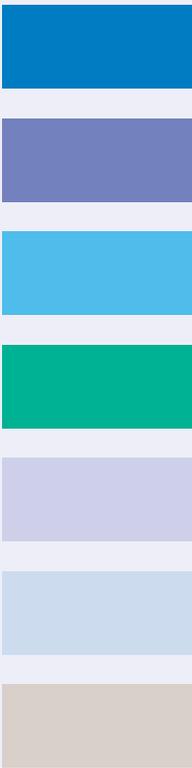


LOCAL ENERGY ACTION

EU good practices



The European Commission's Directorate-General for Energy and Transport develops and implements policy in these closely linked areas. The 2000 Green Paper '**Towards a European strategy for the security of energy supply**' analysed Europe's structural weaknesses: energy consumption is rising, while the EU is becoming increasingly dependent on external sources of energy. At the same time, to respect its commitments under the Kyoto Protocol, the EU must reduce its production of greenhouse gases. The Green Paper proposes a strategy to diversify energy imports, to reduce energy consumption in Europe through improved energy efficiency, and to increase the use of renewable energy sources. Promoting local initiatives for more efficient use of energy and greater use of energy from renewable sources is crucial for reaching the targets set out in the Green Paper.

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Introduction

Local initiatives lead the way

Achieving the European Union's ambitious goals for improving energy efficiency and increasing the share of energy from renewable sources cannot be left to governments and utilities alone. If these goals are to be reached, individuals – householders, companies, organisations – need to make choices, and take responsibility for their own energy use. Local energy agencies are about informing and encouraging local citizens to take these decisions, so that local actions bring direct benefits to local people. Ideas for local initiatives are frequently simple, and have already proved their worth elsewhere, but successful implementation requires commitment and resources.

A European challenge

Energy consumption in the European Union is rising, and most worryingly so is our dependence on fossil fuels – principally oil and gas – imported from outside the Union's borders. At the same time, the EU has signed up to the Kyoto Protocol, committing us to reduce greenhouse-gas emissions in 2012 by 8 %, in comparison to 1990 levels. In November 2000, the European Commission adopted a Green Paper, setting out the strategy to reduce the EU's dependence on imported energy. The twin focus of this strategy is to improve energy efficiency and to increase the use of energy from renewable sources – which exist within the EU.

Whilst action at EU and national levels is a vital part of realising these objectives, without action at the local level, there is no chance that they can be achieved. The drive to improve energy efficiency requires end-users to examine their energy consumption and consider means to reduce it – but without reducing their standards of living. Initiatives such as installing insulation or more efficient heating/cooling equipment, or simply ensuring that lights and equipment are switched off when not in use all bring savings in energy consumption, and in the bills to be paid.

Increasing the use of renewable energy sources is often appropriately tackled at local level. Individual installation of photovoltaic panels to capture solar energy, or district heating plants fired by biofuels, or local windfarms to provide electricity to an area, are different examples in which local communities can commit themselves to using renewable energy.

Local – or individual – initiatives are critical to achieving the EU's targets in the energy sector. The more such initiatives are taken, the closer we come to meeting our commitments. But if local citizens do not take up the challenge, we cannot reach our objectives. Certainly there is an initial investment that needs to be borne, but in the longer term, these initiatives will pay for themselves in cost savings, in addition to reducing environmental damage.

Energy agencies as local facilitators

Information and encouragement are at the heart of successful local initiatives to encourage take-up of energy efficiency and renewable energy use. Individuals, organisations and companies which stand to benefit from such measures often do not have the resources to investigate the possibilities and, therefore, do not consider taking them up.

To help provide local citizens and organisations with the information and encouragement needed, the European Commission has supported the creation of local energy agencies across the EU. These are set up by public authorities (regional or local authorities made up of elected representatives) and partner organisations, although the agency itself must be established as a separate legal entity. The role of energy agencies is to promote and disseminate good practice in the areas of energy efficiency and renewable energies.

EU funding is used to get energy agencies up and running, and lasts for a maximum of three years, beyond which the agency is expected to be viable. In principle, EU funds may cover up to 50 % of an agency's budget in the first three years. The remainder of the budget comes from the local authority and other public or private partners. In many cases, an energy agency will generate funds from its activities which can then be reinvested in its work.

Each energy agency works with local people in its area. Given that these local citizens are directly responsible for more than half of all final energy consumption in the EU, the focus of energy agencies is on disseminating good practice in demand-side management to consumers. Good practice may come from all over Europe and beyond, although in many cases, the details need to be adapted to different local contexts. The need to access as wide a range of examples of good practice as possible on behalf of local citizens means that local and regional energy agencies across Europe need to communicate and co-operate with each other.

The European network of energy agencies: the ManagEnergy initiative

To support the many energy agencies operating across Europe – as well as other organisations working in the energy field at local and regional levels – the Commission is funding the ManagEnergy initiative. ManagEnergy's primary aim is to facilitate the sharing of information. It does this through its website ⁽¹⁾ and helpdesk, and through events and publications, by providing a forum for exchange of ideas and experiences. In particular, ManagEnergy supports the collection and dissemination of good practice throughout the network. It also helps organisations find partners to implement projects, and provides information on EU policies in the energy sector and on funding opportunities.

Today there are some 380 energy agencies within the ManagEnergy network, and new agencies receive support on a regular basis, through the Intelligent Energy – Europe programme ⁽²⁾. In particular, the Commission expects to approve funding for a number of additional local and regional energy agencies in the new Member States in the coming months.

Exchanging good practice

The basis of the ManagEnergy network is exchanging ideas and experience between local actors. Schemes which have worked well in one situation may fit in well in another, or may work with some adaptation, or may not be suitable for a given context. The essential basis for exchange of good practice is circulating the available information to as wide an audience as possible. People's different reactions to ideas mean it is essential that as many local actors as possible have access to good practice examples: whilst one person may not be able to envisage a scheme in their own situation, their colleague may be able to visualise it clearly. Equally important is the ability to contact a counterpart, who has the experience of implementing a scheme, and can discuss informally the benefits and difficulties in implementation, as well as the key criteria for success.

⁽¹⁾ <http://www.managenergy.net/>

⁽²⁾ http://europa.eu.int/comm/energy/intelligent/index_en.html

ManagEnergy provides a range of information channels for the exchange of dissemination of good practice, of which this brochure is just one. As a printed product containing just a small selection of good practice examples, it will undoubtedly attract a different audience from the website, where there are more than 400 case studies available. The more people that see these examples the more chance they have of being replicated in other parts of Europe. Whilst the details would undoubtedly change when implemented in a different context, the principles will remain the same – not just the design of the scheme, but its results as well.

Selection of case studies

This brochure contains just 12 examples of good practice from energy agencies across Europe. Each has been validated by the European Commission against a set of objective criteria, and they have been chosen for their strong contribution to the promotion of energy efficiency and/or renewable energy use, and for their strong possibilities of replication.

