



Energetic News

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Project status

by Kirsten Dyhr-Mikkelsen, NEE

Our Active Learning project is coming to its end. Our goal has been to empower the citizens of the future to take control and consciously shape the world they live in. Through hands-on experiments combined with reflections the pupils of our champion schools have had great fun and at the same time learned about energy efficiency and renewable energy.

Energy monitoring

Energy monitoring is the key topic of the articles of this newsletter since awareness of a problem is the first step to remedying a problem.

The teachers of the Champion Schools have chosen their favourites among the activities proposed in the Active Learning toolbox and composed teaching plans that fit their particular pupils and curricula. Some have chosen a modular approach as the articles in this newsletter show.

The pupils of the Champion Schools have monitored the energy consumption pattern of their schools and tried to establish the links between the consumption and activity levels and weather conditions.

The results of the energy monitoring efforts have then been entered on the website 'www.sustain.no' to allow other schools to make comparisons.

What is next?

As many as 188 Champion Schools chose to join us in our quest for a sustainable future. Their dedication to high quality teaching and environmental protection made it possible for us to develop the Active Learning toolbox for which we are grateful. Many have stated that their work has only begun and that they will continue to use the Active Learning tools in the next school year.

It is our hope that the work of these Champion Schools will inspire new schools to use the Active Learning toolbox. We, the project consortium, will do our best to promote permanent integration of education on energy efficiency and renewable energy in the national curricula within our countries but also in the neighbouring countries.

On behalf of the project consortium I wish to express a warm

THANK YOU

to our Champion Schools

AL is integrated into the school curriculum

by Bogdana Bogdanova, EAP

One of the 13 Bulgarian champion schools taking part in the Active Learning project is 'Michail Lakatnick Primary School'. Mrs. Petya Yordanova - assistant director, explains how the project changed the pupils and the school.

"Last school year, the pupils at 'Michail Lakatnick Primary School', Burgas began an energy monitoring program at the school. Each day they recorded the outdoor temperature and catalogued this information. Once a week they were given energy usage totals. Throughout the school year they learned to plot the figures on graphs using Excel, and in April they concluded their study with a PowerPoint presentation for 'Earth Day' at the school. The results show that the school could cut back on its energy consumption. In May the pupils created a collage about energy efficiency using all the work they had done throughout the year.



The program began with teachers being trained and given materials on energy efficiency. Then the teachers presented the pupils with a four module Active Learning curriculum on information and activities related to energy conservation.

The lessons varied from basic tips and activities that get the pupils thinking about saving energy (such as forming positive habits such as switching off lights when leaving the room to discussing alternatives to energy consuming activities – e.g., watching TV vs. writing and performing a play with friends) to lessons designed to show the pupils how they can track their specific energy usage.

After completing the modules, all of the classes knew how to reduce their energy consumption.

Three classes were identified for further energy conservation

education using the more advanced lessons in the Active Learning Toolbox curriculum and participated in the monitoring and reporting of energy savings at the school.

These students and teachers were also trained in how to track the results in Excel and on the internet web site 'www.sustain.no', and learned how to make computer presentations for their peers and parents.



The school has thus developed a project concept focusing on energy efficiency education and improvements at the school by installing regulating knobs on the water radiators and updating light fixtures and lighting in some of the

classrooms and corridors.

We look forward to continuing to monitor and improve energy usage at the school in the coming year."

