

50/50 STEP BY STEP

Energy efficiency and saving at school



Supported by
INTELLIGENT ENERGY
EUROPE 



EURONET
50/50

50/50 STEP BY STEP

Energy efficiency and saving at school

We would like to thank all the schools and city councils that have enthusiastically participated in the Euronet 50/50 project sharing and learning together to save and improve energy use. We specially thank pupils that have led the actions showing us that great results can be reached if we take care of our daily actions.

INDEX

I.	THE PROJECT: 50/50 EUROPEAN NETWORK OF EDUCATION CENTERS	3
II.	BEFORE STARTING A 50/50 PROJECT YOU SHOULD KNOW THAT...	5
III.	STEPS TO CARRY OUT 50/50	6
IV.	CALCULATION OF 50/50 SAVINGS	10
V.	BEST PRACTICES IMPLEMENTED BY SCHOOLS OF THE 50/50 NETWORK	11
VI.	EVALUATION OF THE EURONET 50/50 PROJECT	20
VII.	JOIN THE NETWORK !!!!!!!!!!!!!	24
VIII.	STAKEHOLDERS INVOLVED IN THE PROJECT	26

Getting energy smart with Euronet 50/50

From the last third of the twentieth century environmental protection has turned into an important challenge for local authorities, which requires the collaboration of citizens and other authorities. A joint effort that through the years is getting more solid and having outstanding results. This teamwork has been particularly relevant in the mitigation and adaptation to climate change.

EURONET 50/50 is a good example of practical cooperation and implementation of straightforward local initiatives to address the most internationally recognized environmental problem: climate change and the overproduction and excessive consumption of energy related to it.

With the project we could realize that cooperation between city councils and the management teams of schools, commitment of teachers and students, technical and financial support from the EU through the IEE program, and coordination of supra-local organizations that promoted and coordinated the project in its territory, are factors that add up well, leading to a remarkable improvement in energy efficiency of schools.

In the territories where the project has been developed there has been a successful combination of pedagogic materials, technical knowledge on energy, awareness and public management. Some outstanding results that highlight the efforts made are the creation and continuity of energy teams at each school, the energy savings and CO2 emissions reduction achieved and the increased income of schools thanks to money received from 50/50 savings.

The steps started by EURONET 50/50 on May 2009 have an end on May 2012, but this is just an administrative deadline, because the project has achieved one of its most difficult goals: to keep going on. The 50/50 NETWORK and guidance materials developed and tested within the project facilitate to engage other European schools in energy saving projects and in turn, to promote the empowerment of pupils in the educational system. Therefore it has a clear double benefit.

The methodology is ready, and now is time for educational communities and municipalities to continue leading 50/50 action. We hope this guide inspires and helps schools to develop a process of energy saving and emissions reduction, and that through the experiences acquired with Euronet 50/50 it joins those efforts already undertaken by schools and city councils in a common goal to tackle climate change.



Euronet 50/50 partners



I. THE PROJECT: 50/50 EUROPEAN NETWORK OF EDUCATION CENTERS

Pupils behaviours can make a big change at school and at home to move towards sustainability. Euronet 50/50 project focused on this, mainly by empowering pupils to save energy. It has created a European network of schools to save energy by implementing the 50/50 concept. Nine partners from different European countries have developed the project.

The project is co-financed by the Intelligent Energy Program of the European Commission and it has been running for 3 years since May 2009.

The 50/50 concept

With 50/50 schools can implement a methodology that helps them to learn about energy and to save it, mainly through behavioural changes. The 50/50 concept started in Hamburg in 1994. The objective is to include economic incentives for saving energy between the schools and the managers of school buildings (usually local authorities): 50% of energy savings achieved from the energy efficiency measures taken by the pupils and teachers are returned through a financial payout. The other 50% will be a net saving for the public authority that pays the bills.

As a result everyone wins: the school gets additional financial resources, the managers of school buildings have less energy costs and energy efficient schools are contributing to local energy and climate change targets.

The project development

The implementation of project activities followed a three-stage structure, involving phases of planning, execution and assessment:

- ▶ Firstly, the basic conditions for the implementation of the 50/50 system were studied with special focus on the educational systems of the partner countries. A common 50/50 methodology was developed and schools were selected to get involved in the project.
- ▶ Secondly, the 50/50 has been implemented during 2 years in 58 schools constituting the EURONET 50/50 network. Every school has created an Energy Team to coordinate and monitor the implementation and has undertaken energy audits to find out the schools' energy baselines and the potential energy savings. Common educational material is also a result of the project that has helped schools to implement 50/50.
- ▶ Finally, the school's experience and results of the project have been evaluated.

The 50/50 Network is still active, sharing knowledge and activities among schools and involving new educational centers around Europe.

To know more about the project go to: www.euronet50-50.eu/

The screenshot shows the top section of the Euronet 50/50 website. It features an orange header with the project logo on the left, a language selection dropdown menu set to 'English' on the right, and a login section with 'User' and 'Password' input fields and a 'log-in' button. Below the header is a white navigation bar with links for 'Welcome', 'The project', 'Project implementation', 'Events', 'Press', 'What are we doing now?', 'Twitter', and 'Contact'. Social media icons for RSS, Twitter, and YouTube are also visible in the bottom right corner of the navigation bar.



Motivations to implement 50/50 at school

Many benefits can be reached with 50/50 development:

- ▶ 50/50 empowers pupils to learn about energy and get energy smart
- ▶ A correct management of temperature at school allows to improve the environment and to regulate temperature and illumination to the needs of every activity.
- ▶ If we reduce the energy use we also decrease the money we pay for it, so that school can save money to invest it in other priorities
- ▶ Energy production is usually linked to generation of CO₂ emissions. If we save energy we can reduce this greenhouse gases and the impact on the climate.