The selection in the following pages demonstrates the wide variety of spheres in which energy agencies operate, from small rural districts to large cities, and in Member States of varying sizes and historical energy policies and infrastructures. Furthermore, different agencies have chosen to work with different target groups. Some have worked with individual householders, some with companies, some with whole villages or districts, some have gone straight to young people in schools to promote energy efficiency, and some have worked directly with public authorities to change policies and oversee their implementation.

The examples of good practice in the following pages represent a wide variety of approaches, and all of them could be replicated elsewhere. But there are many other approaches which could be taken, and this brochure is meant to stimulate thought rather than provide all the answers.

Encouraging energy-efficient measures for home-owners

Calderdale and Kirklees Energy Savers – CAKES

Kirklees Energy Services, United Kingdom

Householders' individual contributions to improving energy efficiency can make a big difference to overall energy consumption – and to their own utility bills. The CAKES scheme, in West Yorkshire (United Kingdom), set up a 'one-stop shop' where local people could obtain advice on improving the energy efficiency of their homes, introductions to qualified installers, and access to grants and loans to fund the work. By encouraging householders to invest in measures such as insulation and new condensing boilers, CAKES is reckoned to have brought reductions in CO₂ emissions amounting to almost 35 000 tonnes.

The aims of the scheme

The energy used by the average household in the UK accounts for around six tonnes of CO₂ emissions every year. But by installing energy efficiency measures, such a household could reduce their annual energy bills by around €300, corresponding to a reduction of around one-third in CO₂ emissions.

For most householders, however, these longer-term savings may not be attractive enough to make the initial investment to install energy efficiency measures. The CAKES scheme overcame this inertia by making it easier for householders to get the work done, and making it easier for them to pay for the installation, with loans and cashback schemes.

The partners

The scheme was run in two local authority areas in West Yorkshire, Kirklees Metropolitan Council (the lead partner) and neighbouring Calderdale Metropolitan Borough Council, with a combined population of around 582 000. The scheme was managed by Kirklees Energy Services, a not-for-profit organisation. While the local authorities contributed the initial funding, together with a UK government grant, to get the scheme started, two utility companies, TXU and Scottish Power, contributed additional funding when the initial funds were depleted.

The other partners involved in the scheme were the network of installers, and three local credit unions which agreed to provide loans for the installation work.

How it worked

Kirklees Energy Services (KES) established a 'one-stop shop' for householders, accessed by calling a freephone number. KES provided householders with advice on energy efficiency measures, discount prices for installation and access to cashback and preferential loan schemes. Householders would be referred to an approved installer, from the network set up by KES, who would inspect the property and recommend appropriate energy efficiency work. Once the work was completed, the householder paid the installer, and would then be eligible for cashback payments from KES. The quality of the scheme was monitored through inspections of 10 % of the works, questionnaires sent out with cashback payments, and telephone surveys.

The installers – of measures such as cavity wall insulation, loft insulation, draught-proofing of doors and windows, heating controls, hot-water tank insulation, floor insulation and condensing boilers – were selected following a tender published in local newspapers. The successful installers received specific energy efficiency training to help householders identify the areas where work could be most beneficial. Installers paid a referral fee of 5 % to KES, to fund the scheme's administration.

Three local credit unions became partners in the scheme, offering preferential loan facilities for householders to install energy efficiency measures. Without this access to dedicated finance, it is likely that many householders would not have been able to improve their homes' energy efficiency.



Results

From 2000 until September 2003, total investment in the CAKES scheme amounted to almost €2 million, of which more than half was made up of householders' own investments (including those for which a loan was required) in energy efficiency measures. A total of 1 455 households were involved, and had 2 080 measures installed. Of these, three-quarters were made up of cavity wall insulation, loft insulation and condensing boilers.

In monetary terms, the scheme has resulted in annual savings of around €270 000 from householders utility bills, which translates into lifetime reductions in CO₂ emissions of over 34 000 tonnes, making a significant contribution towards the UK and EU Kyoto targets.

>>

Promotion of the possibilities offered by the scheme was done through surveys, on-line information, advertising in local directories, posters and leaflets for display in public buildings, payslip advertising and press releases. In fact, the most effective promotion turned out to be write-ups of 'success stories' in local free newspapers.

Could it be repeated?

The scheme is easily replicable, ideally in a small area which could be expanded as experience grows. The key factors for success are ensuring sufficient funding is available to offer householders attractive cashback payments, setting up an accessible loan scheme for householders, and establishing a strong network of installers with high standards of customer care and commitment to energy efficiency.

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Energy initiative brings cosy feeling to Dutch town

The 'warm and comfortable living' campaign

EnergieBureau Amersfoort, The Netherlands

There is little doubt that people can make their homes more comfortable and save on heating bills if they invest in energy-saving measures and insulation. A campaign run in selected districts of Amersfoort, The Netherlands, aimed to give some residents a helping hand by asking them to undertake energy performance assessments (EPAs) on their properties. Households were then encouraged to carry out energy-saving measures – such as installing loft and cavity wall insulation – based on their EPA findings.

The aims of the scheme

The 'warm and comfortable living' campaign targeted owner-occupiers of houses built before 1985. Before that year, little attention was paid to installing insulation and energy-saving technology in houses. It was thought to be too expensive, and energy efficiency simply was not the priority it is today.

Therefore, the aim of the campaign was to encourage as many people as possible to ask for an energy performance assessment (EPA) and to ensure any suggested energy-saving ideas were implemented. Households would request a quotation for work to be carried out based on their EPA. If the work was completed, the EPA was provided free of charge. Subsidies, called regular energy premiums (REPs), were made available to households to help them carry out the required changes to their property.

The partners

The Amersfoort municipality bore the €50 500 cost of the campaign and acted as a 'champion' for residents, helping them to understand what was involved and offering support when needed. EnergieBureau Amersfoort undertook a coordinating role, liaising between the municipality and the other partners: REMU – the local energy supplier – carried out the EPAs, and Planbuilding coordinated the work of the fitters and insulation companies carrying out the installation of energy-saving measures.

How it worked

The campaign was organised on a district-by-district basis, covering 2 500 houses at a time. Heavy use was made of local media to publicise activities. This included producing features for Amersfoort's cable TV information service and encouraging local TV, radio and newspapers to cover the story. Information stands were set up at the city hall and in other public spaces to explain the aims of the campaign and how it worked. Direct mail shots, including a registration card and an EPA brochure, were sent to targeted households. This intensive approach to publicity was backed up by holding an information evening for local residents, which explained the EPA process and the kind of energy-saving measures and subsidies that were available. Through every step of the campaign, if owner-occupiers failed to respond they were contacted by telephone and encouraged to stay involved.



