LEARNING BY DOING - new interesting developments of the EURONET 50/50 MAX project!



In this second newsletter of the EURONET 50/50 MAX project we proudly present some best practices developed in different areas engaged in implementation of the 50/50 energy-saving concept. For over a year more than **500 schools** and **48 other public buildings** from **65 municipalities** strived to save energy and money by increasing energy awareness of pupils, teachers and other building users and engaging them in energy-saving actions.

Each od them has its own experience in energy education, increasing efficiency of energy use and working with the energy team created in its building. Use the opportunity to learn from them, get inspired by them and also share your own achievements, best practices and useful tips! To help you with that we created **EURONET 50/50 MAX Facebook profile** (https://www.facebook.com/EURONETMAX) which you may use to:

- observe our most interesting activities, as well as activities & achievements of other schools, public buildings and municipalities involved in the 50/50 Network
- publish posts about your activities
- present your ideas and innovative approaches to energy saving
- share photos, inspire others and get inspired by them

We decided to use Facebook as our 50/50 Networking Platform as it is free, easy to use and already used by many schools and public institutions. If you don't have a Facebook profile yet, create one and link with us!

Besides following our English Facebook profile, you can also visit national EURONET 50/50 MAX profiles which are accessible from the national versions of the project website (www.euronet50-50max.eu).

From the newsletter you will also learn about other tools and documents that we have developed to help you save energy in your buildings, as well as about interesting actions undertaken by the schools and other public buildings involved in the project. And they are really making a difference - there are already 82 593 pupils and 6 182 teachers engaged aiming to save at least 8% of energy consumed by them.

EURONET 50/50 MAX is an IEE-funded project aiming at mobilizing energy savings in public buildings through the implementation of the 50/50 methodology, which actively involves building users in energy management. Achieved financial savings are shared equally between the users and the local authority which covers the energy bills.

What are we doing now?

50/50 materials and tools

Within the project we have developed many **useful materials and tools** that may help you in implementation of the 50/50 concept and increasing efficiency of energy use. Some of them are presented below. You may download them free of charge from the project website.

Guidebook "Energy saving at school" (Vol. 1 & 2)



The guidebook contains many useful guidelines for teachers that will help them in implementation of the 50/50 methodology and their work with the school energy team. It includes examples of worksheets and experiments that may be used to increase the

pupils' knowledge of energy and climate issues. First part is adressed to primary school teachers, while the second part to seconadry school teachers.

Guidebook "Energy saving in public buildings"

This publications complements the guidebook "Energy saving at school" and focuses on



implementation of the 50/50 methodology in noneducational public buildings. It informs what criteria must be met by these type of buildings, if they wish to engage in the 50/50 project, what is the role of local/regional selfgovernment and the energy team, as well as explains step by step how to implement the 50/50 methodology in order to achieve energy and financial savings.

Guidebook "How to handle the energy team"

Guidebook is addressed to school caretakers (although also the teachers involved in the 50/50 project will find here many useful tips!) and will help them to prepare for the work with the energy team, including co-organisation of the energy

review of the school building. Caretakers play very important role in the 50/50 project as they know best the school building and its energy system. Therefore, they can help the pupils analyse energy situation of their school and implement energy-saving measures.



EURONET 50/50 MAX thermometer



The thermometer was designed by the partners from Huelva (Andalusia). It not only shows the temperatures in the room but also informs what temperatures are suitable for different types of spaces and different seasons. It's very nice, isn't it?

What are we doing now?

The strategic roll-out of the 50/50 concept

One of the main goals of the EURONET 50/50 MAX is the strategic roll-out of the 50/50 concept. The plan is to influence at least 100 local strategies, 16 educational strategies, 16 regional plans and 13 national relevant action plans to integrate 50/50. This can be climate or sustainable energy strategies, educational plans, national energy efficiency action plans, etc. The 50/50 method is a very attractive and efficient tool to save energy and therefore it totally fits with the aims of the Covenant of Mayors. So far, at the local level, 50/50 has been included as an action in 102 Sustainable Energy Action Plans (SEAPs).