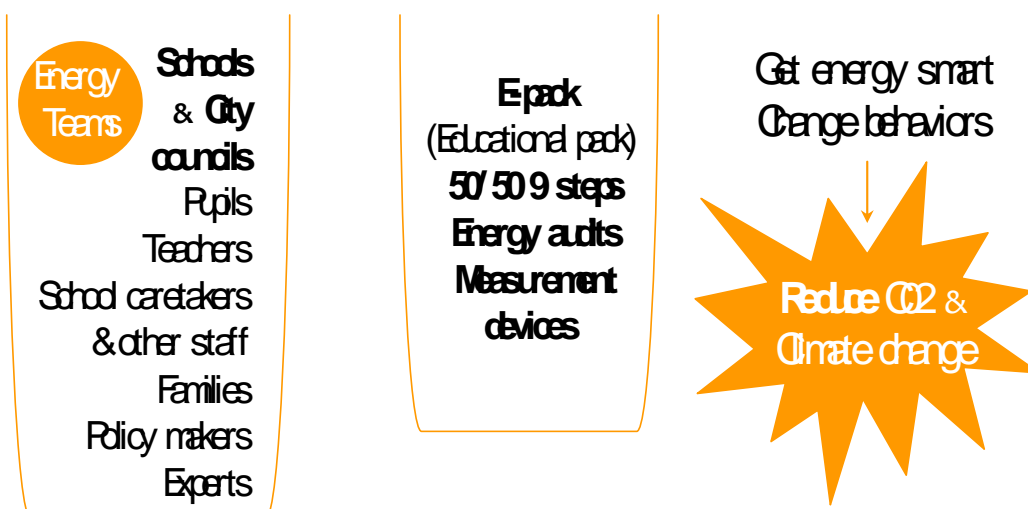
The results of the project

Euronet 50/50 has brought together 58 schools that have taken action to save energy achieving the following main results:

- ▶ 58 schools energy teams have been set up with schools and city council team working to implement 50/50 actions during at least 2 years (2010 and 2011)
- ▶ A common methodology has been developed to implement 50/50 in the schools with common guidelines, an educational pack and devices to measure energy use
- ▶ During the 1st year of 50/50 implementation at least 50% of schools in the 50/50 Network achieved energy savings. They managed to reach the target of 2,5% of CO₂ reductions (saving 251 T of CO₂) and received as a result of savings, an average of 500€ per school. This money was the result of 50/50 transfer to school from the manager of the school building.

A key aspect of the project has been the involvement of stakeholders and the exchange of ideas and actions between energy teams and partners of the project. The 50/50 Network website (<http://escoles.euronet50-50.eu/>) is the place where this activities are widely disseminated and where new schools interested to join 50/50 action can get involve.

50/50 NETWORK & 50/50 METHOD = ENERGY SAVINGS





II. BEFORE STARTING A 50/50 PROJECT YOU SHOULD KNOW THAT...

If you are a City Council you will have to ...



- ✓ provide monthly data about the school consumption on fuel and electricity (historical and current data)
- ✓ appoint a representative for the *energy team*
- ✓ take part in the *energy tour*
- ✓ return to the school *50% of achieved savings*
- ✓ disseminate the *methodology* to other schools of the municipality
- ✓ sign a collaboration *agreement* with the school

If you are a school you will have to ...



- ✓ promote behaviour changes among the users of the building
- ✓ set up *the energy team*
- ✓ follow the *50/50 methodology* to save energy
- ✓ participate in the *Euronet 50/50 Network*
- ✓ keep the *blog* active
- ✓ sign an *agreement* with the city council or with the person in charge of paying the school's energy bills

Blog: space offered by the 50/50 Network to schools to share and exchange their experiences, interests, difficulties and successes.

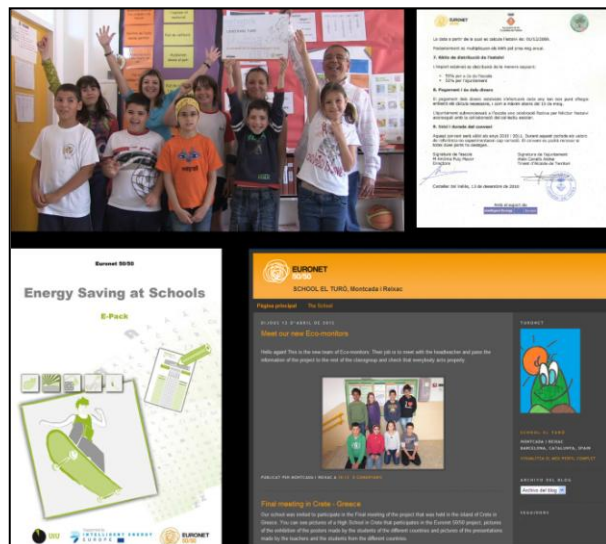
Agreement: compilation of rights and obligations of every signatory: who pays the energy bills of the building and who takes action to reduce energy consumption with changing habits.

Energy Team: group made up of representatives from pupils, teachers, cleaning services, parents associations, city councils and the person in charge of the project in the school.

Methodology: document available on the 50/50 Network explaining the steps to be taken at school to correctly implement a 50/50 project.

Energy tour: visit around the school to learn about energy circulation in the building: how it comes in, how we use it and how it goes out.

50% of savings: this is the share of savings returned to the school





III. Steps to carry out 50/50

If you start reading this section maybe it means that you want to follow 50/50 way.

Go on! you will have fun, you'll learn many things and save!

Start walking, it is very easy!

STEP 1. Set up the energy team: it will be the project's driving force, investigating , proposing, inquiring, informing, deciding,...

WHO

The management team or persons that want to promote the project

HOW

- ④ Deciding how you want to work at school: with all classrooms of 5th and 6th grade? with representatives from all age groups? with representatives from 5th and 6th grade?
- ④ Trying to involve other members of the educational community (families, ...); other users of the building; school staff (school caretaker, cleaning personnel, ...)
- ④ Involving members of the city council (from environment, education, services and maintenance)



TO ...