Results

As a result of the communications drive, 210 EPAs were completed, which in turn led to a variety of energy-saving work being carried out. This included installation of roof insulation, fitting of insulating glass, and injection of cavity wall insulation.

Other positive elements of the campaign included the way in which the partners were able to work together in a spirit of mutual co-operation. Making money available to pay for EPAs – providing end-users carried out the recommended work – appears to have paid dividends in terms of uptake, as does the availability of the REP subsidies.

Some problems did arise in similar campaigns carried out in other municipalities. There was so much interest from owner-occupiers in the Utrecht province that REMU encountered problems with capacity – however, these have been resolved thanks to fresh consultation.

Could it be repeated?

The campaign could easily be replicated across Europe as long as it is adapted to local circumstances. It is important to involve all partners early in the planning stage and use a trusted body – such as a municipality – to implement the campaign's communications requirements. And local media should be harnessed whenever possible to help publicise activities. The scale of a campaign must not be too ambitious, according to the Amersfoort team, otherwise the organisers could lose sight of their overall aims and objectives. It also appears that availability of subsidies is critical in making participation in the campaign attractive to the end users.

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Getting together to cut energy use in commercial buildings

The Energy Benchmark Pool

Energy Agency of Frankfurt, Germany

Commercial buildings can use an enormous amount of energy to run lights, heating, ventilation and air conditioning. If this usage is not managed properly, power is wasted and unnecessary costs can mount up. A scheme run by the Energy Agency in Frankfurt, Germany, brought together owners and users of commercial property – along with investors planning new buildings – to take part in benchmarking exercises that analysed energy use. The information was used to plan efficiency savings that have produced dramatic reductions in energy usage.

The aims of the scheme

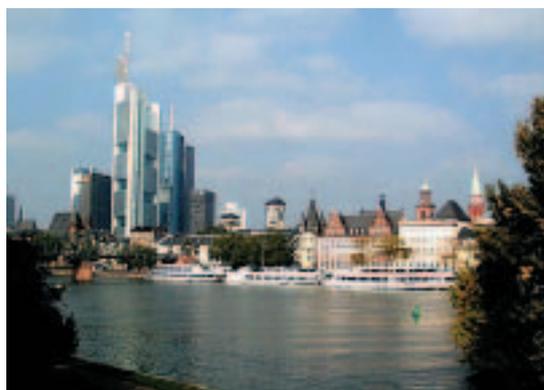
The Energy Benchmark Pool project was part of Frankfurt City Council's CO₂ reduction programme and targeted energy use in commercial property. The aim was to provide data and best-practice examples that could be examined and shared by users and owners of some of Frankfurt's largest office blocks. Participants in the benchmarking pools could then use this information to find ways to better plan how they use energy and so reduce their consumption. Emphasis was placed on the use of electricity, as it accounts for the largest part of energy demand in commercial buildings – this was a departure from previous energy-efficiency drives which concentrated mainly on examining heat demand.

The partners

Benchmarking pools ran for both existing properties and those in the planning phase. The Energy Agency of Frankfurt organised the pools, and property developers and owners got support from external consultants who provided expertise on energy usage. Some external funding was provided to the first 'existing buildings' pool by the 'Frankfurter Förderprogramm Energie' for data analysis and to produce estimates of potential savings.

How it worked

The first benchmarking group for existing buildings started its work in September 2001 and ended in March 2002, although participants continue to exchange ideas and experiences. The first pool for buildings in the planning stage or under construction started in August 2002 and finished in February 2003. Other pools were established in 2003. The process was similar for each pool, beginning with an introductory workshop and the use of an energy-usage questionnaire to start the benchmarking process rolling. After that, participants collected their own data, which was analysed with the help of the Energy Agency. Further workshops were run to discuss findings and to exchange information and best-practice examples. The results from the work carried out by the pools were published anonymously, and twice a year participants continue to exchange information about their energy-saving experiences.



Results

The project identified ways to help commercial buildings cut back on their energy demands by, on average, 25 per cent – with payback on any costs being made up in less than five years. Between 10-15 per cent of total demand could be saved simply by optimising the running time of equipment, without the need for any extra investment. The benchmarking exercise provided, for the first time, an accurate analysis of electricity demand in ten large office buildings in Frankfurt – in terms of how they use lighting, HVAC (heating, ventilation and air conditioning) and office equipment. It revealed great differences in demand for power in each building and highlighted huge potential energy savings.

Could it be repeated?

Thanks to the project, building managers have a greater awareness of energy-efficiency issues. They will be able to use this knowledge in the future, long after the project winds down. There may be problems repeating the exercise locally as external funding is no longer available. However, it was the basis for another energy-saving scheme – GREENEFFECT: Integrating saving of electricity and purchasing of green electricity in office buildings – which started in March 2003 with funding from the EU's ALTENER programme. There is no reason why the project could not be repeated elsewhere in Europe.

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Top marks for power-saving measures in schools

Energy and schools in Modena

The Energy Agency of Modena

Schools in Modena, Italy, are being given the chance to improve the energy performance of their buildings – and to receive a share of the savings they make from cutting back on electricity and gas consumption. By contracting out their energy management strategies to an external company, local administrations are helping the region to make significant reductions in CO₂ output and energy consumption. Children are also learning about sustainable energy issues thanks to the local energy agency's educational projects.

The aims of the scheme

When Modena's local authorities wanted to address energy management issues in their schools they decided to offer a range of incentives, from money to pay for new equipment through to technical support and a guarantee that work would lead to significant energy savings. The objective was to introduce permanent changes to energy management in schools based on principles of sustainability.

The partners

The project's main partners are: Modena Province, Modena Municipality, the local energy agency AESS (*Agenzia per l'Energia e lo Sviluppo Sostenibile*) and several local primary and secondary schools.

How it worked

The project started in 2001 and is expected to continue for several years. Modena's provincial government got the ball rolling by organising a tender for the work, and by giving the local energy agency the opportunity to carry out energy audits in schools. More than 20 audits have been carried out so far. Energy conservation opportunities were evaluated, and cost-benefit analyses carried out, to show what changes would work best for each school. The aim was to guarantee at least a 15 % energy saving following completion of work.

Some direct investments have already taken place, thanks to regional funding. For example, two oil-fired boilers have been converted to gas, and one gas boiler has been converted to run on biomass fuel. A solar-thermal domestic hot water (DHW) plant has been installed in a school gymnasium, and 15 photovoltaic roof panels fitted in various school buildings across the area. And a centralised heat and light control room is to be piloted in one school.

Seven primary schools have signed voluntary agreements with the Modena municipality to improve their energy efficiency. Fifty per cent of any savings made will be handed back to the schools as part of the agreement. Results from the first year of the project show schools receiving between €200 and €10 000.

Under the Local Agenda 21 initiative, Modena Province has approved an action plan for energy and sustainable development (PAESS) that includes scope for making voluntary agreements with secondary schools, where once again energy savings will be shared. The plan also provides teaching projects on sustainable energy, and technical support from the local energy agency.