Energy monitoring activity in Lithuania

by Vygandas Gaigalis and Romualdas Skema, LEI

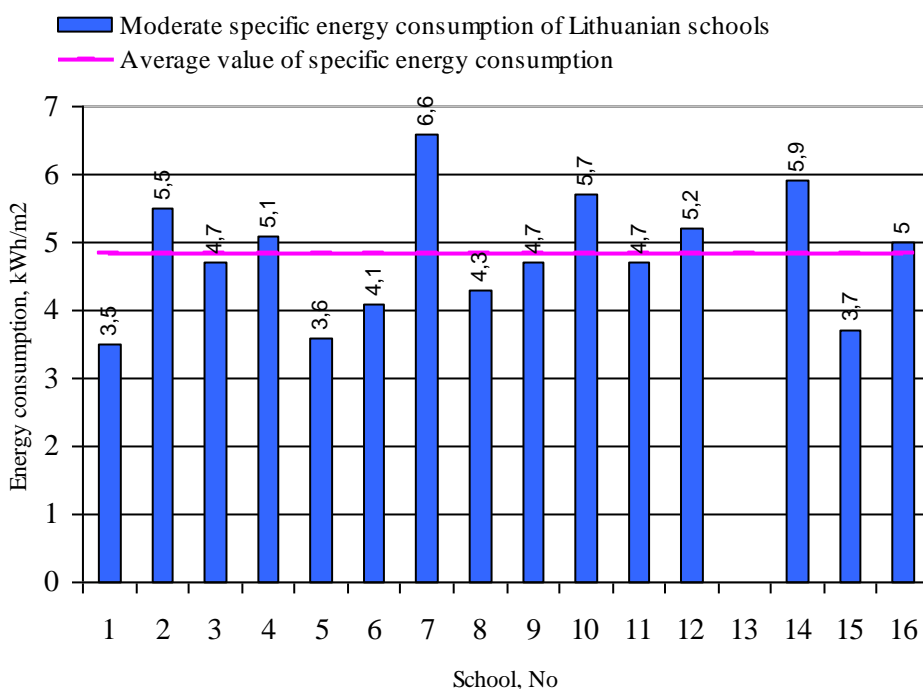
Lithuanian school children and teachers have shown great interest in participating in the AL project due to its many qualities.

School children from 16 Lithuanian schools have shown great enthusiasm in monitoring the energy consumption of their schools. By the November 15th, 2008 more than 230 of such energy monitoring activities were registered on www.sustain.no. More than 20 energy monitoring activities were registered by school children from Kaunas St. Mato, Purienu, Versmes and Sargenu secondary schools. An example of the collected energy monitoring data from Kaunas St. Mato secondary school is shown in the graph in the left corner.



The school children have with great interest compared their school's energy consumption data with that of other schools from Lithuania and schools in the other AL partner countries. They have discussed the possible reasons for why their school's energy consumption data are higher or lower than that of other schools.

The specific energy consumption of the Lithuanian schools measured during 1-15 weeks in 2008 ranged from 3.5-



6.6 kWh/m². The average energy consumption of all 16 Lithuanian schools combined was 4.9 kWh/m².

The schools that found that their energy consumption was higher than the average value have as a result searched for ways to reduce energy waste with aim to reduce the energy budget spendings.

Carrying out energy monitoring and discussing the findings actually made some school children change behaviour. The children showed great concern regarding how to reduce energy consumption. The children analysed which specific actions can lead to actual energy savings. They also took their new knowledge home and acted as advocates for energy economy. The monitoring process showed that children can be effective energy watchdogs and can learn to be conscious energy consumers.

Monitoring our school's energy consumption

by George Andrikos and Karolina Sofianou, 'Nea Genia Ziridis' Primary School

During the school year 2007-2008, our school 'Nea Genia Ziridis' joined Active Learning project, coordinated in Greece by the CRES. The pupils who had the opportunity to participate to the project were those of the sixth grade of our primary school.

The project was divided in three phases.

Phase 1: Conducting a search on energy topics

The pupils were given the chance to familiarize themselves with what energy is and its sources, by gathering related information. They worked in groups of 5-6 pupils, mostly without help from their teachers. Most of their research was conducted through the internet and through scientific magazines. CRES supported the activities by providing the

teachers with useful background information, which the teachers later presented to their pupils.

After having gathered all the information, the groups made a collage showing the key issues. Each group then presented their project to their classmates.



Phase 2: Registering the energy needs of their school

In this phase the pupils, still working in groups, noted the energy needs of their school.

Their notes had the form of a list and included the daily activities that took place at school, the energy consumption that the activities required, as well as the behaviour of other pupils relating to energy consumption. For example: "On Fridays, the chemistry laboratory is being used, which means that there are more lights turned on in the school, as the laboratory is placed in the basement" or "Lights in most classrooms are switched

on whether it is a shiny day or not and they stay that way even when students leave their class to return to their home".

After having taken notes for a week, the groups made a list of simple ways to reduce energy consumption, such as switching on the lights when entering a room and switching them off when leaving the room.

Phase 3: Monitoring the school's energy consumption

This phase lasted for 12 weeks and included three activities in which a member from each group participated.

Some group members had to note down the school's energy consumption on weekly basis. For this activity access to the energy meter was required. This proved to be more difficult than anticipated, but fortunately the school caretaker was helpful.