- ④ Plan tasks
- ④ Propose actions
- ④ Disseminate the project
- ④ Coordinate the project

STEP 2. The insider energy tour

WHO

The management team; teachers involved in the project; maintenance personnel

HOW

- ④ The school caretaker will lead a tour around the school showing heating and electricity systems
- ④ It is important to bear in mind all those aspects interesting for the energy team to develop the energy diagnosis of the school



TO ...

- ④ Learn about the situation of energy in the school: heating system, characteristics of the building.
- ④ Identify aspects for potential savings



STEP 3. Knowledge, awareness and planning

WHO

The energy team; Pupils of 5th and 6th grade



HOW

- ④ Activities in classroom
- ④ Using the project's didactic guide
- ④ Preparing working sheets
- ④ Distributing tasks among the members of the energy team

TO...

- ④ Rise awareness on energy
- ④ Learn concepts such as: climate change, energy saving, ...
- ④ Create a positive attitude

STEP 4. Energy tour/inspection

WHO

The energy team



HOW

- ④ The school caretaker will lead a tour around the school showing heating and electricity systems
- ④ The energy team will take notice of all relevant aspects related with energy and will fill the information in the working sheets

TO...

- ④ Learn how energy comes to school, how it is used and even lost sometimes
- ④ Develop a common diagnosis
- ④ Make a proposal of issues that have to be further analysed

STEP 5. Gathering data

WHO

The energy team; Pupils that take part in the project



HOW

- ④ Taking measures with energy measurement devices
- ④ Making a survey about habits and comfort in classrooms and the school
- ④ Including findings in a map of the school

TO...

- ④ Learn about temperature and light conditions in the school
- ④ Know the habits of school's users



STEP 6. School's action plan

WHO

The energy team



HOW

- ① Talking, thinking and discussing about findings on energy use at school
- ① Evaluating the energy situation at school

TO ...

- ① Develop an action plan to improve energy efficiency at school

STEP 7. Broadcast of results to all school-related agents

WHO

The energy team



HOW

- ① Making posters and wallpapers
- ① Explaining it to other classrooms
- ① Organising workshops
- ① Developing leaflets for all users: parents, teachers, cleaning staff, groups that use the facilities..

TO ...

- ① Explain all the actions undertaken
- ① Inform everyone about how they can take part

STEP 8. Report measures which require small investments

WHO

The energy team; The directive team; Parents' association; City council



HOW

- ① Explaining the project
- ① Making a list of those actions that require a small investment
- ① Sending the list to the representatives of organisms that can make investments
- ① Making a meeting to explain the needs for small investments
- ① Inviting sponsors to the school

TO ...

- ① Improve energy management of the school
- ① Rise awareness on energy use among other stakeholders



STEP 9. Use and report the money saved by the school with its efforts

WHO

The energy team

HOW

- ④ Discussing what can be done with the money returned to the school with the energy savings
- ④ Explaining to the school public the results on energy and emissions saving:
 - celebrating an open event
 - in the school journal
 - with posters



TO ...

- ④ Communicate that changing small habits we can reach important results
- ④ Encourage all stakeholders to take part in 50/50 project
- ④ Disseminate among citizens the actions taken by pupils to tackle climate change.



IV. Calculation of 50/50 savings

First of all to calculate energy savings it is important to keep the calculation system as easy as possible but at the same time understandable and rigorous.

Euronet 50/50 project developed a simple program where schools can include database and calculate savings. The objective is to calculate how many energy has been saved during a whole year in electricity and heating.

First of all, **data is essential to calculate savings!** We need energy bills and the average price of energy.

How to calculate savings on KWh?

We subtract the consumption of the current year from the consumption of a reference period (based on the average of the last 3 years). The resulting saved KWh are multiplied by the average price of energy supply of the current year.

How to calculate savings on heating?

To calculate savings on heating we also compare the energy consumption with the reference period but in this case we need to adjust the consumption on heating with the heating degree days¹. In this way we can lower the yearly differences of external temperature in heating consumption (the colder the weather, the more we spend on heating).

INTRODUCTION

EURONET 50/50

Welcome!!!

This spreadsheet will allow you to easily follow-up the energy consumption of your school
As you know the objective of the project EURONET 50/50 **is to save energy**
But how do we know if we are achieving saving with our actions?

So, knowing what is our consumption on electricity and fuel at school and comparing it with past years when we were not taking action

This spreadsheet will help you to achieve this challenge but at the same time it contains also different useful tools to implement the Euronet project in your school

Particularly you can find:

- [1. Consumption data entry of your school](#)
- [2. Guidelines to calculate energy savings and the annual economic transfer](#)
- [3. Graphics that show the evolution of energy consumption at school](#)
- [4. Conversion and emission factors used for the calculations](#)
- [5. Guidelines to make real meter reading](#)
- [6. Guidelines for temperature measure at school](#)

For any doubt you can contact euronet team at: euronet@diba.cat

Program to calculate energy savings of the schools of the 50/50 network. Developed by Euronet 50/50 project

¹ "Heating degree days", or "HDD", are a measure of how much (in degrees), and for how long (in days), outside air temperature was lower than a specific "base temperature" (or "balance point"). They are used for calculations relating to the energy consumption required to heat buildings. (Source: <http://www.degree-days.net/>)



EASY AND SIMPLE

V. BEST PRACTICES IMPLEMENTED BY SCHOOLS OF THE 50/50 NETWORK

TO SAVE ENERGY

Saving energy is easy!!!

Just thinking a little bit you can get lots of ideas for saving! But if you need some inspiration you can have a look to what pupils involved in 50/50 project have done: having a day without electricity, can you imagine your school in the dark?, made up a rap song, make a film, fill the school with posters, measure the energy consumption, make a competition between classes on closing the lights, and so on...

LET'S HAVE A LOOK!!!



The Schools of BARCELONA PROOVINCE: many actions to save energy

The 13 schools of the Province of Barcelona have put in place many actions to save energy, some of the most relevant are as follows:



Pupils have been organized in inspector teams to supervise that all the lights in classrooms were off during the school playtime, the dining time and at the end of class. In this way they were reinforcing the task done by hanging posters in every classroom.

Even a contest has been developed in some schools with the aim to compete between classes on better closing the lights.