Results

The performance contracting is expected to lead to an annual energy saving of 1.1 million cubic metres of methane for heating. Thanks to the project, energy produced from renewable resources is estimated to correspond to the equivalent of 44 000 kWh of electricity and 60 000 cubic metres of methane per year – equivalent to about 1.4 per cent of the provincial administration's energy consumption. The main benefit to Modena must be the overall improvement in heating facilities, which have been made without investment costs. The project should also bring huge environmental dividends through avoiding the production of an estimated 2 200 tonnes of carbon dioxide per year.

The educational pay-off looks to have been valuable as students have learned about energy saving as work has been carried out in their schools – thanks to the energy agency's complementary teaching projects. Initiatives include the creation of a renewable energy laboratory for primary school pupils, the development of a solar energy outdoor area at one school, and the drawing up of a teaching module on energy saving.

Could it be repeated?

According to those running the project, the main lesson is that a number of actions are needed to win over schools and to change their energy-consumption habits. School managers were said to be reluctant to adopt energy-efficiency changes if the local administration was not prepared to make improvements to buildings.

That said, there is no reason why this initiative cannot be repeated elsewhere in Europe. Any energy agency could manage a similar project, as long as local authorities show some interest in driving better energy-efficiency management in their schools.

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Shedding light on energy efficiency in Latvia

Effective lighting in cities – Tukums

Ekodoma Ltd, Latvia

The renovation of an ageing street-lighting system in Tukums, Latvia has improved the quality of life of residents, and led to significant reductions in energy usage. Efficient lighting technology has been installed across the town, making it safer and more comfortable for people to go about their business. The project can already point to huge energy savings amounting to 630 000 kWh per year, along with a reduction in CO₂ emissions of 365 tonnes per year.

The aims of the scheme

Latvia has long, cold and dark winters so good-quality street-lighting can make a significant difference to people's lives. Before this project made its dramatic changes, Tukums' street lights – installed between 25 and 40 years ago – were inefficient and wasted energy. Light levels were poor and many lamps were not working properly, or were simply switched off. Lamp units/hoods were poorly designed, which meant light was being misdirected into fields and gardens instead of focusing on roads and walkways. These units had little protection from the weather, dust or water. And the bulbs inside were of different wattage and design, with many having a short life-span. The project aimed to give Tukums' 19 000 residents a street-lighting system that was more efficient and less wasteful.

What is more, this initiative was the first in Latvia to use an energy service company (ESCO) to implement the project and raise the necessary third-party finance to pay for it. Success would mean the project could be replicated in other Latvian municipalities.

The partners

The Efficient Lighting Initiative is a programme designed by the International Finance Corporation (IFC) and funded by the Global Environment Facility (GEF) to accelerate the penetration of energy-efficient lighting technologies. The project is costing €395 000 over ten years. Tukums Council is contributing €105 000 after securing a loan from the Nordic Investment Bank (NIB), and the ESCO has raised €290 000, which includes loans from the Latvian Environmental Investment Fund (LEIF), and from the Latvian Hipotek Bank.

Other partners who have made a significant contribution to the project are engineering consultants, Ekodoma from Riga – programme leaders from Latvia's Efficient Lighting Initiative – and two Copenhagen-based companies, Danish Power Consultant and Hansen & Henneberg.

How it worked

The renovation was a significant undertaking as Tukums' old street-light network had 1 000 light points spread along a length of 90 km. Work started in 2001 with an energy audit of the system, carried out by Ekodoma. A detailed business plan was presented to Tukums Council in April 2002, before the ESCO was signed up in September that year to carry out the work over a ten-year period.

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Results

The project has achieved its main objective which was to reduce energy consumption and stop the physical degradation of Tukums' street-light network. By using better technology, the network's energy use has been cut by 630 000 kWh per year, which leads to estimated savings of €37 000 per annum. The figures are also good in terms of CO₂ emissions which have been reduced by 365 tonnes per year.

The new installation has of course brought other dividends for the town's residents in terms of improved health and safety. There has been a reduction in crimes being committed at night since the improvements were made, and more community activities are now being held after dark.

The project also proved to be a successful first outing for the ESCO system, in terms of implementing the project and raising finance. This, together with the energy savings and quality-of-life benefits, should raise awareness in other Latvian municipalities of the value of improved street-lighting networks.

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The ESCO has replaced lamp units on Tukums' main roads, and in its smaller streets and squares. The new units have a greater optical efficiency and the new casings have a much longer lifespan than their predecessors. They are wind, vibration and corrosion resistant, keeping out dirt and the weather, as well as UV radiation. They are also easier to service which means lower maintenance costs. Plenty of work has been done to make sure the new units are positioned correctly on lamp-posts, in terms of their height and angle.

More than 800 light bulbs have been replaced. The new ones have an energy consumption level of 70-100 Watts, and combined with the new units they are bringing about reductions in energy consumption and better lighting conditions across the entire network. Many of the ageing distribution panels have also been changed, which will ensure the system runs smoothly for years to come.

Could it be repeated?

The project is a model for small and medium-sized municipalities in Latvia and the other Baltic states. In Latvia alone, there is potential to repeat the project in more than 500 municipal areas.

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Welsh café society boosts small-scale renewable energy schemes

Community Action for Energy (CAfE) in the UK

Ecodyfi, United Kingdom

The Dyfi valley is home to some 12 500 people in coastal mid-Wales. The area's economy was traditionally based on agriculture but has seen increasing reliance on tourism and other services. Using the experience and reputation of a local sustainable-technology business cluster, together with other community-based organisations, local people have been enabled to carry out small-scale schemes installing and using a variety of renewable-energy technologies. The scheme has spread awareness of sustainable energy systems and a total of over 350 kW of renewable capacity has been installed.

The aims of the scheme

The annual energy expenditure for the communities in the Dyfi valley in mid Wales is some €4 million. Local commercial wind farms can produce as much electricity as is consumed but most energy for heating is imported. The Dyfi Eco Valley Partnership (Ecodyfi) was formed to manage a project to boost the use of a wide variety of renewable energy sources, and then to turn its attention to other sectors of the environmental economy.

The project aimed to encourage local people to engage with energy issues, establish a number of 'community based' renewable energy sources and thereby improve understanding and support for renewable energy through direct demonstration of its benefits. At the outset, targets of five schemes, a total installed capacity of 350 kW (whether electricity or heat), and the compilation of a strategy for the local energy economy were set.

The partners

Ecodyfi is a not-for-profit company created by Powys and Gwynedd County Councils, Dulas Ltd, the Centre for Alternative Technology, the Welsh Development Agency, Snowdonia National Park Authority and other local organisations. Ecodyfi is now managed by a board of local people and is the independent sustainable community regeneration body for the area.

