

EnercitEE Sub-Project E-FoxES

Energy Saving Foxes in European Schools

Reports on Regional Starting Conditions. Summary



Technologie- und Gründerzentrum
Bautzen GmbH



Information & Advice Centre
Energy, Water, Consumption

Table of contents

1.	Policies concerning Energy Efficiency	3
1.1	European background	3
1.2	National backgrounds	3
1.3	Regional backgrounds	4
2.	Awareness raising actions for pupils	5
2.1	Actions on European level	5
2.2	Actions on national level	5
2.3	Actions on regional level	5
3.	Energy related education concepts	6
3.1	National Education Systems	6
4.	Preconditions for the implementation of the EnercitEE Sub-Project "E-FoxES"	6
	References	8

Annexes

Annex I	Report on Regional Starting Conditions in Saxony	II
Annex II	Report on Regional Starting Conditions in Småland	XIV
Annex III	Report on Regional Starting Conditions in Haute Savoie	XXVI

1. Policies concerning Energy Efficiency

1.1 European background

Energy efficiency is a very important issue in the policy of the EU and the EU member states. We identified the following policies as the most important for Europe:

- Europe 2020, A strategy for smart, sustainable and inclusive growth, European Commission, 3rd March 2010 [1]
- Energy efficiency plan 2011, European Commission, 8th March 2011 [2]
- A Roadmap for moving to a competitive low carbon economy in 2050, European Commission, 8th March 2011 [3]
- One of the priorities of the Directive 2006/32/EC on energy end-use efficiency and energy services [4] is to raise awareness among the general public regarding energy saving (as well as GHG emission reduction)
 - Awareness-raising actions for public audience
 - Information actions to guide the behaviour of economic actors

These policies are also reflected in the background of the *EnercitEE* project:

“The EU Climate and Energy Package is considered key to an energy efficient and low-carbon Europe. The three overall objectives have become generally known as the 20-20-20 targets: a 20% cut in emissions of greenhouse gases by 2020, compared with 1990 levels; a 20% increase in the share of renewable; and a 20% cut in energy consumption.” [5]

The Interreg IV C project *EnercitEE* intends to contribute to the EU targets concerning energy efficiency. The project builds upon experiences and already existing networks from the Interreg III C project *energy'regio*. The exchange of experience at European level will be an essential part of the sub-project E-FoxES.

1.2 National backgrounds

All countries have clear plans for how to make energy use more efficient, and there are deadlines for all interventions.

Some common features that can be labelled are:

- There are several actions that interact
- Carbon emissions will be reduced

1.3 Regional backgrounds

There are the background for all actions and policies in the Free State of Saxony and refer to the appropriate European and national documents. The Saxon action plan comprises actions on climate change, sustainable energy supply and the adaptation to the climate change in Saxony. The Saxon government developed more than 200 measures including attractive incentives for citizens and support of energy-related education in schools.

In Växjö, Småland, the overall objectives of the environmental program points the way towards the fossil fuel free society and is also based on the energy plan:

- stop using fossil fuels,
 - use energy efficient.
-
- The power supply will decrease by 15% per capita from 2008 to 2015.
 - The consumption of electrical energy will be reduced by at least 20% per capita from 1993 to 2015
 - The fossil carbon dioxide emissions to fall by at least 55% per capita by 2015 compared to 1993
 - The total energy consumption will decrease by 17% in the municipality's premises and housing, calculated from average years 2003/2004 and 2015.”
 - Excerpts from the municipality's energy plan

The regional plan complies with the national and it is clear how active the work is in these issues.

The activities offered to schools are increasing.

2. Awareness raising actions for pupils

2.1 European level

A pan-European competition on energy education called U4energy is organised by the European Commission. Primary and secondary schools across Europe can participate in this competition.

2.2 National level

In France there is the “Eco- école” programme: make eco-friendly schools and middle schools. They are planning for more activities.

In Germany a school contest on the national level was identified: “Energiesparmeister” (energy saving champions). This annual competition was performed the first time in 2009.

Sweden have a few projects, one of them is called KNUT. The project is collaboration between four regional players and aims to increase children and young people's interest, knowledge and commitment to the environment, resource and energy issues.

But - there is a need for training in these topics for the teachers. Many lack the right skills and subject knowledge that is needed.

2.3 Regional level

There is a number of different examples of activities concerning energy efficiency and renewable energy sources on regional level in Saxony, Germany. One of them is a bet for energy saving in schools, where they benefit from the costs saved. They also have a solar car racing for kids in Chemnitz “SOLARIS Cup”.

In Haute Savoie, France, there is “Regional Council” which is developing funds for raising awareness program dedicated to students, schools, or specific group of

citizens. A raising awareness kit has been also developed by the Regional Council for high schools.

Volunteers are trained to speak to children in schools about energy efficiency and eco-consumption (which is directly linked).

In Småland, Sweden, the local electricity and energy supplier, Växjö Energi AB (VEAB), in collaboration with the municipality and the Energikontor Sydost (ESS) has launched a project this year which is aimed to teach young people about energy.

In all regions we find very good examples of actions aimed for the pupils. We can also see a pattern of teaching structure, at the beginning the ecosystem being treated, energy saving and problems of fossil fuels.

3. Energy-related education concepts

Germany identified energy-related education concepts for all ages and so did France. In Sweden it is not so clear what is termed as energy education. It disappears into the other subjects in school.