Just turning lights off when we leave a classroom we can save more than 5% of the electricity consumption of the school.

The other big consumer of the school is air conditioning. During the school playtime and the entrances and exits of the building, doors are leaved usually opened or windows opened for ventilation and the classroom gets cold. Now in all doors there are posters to remember to close them and windows are opened only during 10 minutes.

With these two best practices is possible to save between 2 and 6% of fuel consumption in the school.

Many of the schools of the province have cleaning services out from the school timetable. Usually the cleaning persons turn on all lights to feel more secure, consuming almost the same electricity as when the school is full of pupils. In some schools, pupils have talked with the cleaning persons and after that they changed their behaviour closing lights when they finish cleaning an area. In this way it is possible to save more than 10% of the electricity consumption of the school.

Creativity of children has no limits. All the schools of the 50/50 Network have filled with posters, banners, some of them have developed videos, have been interviewed in the radio... The big success of the project have been the awareness raising on energy saving and tackling climate change.



What the LANCIANO schools' have done?

The EURONET 50/50 experience was a great success in all the six schools involved in the municipality of Lanciano. Pupils and teachers worked very hard during the whole period of implementation of the project. It allowed to increase the energy-environmental awareness of pupils, teachers and parents, to save energy and at the same time it was a very fun. We can summarize two best practices as follow:



Even if several times it was difficult to cooperate with the Municipality of Lanciano, it realized an important action. In fact the city council gave to the school its own part of the 50% savings. This represented a great boost for pupils and teachers to continue in the put in practice of measures to save energy. The total energy saving for the two years of implementation of the project is about the 2% for the heating and the 4% for the electricity.

Make learning fun. Pupils and teachers implemented many actions and initiatives to promote the energy saving at schools, making it very funny. Some pupils realized plays to involve the whole school in the project, such as the snakes and ladders or the labyrinth of energy. Thanks to the action of the municipality energy efficiency interventions have also been realized, such as the replacement of windows and installation of thermostatic valves.

Other schools organized several initiatives to spread the idea of energy saving: a dance to introduce the energy concept, presentation of the project during the fair of book organized in the school, tours to visit RES plants, articles, labels, blog.



FINNISH schools' don't stop! They have been very active saving energy!!

The five 50/50 pilot schools of Finland have been very creative in order to make the project fun and to disseminate about it! Some of the most relevant actions are as follows:



Some of the Finnish schools were very active bloggers and thus communicated to the others what they were doing in the project! Especially the following blogs are worth to read:

<http://lansimetsaschool.blogspot.com>

<http://isonkylaschool.blogspot.com>.

Saving energy is very simple. Just switch off the lights and other electrical equipment you don't need, don't keep the rooms too warm and ventilate carefully. It is not that difficult. However, the challenge is to keep doing all this, day after day, month after month. It is about learning new habits and making small behavioural changes. Some effort is required. What helps is to keep the project interesting both for the teachers and the pupils, remind everybody why energy saving is important and make it all fun, too!

Finnish 50/50 schools were very active and creative in arranging many different kinds of events and theme days related to the project.

One event that was arranged by all the schools was a Day Without Electricity. In Finland, it is a challenge to be without electricity even for a day – especially in winter time. The school buildings were dark; only candlelight was used. All the lessons were arranged without any computers, document cameras etc. Recycling material

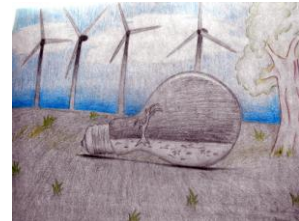
was used for the art lessons. The schools were working with energy saving related themes for the whole day. They also discussed why energy is so important in every-day life and why energy should not be wasted.

On a Day Without Electricity, no electricity could be utilized for cooking either, so the food was prepared outside. This was very exotic, especially in a cold weather!



In HUNGARY... Applying the 50/50 steps

Seven schools were involved in the EURONET 50/50 project from Hungary. Primary School of Balatonendréd is the smallest of them with 110 pupils, but it can show a good example for other small schools.



The building of the school was built more than one hundred years ago in 1900. Therefore, we cannot speak about a modern building with high energy efficiency. The strength of the building is in its utilization, namely the operating practices are favorable to use energy efficiently. EURONET 50/50 project has tried to support this attribute and helped the school to change pupils' habits in the field of energy savings.

The students have followed the steps of the elaborated educational materials. They have learned a lot about renewable and non-renewable energy not just at theoretical level but at practical level too. They have measured temperatures in short and long term; and they have measured the electrical consumption too. Moreover, a study tour has been organised for the children to Güssing in Austria, which town is famous about using renewable energy.

When the involved students have summarised their experiences about energy saving of their school, they have disseminated the lessons learnt on posters for other students, and wrote letters for the headmaster of the school and the mayor of the village. They also invited a member of the Hungarian Parliament in order to demonstrate the project results. Thanks to the project, the students have achieved that the mayor spent money to replace the old doors and windows for new ones to further increase energy efficiency.



The ALMADA schools have taken action to save energy and water

All 5 schools engaged in the project by the Almada City Council implemented energy saving measures and obtained noticeable results, mostly in what regards electricity and water consumptions.



The best results were obtained with **electricity**, because many situations of excessive lights that were left on were identified and corrected. The elimination of these unnecessary lamps and the replacement of incandescent lamps with more efficient compact fluorescent lamps allowed to maintain the same levels of illumination and resulted in important electricity savings.

The strict monitoring of the **water consumption**, initially diagnosed as the biggest consumption problem in some schools due to frequent ruptures in the water pipes, was also very important. Being able to identify these irregular situations at an early stage allowed the schools to provide for quick repairing measures, which resulted in significant savings in water.

One school took the energy saving measures even further and promoted an intervention at the school's administrative office. They installed a **brand new entrance door**, which allowed to prevent thermal losses, as well as maintaining an adequate temperature, thus avoiding the intense use of electric heaters that accounted for an excessive consumption of energy in that school.