How it worked

The provision of EU funding allowed Ecodyfi to provide grant aid to eligible schemes – of up to 30 % of their capital costs. The scheme was promoted through visits to various local groups and informing active local individuals. Public meetings were held to discuss specific topics and leaflets were delivered to all households on two occasions. Local media, in particular three local Welsh-language monthlies, were also important in spreading the word.

Ecodyfi staff responded to suggested schemes (and in some cases suggested them themselves), and provided free initial feasibility studies together with other administrative support and guidance. Those that needed more detailed feasibility studies were offered a 50 % grant for this work. Feasible ideas were worked up into applications for capital grant aid and the successful ones implemented. Proposers of schemes included schools, farmers, other businesses, householders and community groups. One community group has created an Industrial and Provident Society called Bro Dyfi Community Renewables Ltd, as a vehicle for local development and ownership. Its first project was to erect a 75 kW wind turbine. In addition, a Solar Club promoted solar water heating to householders, including technical assistance to install domestic systems.

Results

Some 65 schemes were initially registered, resulting in 28 grant offers. Of these, 16 schemes have been completed and received grant aid. A total of €541 000 was invested in these installations, and in addition ten homes were furnished with solar water heating systems at a total cost of €24 000 via the Solar Club.

The total installed capacity of renewable energy schemes was 150 kW of heating and 205 kW electrical power, including a grid-connected hydro-electric scheme, a variety of solar electric installations, solar thermal applications plus combined domestic wood-burning stoves and solar-heating systems.

The local communities have benefited from reduced expenditure on external power sources, increasing money supply within the local economy and local sourcing of equipment, technical and engineering support. Each scheme contributes visibly to the credibility of the 'green' local energy economy through reduced fossil-fuel consumption and carbon dioxide emissions.

The original Ecodyfi project was initiated in June 1998, with elements continuing until June 2002. A similar project for the whole of the Powys county began in 2000. In 2004, after four years as Powys Energy Agency, the regional vehicle has expanded into Mid-Wales Energy Agency, while at the very local level Ecodyfi goes forward with a broader regeneration agenda.



Could it be repeated?

The scheme is easily replicable, but working with communities requires a long-term commitment. The availability of grant aid is a crucial factor as very small-scale schemes are economically marginal with long pay-back times. The availability of subsidised or free feasibility work is also important, to alleviate the risk of investing in the development of a scheme before planning permission or finance has been secured. In general, project managers need to be prepared to work very closely with community groups providing information, sourcing technical assistance and helping with administrative tasks. Finding community 'champions' is a key success factor: people with enthusiasm and persistence to make schemes happen for their community. Their example often sparks others to get involved.

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Biofuel initiative warms up rural economy in Sweden

Nearby heating in the county of Kronoberg

Energikontor Sydost, Sweden

The 'Nearby Heating Kronoberg' initiative is one of the most successful renewable-energy projects in Sweden. A total of 25 bio-fuelled district-heating schemes have been established via the project, the majority of which are also capable of power production. The plants are located in industrial and housing areas and use locally derived biomass. Net carbon dioxide emissions have been significantly reduced and a major boost to the local rural economy has been made by the direct employment of 50-100 people and diversification opportunities for the region's forestry and rural sectors.

The aims of the scheme

The first biofuel-fired district-heating plant in Sweden was built over twenty years ago. The success of that initial project and a strong political will to increase regional and national sustainability led to the goal of achieving at least 50 % renewable energy use in Kronoberg by 2010 and to be fossil-fuel free by 2050. A main driving force was to integrate this ambition with regional employment prospects, new business development and increasing diversification of the mainly rural economy. The county of Kronoberg in south-east Sweden consists of eight municipalities and has 175 000 inhabitants. It has a small industrial sector and a major focus on forestry.

The main objective of the heating scheme was to use the abundant natural and renewable biomass to replace fossil fuel-derived heat and power with woodchips, shavings and pellets.

The partners

The key actor in the process has been the Energy Agency for Southeast Sweden (*Energikontor Sydost*) by proactively promoting and demonstrating the feasibility and profitability of the heating plants. *Energikontor Sydost* was established under the EU's SAVE II programme, and has held a central role in coordinating efforts from political, industrial, community and academic partners. To construct and finance the plants BioEnergy Group Ltd was set up. This joint venture has

ten partners representing the leading energy and bio-fuel producers and boiler manufacturers, together with university and specialised energy, technical and project-development consultants with *Energikontor Sydost* as a central partner.

How it worked

The energy agency targeted public and private enterprises together with neighbouring mechanical and forestry industries. *Energikontor's* strategy was to involve these groups and leverage their needs for upgrading plant with improvements to energy infrastructure and appropriate municipal real-estate companies. The agency would produce feasibility studies and first-stage project developments and promote them towards relevant decision-makers in the companies and communities.

Most plants were commercially viable from the start through heat-supply agreements but some sites received initial subsidies of up to 25 %. An example is the proactive approach to a Volvo truck factory with 600 employees, close to the village of Braås which has some 2 000 inhabitants. By interlinking mutual needs of the business and the village, and providing a support subsidy of 15 % from national funds, a 9 MW plant was established with biomass replacing the oil fuel consumed to heat both village buildings and the factory.



Results

The total investment in the plants is €45-48 million, which equates to a capital cost of €400-500 per kW installed for the different plants. Around 85-90 per cent of the investment was from the BioEnergy Group Ltd partners and other energy utilities and industries, with the remainder from national and local subsidies for sustainable development.

This investment has boosted locally produced bio-fuel and energy by 250 GWh whilst increasing local and regional business development. In addition most of the plants are equipped to generate electricity should the need arise, and distribution infrastructure is provided. Eight new or diversified companies have been established in association with the energy initiatives, providing 50-100 new local jobs. The estimated reduction in carbon dioxide emissions is 83 000 tonnes per year.

The project has also increased knowledge and expertise in the business area of bio-energy in the local university, with the establishment of two professorships and eight postgraduate research positions.

In addition the project has developed an environmental and technical guideline that can be used by future developers, and is working with the Swedish National Energy Agency to spread the findings and example of the project to neighbouring counties and internationally.

Could it be repeated?

Swedish authorities are already looking to spread the experience of Energikontor Sydost around the country and outside. A key success factor is to establish the political will to achieve a sustainable energy economy in a region and integrating all stakeholder aspirations. In particular when dealing with the establishment of small to medium-sized bio-energy infrastructure (0.5-10 MW plants) strong political will is required. Consequently general interest and support for renewable energy amongst the public needs to be established with clear benefits, both environmentally and economically, articulated.

The availability of investment grants and subsidies in the early investment phase is also important. Even a small level of support can boost the development of schemes as the cost of moving from fossil fuels can be modest, and even a very low level of subsidy can play an important role.