4. Preconditions for the implementation of the Sub-Project “E-FoxES”

In the town of Bautzen the competition “Energy Saving Foxes” started in 2008. The aim of the competition is to raise awareness among the children and young people concerning energy saving. The schools should actively contribute to stop the climate change and the global warming by projects carried about by pupils’ project groups.

The pupils suggest and implement their own ideas for energy saving by support of teachers. The projects of the pupils are focused on their living environment and energy saving actions in school buildings. The economic impact of the project is not so important but all involved pupils should think about the origin of climate change and the own behaviour.

At the beginning of the school year the association Prioriterre and the General Council of Haute Savoie proposed the competition to the school.

Prioriterre developed a time schedule for the implementation. The first step after the involvement of the schools was to train the educative team. One workshop per school was organised to train the teacher and technical staff. Then another workshop with the teachers, technical staff and pupils was organised so that they elaborate their project together.

The involved project groups from different schools are supported by the organizers of the challenge, their teachers and if possible also by regional external experts. Prioriterre also propose some financial support for the school projects through the SP2 budget.

In the end of the school year all project results are presented during a final event that can be organised either in one school either in a public space or meeting room. The General Council is welcoming this event to make it more official.

The winners of the competitions are selected by a jury composed of a member of General Council and 4 staff members from Prioriterre.

In Sweden principals were informed about the ability to train their teachers in the energy sector.

The involved project groups from different schools are supported by the organizers of the competition, their teachers and also by the local energy supplier, VEAB. In the end of the term all project results are presented for some days in the city library of Växjö.

The winners of the competitions are selected by a jury composed of representatives of the administration of the town, representatives from the schools, the regional energy supplier and the involved sponsors.

References

- [1] COM (2010) 2020 final: Communication from the Commission; Europe 2020; A strategy for smart, sustainable and inclusive growth
- [2] COM (2011) 109 final: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions; Energy Efficiency Plan 2011
- [3] COM (2011) 112 final: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions; A Roadmap for moving to a competitive low carbon economy in 2050
- [4] Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC
- [5] Background of EnercitEE:
<http://enercitee.eu/About-EnercitEE/Background,15/>
- [6] Federal Ministry of Education and Research (BMBF): Ideas. Innovation. Prosperity.; High-Tech Strategy 2020 for Germany; Bonn, Berlin; 2010
- [7] Federal Ministry for Economics and Technology: Energy Concept for an Environmentally Sound, Reliable and Affordable Energy Supply; Berlin; 2010
- [8] Saxon State Ministry for Environment and Agriculture: Action plan Energy and Climate of the Free State of Saxony; Dresden; 2008
- [9] Saxon State Ministry for Economic affairs, Labour and Transport (SMWA) and Saxon State Ministry for Environment and Agriculture (SMUL): Saxon Energy and Climate Programme 2011; Dresden; 2011
- [10] Documents and criteria of the U4energy award
<http://www.u4energy.eu>
- [10] School contest "Energiesparmeister"
<http://www.Energiesparmeister.de>
- [11] Bet for energy established by SAENA
http://www.saena.de/Saena/Schueler_Schulen/Energiesparprojekte/Energiesparwette
- [12] School Day of renewable energies
<http://www.energietag.de/formulare/schulernergietag.html>

Annexes

Annex I

EnercitEE Sub-Project E-FoxES

Energy Saving Foxes in European Schools

Report on Regional Starting Conditions

**Sub-Project Participant: Bautzen Innovation Centre
Partner Region: Saxony, Germany**



Technologie- und Gründerzentrum
Bautzen GmbH

Table of contents

1.	Policies concerning Energy Efficiency	IV
1.1	National background	IV
1.2	Regional background	V
1.2.1	Free State of Saxony	V
1.2.2	Upper Lusatia	VI
2.	Awareness raising actions for pupils	VII
2.1	Actions on European level	VII
2.2	Actions on national level	VII
2.3	Actions on regional level	VII
3.	Energy related education concepts	VIII
3.1	National Education System	VIII
3.2	Special features of the regional education system in Saxony	VIII
3.3	Environmental and energy-related education concepts in Saxony	X
4.	Preconditions for the implementation of the EnercitEE Sub-Project "E-FoxES"	XII
4.1	Background	XII
4.2	Management of the Energy Saving Foxes contest	XII
4.3	Success factors of the Energy Saving Foxes contest	XIII

1. Policies concerning Energy Efficiency

1.1 National background

The German government has developed several concepts and strategies for its climate and energy policy during the last years. The most important strategies are:

- Innovation Strategy for Germany:
Ideas. Innovation. Prosperity - High-tech strategy 2020 for Germany, 2010
(Ideen. Innovation. Wachstum - Hightech-Strategie 2020 für Deutschland) [6]
- Energy Concept for an Environmentally Sound, Reliable and Affordable Energy Supply, (Energiekonzept für eine umweltschonende, zuverlässige und bezahlbare Energieversorgung), 2010, with amendments from 6th June 2011 [7]

The High-tech strategy 2020 is a new approach for Germany. This strategy is focused on the global challenges of economic and social needs in five fields of action including climate and energy (see figure 1). All federal ministries connected to research and innovations are involved in the implementation of this strategy.