Best practices in the field of energy saving implemented by POLISH schools engaged in Euronet 50/50 project

In the framework of EURONET 50/50 project pupils from 11 Polish schools took up the task of analyzing and reducing energy consumption at their schools. They proved to be very creative and managed to achieve impressive results! Below you may find some of their best practices:



Some of the schools decided to establish so called **“School Environmental Service”** whose members are responsible for turning off unnecessary lights (e.g. light at the corridors during lessons), unused equipment and running taps, as well as for reporting any failures that may cause excessive energy use (e.g. leaking taps). Thanks to their engagement energy is used at school in more rational way.

Energy consumption measurements conducted by pupils with energy meters received in the framework of the project proved that computers, photocopiers, TV sets and other electronic devices consume a lot of energy, also in the stand-by mode. That is why pupils decided to prepare **labels** that would remind them and their colleagues to completely turn off electronic equipment whenever it is not used.

Similar labels have been also prepared for light switches and water taps to encourage pupils and teachers to save energy used for lighting and to save water.

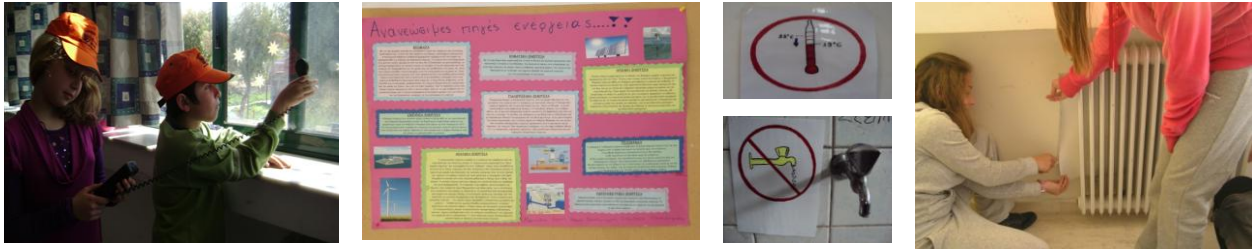
In order to engage whole school community in energy-saving activities pupils from energy teams organised **information & education campaigns**. They used various communication means to reach their target groups, including: flyers and posters with tips how to save energy (and other resources) in everyday life, bulletin board displays, performances, presentations, articles in school newspapers etc. Their creativity was truly unlimited.

Thanks to active engagement of pupils and teachers most of the schools managed to **achieve energy savings**. As a reward the schools received 50% of saved money that they could spend on any purpose they wished. Most of the schools bought with the money extra equipment and educational materials that will be used during work with pupils. They also rewarded pupils from energy teams, e.g. Primary School n° 13 from Bielsko-Biała organized for them a trip to European Tale Center in Pacanów.

CRETE schools': artists for saving energy



Four schools in Crete have been included in the 50/50 network: 2nd Primary School of Archanes, 40th Primary School of Heraklion, 3rd & 10th Secondary School of Heraklion.



Energy Team is performed in every school, and pupils with teachers' guidance have started applying the methodology of the 50/50 Project. They have performed measurements, started monitoring the heat and the electricity consumption, applied best practices to prevent thermal losses, as well as to maintain an adequate temperature, preventing the excessive use of electric heaters.

Pupils have prepared posters and special signs for saving energy consumption, being placed on the walls of their schools. Members of the energy teams encouraged all others to follow 50/50 methodology, for achieving best results in energy consumption throughout the school building.

The enthusiasm of the pupils, their imagination and initiatives, together with the interest and the excellent work done by their teachers found to be amazing, apart from classes on energy and all methodology adaptations in the schools.

Pupils have synthesized songs for energy, became actors and movie's directors, as well as designers of smart useful games and special original structures, representative of renewable energy sources.





SLOVENIAN schools': music to save energy... And more!

In Slovenia we have five different schools joined in Euronet 50/50 project. Schools have put in place many actions to save energy, some of the most relevant follows:



In the frame of Euronet 50/50 project and U4energy competition, one school has made ECO RAP, a song with strong message. The refren follows:

**GREEN SCHOOL – THIS IS THE RULE!
LET'S TURN OFF THE ENGINES
AND TURN ON OUR HEARTS
THIS WILL BE THE BETTER START!**

Although we have five different schools joined in Euronet 50/50 project, at implementation of project activities in the past two years, they all came to almost the same conclusions and findings. After long term temperature measurements have been done all energy teams noticed that the rooms in the school are warmer than necessary, so they found out that there are possibilities to save energy in the schools just with regulation of temperature.

The pupils and teachers have actively worked in order to save electricity, heat and water. In our schools they are aware that a lot can be done only by raising awareness for pupils and teachers about energy savings actions and these actions are mostly for free!

The most successful energy saving actions in schools:

- ⇒ school energy - eco detectives (one pupil on duty in every classroom in charge of shutting down the lights and closing the windows when the class is finished),
- ⇒ mascot Žarko (Bulb Bob),
- ⇒ hanging posters in the hallways and pasting energy saving stickers in every room (over the light switches, entrance doors, windows, computers and water taps to remind users to save energy and other resources) and
- ⇒ Organizing a day without electricity.