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Cross-border collaboration sustains energy and economics

Integrated Energy Plan of the Frydlant Microregion

ENVIROS s.r.o., Czech Republic

A collaboration between Czech, German and Austrian partners is supporting municipalities in the northernmost region of the Czech Republic. The Frydlant region has high unemployment and its rural economy is in recession. Investment in new biomass-heating plants and wind turbines for electricity generation is helping to revive the economy and supplant heat and power consumption mainly based on brown coal. Complete energy self-sufficiency is possible in four municipalities and the aim is to achieve 48 % throughout the region by 2020.

The aims of the scheme

Frydlant in the northern Czech Republic is bordered by Germany and Poland and is an economically underdeveloped region. The rural economy suffers from geographical isolation, relatively poor infrastructure and recession in its main non-agricultural industry: textiles.

The primary aim of the project was to support the local authorities in regional planning for promotion of renewable energy sources. An integrated energy plan was developed identifying priorities and giving guidelines for implementation and appropriate policy measures to promote renewables, reduce pollution and stimulate employment.

The future energy supply strategy will be based on an optimal combination of demand-side management measures (improved energy efficiency) and a structural shift from fossil fuel to locally available renewable energy sources such as wind energy, small hydro-power, biomass and solar energy.

The partners

Enviros s.r.o. in Praha was the main project coordinator, working closely with the local Power Service from Liberec, IHK-Gesellschaft in Berlin and LandesEnergieVerein, a regional energy agency from Austria. The Austrian agency had already had much experience in energy planning in the Styria region. Other associated partners were the Regional Development Agency, Czech Energy Agency and the State Environmental Fund. The Czech Energy Agency is responsible for the national promotion of renewable energy and co-financed the initiative.

How it worked

The partners initially worked together to assess the current state of energy supply and demand in the region, and to identify measures to improve use of energy and opportunities for renewable energy sources. This led to the development of an integrated energy plan and an action plan for promotion of energy efficiency and renewable energy use.

The key target for the project outcomes were the municipal authorities as well as other key regional stakeholders such as farmers, forestry firms, public and private commercial services, industry, NGOs, financiers, energy suppliers and households.



Results

Results are significant and growing. A small biomass district-heating system with a capacity of 350 kW and two wind turbines with a total generating capacity of 1 200 kW were the first concrete steps. The great potential for biomass fuel use has been highlighted thanks to the large area of unused agricultural land, which, if used for energy crops, could almost cover the total demand for heating in the region.

The main focus of the project has been on organisational measures, creating infrastructure and tools such as energy consultancy, public-awareness campaigns, and education and training facilities to build towards the goals of self sufficiency.

The view from Frydlant towards Poland takes in the largest brown-coal-fired power plant in Europe, so the potential for improving environmental factors through renewable energy sources is evident to all daily.

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A large number of workshops and seminars with a strong interactive element were held, and positive results from other Czech, Austrian and German regions with similar issues were demonstrated. A mobile exhibition was produced discussing the link between energy, greenhouse-gas emissions and climate change. The exhibition was designed to be shown at schools and other community facilities.

Initial awareness of renewable-energy options was very low in the region, but the enthusiastic participation of one local mayor helped to galvanise authorities in neighbouring communities to get more involved and commit to the project.

Could it be repeated?

As with many schemes, the experience of the partners indicates that technology can be easily transferred to new situations, but transfer of policy instruments to set the correct regulatory and financial framework is more difficult. The production of tools that can start local awareness campaigns is useful. The travelling exhibition for schools was one such tool, and helped in the process. Enthusiastic individuals to champion initiatives on the ground are also invaluable.

Energy and development planning is a complex process with many steps to be taken in parallel. A good overview of the energy and environmental factors of a region are needed to identify the significant improvements required and the ability to measure the impact of the improvements as they are implemented.

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Barcelona – a shining example

Barcelona Solar Thermal Ordinance

Barcelona Energy Agency, Spain

Barcelona has implemented measures to increase the use of renewable energy (especially solar energy) in the city. As part of this initiative a Solar Thermal Ordinance has been introduced to encourage the use of solar heating for hot-water supply in buildings through revised building regulations. All new buildings, and those undergoing major refurbishment are now required to use solar heating to supply at least 60 % of their hot water requirements. This measure has hugely increased the amount of installed solar heating and made significant cuts to carbon dioxide emissions in the city.

The aims of the scheme

Barcelona has recognised that a major shift towards sustainable energy systems in the city is urgently required and is a priority. The city council therefore formulated a Plan for Energy Improvement in Barcelona (2002-10). This initiative includes promotion and demonstration projects, legal and management instruments and the integration of sustainable energy measures in urban development, to proactively boost the share of energy supplied by renewable sources.

Specific aims of the programme are to reduce carbon dioxide emissions by 20 % compared to 1999 levels, maximise the use of the city's renewable energy resources and emit less than the equivalent of 3.15 tonnes of carbon dioxide per person per year.

The partners

Barcelona City Council developed the Plan for Energy Improvement and the Energy Agency of Barcelona is responsible for its promotion, implementation and monitoring of its effect on energy use and pollution reduction. The plan and agency are two major public management instruments that ensure the commitment of the city to further promote sustainable energy measures in a planned and structured manner.

How it worked

Barcelona City Council developed the Plan for Energy Improvement that included an Action Plan to conserve energy, and recommendations on reducing carbon dioxide emissions. The plan includes quantification of the energy consumption and emissions produced by the city, and provides scope for municipal action to promote environmentally sustainable initiatives.

The plan was approved in February 2002 and has been implemented by the Energy Agency of Barcelona since May 2002. The plan covers four main areas: management strategies, supply and consumption strategies, social and communication strategies and economic and legal strategies. As a forerunner to the plan, Barcelona City Council introduced the Solar Thermal Ordinance in August 2000. The aim of this regulation was to legislate for the implementation of low-temperature heated water systems using solar energy. All new buildings and buildings undergoing major refurbishment were required to use solar energy to supply at least 60 % of their running hot water.

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To promote the ordinance and assist its acceptance by the public and contractors, the City of Barcelona initiated a broad communications programme. An explanatory guide was published in several languages and round-table discussions on the Ordinance held with a variety of stakeholders including contractors' associations, neighbourhood groups, engineers, architects and environmental organisations. The legislation was promoted in neighbouring cities and a 'Solar Day' was organised in Barcelona itself.

Major demonstration projects were implemented in public buildings such as swimming pools, schools and the town hall to show the feasibility and benefits of the technology.

Could it be repeated?

The Solar Thermal Ordinance was a first for Barcelona and has been a model for many other municipalities. More than 20 other Spanish cities are now replicating the scheme. A key success factor is to formulate an effective communication programme for the new regulations to encourage contractors to adopt and embrace the initiative.