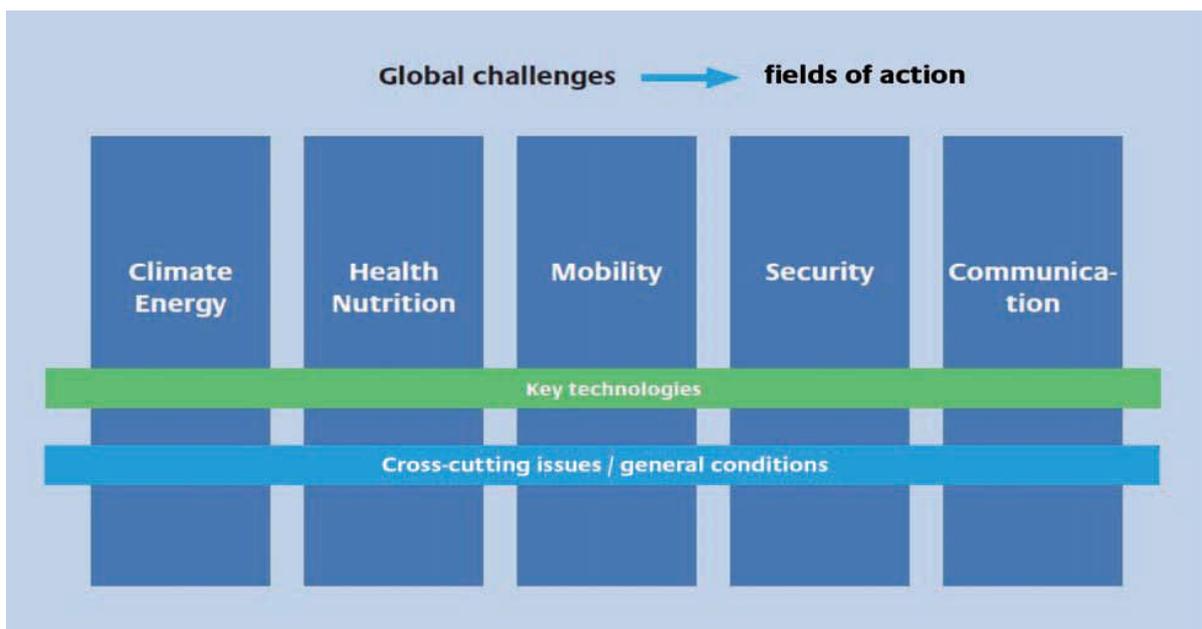


Figure 1: Fields of action in the High-tech strategy 2020 for Germany [6, page 5]

The field Climate / Energy includes eight lines of action. In addition, forward-looking projects will be developed. One example of these projects is the "CO2-neutral, energy-efficient and climate-adapted city".

Furthermore, there is the so-called Energy concept 2050 for Germany. It is integrated into European energy policy. In September 2010 the federal government has adopted the energy concept which describes the German energy policy until 2050 and sets out particular measures to develop the renewable energy sources, power grids and energy efficiency. Due to the Fukushima nuclear disaster, Germany adopted decisions on the gradual phase-out of nuclear power by 2022, greater energy efficiency and an accelerated switch to renewable energies. To this end, the German government drew up a concrete programme of measures and a second financing plan for its implementation.

The current energy concept defines nine fields of action including the field Transparency and Acceptance. A future sustainable energy policy will only be successful if it is convincing and transparent for the citizens. That's why the federal government will set up an online information platform as well as an online dialogue forum on "sustainable energy supply" for the citizens. [7]

1.2 Regional background

1.2.1 Free State of Saxony

On regional level the Action plan Climate and Energy of the Free State of Saxony was developed in 2008 [8]. The draft of the Saxon Energy and Climate Programme was published in 2011 [9]. They are the background for all actions and policies in the Free State of Saxony and refer to the appropriate European and national documents. The Saxon action plan comprises actions on climate change, sustainable energy supply and the adaptation to the climate change in Saxony. The Saxon government developed more than 200 measures including attractive incentives for citizens and support of energy-related education in schools. The EnercitEE sub-project E-FoxES refers to section B.12 of the Saxon action plan Education and research:

“Informing the public and specific target groups on the possibilities of climate protection and sustainable energy is a constant task. It serves to raise awareness for implementation of necessary measures and promotes the willingness to participate.”
[8]

The inclusion of the issue of climate protection and sustainable management of energy in school as well as extracurricular activities increase the knowledge of children and adults and provides an early interest in climate-friendly behaviour. One measure is the further development of the curricula for all schools which refer to climate change and climate protection. Furthermore, the initiative "Climate in schools of Saxony" will be continued and improved. Another measure is the development of incentive schemes for saving energy in schools. The Saxon Energy and Climate programme from 2011 aims to a well-balanced energy mix consisting of different energy sources.

The EnercitEE sub-project E-FoxES is in accordance with these policies. E-FoxES is focused on schools, pupils and teachers, but also raises awareness of citizens by means of public events.

1.2.2 Upper Lusatia

For Upper Lusatia, the eastern part of Saxony including the two districts Bautzen and Görlitz, an energy and climate concept is in progress. Few municipalities in the district of Bautzen have already developed energy action plans. The Regional Planning Association of Upper Lusatia / Lower Silesia decided in 2010 to develop an energy and climate protection strategy for the region. This concept will be finalised by the end of 2012 by a Leipzig energy institute "Leipziger Institut für Energie GmbH" in collaboration with the Bosch & Partner GmbH from Munich. The concept will serve as a model for other Saxon regions and will describe energy balances and CO₂ emissions in the planning region Upper Lusatia / Lower Silesia as well as options for the future developments. The district of Bautzen will establish a regional energy agency by the end of 2012 in Bautzen Innovation Centre. The town administration of Bautzen plans to develop an energy concept for the town in 2012.