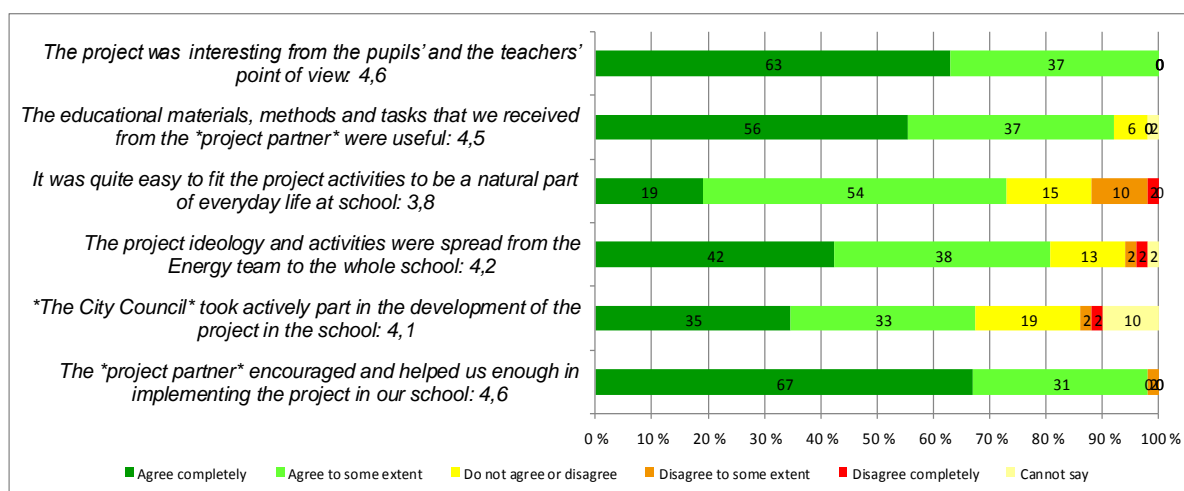


VI. Evaluation of the EURONET 50/50 project

The experiences of the 50/50 project were evaluated comprehensively; the opinions of both teachers and pupils of the pilot schools as well as the viewpoints of the project partners were included in the evaluation process. In total 52 teachers and 1082 pupils from 8 countries evaluated the project. In addition, 8 out of 9 project partners gave their written evaluation. Some of the key findings are summarized below.

Teachers & pupils

In general, the feedback from the schools was very positive. The teachers and the pupils found the project fun, interesting and useful. Most of them were motivated and enthusiastic. The teachers thought that it was rewarding to notice how the attitudes and behavior really changed, and how energy can be actually saved by some small and simple behavioral changes, without too much effort or major investments required. The project made the energy consumption of the school more visible and made the building users more aware of their own actions' influence in the energy usage of the school. Almost all the pilot schools estimated that the project will influence in their school's energy usage in the future as well (long-term impact).

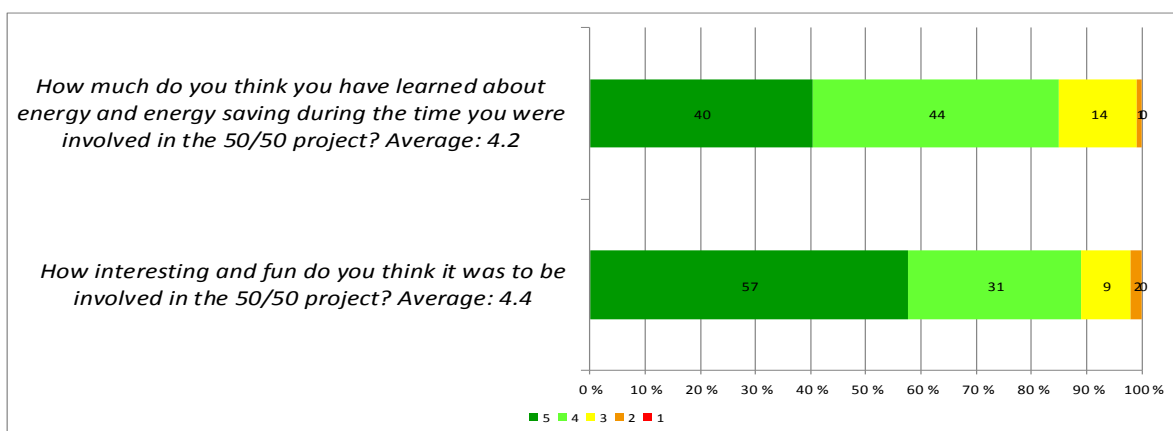


Regarding the actual contents of the project, the teachers were asked to evaluate especially two things: The nine-step project structure and the E-Pack (teaching package including the tasks, forms, ideas, advice and the measurement equipment to enable following the nine-step structure). The structure received very good feedback. For example, "establishment of the energy team" was considered to be very useful way to start implementing the project. Also the "long-term temperature measurement & energy observation" was considered to be useful by almost all teachers. Some steps that not all schools considered relevant, were "communicating measures that need investment" (some municipalities have serious lack of money and therefore no funding is available even to the smallest investments) and "using and communicating the money that school gets for its efforts" (not all schools were able to save energy and therefore there was no money to communicate about). Regarding the E-Pack, teachers felt that it was interesting and well-structured package, and what they liked the most was that the tasks explained in the E-Pack were very practical and easy-to-understand-and-conduct.



The teachers were relatively happy with the support they received from the project partners. On the other hand higher number of personal visits (by the partners or some other experts) to schools would have been useful, on the other hand the schools felt that they received support, ideas and advice when ever they needed.Regarding the City Councils or other municipality representatives, many schools would have wanted more cooperation and more support. Other challenges existed also with executing the project. By far the greatest challenge was a lack of time. The school life is rather hectic and there are a lot of projects going on. It was a real challenge for the teachers to find time to do the project properly with the pupils. However, the pilot schools were very committed to the project and really wanted to succeed, so they worked hard in order to get everything done.

The pupils were asked to estimate on a scale of 1-5 (the higher, the better) how much they think they learned and how much they enjoyed being part of the project. The average score for both of these dimensions were well above 4, which can be considered very good.



Almost all the teachers of the pilot schools stated that they believe the energy saving activities will continue in their school, one way or the other, even if the project finished.

Project partners

By far the most often mentioned thing as a best experience was the increased awareness of the pupils (and teachers) as well as their engagement, enthusiasm and the effort they were willing to make in order to save energy and promote the project. On the other hand, the partners also felt the pressure of the schools' lack of time – sometimes there just did not seem to be enough time for the project. Also, in some cases there was lack of commitment from the municipalities' side and sometimes calculating the savings and/or giving the money back to the schools seemed to be very complicated. Not all partners were satisfied with the savings achieved in their country, but all partners were very satisfied with the most important results: increased awareness, changed attitudes and changed behavior.