Results

Barcelona Energy Agency's evaluation programme monitors and further promotes the effective implementation of the Solar Thermal Ordinance. Since the Ordinance came into effect, licences to install over 19 600 square metres of solar panelling have been requested up to January 2004. This compares to a total installed capacity of 1 650 square metres prior to August 2000 – more than a ten-fold increase. This massive increase has resulted in annual energy savings of 15 675 MWh and a corresponding reduction in carbon dioxide emissions of 2 756 tonnes per year.

The Barcelona Energy Improvement Plan proposes a series of measures that build on this current success, with 55 projects for local action planned up to the year 2010. The majority of projects focus on energy saving and the use of renewable energy. An example is the sustainable energy components of developments in the Barcelona Forum 2004 area. These include energy-efficient buildings, district heating and cooling systems and a 1.3 MW solar photovoltaic power station.

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Sustainable transport plans for the smaller town

MOBASTO – Mobility Agency in Small Towns

Rhônealpiénergie-Environnement (RAEE), France

Transport planning is commonplace in larger cities, but two French towns have mapped out voluntary urban transport plans that will allow small and medium-sized towns to realise their own urban transport plans. Two priorities underlie the plan: better town planning management to reduce urban sprawl, and promoting public transport and bicycle use to reduce greenhouse-gas emissions. The plan has been adopted by a variety of towns across Europe and a website created to spread the message and information on transport options.

The aims of the scheme

The faces of many medium-sized towns in Europe have changed dramatically over the last couple of decades due to urban sprawl. This development has provoked a dramatic increase in the number of journeys undertaken and the distance citizens travel within their own locality – in particular the use of cars has risen sharply, bringing environmental and health problems.

Local authorities have the ability to act to alleviate this situation as they often coordinate planning issues, road works and public transport. The MOBASTO project was launched in 2001 to assist small towns to plan for sustainable transport use. The pilot towns in the scheme created sustainable urban transport plans and established mobility agencies. The agencies provide comprehensive and easily accessible information on the ecological aspects of transport options, whilst encouraging and promoting the best options. Best practice advice is given to local authorities on urban management, to ensure that planning solutions are found to promote improved social and spatial structures for the towns, in terms of housing, services, leisure and business.

The partners

The pilot towns were Romans and Bourg-de-Péage in France with a combined population of 55 000. Other partner towns across Europe were Luleå in Sweden and Quedlinburg in Germany. A number of regional and national agencies (Regional Agency of Norrbotten, Sweden, Rhônealpiénergie-Environnement, France, Rhône-Alpes Regional Council, France, and the Environment and Energy Management Agency, France) were involved in the project, which also received funding from the European Union's SAVE II programme.

How it worked

In France, only towns with populations greater than 100 000 are obliged to establish an urban transport plan, and the issue of urban sprawl is not usually addressed. MOBASTO developed a method to produce urban transport plans for small and medium-sized towns, by evaluating solutions against the amount of greenhouse-gas emissions avoided. The process also considered urban management in terms of urban sprawl and looked at the possible alternatives.

The proposed measures are promoted by mobility agencies set up by the community. Good communication channels are essential to convey the information to the public and to change transport habits. A charter has been published by the four partner towns in which they pledge to reduce their emissions, and a website produced that allows other communities to work up their own plans.



Results

The plans produced in the pilot studies could reduce greenhouse-gas emissions by half in the long term. Current results show that measures planned up to 2010 will reduce the rate of growth in greenhouse-gas emissions – from a predicted 10.5 % to just 6.3 % – by increased use of public and soft transport modes such as buses and bicycles. A growth in public transport use in the centre of town of over 30% and in the suburbs of 40%, combined with a 25 % increase in train use for longer distance travel predicts daily CO₂ emissions of around 173 tonnes in 2010 (compared to an expected 180 tonnes per day if these measures were not implemented). On average, every kilometre covered by public transport avoids the emission of 35 kg of carbon dioxide.

Could it be repeated?

MOBASTO has shown that it is possible to make an inventory of transport issues, quantify them objectively and derive a methodology to produce an urban transport plan, organise the necessary dialogues to agree it and define the objectives of a local mobility agency to follow up on the plan. The scheme can evaluate the potential greenhouse-gas emissions of different means of transport and integrates the effect of urban sprawl management to promote alternative transport options to the car.

A charter for small and medium-sized towns has been drawn up for those who wish to reduce greenhouse-gas emissions from transport and the website provides a platform for exchange of best practice and information on the subject.

The scheme is, of course, voluntary, so towns are not obliged to enforce it. Therefore the close involvement of local elected representatives and decision-makers is very important. There is also a major hurdle to cross in terms of changing the attitude of the public to enable them to become less dependant on their cars.

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Child power drives energy awareness in local communities

The FEE-project: Force for Energy by Children *Energy Advice Centres in seven European Countries*

Children in seven European countries have been learning about renewable energy sources (RES) and the rational use of energy (RUE) in an education project that has reached 100 schools. The children used what they learnt to produce exhibitions on energy topics – inspiring friends, parents and local communities to get involved in energy-saving issues.

The aims of the scheme

The FEE-project – which also went under the longer title, 'Persuasive power of children towards energy consumption in the local community' – aimed to raise awareness of energy and environmental issues in schools and local communities. The objective was to bring a change in the way people use energy, giving them the knowledge to use more renewables and cut down on waste. The children who took part were aged between 10 and 14 years old, which meant both primary and secondary schools were able to take part. The project ran from January 2001 to December 2003.

The partners

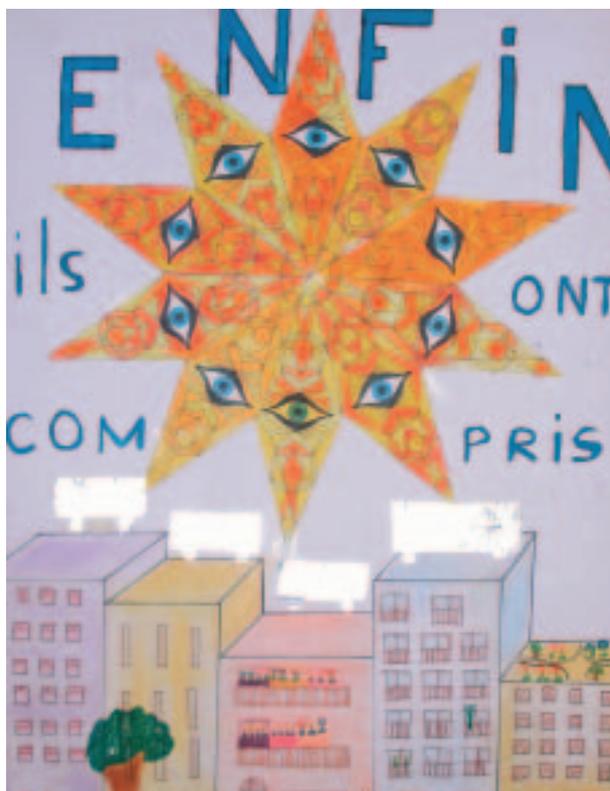
The European Union's ALTENER programme, which promotes the use of RES within Europe, supported the project. Resources were made available by regional and local authorities, and 5 000 children from 100 schools took part, along with about 6 000 parents.

