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Case study

An example of the
successful implementation
of YEP! project in
Professional High School for
Electronics, Plovdiv

Energy Agency of Plovdiv



YEP! Partner No: 8

Intelligent Energy  Europe

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Description of the Professional High school of Electronics, Plovdiv

The Professional High School of Electronics (PHSE) is situated in a residential district in the center of Plovdiv. The school was built in 1962, and because of its age, there is a lack of building and heating designing documentations. For about of 50 years a coal boiler has been heating the two school buildings. PHSE is a one of the largest schools in Plovdiv, with 950 students, aged 14 – 19.

PHSE embraced the opportunity to be involved with YEP! fully and has maintained dedicated support from the headmaster, the teachers and the students throughout the work. The school leadership understands the importance of EE and RES education and was willing to assist in the implementation of the project programme. Moreover, the school needed an energy audit but had no finances to do it, so they recognized the project as the first step to be taken in that direction.



Background of YEP!

YEP! aims to increase sustainable energy practices in secondary schools and workplaces by empowering pupils (age 14-19) with relevant knowledge and skills. Using the schools as a training ground for acquiring and understanding energy issues and their management, pupils gain experience in preparation to transfer their acquired knowledge to a work placement. Through this activity carbon emissions can be reduced. Additionally, the project actively illustrates the practical applications of these skills to the workplace and raises pupil awareness of potential career opportunities.

Objectives

To provide an educational programme, resources and method that can be used as a framework for schools wishing to undertake similar projects at workplaces. Elements include:

- ✓ Energy efficiency programmes established in participant schools and workplaces
- ✓ An evaluation that demonstrates the project work effectiveness and indicates its potential for wider application
- ✓ A dissemination of project work aimed at inciting similar actions in new schools and workplaces
- ✓ Increased awareness of the opportunities for applying energy-related skills and knowledge to future careers.

Funding and Management

The YEP! pilot project in Plovdiv is co-funded by the European Agency of Competitiveness and Innovation, Intelligent Energy Europe programmes and by the Energy Agency of Plovdiv (EAP). It was internationally coordinated by Severn Wye Energy Agency, UK, and locally managed by EAP, Bulgaria.



Implementation in Professional High school of Electronics, Plovdiv

Initially EAP had undertaken several meetings with the head teacher, Dipl. Eng. Paunov, presenting the project and discussing its energy management and educational aspects. Discussions with energy experts and school leadership were convincing, and the positive decision was made by the school to participate in the YEP! project. The detailed education programme was prepared and agreed by the energy agency and the schools. On the other hand, before communication with the professional school the needs assessment study had been undertaken with the workplace and a concrete agreement was signed

The educational program in PHSE started with five students. The students came to EAP for active learning activities, and EAP's team visited the school and provided manuals and background lessons that gave students good knowledge of energy management and energy monitoring.

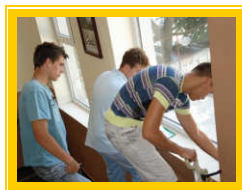
A School Energy Management Team (SEMT) was established with five selected by the school director students. EAP prepared the students for the workplace. At this time EAP collected baseline data

from the school to give a picture of consumption patterns for a complete year previous to project action. This happened to be quite a challenge, having in mind that in the school there was no person keeping records of the energy consumption and the data were taken from the financial records, which took a lot of time.

Students visited the other schools as well – the boiler rooms and school buildings of the all participating schools. They were well-informed about the building energy infrastructure and its maintenance. During the International Plovdiv Fair the SEMT visited the stands of RES-related companies. They also participated in the workshops and energy forums organized by EAP.



EAP's premises became a learning lab where the SEMT received more concrete knowledge of energy management in SMEs and RES applications. Technical experts from EAP guided the students in doing a full audit of their school and producing a report that covered fuel consumption for heating and alternative modern systems. The audit was followed up by action planning that used the findings to prepare recommendations for lowering the energy consumption in the school and a switch from coal to alternative heating.



With the knowledge gained during the educational part, the SEMT went to the workplace fully prepared and upgraded their knowledge, while analyzing the energy consumption of the workplace's industrial buildings. The team of energy experts of EAP, workplace and "energy" students has worked together for solutions in three energy tasks in the workplace. The well-prepared

win-win strategy was a key to the success of the project implementation.

Key features for success:

- ✓ The strong engagement of the headmaster:
 - Many preliminary meetings/discussions
 - Development of the two-year action plan
 - The headmaster himself chose the Energy management team
- ✓ The agreement between EAP and the workplace based on the developed work program
- ✓ The students were highly motivated to DO something for their school
- ✓ The students understood the importance of energy saving and that we have to always look for ways to lower energy consumption and to apply efficient RES technologies for heating.

Identified results

- ✓ Involvement of students in an energy study of the school building
- ✓ Involvement of students in development of two scenarios for a fuel switch - from oil to natural gas and biomass (wood pellets)
- ✓ Discovery by the students of a new world of modern building and heating concepts and technologies through their involvement in EE&RES workshops, conferences, fairs.
- ✓ Involvement of student in preparation of preparation of new documents for structural funds application.
- ✓ The school leadership is considering changes in the school curriculum.

Energy education – EE and RES -- will become a permanent part of the curriculum in PHSE. The SEMT graduated successfully and they will apply to enter Energy Management university programs.

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