2. Awareness raising actions for pupils

2.1 Actions on European level

In preparation of the sub-project E-FoxES existing actions for children and people raising the awareness concerning energy efficiency issues were evaluated at European, national and regional level. A pan-European competition on energy education called U4energy is organised by the European Commission. Primary and secondary schools across Europe can participate in this competition. The first round of the competition was launched in September 2010. The second round is open until May 2012.

U4energy is an online competition based on many criteria. We intend to extract useful inspirations for our own E-FoxES contest from the documents and criteria of the u4energy energy competition. [10]

2.2 Actions on national level

On the national level we identified a school contest with the title “Energiesparmeister” (energy saving champions). This annual competition was performed the first time in 2009. More than 150 schools participated in the competition in 2009 with creative and innovative projects about climate protection. Ten projects were awarded. We intend to use materials from this action to support the teachers and pupils in their project work. [11]

2.3 Actions on regional level

In Saxony the Saxon Energy Agency (SAENA) has established a bet for energy saving in schools. The schools benefit from the energy costs saved. The additional funds can be used e.g. for project days and extracurricular activities. [12] Further the School Day of renewable energies is held annually in Saxony since 2005. Schools can participate and register their actions for this day on a website. This activity was established by the municipality of the Saxon town Oederan. [13]

These are further examples of activities concerning energy efficiency and renewable energy sources on local level:

- Children universities in Dresden, Zittau and Bautzen
- Solar car racing for kids in Chemnitz “SOLARIS Cup”
- Energy Saving Foxes contest for schools in Bautzen

The competition of Energy Saving Foxes in Bautzen is the basis of the sub-project E-FoxES.

3. Energy related education concepts

3.1 National Education System

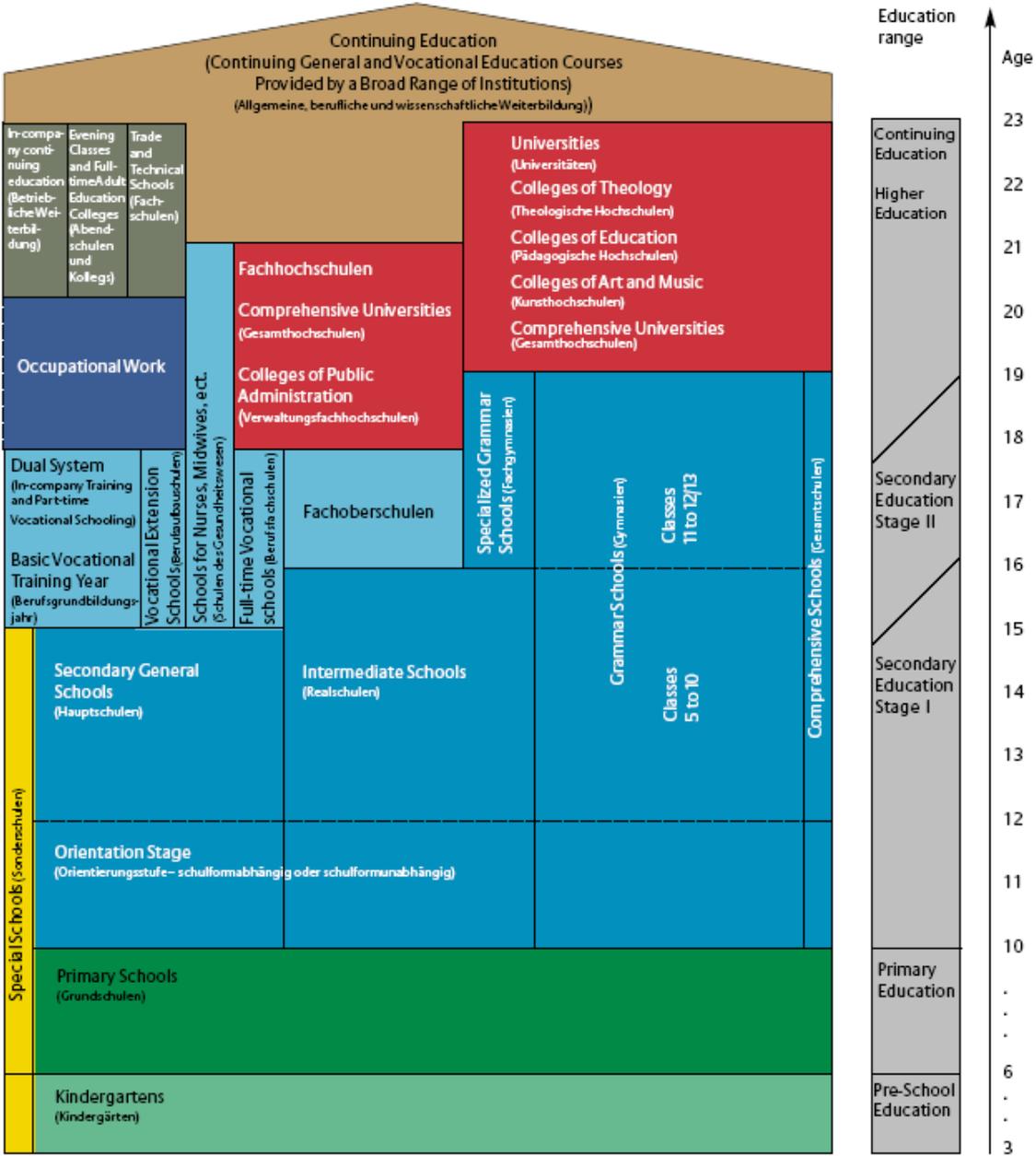
The basic structure of the Education System of the Federal Republic of Germany is shown in figure 2 on the next page.