The meter was checked every week by the caretaker and each group transferred the data to an excel table. In addition to this, each group calculated the specific energy consumption per week (i.e. the amount of energy consumed per m²) and the results were also transferred to the excel table.

Other group members were responsible for measuring the daily outdoor temperature. At

The **Active Learning** project has been an exciting 3-year European project based on the idea that children aged 6-12 years play an important role in sustainable development, and that pupils learn more and the knowledge is retained longer if they experience things first hand. Our Active Learning toolbox contains exciting activities that can be used to teach energy efficiency and renewable energy topics.

The Active Learning toolbox materials can be downloaded free of charge at

www.teachers4energy.eu

Why not try it out now?

the end of each week, they calculated the average temperature and noted down the result in the excel table.

The rest of the group members observed the activities that took place at the school during each week and determined whether the activity level was normal, below normal or above normal. For example, if there was a week when the school was closed for a couple of days, the activity level during that week would obviously be considered below normal. These conclusions were also transferred to the excel table.



All three phases were part of a learning process.

At the end of the first phase, the pupils had understood the extent of the energy problem that our planet faces and therefore, the importance of using renewable energy sources.

During the second phase, the pupils realised that our everyday activities require a great amount of energy which means that we are all responsible for the energy problem. They were also able to understand that we can all help limit the problem by changing our way of life.

Finally, the third phase helped the pupils recognise some of the factors that influence energy consumption, such as the activity levels and outdoor temperature.

More information can be obtained by contacting the consortium partner representing your country:

Belgium

Le Centre Urbain / Stadswinkel asbl (ABEA), www.curbain.be
Contact: Yveline Wigny, yveline.wigny@curbain.be, +32 2 219 4060

Bulgaria

Energy Agency of Plovdiv (EAP), www.eap-save.org
Contact: Liyana Adjarova, liyana.adjarova@eap-save.dir.bg, +359 32 625 755

Czech Republic

SEVEn, Stredisko pro efektivni vyuzivani energie, o.p.s., www.svn.cz
Contact: Juraj Krivošik, juraj.krivosik@svn.cz, +420 224 252 115

Finland

MOTIVA Oy, www.motiva.fi
Contact: Irmeli Mikkonen, irmeli.mikkonen@motiva.fi, +358 424 281 213

France

The French Environment and Energy Management Agency (ADEME), www.ademe.fr
Contact: Therese Kreitz, therese.kreitz@ademe.fr, +33 4 9395 7984

Greece

Centre for Renewable Energy Sources (CRES), www.cres.gr
Contact: Charalambos Malamatenios, malam@cres.gr; +30 210 660 3300

Hungary

INNOTERM Energetics Environmental Protection & Development Ltd., www.innoterm.hu
Contact: Miklós Fráter, miklos.frater@innoterm.hu, +36 1 343 1280

Italy

Eliante, www.eliante.it
Contact: Mauro Belardi, belardi@eliante.it, +39 348 874 9889

Lithuania

Lithuanian Energy Institute (LEI), www.lei.lt
Contact: Romualdas Skema, skema@isag.lei.lt, +370 37 401 802

Norway

The Directorate for Primary and Secondary Education (DPSE), www.udir.no
Contact: Astrid Sandås, astrid.sandas@udir.no, +47 2330 1318

Norway

Norwegian Energy Efficiency Inc (NEE), www.nee.no
Contact: Thea Marie Mørk, tmm@nee.no, +47 9325 7234

Poland

EC BREC Institute for Renewable Energy (EC BREC), www.ieo.pl
Contact: Grzegorz Wisniewski, gwisniewski@ieo.pl, +48 22 825 4652

Poland

European Association of Ecologists (ESE)
Contact: Grazyna Jaworska, eseeko@wp.pl, +48 71 34 76 000

Slovenia

Agencija za prestrukturiranje Energetike (ApE), www.ape.si
Contact: Suzana Domjan, suzana.domjan@ape.si, +386 1 586 3874

Sweden

The Swedish Energy Agency (STEM), www.energimyndigheten.se
Contact: Lisa Lundmark, lisa.lundmark@energimyndigheten.se, +46 16 544 2152

United Kingdom

Newark & Sherwood Energy Agency (NSEA)
Contact: Chris Gilchrist, chris.gilchrist@nsdc.info +44 1636 655 596

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