



## Active Learning ABEA, Belgium

### The Energy Monitoring at the “Chant d’Oiseau School”

#### Summary

The Active Learning project (2006-2008) is an education project partly financed by the EIE programme. It was carried out by a consortium consisting of 16 organisations from 14 countries, including both energy and educational experts. One of the key outputs of the project is a toolbox containing hands-on fun activities for active learning about sustainable energy and energy efficiency ([www.teachers4energy.eu](http://www.teachers4energy.eu)). More than 160 champion schools that have used and incorporated these activities in their teaching plans. The main philosophy is to get children to learn while having fun, and to pave the way for curricula integration of this approach.

In Brussels 12 schools participated to the Active Learning project, and among these Chant d’Oiseau school in Woluwé-Saint-Pierre. Thierry Raye and d’Ophélie Dury’s pupils had a « Energy monitoring ». They explored the building in order to make an energetic reading of heating and lighting. This activity was exposed in front of the Mayor in the city hall on April 22nd 2008.



Let’s give a look at the project in the details !

*This project has been made possible thanks to the cooperation of the headmaster of the school, the teachers, the pupils, but also thanks to the technical support of ABEA (Agence Bruxelloise de l’Energie, partner of the project) and to the support of European Commission.*

#### End-user area

- New buildings
- Refurbishment of buildings
- Transport and mobility
- Financial instruments
- Industry
- Legal initiatives (regulations, directives, etc)
- Planning issues
- Sustainable communities
- User behavior
- X Education
- Other

#### Target Audience

- Citizens
- Households
- Property owners
- X Schools and universities
- Decision makers
- Local and regional authorities
- Transport companies
- Utilities
- ESCOs
- Architects and engineers
- Financial institutions
- Other

#### Technical

- X Energy efficiency
- Heating
- Cooling
- Appliances
- Lighting
- CHP
- District Heating
- Solar energy
- Biomass
- Wind
- Geothermal
- Hydro power
- Other

#### Context

A survey on education carried out by ManagEnergy in 2004 recommended that in order to achieve cost-effective sustainable development, the education system needs training of teachers, active involvement of students through experimental or hands-on approach, and integration of energy into curricula to create room



(time) for energy issues which in turn requires cooperation with education authorities. The recommendations were also supported by the EU 'Reflection Document on Sustainable Energy Education'.

Active Learning is a pedagogical principle based on the idea that students learn more and their knowledge is retained longer if they carry out hands-on and fun experiments to which they can relate.

*The aim of the Energy Monitoring is to reduce the consumption of energy in schools! In fact, just thanks to a different behaviour and without modifying anything in the structure, there's the chance to reduce the energetic consumptions by 30%.*

In Chant d'Oiseau school, pupils named two coaches among the children. The heater coach, named « Mister Energy » and the electricity coach, named « Mister Light ». They had to make a reading of the use of heaters and electricity in the school and observe whether there was any wasting.

## Objectives

The objectives we wanted to reach were:

- teaching to the pupils how to calculate the energetic consumptions of a building, using a « toolbox » with some measuring equipment, such as digital thermometers, light meters, energy meters, to make the Energy Round Tour more fun;
- teaching to the pupils to observe our daily acts in order to understand how much they influence the energy bill.
- And also... to have fun!

## Process

At the Chant d'Oiseau School, the strategy we used was that of making an Energy Monitoring, as it was a game, an investigation of energy consumption by the « pupils-detectives » at school. It wasn't a real « energy audit » but a « mini-audit ».

For what concerns heating, a pupil named "Mister Energy" made a reading of indoor temperature in several moments during the day and checked the heaters at specific times of the day.

For what concerns lighting, another pupil named "Mister Light" observed for how long the light was on each day in the rooms considered.

The pupils did that during a witness week (during that week the rest of the classroom was unaware) and during a test week. So they could establish the influence of the children's behaviour on energetic consumptions.

## Financial resources and partners

This project was mostly financed by the European Commission. It's a three years project. ABEA received an amount of €35328.

The local partners that supported us are the city council of Woluwé-Saint-Pierre, that transmitted us the energetic readings of the school and invited the children to expose them their project, the headmaster and the teachers that sensitized and motivated the children, ABEA that coordinated this action.