3.2 Special features of the regional education system in Saxony

In Saxony we find most of the educational institutions described in figure 2. The structure of the education system of Saxony is comparable to the education system of the other federal states of Germany. Saxony is one of the federal states, which offer pre-school classes or school kindergartens to prepare children for transition to primary school. The Saxon “Middle School” (Mittelschule) is a special type of school which combines Secondary General School (Hauptschule) and Intermediate School (Realschule). The teaching concepts and curricula of grades 5 and 6 of Middle Schools and Grammar Schools (Gymnasium) are similar. In Saxony Grammar School covers 8 years (grades 5 to 12). Basic and dual vocational training are comparable to the pattern of the national education system.

Saxony is one of the federal states with Universities of Cooperative Education, a special type of Higher Education Institutions in Germany. The University of Cooperative Education offer so-called “sandwich” courses, whereby during their study the students have regular work placements in companies. The students obtain a bachelor degree after three years.

It should be mentioned that the number of private schools is increased in Saxony and also in other federal states in Germany. The private schools have to follow the national standards of education. The final certificate awarded by Grammar Schools (Abitur) is at the same level as in state schools.



- Diagrammatic representation of the typical structure of the education system of the Federal Republic of Germany. In individual Länder there are variations from the above pattern.
- The age given for attendance at the various educational institutions refers to the earliest possible typical entry.

Figure 2: Basic structure of the education system of the Federal Republic of Germany (source: BMBF)

3.3 Environmental and energy-related education concepts in Saxony

We identified energy-related education concepts for all ages. In the kindergarten elements of “ecological education” are included in the pedagogical conception. Children at kindergarten deal with problems concerning energy at an adequate level. Ecology is addressed in the widest sense. Kindergarten children observe the nature, the wind, the light and plants. In this way the children are aware of the relationships between environment and their own behaviour.

In the primary school energy efficient issues are included in the curriculum under the heading “sustainability”. There are three main topics:

- ecosystems
- environmental pollution
- energy-related issues

In the grades 1 and 2 four to six hours are focused on the subjects “power of wind and water”. Pupils are dealing with wind mills, water mills and the economic importance of energy resources in the region. In grade 4 teaching concepts are focused on ecologic aspects. Basic knowledge concerning sustainability and environmental pollution is offered. In the following grades of Secondary and Grammar School the national teaching concepts are used in the Free State of Saxony.

In the next level - secondary school – the teaching concepts in this field are focused on three points:

- energy balance/energy saving
- problems of fossil fuels
- renewable energy sources

The subject “energy” is part of secondary education (grades 6 and 7). Special subjects are included in the basics of biology, physics and chemistry. The subjects taught in biology are focused on environmental pollution caused by oil and coal. Renewable energy sources, the change in climate, the relation between the

consumption of fossil fuels like oil, gas or coal and the national as well as the global economic growth, the environmental pollution caused by traffic and industry and the role of emerging countries as suppliers of oil and gas are dealt in political and social subjects. The curriculum includes basic knowledge concerning the production and the consumption of energy as well as political and social aspects of the topic.

Energy balances show which kind of energy contributes to different fields like heating and traffic. The energy need concerning the production, packaging, warehousing and distribution of goods is explained as well as differences between centralised and decentralised production and distribution of energy. Questions dealing with wasting gas and heat are answered and global and regional energy scenarios are explained. Pupils should think about the relation between economic growth and energy consumption all over the world. Energy saving is another important subject. Measuring of the consumption and monitoring of the efficiency are necessary to avoid energy losses and to reduce the energy consumption. One further topic is energy efficiency.

Renewable energies are part of the curriculum with a focus on solar energy. Beside the technical principals of solar cells and solar collectors also other renewable energy sources are mentioned and explained:

- wind power
- use of biogas
- hydroelectric power

The teaching concepts include the use of renewable energy sources for heating and the generation of electricity. Statistics concerning the present energy production by renewable energy sources are part of the curriculum as well as basic information about fuel cells.

4. Preconditions for the implementation of the EnercitEE sub-project “E-FoxES”

4.1 Background

In the town of Bautzen the competition “Energy Saving Foxes” started in 2008. The aim of the competition is to raise awareness among the children and young people concerning energy saving. The schools should actively contribute to stop the climate change and the global warming by projects carried about by pupils’ project groups.

The pupils suggest and implement their own ideas for energy saving by support of teachers. The projects of the pupils are focused on their living environment and energy saving actions in school buildings. The economic impact of the project is not so important but all involved pupils should think about the origin of climate change and the own behaviour.

4.2 Management of the Energy Saving Foxes contest

At the beginning of the school year the organizers of the project, the town administration, regional energy supplier, foundation of the promotion of technologies (Technologieförderverein Bautzen e. V.), announce the competition and develop a time schedule for the implementation. In every school year a new competition is started by a public event under the leadership of the Lord Mayor. The project ideas of the project groups from different schools are presented by short presentations during the opening ceremony. It is very important to involve the Lord Mayor or other policy makers to show the children the importance of energy saving. The local press (print media, regional TV) informs the public about the competition and the individual projects.

The involved project groups from different schools are supported by the organizers of the competition, their teachers and if possible also by regional companies. The companies can help to implement the project or to give some financial support. In the end of the school year all project results are presented for some days in the central shopping centre in Bautzen. In this way, a lot of people are faced with the topics of climate change and possibilities for energy saving. The presentation week is finished

by the second public event under the leadership of the Lord Mayor and in presence of all other project partners.

