments are vacant and the heating controls are not functioning

ACER RE is monitoring and responding directly to tenants' questions about heating management. This has resulted in a good relationship between tenants and the building manager.

Tab 1.2 Energy Consumption after retrofit (2006-2007)

	Before Retrofit		After Retrofit			
	Consumption (m3)	Cost (€)	Consumption (m3)	Cost (€)	Gas Savings (m3)	Cost Savings (€)
Building A	20,716	20,836	13,411	11,000	7,305 (35%)	9,836 (47%)
Building B	18,057	22,269	12,234	10,050	5,823 (32.2%)	12,219 (55%)





Building A			
Energy Indicators	**Before Retrofit**	**After Retrofit**	**Reduction**
Energy Performance	180 kWh/m^2a	129 kWh/m^2a	
Energy Consumption	20,716m^3/a	13,411m^3/a	35%
Heating system	Gas boiler	Condensed boiler	
Financial Indicators	**Before Retrofit**	**After Retrofit**	**Reduction**
Energy costs (€)	20,836 €/a	11,000 €/a	47%

Building B			
Energy Indicators	**Before Retrofit**	**After Retrofit**	**Reduction**
Energy Performance	180 kWh/m^2a	129 kWh/m^2a	
Energy Consumption	18,057m^3/a	12,234m^3/a	32.2%
Heating system	Gas boiler	Co-generation system	
Financial Indicators	**Before Retrofit**	**After Retrofit**	**Reduction**
Energy costs (€)	22,269 €/a	10,050 €/a	55%

Evaluation

In total 77 tenants, one municipality and one national union of tenants were involved in the refurbishment. The tenants reported a very good level of satisfaction about the works carried out.

Key success factors

- Use of an innovative financing model has proved successful
- Control and monitoring is necessary during the initial energy audit and evaluation phase
- Active involvement of the tenants is a crucial success factor throughout the life of the project
- Increased energy efficiency of buildings has improved residents comfort; before the refurbishment, some residents did not heat their flats adequately in order to reduce their energy bills

Difficulties encountered

The main limits are the rigidity of the tenants' contracts and the lack of financial mechanisms available for this type of refurbishment.

Lessons Learnt

This is an example on how a communities can come together to overcome legal and financial barriers and pursue sustainable objectives.

Lessons learnt from this initiative have been shared at 3 national SHO meetings with approximately 350 participants.

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Condomini Virtuosi

Aim: Fuel Poverty - stimulating behaviour change among tenants to save energy and reduce CO_2

Objectives:

- To inform and raise awareness among tenants of the environmental impacts caused by everyday actions
- To disseminate best practices in order to improve living conditions, save energy, reduce waste and stimulate virtuous actions

Location: Municipality Reggio Emilia, Italy

Target Groups: Social Housing tenants

Results: 3 condominiums (200 tenants) directly involved to reduce their carbon footprint

Detail

This project was based on the premise that citizens must understand their use of energy and behaviour in the home to effectively reduce their CO_2 emissions. A two-year project was developed (April 2010 – April 2012) to inform, educate and inspire residents to take action.

Three districts (North, West and South) of Reggio Emilia Municipality have been targeted through the project with ACER Reggio Emilia coordinating the initiative.

Through regular meetings with building managers and tenants the following activities are being undertaken:

- Carbon footprint calculations for the condominiums (apartments) participating in the scheme
- Implementation of energy audits to assess the best actions that the Energy Service Company (ESCO) can take to save energy; this is undertaken at no cost to the condominium
- Installation of flow regulators (taps) and energy efficient light bulbs
- Exchange of objects between the tenants, leading to both economic and environmental savings (less waste)
- Dissemination of information and knowledge to reduce carbon footprint
- Monitoring of the results

Evaluation

The carbon footprint calculation tool has been finalised and the questionnaires have been distributed.

Possible success factors - A key success factor of the project is that citizens can apply the advice given to them and take action to live more sustainably and economically. Furthermore they can promote the initiative to their peers (via condominium meetings).

Difficulties encountered

There has been some difficulty in defining the parameters and indicators necessary to calculate the carbon footprints of social housing buildings.

