

## Project Fact Sheet

Created/updated: February 2009

### Integration of Active Learning and Energy Monitoring with School Curriculum

#### (Active Learning)

<b>Programme area:</b>	HKA2 and HKA4
<b>Status:</b>	Completed
<b>Coordinator:</b>	Norwegian Energy Efficiency Inc. (NEE) P.O. Box 4101 Gulsbogen, N-3005 Drammen, Norway E-mail: <a href="mailto:tmm@nee.no">tmm@nee.no</a> , <a href="mailto:kdm@nee.no">kdm@nee.no</a> Tel: +47 95 22 04 82
<b>Partners:</b>	Centre for Renewable Energy Sources (CRES), Greece; Le Centre Urbain / Stadswinkel asbl (ABEA, Belgium); The French Environment and Energy Management Agency (ADEME), France; Eliante, Italy; Newark & Sherwood Energy Agency (NSEA), United Kingdom; MOTIVA Oy, Finland; The Swedish Energy Agency (STEM), Sweden; The Directorate for Primary and Secondary Education (DPSE), Norway; Lithuanian Energy Institute (LEI), Lithuania; EC BREC Institute for Renewable Energy (EC BREC), Poland; Energetics Environmental Protection & Development Ltd. (Innoterm), Hungary; Agencija za prestrukturiranje Energetike (ApE), Slovenia; European Association of Ecologists (ESE), Poland; Energy Agency of Plovdiv (EAP), Bulgaria; Stredisko pro efektivni vyuzivani energie, o.p.s. (SEVEN), Czech Republic
<b>Website:</b>	Project – <a href="http://www.consortium4al.eu">www.consortium4al.eu</a> ; Toolbox – <a href="http://www.teachers4energy.eu">www.teachers4energy.eu</a>
<b>Objective:</b>	Reduce energy consumption in schools/homes by teaching children RUE, RES, and transport hands-on activities
<b>Benefits:</b>	Integration of active learning in national curricula and specific savings in 184 schools
<b>Keywords:</b>	Energy monitoring, children, active learning
<b>Duration:</b>	01/2006-12/2008
<b>Budget:</b>	€ 1,454,293 (EU contribution: 49.75%)
<b>Contract number:</b>	05/159



## Short description

The Active Learning project has been an exciting 3-year project based on the idea that children play an important role in sustainable development. These children are the decision-makers of tomorrow and can take an active part in their own education, rather than being passive receivers of information and knowledge. They can also influence the adults in their lives to lead more sustainable lifestyles.

The project aim was to promote active learning and energy monitoring as a tool for energy education among pupils aged 6-12 years. The expected outcome was a change in attitudes towards energy use among the future generation plus short- and long-term energy savings in school buildings and private households.

In order to ensure that sustainable energy exploitation becomes a more permanent topic in primary school education the project laid the basis for integration of active learning into the national curricula.

Illustrative success stories are by far the best way to promote any topic. The project was therefore piloted by a number of 'Champion Schools' – frontrunners – who were willing to test the toolbox of selected material, created for teachers.

The project included a large number of national seminars where the participating schools could discuss their experiences with energy monitoring and active learning among themselves and with other educators, local authorities and national ministries.

## Expected and/or achieved results

The project developed a special 'toolbox' for teachers, which provides lesson plans for implementing a wide range of energy awareness activities closely linked to many aspects of the curriculum. One of the core activities is based on energy monitoring in school, which contains many opportunities for the pupils to participate in 'real' Mathematics and Science activities. In addition, there are lots of supplementary activities with particularly strong links to Geography, Design/Technology and Citizenship. The toolbox activities can be delivered as distinct 'lessons about energy', or used flexibly in cross-curricular topics. The project has thus contributed to the implementation of the recommendations made in the 'The Reflection Document on an EU-wide Co-operation of Local Actors on Sustainable Energy Education'.

Our target was 162 Champion Schools but we reached 184 in spite of some partners not meeting their individual targets. Our newsletters and articles produced during the course of the project show some of the creativity and achievements presented by our Champion schools. The project has shown clearly that there is a demand and a need for good educational materials for in primary schools. In spite of the electronic era hard copies are still very sought after. The online toolbox materials at [www.teachers4energy.eu](http://www.teachers4energy.eu) were therefore also provided in hard copy to the interested Champion Schools.

It is still surprisingly difficult for the schools in some countries to gain access to their own energy metering data and thus it can be very difficult for the interested schools to carry out energy monitoring activities with their pupils. In some cases school consumption is not registered separately just together with other public buildings. This is highly criticisable given the EU targets for energy efficiency and the declared interest in the public sector "leading the way" for other segments of society. A first step to sustainable energy behaviour is knowledge about energy consumption and how it relates to everyday activity levels. However, our champion school teachers showed great resourcefulness in their attempt to overcome such barriers. For example, one school transformed the energy monitoring activity into a lesson of citizenship where the pupils debated possible steps: What could they do to persuade the Mayor to replace the general meter with individual meters? Make another appointment, write a letter? Why does such a change take so much time?

Although teachers are the key to introducing new elements in their schools, head master support and commitment is crucial to long term and full scale integration. Often new methods and materials are tested on a small scale – for example by one teacher – and then a decision is made whether to use it in all relevant classes. In addition teacher involvement in the tool development process was very valuable and crucial to success. Having experienced teachers as part of the project team was a great strength. Furthermore it is our hope that the dialogue between energy experts, teachers, schools, school authorities, education and energy authorities established during the project together with illustrative success stories will function as leverage for a wider dissemination of active learning and energy monitoring. One lesson learnt is that the teachers in general are interested and keen to try out new quality materials but are short on necessary support. Teacher training, cooperation between teachers and other school staff and local authorities, and official approval of the time and resources spent on preparing and realising the activities are critical for long-term impact.

Our ambitious impact evaluation intentions were met with a number of difficulties and we did not receive as much information from the energy monitoring activities as expected. However, the schools made a sincere effort and our student survey show an increase in student knowledge for example concerning energy labelling. Furthermore, the involved teachers have reported a keen interest and enthusiasm among the students that also seem to indicate a positive change attitude.