Checklist for the schools to autoevaluate their 50/50 project development

Good project managing includes regular checking of where the project implementation is going and have all the necessary actions been taken. It is good to take a systematic approach on this. The following check lists might be useful:

Level of implementation of the 9 project steps

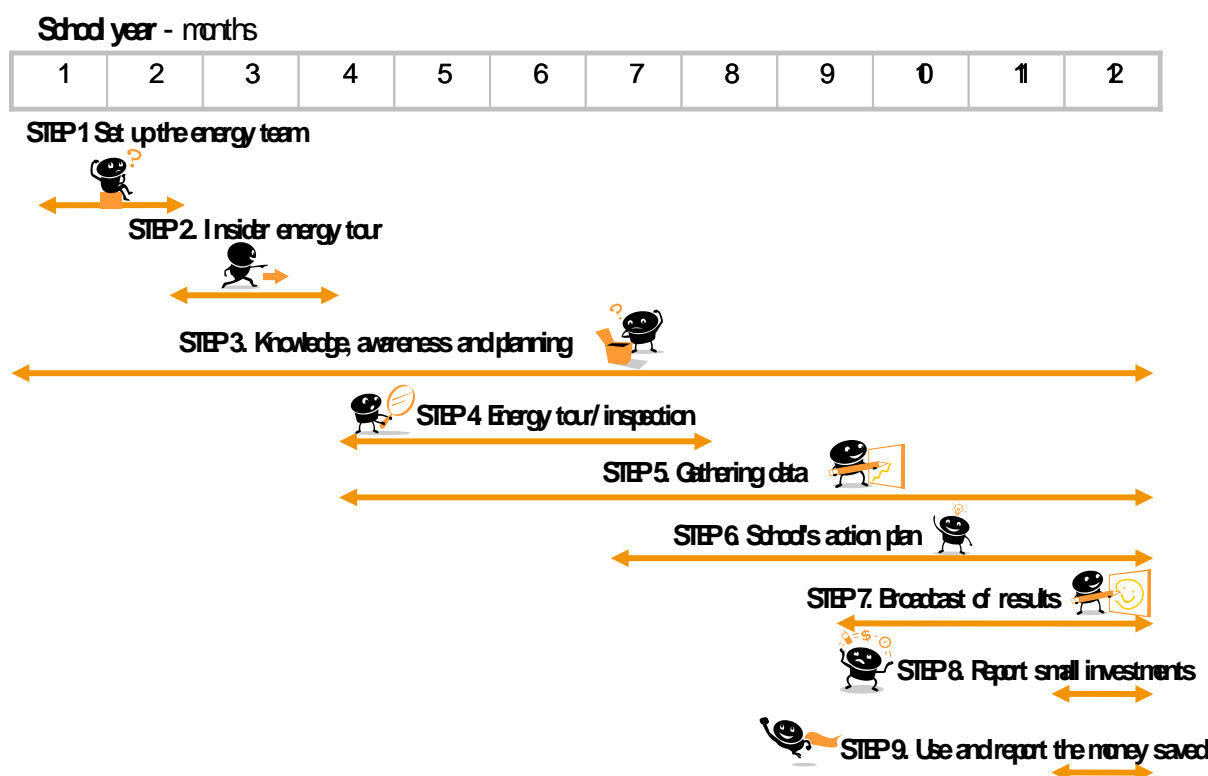
	Done	Partially done	In process	Not done
STEP 1 - Set up the energy team				
✓ Choosing the energy team members				
✓ Introducing the project to all energy team members				
✓ Deciding the working methods, meeting frequencies etc.				
STEP 2 -The insider energy tour (adult members of the energy team)				
✓ Making the tour in the whole school building				
✓ Listing things that the energy team should pay attention to				
STEP 3 - Knowledge, awareness and planning				
✓ Discussing general issues (energy, energy saving, environment)				
✓ Teaching about the greenhouse effect, climate change etc.				
✓ Defining the tasks to be done during the energy tour				
✓ Preparing the work sheets				
✓ Delegating tasks amongst energy team members				
✓ Preparing a check list of things to be analyzed				
STEP 4 - Energy tour /inspection				
✓ Examining the entire school building				
✓ Preparing a memo of the observations during the tour				
✓ Preparing a proposal of data to gather and areas to analyze				
STEP 5 - Gathering data				
✓ Making temperature measurements and documenting the results				
✓ Gathering information of the experiences and habits of the users				
STEP 6 - School's action plan				
✓ Discussion about findings during the previous steps				
✓ Making a plan to disseminate the results and to propose actions				
STEP 7 -Broadcast of results to all school-related agents				
✓ Explaining all the actions that have been executed				
✓ Informing all users of the building on how they can participate				
STEP 8 - Report measures which require small investments				
✓ Preparing a list of measures that need investment				
✓ Preparing a list of organizations/persons to be approached				
✓ Deciding the working methods				
✓ Undertaking the necessary actions				
STEP 9 - Use and report the money saved by the school with its efforts				
✓ Explaining to the school public the achievements of the project				
✓ Deciding how to use the money returned to the school				



Level of stakeholders' involvement in the project

	High	Medium	Low	None
Level of communicating with the project partner (or similar)				
✓ Reporting the school's activities				
Level of communicating with the facility managers				
✓ Going through the school's consumption figures monthly together with the facility managers				
✓ Reporting problems found with the school building or the energy use				
✓ Reporting the results of the long-term temperature measurement				
✓ Reporting the measures that need investments				
Level of communicating with the educational community				
✓ Other pupils				
✓ Teachers				
✓ Principal				
✓ Other staff of the school (caretaker, cleaning staff, secretaries etc.)				
✓ Other users of the school building (e.g. evening and weekend users)				
✓ Parents' association				
Level of communicating with other stakeholders				
✓ Pupils' families				
✓ Citizens				
✓ City Council (or similar)				
✓ Other stakeholder, which one?				

Reference calendar to implement 50/50 steps at school





VII. JOIN THE NETWORK !!!!!!!!!!!!!

If you want to take part in an European action to tackle climate change, share your experiences with other schools of the network, learn about energy in your school, be the leader of energy savings and even get economic incentives for your school to continue improving.....