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Tavolo Anticrisi

Aim: Tackling fuel poverty by improving the energy efficiency of social housing buildings

Objectives:

- To identify measures and tools to fight the increasing fuel poverty in social housing, through the involvement of local institutions and businesses
- To disseminate knowledge and expertise in the field of energy saving

Location: Municipality Reggio Emilia, Emilia Romagna, Italy

Target Group: households in or at risk of fuel poverty

Results:

- Establishment of a permanent working group
- Signed agreement with local enterprises to:
  - Facilitate refurbishments (energy efficiency measures) in the home
  - Promote individual metering and monitoring systems (energy consumption)
  - Promote individual energy supply contracts
- Creating a guide to energy saving and virtuous behaviours for tenants
- Identification of incentives and financial tools for private parties

Results: 3 condominiums (200 tenants) directly involved to reduce their carbon footprint

Fuel Poverty is an issue for many households in Reggio Emilia. ACER Reggio Emilia manages the urban district heating system which supplies social housing in the region. Currently 10% of social housing tenants are in fuel debt. Families are finding it increasingly difficult to afford to pay their utility bills; this is in no small part due to increasing energy prices.

ACER Reggio Emilia, alongside a variety of other organisations (see below) have come together to form a working group to address the issue of fuel poverty in the municipality of Reggio Emilia.
Fuel Poverty Working Group:

- ACER Reggio Emilia
- Municipality of Reggio Emilia
- IREN (Energy, water, waste multi utility company)
- Unions: CGIL CISL UIL
- Sunia, Sicet, Uniat di Reggio Emilia (Tenants Unions)
- Federconsumatori, Adiconsum, Adoc di Reggio Emilia
- ASPPI Reggio Emilia (Owner union)
- A.P.E Reggio Emilia
- ANACI Reggio Emilia
- ECOABITA®

A project (March 2010-April 2012) has been initiated to:

- establish an agreement with local enterprises
  - to facilitate the refurbishment of homes (including installation of energy saving measures)
  - to promote individual apartment metering and monitoring systems
- produce a guide for tenants focused on saving energy and pro-environmental behaviours
- identify incentives and financial tools for use by residents

Evaluation
A permanent fuel poverty working group has been established in the region.

Possible success factors
There is a strong possibility that the model and lessons learnt from this project could be replicated on a regional or national level.

Difficulties encountered
- Lack of knowledge by the unions of all types of energy-saving technologies.
- Despite having the financing, is difficult to obtain the approval of tenants for the intervention

Lessons Learnt
Only the cooperation, agreement and co-financing of many institutions and stakeholders will enable the success of the project.

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ECOABITA

Aim: Promotion of an energy certification instrument to enable citizens to assess the energy efficiency of their homes.

Objectives:
- To raise awareness on home energy consumption
- To implement Energy Performance of Buildings Directive (2002/91/CE)
- To implement energy saving actions

Region: Emilia Romagna, Italy

Target Group: citizens, local municipalities, utility companies, SMEs

Results:
- 309 ECOABITA Certifiers
- 42 public authorities involved
- 237 energy certificates issued under ECOABITA's system

ACER Reggio Emilia came together with the Province and the Municipality of Reggio Emilia to promote the ECOABITA certification system. ECOABITA is programme of administrative measure, incentives, technical specifications, communication campaigns, and training at all levels, to meet the requirements under the European Directive Energy Performance of Buildings (2002/91/CE).

The certification system has been promoted at two prominent events: ECOMONDO an international trade fair of materials, energy recovery and sustainable development (Rimini Fiera, Italy) at a ECOCASA an annual regional fair held in Reggio Emilia.

Evaluation

The experience of ECOABITA has been extremely positive both for citizens and public authorities. 237 certificates have been issued using the ECOABITA system. Today there are 309 ECOABITA Certifiers and 42 public authorities are involved.

Success factors

ECOABITA has stimulated the market for energy efficient buildings in all sectors and has encouraged interventions to meet the EPBD requirements.

Difficulties encountered

The main difficulty of developing such a comprehensive system as ECOABITA (training mechanisms, energy certification protocols, etc), was the need to involve and reach an agreement with a wide range of stakeholders: public authorities, technicians, building companies, universities, etc.

Lessons Learnt

The experience shows how the commitment of main stakeholders can pave the way towards sustainable development activities, moreover the development of a certification system with the involvement of private sector can be a driver to change habits.

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