The most successful projects are awarded in two categories,

- most innovative project and
- most active project

by challenge cups. It means in the next school year two other schools will receive the two cups. Furthermore it is important to motivate all participants of the projects by other prizes, for instance visiting tours to big energy projects (solar parks, wind mills etc.) and also to interesting companies.

The winners of the competitions are selected by a jury composed of representatives of the administration of the town, representatives from the schools, the regional energy supplier and the involved sponsors.

4.3 Success factors of the Energy Saving Foxes contest

The concept of the energy saving contest is based on a high degree of publicity. The politics is involved from the beginning to the end of the contest as well as the media, for instance by press articles which present individual projects of the active groups of pupils during the project year.

In Bautzen we have found for every project a local company as sponsor, for instance the regional energy supplier. The companies also benefit from the publicity of the school projects. In the last three years we found out that it is very important to involve the responsible school administrations too. These administrations can help to persuade the directors and teachers to motivate the pupils to participate in the contest.

Annex II

EnercitEE Sub-Project E-FoxES

Energy Saving Foxes in European Schools

Report on regional starting conditions

**Sub-Project Participant: Energikontorsydost, Småland,
Sweden.**

Table of contents

1.	Policies concerning Energy Efficiency	XVI
1.1	National background	XVI
1.2	Regional background	XVI
2.	Awareness raising actions for pupils	XVII
2.1	Actions on European level	XVII
2.2	Actions on national level	XVII
2.3	Actions on regional level	XVIII
3.	Energy related education concepts	XVIII
3.1	National Education System	XVIII
3.2	Description of environmental and energy education	XX
4.	Preconditions for the implementation of the EnercitEE Sub-Project “E-FoxES”	XXI
4.1	Background.....	XXI
4.2	Management of the Energy Saving Foxes contest in Sweden	XXI

1. Policies concerning Energy Efficiency

1.1 National background

- Sweden's second National Action Plan for Energy Efficiency.
Agreed at Cabinet Meeting June 30, 2011

Extracts from Summary:

“The Swedish Parliament has, in accordance with the European Parliament and Council Directive 2006/32/EC of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC - Energy Services - adopted an overall national indicative target of 9 percent energy savings by 2016 compared to the average end-use energy in the period 2001-2005 (Government Bill 2008/09: 163, bet. 2008/09: NU25, Government Communication 2008/09: 301). The Swedish parliament has in the same decision also established an interim indicative target of 6.5 percent energy savings by 2010. The percent energy savings target is converted to energy in physical terms, corresponds to 24.0 TWh in 2010 and 33.2 TWh in 2016.”

1.2 Regional background

In 1996 it was decided unanimously that Växjö shall become a fossil fuel community, which means that our energy usage and our shipments will not be using fossil fuels. Related to the environmental program's revision in 2010 it was also decided that the municipality must be fossil fuels by the year 2030 (Municipal Group to be fossil fuel free by 2020).

The overall objectives of the environmental program points the way towards the fossil fuel free society and is also based on the energy plan:

- We should stop using fossil fuels
- We will use energy efficient.

The goals are then broken down into goals for 2015. The goals with the greatest connection to the energy plan are:

- The power supply will decrease by 15% per capita from 2008 to 2015.
- The consumption of electrical energy will be reduced by at least 20% per capita from 1993 to 2015
- The fossil carbon dioxide emissions to fall by at least 55% per capita by 2015 compared to 1993
- The total energy consumption will decrease by 17% in the municipality's premises and housing, calculated from average years 2003/2004 and 2015
- The fossil carbon dioxide emissions from the municipality's transportation and service, reduce by at least 30% from 1999 to 2015

2. Awareness raising actions for pupils

2.1 Actions on European level

In preparation of the sub-project E-FoxES existing actions for children and people raising the awareness concerning energy efficiency issues were evaluated at European, national and regional level. A pan-European competition on energy education called U4energy is organised by the European Commission. Primary and secondary schools across Europe can participate in this competition. The first round of the competition was launched in September 2010. The second round is open until May 2012.

U4energy is an online competition based on many criteria.

2.2 Actions on national level

On the national level there is a need for training in these topics. We do have some projects, one of them is called KNUT. The project is a collaboration between four regional players and aims to increase children and young people's interest, knowledge and commitment to the environment, resource and energy issues.

KNUT project will develop and disseminate multi-disciplinary approaches to integrate climate, resource and energy issues as part of teaching.