At the regional level we found so far 8 different strategies that will integrate the 50/50. DIBA, coordinator of the project, also got in contact with the EU SERPENTE project and - as a result - the 50/50 concept has been adopted by ALEC (Local Energy Agency of Bordeaux and Gironde metropolis). In Austria the idea will be included in the implementation concept of two "Climate and Energy - model regions" (Styrian Nature Park Eisenwurzen and Weiz-Gleisdorf region) and in the "E 25 Energy Strategy" of the Styrian Provincial Government.

The biggest challenge of the strategic roll-out is to identify relevant national plans to fight climate change, national Energy Efficiency Action Plans, environmental education strategies, etc., where 50/50 can be integrated. Until now, three national strategies will incorporate the concept.

Very important role is played by so called "project observers" who will help to spread and promote the 50/50 concept across Europe.

Our network of observers includes many different and commited organisations - 8 municipalities, 6 energy agencies, 1 federal ministry of education, 2 educational organizations, 2 associations of municipalities or towns, 1 association of school principals, 1 university and 1 Europe Direct Information Centre. They have a big potential to disseminate the 50/50 concept effectively to a wide target audience. As the dissemination should go beyond the partner countries, the 50/50 concept is being promoted also through other networks or initiatives at the EU level.

If you want to include the 50/50 concept also in your local/regional/national strategy, contact us!

50/50 annual celebrations are coming soon!

Since the school year is coming to an end, the project partners are planning some festive activities to reward the children for their hard work and help them to promote their Author: Nemo; source: impressive achievements. In



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each country "energetic" 50/50 celebrations will be held with a lot of fun and opportunities to further increase knowledge on climate and energy. Many interesting activities are planned, including presentations and performances of the pupils, dissemination of eco-friendly gadgets and material and many others.

The events will be also an occasion to invite the families and engage them in energy-saving activities. Maybe they will get impressed and decide to run a 50/50 project in their homes? This would give the children chance to get some extra pocket money with their energy-saving skills. Follow us on Facebook to learn more!

Below you may find selection of best practices developed in different countries participating in the EURONET 50/50 MAX project. Get inspired by them and share them with the others!

Austria

Good practice 1: model actions in the Primary School Barwitzius (Wiener Neustadt). The Primary school Barwitzius in Wiener Neustadt is one of the 10 Austrian schools involved in the EURONET 50/50 MAX project. School's energy team started to work on the implementation of the 50/50 concept in October 2013, trying to save as much electricity, heat and water as possible. Supplementary, the school strived to reduce the amount of waste produced. Within the first year of the project the school managed to save 19 % of energy (which equals 7 200 €).



The biggest part of these savings (more than 4 000 €) was achieved on heating – its consumption was reduced by 38 096,79 kWh (16,70 %). This best practise shows that it is worth to touch the heating system. The electricity consumption, on the other hand, decreased by 24,69 % (10 187,30 kWh).

Above that, the energy team of the Primary School Barwitzius showed that it is also worth to work with waste and water. By reducing water consumption by 28,47 %, the costs declined by 2 812,30 \in . By reducing the amount of waste by 16,68 %, another 846,41 \in were saved.

Croatia

Good practice 2: EURONET 50/50 MAX in the Vladimir Prelog Science School. While teaching in their classes the teachers Mara Husain and Gorica Grozdanić realized that their students possess great energy - much more than it is necessary for normal classes - and that this energy should be channelled for their own benefit and the benefit of the whole school. Therefore, they decided to invest 100% of their and pupils energy to achieve maximum energy savings in their school.

School's energy team includes the school principal, Mr Zlatko Stić, and the caretaker, Mr Janez Grubar, who decided to join it in exploring



uncharted waters of energy savings. The caretaker was happy to involve the pupils in his work. Also the rest of the school has been intrigued by what the team does.



Everything started with a lamp made of recycled material. This was just the beginning: while the "creators" worked on decorations from plastic bottles and CDs, the "machinery" waged war against Photoshop concerning the color or fonts for ID cards. The "practitioners" snuck into classes with strange devices and measured while "analysts" decided something, on appropriate temperature for specific rooms. After first hearing about the project, the students blamed those "Energy saving eco-people" for the cold. They were, of course, not the reason, but it was fun to hear their complaints.