## Results



Chant d'Oiseau school worked as a pilot-school for this project. It tested this activity in order to evaluate it and extend it to other schools for the next years.

This project resulted really positive on many levels.

Firstly, the children became aware of the fact that in many other countries in Europe some children just like them have the same worrying: saving the planet.

Secondly, at a local level, it allowed the meeting among different kinds of actors (pupils, technicians, energy agencies, city council responsables) and allowed to focus on the fact that our behaviour influences energy bills.

The project counted two important steps:

The exposition of the school energy monitoring, made by the pupils in front of the city council responsables. The children were invited on the occasion of a board of governors, who listened to them and answered to their questions. This event took place on April 22th 2008.

The prizegiving of the Active Learning international competition, in front of 450 people, Bernd Decker, Project Officer at the European Commission, handed the children 5 big Lego boxes to build towns supplied with renewable energies. This event took place on June 26th 2008.

The children had subscribed to the competition realizing a windmill using some poppies, and the blades were flowers petals. It was a poetic and instructive product.



## Lessons learned and repeatability

This project showed that teamworking is fundamental. All members are important. It's important to put people in contact so that everyone can make an effort: the energy agency explaining the working of the boiler, the pupils listing their daily gestures and thinking of how improve them, the city council responsables listening to the children's projects and taking into account their observations.

Chant d'Oiseau school decided to go on with the project. Mister Energy and Mister Light are still working! They also set up an Agenda 21 (dealing with water, paper, wastes, mobility and energy).

*This project will be repeated in other schools of the city that gives priority to the energy question. Each school works as mouth piece so that other schools get involved and committ to realize some energy saving with the support of the energy agencies and of children.*

### Contact for more information:

Project Web Site: [www.teachers4energy.eu](http://www.teachers4energy.eu)

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**Printed reports or other literature available:** 1. The site [teachers4energy.eu](http://teachers4energy.eu) where you can find 23 activity sheets about energy in 14 languages. 2. Wolumag journal, a local monthly magazine edited in 20000 copies and available on the net where you can find pictures and articles about the project in may and september 2008 issue. [www.wolumag.be/documents/200805004/200805004.pdf](http://www.wolumag.be/documents/200805004/200805004.pdf) pg30

and [www.wolumag.be/documents/200809006/200809006.pdf](http://www.wolumag.be/documents/200809006/200809006.pdf) pg16

Other contacts: ABEA- Brussels Energy Agency. Boulevard Anspach, 59. 1000 Brussels. [www.curbain.be](http://www.curbain.be)

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For your information. To be taken into account when filling in the template

Criteria for selection of Good Practice Case Studies

***Energy effective (Weight factor: 2)***

The activity should result in quantified energy savings and/or in energy produced from renewable energy sources in a definable period of time. If not applicable (e.g. education or information) give potential benefits in the long term.

***Environmentally benign (Weight factor: 1)***

The activity should result in a reduction of greenhouse gases emission, lower local pollution, higher air quality and saving of natural resources.

***Adequacy of techniques and tools used (Weight factor: 1)***

The activity should not use techniques that are not viable or that present high technical risks. The complexity of the technologies and tools used should be adequate to the role of a local or regional energy agency. An activity with limited technical content (e.g. information sessions for children) would perform well according to this criterion. Integration of technologies will also be evaluated under this criterion.

***Economically viable (Weight factor: 2)***

The project should be economically attractive for the society as a whole, and involve reasonable costs for a local/regional agency. Quantitative results are required using indicators adequate to the type of project. For projects predominantly "technical", life-cycle cost is preferred, but other economic indicators can be used. For other projects, indicators can be audience reached, participation rate, number of meetings etc. Other non-energy benefits should be mentioned. The use of subsidies should be clearly stated.

***Socially and politically acceptable (Weight factor: 1)***

The socio-economic benefits and acceptance issues of the activity should be described. Regarding acceptance, positive aspects (e.g. the project has become a landmark or is used for education purposes) as well as negative aspects (e.g. opposition from local actors) should be mentioned.

***Replicability (Weight factor: 3)***

The success factors and the specific conditions needed for repeating the activity in a different context should be described. The action should present a high potential of replicability.