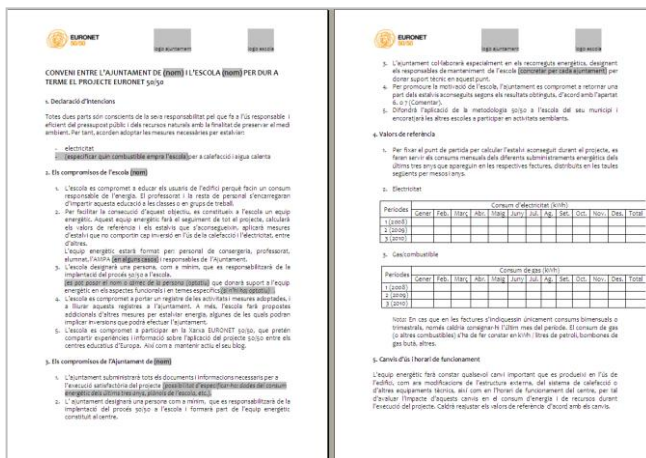
JOIN THE NETWORK!

It is very easy!!!

1. Fill the contact form available on the network website: <http://escoles.euronet50-50.eu/>



2. Sign the agreement between your school and the city council or between the energy team and the management team of your school if the school is the one that pays energy bills.



3. Send all of this to: euronet@diba.cat

New members will receive an adhesion document and an Epack (education pack) to implement 50/50 methodology. If you have any doubt you only need to ask us contacting us in: euronet@diba.cat



58 Schools around Europe have taken part in Euronet 50/50 project starting 50/50 Network. The Network continues taking action and growing!!



- 1) SPAIN: 13 school in the province of Barcelona
- 2) GERMANY: 2 schools from Berlin and Postdam
- 3) ITALY: 6 schools from municipality of Lanciano
- 4) FINLAND: 5 schools
- 5) HUNGARY: 7 schools from the Lake Balaton Region
- 6) PORTUGAL: 5 schools from the municipality of Almada
- 7) POLAND: 11 schools
- 8) GREECE: 4 schools from the island of Crete
- 9) SLOVENIA: 5 schools

In addition to these 58 schools, **more than 100 new schools** have joined the 50/50 Network during the project or are on process to join!
JOIN IN!!! TOGETHER WE CAN REACH BIG ENERGY SAVINGS!



VIII. STAKEHOLDERS INVOLVED IN THE PROJECT

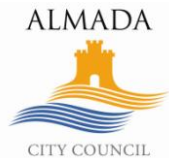
Schools and municipalities involved:

Country	School	Municipality
SPAIN	Sant Domènec	Sta Margarida i els Monjos
	Castell d'Òdena	Òdena
	Mare de Déu del Patrocini	Cardona
	Abat Oliba	Cornellà de Llobregat
	Escola Benviure	Sant Boi de Llobregat
	Sant Joan	Berga
	Sant Jordi	Vilanova i la Geltrú
	Sant Pau	Sant Pol de Mar
	La Monjoia	Sant Bartomeu del Grau
	Sant Esteve	Castellar del Vallès
	El Turó	Montcada i Reixac
	Pau Casals	Montmeló
La Tordera	Santa Maria de Palautordera	
GREECE	2nd Primary School of Arhanes	Arhanes
	40th Primary School of Heraklion	Heraklion
	3rd High School of Heraklion	
	10th High School of Heraklion	
SLOVENIA	Elementary school Miha Pintar Toledo	Velenje
	Elementary school Anton Askerc	
	Elementary school Salek	
	Elementary school Frana Rosa	Celje
	Elementary school Smartno Slovenj Gradec	Gradec
FINLAND	Huutoniemen koulu,	Vaasa
	Länsimetsän koulu	
	Isonkylän koulu	Laihia
	Joupin koulu	Seinäjoki
	Isokylän koulu	Seinäjoki
ITALY	Primary School "I Circolo"	Lanciano
	Primary School "II Circolo"	
	Primary School "III Circolo"	
	Secondary School "G. Mazzini"	
	Secondary School "Umberto I"	
	Secondary School "D'Annunzio"	



Country	School	Municipality
POLAND	School Complex No 1	Raciechiwice
	Primary School No 2	Niepołomice
	Primary School of Józef Piłsudski	Niepołomice
	Primary School No 11	Dąbrowa Górnicza
	Ecological Primary School No 7	Bielawa
	Primary School	Janów
	Primary School No 7	Cieszyn
	Primary School No 13	Bielsko-Biała
	School Complex in Jadachy	Chmielów
	Primary School No 10	Bielawa
	Primary School No 4	
GERMANY	Grundschule am Schäfersee	Berlin
	Rosa-Luxemburg-Schule	Potsdam
HUNGARY	Bem József Általános Iskola	Balatonfüred
	Általános és Alapfokú Művészeti Iskola	Gyenesdiás
	Mikszáth Utcai Általános Iskola	Marcali
	Boglári Általános Iskola és Alapfokú Művészetoktatási Intézmény	Balatonboglár
	Szabó István Általános Iskola	Cserszegtomaj
	Általános Művelődési Központ Általános Iskola	Sármellék
	Balatonendrédi Általános Iskola	Balatonendréd
PORTUGAL	Colégio Campo de Flores	Caparica
	Externato Frei Luís de Sousa	Almada
	Escola Básica Integrada Elias Garcia	Sobreda da Caparica
	Escola Secundária com 2º e 3º ciclos Prof. Ruy Luís Gomes	Laranjeiro
	Escola Secundária com 2º e 3º ciclos Anselmo de Andrade	Almada

Project partners:



www.euronet50-50.eu/
<http://escoles.euronet50-50.eu/>

Project coordinator:



Gerència de Serveis de Medi Ambient
Comte d'Urgell 187, 2a planta
08036 Barcelona
Tel.: 934 022 485
www.diba.cat
euronet@diba.cat