The hardworking "creators" marched down the hall covered with paint, surrounded by wonder of other students, which was soon answered with a poster detailing the project and stickers put on every socket, which were presented by "showmasters". All this was closely documented by the "paparazzi". Our analyst, Vedran, decided to solve the problem of losing energy through windows: he put aluminum foil behind radiators to return heat back to the room.

Don't worry, our "press section", whose text you are reading, will make sure you stay in touch with all that goes on in the project!

Cyprus

Good practice 3: Educational activities of the Cyprus Energy Agency. Using the opportunity given by the EURONET 50/50 MAX project, the Cyprus Energy Agency is getting in touch with the schools and broadening its educational campaign concerning energy efficiency and RES use. The agency is disseminating the material produced within the project and organises educational "energy days", including workshops and presentations tailored to different age groups, in schools involved in the 50/50 Network. The presentations are further used for other educational purposes in schools not being part of the 50/50 project.



Along with the educational material provided by the EURONET 50/50 MAX, the students were given posters with the list of energy efficiency rules that they should follow in their rooms, worksheets, mouse pads, stickers and calendars. The students were also encouraged to use the Agency's educational corner on its website to further increase their knowledge on sustainability and energy saving. Towards the end of the visit, the students had the chance to play the energyrelated game entitled "The giant energy snake", where they themselves became the pawns in the traditional "snakes and ladders" game. The schools were also provided with the "energy snake" board game which is included in the students leisure activities. Except for the trainings, the Cyprus Energy Agency organises field trips to various renewable energy parks such as wind farms, biomass plants and photovoltaic parks, where the students could see with their own eyes how the renewable sources are turned into electricity.

To ensure that the teachers also get the necessary education on renewable energy sources and energy efficiency, the Cyprus Energy Agency - supported by the Ministry of Education - prepared an educational package for the teachers. This educational package will be distributed to more than just the 50/50 schools (more than 350 schools) throughout the whole Cyprus.

Italy

Good practice 4: energy saving in Florence sports facilities. Florence City Council adopted a plan to increase efficiency of energy use in the public sports facilities and thus spend less money. The amendment to the regulation on the management of sports facilities was approved in February 2015 to include the programme of public and private interventions, including implementation of the 50/50 concept and use of the ESCO scheme (more info at: http://met.provincia.fi.it/news.aspx?n=190073).



Good practice 5: energy team in the Gandhi Institute of Florence. One of the Italian schools involved in the EURONET 50/50 MAX project is Gandhi Institute of Florence, which is located in a residential area with the presence of a large Chinese community. The institute adopted very active approach towards the project since the very beginning. It started with the meetings of the working group where the theory was explained. In early November 2013 the three members of the group (Angela, Dominic and John), the staff of Ata (Claudia, Laura, Simon and Tiziana) and the energy consultant from AFE (Michael) met to define how the energy team created in the institute will work.

The objective was to involve as many classes as possible and to give continuity to the training and activities involving the pupils. The energy team

created is composed of the two representatives of each class of the first and second year. The energy team includes both Italian students and the students originating from other countries, mainly Chinese, that can integrate with each other by implementing common tasks (more info at: http://www.icsgandhifirenze.gov.it/progetti/ euronet-50-50-2013-2016.html).



Using the E-pack provided by AFE, the students started their work. For two months they have been measuring the temperature and light brightness not only in all classrooms, but also in the secretariat, gym, computer labs, theater, science lab and library. The data gathered were presented on the map of the school, where different rooms were colored in a way so that everyone could see immediately if a classroom is too cold or too hot.

On Saturday, 7th of June 2014, during the end-ofthe-school-year celebration, "beautiful" billboards prepared by the students were displayed and could not be missed! And now the project continues – soon you will learn about our new developments.

Lithuania

Good practice 6: Smart measurement devices installed in Panemunes library. Panemunes library was involved in the EURONET 50/50 MAX in the second year of project implementation. It is located in Kaunas municipality, Lithuania. On the 15th of December 2014 smart electricity meters and temperature data logger were installed in the library building to monitor different aspects related to energy consumption.