The eight energy agencies that ran the project were:

- Belgium: **ABEA** (Agence Bruxelloise de l'Energie/Brussels Energie Agentschap)
- Italy: **ARE-Liguria SpA** (Energy Agency of Liguria Region), and **EALP** (Energy Agency of Livorno Province)
- France: **PACA-Region** (Région Provence-Alpes-Côte d'Azur)
- UK: **ELEEAC** (East London Energy Efficiency Advice Centre)
- Greece: **REAC** (Regional Energy Agency of Crete)
- Sweden: **GDE-NET** (Gävleborg/Dalarna Energy Network)
- Portugal: **AREALIMA** (Agencia Regional de Energia e Ambiente do Vale do Lima)

How it worked

Firstly, a common project framework was established and a lot of groundwork was done when choosing the schools that would take part. For example, studies were carried out into how energy was used in the local area, and educational tools were carefully prepared. Exercise books and teaching documents were distributed to teachers and students to explain energy issues and to provide study exercises. An energy newsletter and website were devised to tell the wider community about the project, along with a guide to RES and RUE issues. The REXNET website gave an international focus to the schools' studies.



Results

Schools worked on the project for a year, and the mix of theory, practical exercises and visits inspired students to take their work home. Undoubtedly those children who took part have a much greater understanding of energy issues, and now see how they can affect everyday life. Many children have gone on to change the way they use energy and have influenced their families to do the same. Project organisers hope that their work will trigger wider, permanent community involvement in energy-saving programmes, perhaps through the Local Agenda 21 initiative.

The participating energy agencies have also learned a lot – the general experience and teaching tools can be used again for related educational activities. And they have also been able to exchange good practice ideas. Some agencies have been asked to continue their work in other schools, and the project has gained the attention of environmental institutions, and national education boards – notably in Greece and Italy.

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The energy agencies supported the schools by guiding them towards meeting the project goals, and provided the context for the study exercises. Learning was project-based, allowing children to analyse issues and search for their own answers and solutions. Each school held an exhibition at the end of the year to display their work to the wider community.

The link between school and community was further strengthened by encouraging children to do energy audits in their homes. Parent committees were also encouraged to get involved in the project.

Could it be repeated?

The energy agencies have the technical skills, content and educational tools to carry out similar awareness-raising projects in the future. However, success depends on creating strong partnerships with the likes of municipalities, environmental bodies and teachers.

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School work shows the way to better energy use

Secondary Schools Energy Awareness Programme

Wexford Energy Management Agency Ltd, Ireland

School children in County Wexford, Ireland, have taken part in a ground-breaking programme that has shown them the value of energy conservation and the importance of renewable energy sources. Their enthusiasm and hard work paid off when they won awards for their project reports and displays at a national energy conference. What is more, their success means that other schools in the County can now take part in the programme.

The aims of the scheme

Wexford Energy Management Agency Ltd (WEMAL) designed and constructed their 'secondary schools energy awareness programme' to increase students' understanding of energy and environmental issues. It was initially trialled in two secondary schools to assess its performance. The programme was tailored to two groups – Junior-Certificate-level children (aged 13-15 years), and senior-level pupils (16-18 years).

The main focus at junior level was to give students an understanding of energy-efficiency issues and to show them how renewable energy sources can be used to produce sustainable power. At senior level, the focus was broadened to include monitoring exercises as students closely examined the use of power in their school.

The programme's second objective was to ensure that the children's project findings were disseminated to other students, teachers, parents and the general public.

The partners

Project costs were met by WEMAL finances via the European Union's SAVE II programme, Wexford County Council and the Wexford Organisation for Rural Development. The two schools involved in the trial were: Bridgetown Vocational College, Bridgetown (Junior-Certificate level); and the Christian Brothers Secondary School in Wexford (senior level).

How it worked

WEMAL designed the programme so it could be easily integrated into the school curriculum. At Junior-Certificate level, it was introduced to the 'civics, social and political education' (CSPE) course. Pupils taking CPSE must carry out an 'action project' as part of their school work. Therefore, WEMAL designed an energy action project around topics such as energy security, the environmental effects of energy use and how society can harness its renewable resources. In-class presentations provided background information, and a field trip to Carnsore Point wind-farm gave the children first-hand experience of a renewable energy source in action. Students used what they learned to produce a final report and exhibition of their work.



Results

Twenty students took part in the Junior-Certificate project. They produced three wind energy surveys, conducted through interviews with 100 fellow students and a further 100 local people who lived near the wind farm. As part of the survey, they also questioned five members of the Irish Parliament and one MEP. The students displayed their results at the Renewable Energy Conference 2004, held in Wexford in February. They won the conference's Best School Project Award at Junior Level.

Some 14 students from the Christian Brothers Secondary School took part in the senior-level energy audit. The work included a survey of school transport that canvassed 172 fellow pupils. The findings are being used to encourage more students to walk or cycle to school to reduce the use of fossil fuels. They also suggested running school buses on renewable fuels, such as bio-fuels, to make transport more sustainable and less polluting. Car-sharing also offers another way to reduce pollution and ease congestion, according to the students' report. An exhibition of the results won a certificate of achievement at the Renewable Energy Conference.

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At senior level, the programme was introduced in a transition year when it is easier to incorporate extra-curricular projects. WEMAL designed a school energy audit which was used by the children to assess their own school's energy usage. Students measured and calculated their school's annual electricity and heat-energy use, along with the costs of using school transport. The results went into a report and display – and a public exhibition of the work brought the issues to a wider community audience.

Could it be repeated?

The success of the trials has led to two more junior-level action projects at schools in County Wexford. And there are also plans to introduce more projects at different schools across the County – both at junior and senior levels.

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Further information

The ManagEnergy initiative website (<http://www.managenergy.net/>) includes:

- Details of EU energy policies and funding opportunities
- Full contact details for local energy agencies across the EU
- A range of case studies and good practice from across the network
- Information on events, including live webcasts
- Partner search facility
- Links to information on other websites

More information on the Intelligent Energy – Europe programme is available at http://europa.eu.int/comm/energy/intelligent/index_en.html

The European Commission's Energy and Transport DG has a website with a wealth of information on EU policies in these two related fields. In particular it covers:

Renewable energy sources:

http://europa.eu.int/comm/energy/res/index_en.htm

Energy demand management:

http://europa.eu.int/comm/energy/demand/index_en.htm

The Commission's 2000 Green Paper on security of energy supply can be found at:

http://europa.eu.int/comm/energy_transport/en/lpi_lv_en1.html

The Commission's 2001 White Paper on transport policy can be found at:

http://europa.eu.int/comm/energy_transport/en/lb_en.html