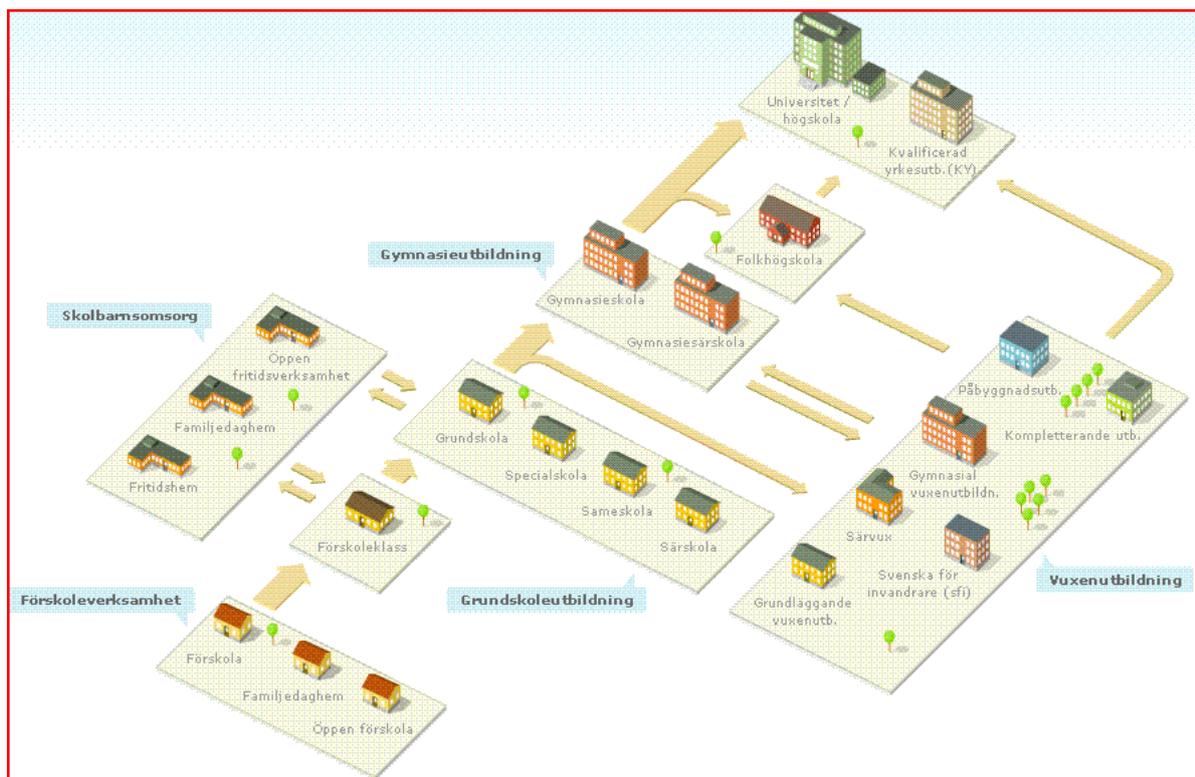
2.3 Actions on regional level

The local electricity and energy company, VEAB, has in collaboration with the municipality and the ESS this year launched a project aimed to teach young people about energy. Schools will be helped with training and also to visit the energy building of VEAB. It will also follow a toolbox to use in school.

The box will contain everything you need as a teacher to perform your lessons.

3. Energy related education concepts

3.1 National Education System



The basic structure of the Education System in Sweden

Description of the Swedish education system:

There are three curricula - one for pre-school (Lpfö 98), one of the compulsory school system, preschool classes and after-school (LGR 11) and one for the voluntary school (Lpf 94). Curricula links to each other in that way that they are structured similarly and expresses the same view of knowledge, learning and development.

The Swedish school system is based on targets with a high degree of local responsibility. The responsibility lies with the municipalities and authorities responsible for independent schools.

Pre-schools shall be provided in all municipalities, for children that are 6. The 9-year compulsory education covers children aged 7 - 16 years.

Curriculum, course curriculum and timetables:

The latest national curriculum for compulsory education (Lgr 11) came this year. The theme of energy does not exist as an isolated discipline in primary school. However, there is that element of the curriculum in Physics and Biology. These elements are not specified for the scope of the curriculum.

Differences at the regional level:

Each municipality shall specify the methods in a school plan that shows how local schools will be organized and developed. The curriculum, syllabi and school plan then allow the individual school principals, teachers and students to personalize content, organization and operation of local circumstances. The planning of these is set in the local school scheme.

3.2 Description of environmental and energy education

Compulsory school 7 - 16 years:

The subject covers mechanics, including acoustics and wave motion, thermodynamics, optics, and electricity and magnetism with electromagnetic radiation. In addition, astronomy, cosmology, atomic and nuclear physics. Energy is common to all these areas of knowledge. Particular attention is given to concepts that are used in everyday life and technology as well as discussions on environmental and resource issues. The subject also aims to understanding the human relationship to nature, especially as regards energy and radiation.

Upper secondary school (16-18years):

The high school curriculum is so generally written that there is room for teachers to plan instruction with their students. From 2000 there are 17 national three-year program. Within a program there may be different profiles. Each program comprises 2 500 upper secondary credits. The guaranteed teaching time for science programs is 2180 hours. Job training, APU, is an opportunity which is not mandatory for technology programs.

In the energy program, you learn drawings and wiring diagrams and how to manage, maintain and troubleshoot various types of energy equipment. After high school you can work as technicians, caretakers or HVAC technician etc.

The private schools are increasing in Sweden. They have to follow the national curricula.

4. Preconditions for the implementation of the EnercitEE Sub-Project “E-FoxES”

4.1 Background

In the town of Bautzen the competition “Energy Saving Foxes” started in 2008. The aim of the competition is to raise awareness among the children and young people concerning energy saving. The schools should actively contribute to stop the climate change and the global warming by projects carried about by pupils project groups.

The pupils suggest and implement their own ideas for energy saving by support of teachers. The projects of the pupils are focused on their living environment and energy saving actions in school buildings. The economic impact of the project is not so important but all involved pupils should think about the origin of climate change and the own behavior.

4.2 Management of the Energy Saving Foxes contest in Sweden

In Sweden we have informed principals about the ability to train their teachers in the energy sector. Teachers will also be associated with education to get a box back to school with valuable tools for their further education. In conjunction with the principal information told us even if E-FoxES and illustrated the challenge that meant. Because of the new curriculum in Sweden, we will not start our training until the autumn when the new school year starts.