For the electricity consumption metering, EFERGY E2 electricity meters were selected as installation of these devices is easy and they provide very useful data. Smart electricity metering allows to monitor electricity flows in different areas (lighting, computers, heating systems, etc.) and shows electricity consumption at peak time, the reduction of which is the most important target on the way to electricity saving. It allows to monitor both real-time and total consumption. Real-time consumption can be seen on LCD monitors all the time, which motivates building users to reduce it (if such amounts of energy are not necessary at the moment).

Gathered consumption data were analyzed by the local project coordinator and the results were presented to the energy team. The most energy consuming areas and peak times were discussed in order to choose the most proper and effective energy saving measures. The results showed that the lighting system is responsible for the largest part of electricity consumption (41%). Therefore, it was recommended to pay stronger attention to the rational usage of lighting. Also other electricity saving possibilities were discussed.

Except for the electricity meters, also the LASCAR EL-USB-2-LCD temperature data logger was installed. It records the temperature value once per hour and creates temperature diagrams which are very useful for heating system analysis. Temperature changes are recorded both during the working hours, when the temperature should not be above 20 °C, and during the night time or weekends, when it should be between 16-17 °C. The data gathered showed that during the working hours the temperature in the rooms was too high, so it was recommended to adjust the heating system and reduce energy consumption for heating in this way.

Library's energy team was very positive about the measurement devices provided and hoped that gathered data will help them to reach significant savings in the future, as well as to create a more comfortable working environment.

Poland

Good practice 7: Teaching responsible use of energy in the Primary School n^o 5 in Dzierżoniów. Increasing pupils knowledge on climate and energy issues is one of the most important steps of the EURONET 50/50 MAX project. There are

manv interesting and effective wavs of transferring knowledge on the types of energy used, energy saving, RES, climate change and climate protection. One of such methods was developed by Mrs Myszakowska, the teacher from the Primary School nº 5 in Dzierżoniów, who launched а project entitled "Responsible consumer".



The project was implemented during the natural science classes to involve both pupils from the energy team and others. The pupils were divided into three groups, each of them responsible for different resource that we consume or produce – energy, water and waste. Each group got a list of topics that it should work on, e.g.:

Group for energy: energy sources, advantages and disadvantages of different types of installations used to produce energy (coal-fired electricity plants, wind farms, solar installations, etc.), energy saving, energy consumption of different home appliances, advantages and disadvantages of different types of lamps.



Group for water: types of water power plants, water consumption in households, ways of saving water, areas in the world with the shortage of water.

Group for waste: types of waste and their segregation, advantages of recycling, methods of reducing waste during everyday shopping, laws and responsibilities of consumers with regards to waste.

Then, the pupils were asked to find detailed information on the given topics and prepare presentations for their colleagues using different tools of communication – posters, drawings, photos, PPT slides, etc. They also showed requisites like different types of light bulbs or bags fo waste segregation. The pupils handled the task well and with great enthusiasm and creativity. They enjoyed this way of work and – after summarising the project – it turned out that they remembered many useful information. Much more than in case of simple lectures given by the teachers. The project also made the pupils aware that their individual actions really make a difference and are very important.

Spain

Good practice 8: The EURONET 50/50 MAX in the ManagEnergy magazine. One of the latest issues of the ManagEnergy magazine focused on energy education. You may find there many successful examples on how to promote energy efficiency in primary and secondary schools. Also EURONET 50/50 MAX project was present! It appeared in the article showing the experience of Can Besora School (http:// www.managenergy.net/news/articles/568). It is one of over 500 European schools involved in project, which are developing many actions to save energy and reduce CO₂ emissions.



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ropes yound on their generation proud the Jetember Ar governments from a found the word met for the UN cannel ange Conference (CO20). 60 Young Freedo of the Earth Europe members convenient of a foundes to make their own listical contribution. The teenagers followed the discussions closely, and responded by campaiging against complacempt dipalment provide contraste protection stategies for 2015. Their actions sent out a havefrain greases are been functioned to the state of the state of the state found of the action sent out as havefrain greasage to energylucation initiatives in Europa, showing that there are engaged and motivated European youths ready to respond to the erry crisis with action and determination.

wareness agency, Agence de Formironnement et de Mahrise de Tinnergie (ADEME), used the Christmas featbries as a poportunity to educarise kinds on sustainable behaviour. Adding tradaning resources, information and fin Christmas ecocivities accessible to hundreds of schools, families, and interveted kits, these organisations seared the chance to help to text generation to make climate friendly, energy-efficient chuices into the New Year.