The involved project groups from different schools are supported by the organizers of the competition, their teachers and if possible also by the local energy company, VEAB. In the end of the term all project results are presented for some days in the city library of Växjö. In this way, a lot of people are faced with the topics of climate change and possibilities for energy saving.

We follow the projects award categories.

The winners of the competitions are selected by a jury composed of representatives of the administration of the town, representatives from the schools, the regional energy supplier and the involved sponsors.

Annex III

EnercitEE Sub-Project E-FoxES

Energy Saving Foxes in European Schools

Report on Regional Starting Conditions

**Sub-Project Participant: Prioriterre
Partner Region: Haute Savoie, France**



Table of contents

1.	Policies concerning EE	XXIV
1.1	National background	XXIV
1.2	Regional background	XXIV
2.	Awareness raising actions for pupils	XXV
2.1	National level	XXV
2.2	Regional level	XXV
2.3	Local level	XXV
3.	Energy-related education concepts	XXVI
3.1	KIndergarten	XXVI
3.2	Primary School	XXVI
3.3	Secondary School	XXVI
4.	Preconditions for the implementation of the EnercitEE Sub-Project "E-FoxES"	XXVII

1. Policies concerning EE

1.1 National background

- The Decree of 28 November 2006 states that ‘all publicity undertaken for a business concerning energy or aimed at its consumption, shall include a message promoting rational energy use and encouraging energy savings, with the terms and conditions of its dissemination to be established by order of the Minister responsible for energy.
- France has undertaken to comply with the terms of the ‘Energy/Climate’ Package adopted in December 2008 under the French Presidency of the European Council, which provides in particular for a 20% improvement in the European Union’s energy efficiency in 2020.
- “Grenelle de l’environnement” Bill 1 and 2 (with a strand for environment education)
- Programme of Action for Energy Efficiency from the National Roundtable on Energy Efficiency

1.2 Regional background

Regional Council is developing funds for raising awareness program dedicated to students, schools, or specific group of citizens. A call for project « objectif terre » is funding project dedicated to students. A raising awareness kit has been also developed by the Regional Council for high schools.

Planète Lycée (Regional council of Rhône-Alpes).

2. Awareness raising actions for pupils

2.1 National level

“Eco-ecole” programme: make eco-friendly schools and middle schools
National education programme is planning energy efficiency classes but teachers do neither have any means nor background to easily teach this career. There is a need for more training on these topics.

2.2 Regional level

Regional Council is developing funds for raising awareness program dedicated to students, schools, or specific group of citizens. A call for project «objectif terre» is funding project dedicated to students. A raising awareness kit has been also developed by the Regional Council for high schools.

“Planete lycée” is another programme funded by Rhône-Alpes region for energy efficiency.

2.3 Local level

Prioriterre trains volunteers to speak to children in schools about energy efficiency and eco-consumption (which is directly linked).

Project such as Eden (Interreg III A) or IUSES (save IEE) were dedicated to school and students and were developed locally. Training and workshops on energy efficiency at schools and in the day to day life were organised. Documents of training have been produced and Prioriterre was partner.

Prioriterre also gives conferences in high schools or schools when they ask for it.

3. Energy-related education concepts

3.1 Kindergarten

Elements of ecological “education”, inter school mobility challenge (come to school on foot)

3.2 Primary School

Class intervention on energy efficiency thematic

3.3 Secondary School

Teachers should raise awareness amongst children (middle school) on energy efficiency but the tools are missing somehow. Nonetheless, some schools get a specialization in environment and are willing to raise awareness on these issues among children.

Prioriterre has been participated to some European project that helped in developing teaching material and activities that were disseminated in Haute-Savoie.

4. Preconditions for the implementation of the Sub-Project “E-FoxES”

Haute-Savoie is implementing since 4 years the energy neighbourhood bet that is a challenge to save energy at home.

We work a lot with school with Planet volunteers programme and through 2 European projects:

- IUSES, a project Prioriterre carried out in 2008-2010. The global aim of IUSES is to develop a common European program for the teaching at secondary schools of energy education, and make schools and young people adopt sustainable and efficient energy behaviour.
- Eden, was a project in which technical sheet for teacher and tools for pupils were developed
- Prioriterre trains volunteers to speak to children in schools about energy efficiency and eco-consumption (which is directly linked energy efficiency as well)

The concept to develop a challenge for the schools is a concept that came out because of these different experiences and also because it is a very useful tool for teaching energy efficiency at schools!

At the beginning of the school year Prioriterre and Conseil general HSA proposed the competition to the school. It was a bit late in time (it was already end September whereas it is advised to propose the challenge before the end of the previous year, so that the teachers can plan the activity in their next year programme).

Prioriterre developed a time schedule for the implementation. The first steps after the involvement of the schools was to trained the educative team. We organised one workshop per school to train the teacher and technical staff. Then we organised another workshop with the teachers, technical staff and pupils so that they elaborate their project together.

The involved project groups from different schools are supported by the organizers of the challenge, their teachers and if possible also by regional external experts. Prioriterre also propose some financial support for the school projects through the SP2 budget.

In the end of the school year all project results are presented during a final event that can be organised either in one school either in a public space or meeting room. The Conseil General is welcoming this event to make it more official.

The most successful projects are awarded in two categories,

- Most innovative project and
- Most active project
- Most creative project

The winners of the competitions are selected by a jury composed of a Conseil General member and 4 staff from Prioriterre.

This project is co-financed by the ERDF and made possible by the INTERREG IV C programme. The contents reflect the author's views and the MA is not liable for any use that may be made of the information contained therein.