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Good practice 9: Can Besora school case. In Can Besora school, located in Barcelona's Mollet del Vallès, kids are excitedly working towards their reward. "*We like this project because we*

save money and energy", say the 6th grade students, Idaira, Alba and Naia. "With the money saved we help our school to save even more. We can also buy a ping-pong table and instruments for the lab."

"At first it was difficult to achieve results", explains the English teacher and the project "ecorepresentative", Eva Álvarez. "Our school had one of the lowest savings in Mollet, because it was built to the highest energy efficiency standards already and our kitchen is used to prepare fresh organic food everyday from scratch, which involves energy use that is difficult to cut down ... ". But participating schools are provided with energy monitoring devices and easy computer programmes to help track energy usage. E-packs, teachers' guides and worksheets are distributed throughout the network, supporting teachers to learn new energy-saving techniques and promote deeper energy awareness to their pupils.

The programme soon proved a great teaching support for the teachers at Can Besora, helping them to teach kids not only about energy saving, but also about all aspects of the curricula. To learn their subjects, pupils work through different focus projects.

EURONET 50/50 MAX offers a great opportunity to introduce practical learning in a number of disciplines. Mrs. Álvarez says: "For example, when children write 'ten energy saving commandments' (Decalogue) they are focussing on the language too". And they are learning maths through preparing graphics to represent the figures resulting from their energy expedition. Teachers were impressed by the imagination and the enthusiasm that the project inspired in their pupils: "They created energy-efficiency reminders for different places in the class: windows, doors, computer screens, switches... .", explains Álvarez, "They put coloured stickers on the light switches to remind students and staff that we do not need to turn on all the lights at the same time. but only the green switch when we need some light."

The programme has proved so valuable for Can Besora that the teachers decided to continue the concept even after the project ends!

saving energy **E** buildings hools energy **ENERGY**

Contact the project partners

EURONET 50/50 MAX The project is implemented by a consortium of 16 motivated partners from 13 European countries, with great experience in the fields of energy saving and energy education.

Experienced partners:



Diputació Barcelona Provincial Council Barcelona (DIBA) - project coordinator Website: www.diba.cat E-mail: euronet@diba.cat



Independent Institute for **Environmental Issues (UfU)** Website: www.ufu.de E-mail: almuth.tharan@ufu.de



Local Agency for Energy and **Environment (ALESA)** Website: www.alesachieti.it E-mail: info@alesachieti.it



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Association of Municipalities Polish Network "Energie Cités" (PNEC) Website: www.pnec.org.pl E-mail: biuro@pnec.org.pl



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The "EURONET 50/50 MAX" network map

Sweden Finland Norway Helsinki Oslo Stockholm 0 oTallinn Estonia Baltic Sea Gothenburg Latvia Mosco North Sea Москв Lith Denmark ania United Minsk Vilnius o Minck Kingdom Hamburg Belarus Ireland Birmingham Bé Netherlands Poland Kyiv Germany Kharkiv Belgium o Київ London Kraków Cologne Харків Czec Paris Ukraine Munich Bratisla Slovakia 0 0 Dnepropetrovsk. Vaduz Moldova Aus Дніпропетровсы Hungary France 0 Milan Odessa Romania 0 Одеса Croatia Turin Serbia Bucharest Italy Black Sea oMarseille Rome Bardiona Bulgaria Madrid Portugal Istanbul Ankara Tyrrhenian Sea Spain Lisbon Greece İzmir Turkey C Algiers Tunis 0 Aleppo Antalya الجزائر نونس Oran Athe ABhy وهران 0 SI Casablanca Mediterranean Sea God Junisia الدار البيضاء Lebanon

Join the 50/50 Network of energy-saving schools and other public buildings!

To receive more information about the project you can contact us at **euronet@diba.cat** or visit the EURONET 50/50 MAX project website:

www.euronet50-50max.eu



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