

# Schools at University for Climate and Energy - SAUCE -



## Recommendations for universities on structuring SAUCE preparatory meetings for teachers

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Malte Schmidhals, Unabhängiges Institut für Umweltfragen (UfU),  
Germany

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**Project coordination**

Annette Piening, M.A.  
Freie Universität Berlin  
Otto-Suhr-Institut für Politikwissenschaften  
Environmental Policy Research Centre (FFU)  
Innestrasse 22  
14195 Berlin  
Germany  
Ph. +49 30 838 544 91  
annette.piening@fu-berlin.de  
www.fu-berlin.de/ffu

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Malte Schmidhals, UfU e.V.

# Schools At University for Climate and Energy (**SAUCE**)

**Recommendations for universities  
on organising preparatory meetings for  
teachers**



# Recommendations for universities on structuring SAUCE preparatory meetings for teachers

In line with the preparation and the conduct of lectures for pupils in the SAUCE (Schools At University for Climate and Energy)-project, preparatory meetings for teachers are held.

The following paper briefly describes the approaches and aims, the subjects and the structuring of these meetings to be held at the Freie Universität Berlin. While it takes the German perspective, it may serve as a guide for other European universities carrying out SAUCE programmes.

## 1 Approaches to energy education

The energy education in Germany mainly developed out of two theoretical approaches, which are both represented the SAUCE lectures and the preparatory meetings for teachers:

The first was developed in the late 1980s after the nuclear disaster of Chernobyl. It was developed in Berlin and Hamburg and published at the Leibniz-Institute of Pedagogics of Natural Sciences (Leibniz-Institut für die Pädagogik der Naturwissenschaften) at Kiel University as a book with the Title: "ASKA – Eine Schule spart Energie". The incentive system "fifty/fifty" was developed out of this methodology in the early 1990s and introduced in Hamburg, Berlin and other German Cities.

<http://www.hamburger-bildungsserver.de/klima/fifty/>,  
and <http://www.ufu.de/de/fifty-fifty/fifty-fifty-home.html> .

These Energy saving projects were first disseminated to other European Countries with the SAVE-Project "Energy saving at schools" in the late 90ies. Ever since, they have been run by the member organisations of the "Bundesverband Schule Energie Bildung": [www.schule-energie-bildung.de](http://www.schule-energie-bildung.de).

The second approach was part of the programmes for Education on Sustainable Development. Energy consumer behaviour, energy efficiency and climate change issues were taken up by the federal government's educational agenda in the mid-1990s together with the goals of the Agenda 21. At the time, a process of formulating new education guidelines was initiated: Growing from various political and civil society initiatives in support of the goals of the Agenda 21 in the mid-1990s, these topics have since become an integral part of public environmental education programmes, which primarily operate under the title Bildung für nachhaltige Entwicklung - Education for Sustainable Development.

This approach lays emphasis on the output of learning: What should the pupils be able to do or which problem-solving strategies, which concepts and abilities for different problems and situations should they acquire? (In contrast to this, traditional teaching is input-oriented by asking which particular subjects and details the students should learn or know about.) "Gestaltungskompetenzen" are those abilities individuals need to actively participate (and not merely react) in shaping economic, ecological and social decisions and conditions in their personal environment, as members of the polity and in society at large.

## 2 Aims of the preparatory meetings

There are several reasons, why preparatory meetings for teachers are called for when you plan SAUCE lectures for pupils. The most important reason probably is to help the teachers to integrate the prospective visit of the SAUCE lecture into their regular lessons, thus making

the lecture more than a mere school excursion. But there are more reasons to offer such preparatory meetings; a short overview is given in the following.

## **2.1 Help the teachers to integrate the SAUCE lectures into their lessons**

Climate change and the energy question have become a matter of public interest recently and so most teachers, who are interested in these topics, will be familiar to general information. But most of them have not heard about it in their own studies and training. To focus on these topics in their own lessons does therefore mean more work and an extra effort in preparing the teaching. As the time for preparing lessons is very limited since a teacher holds 26 lessons a week, it is quite easy to understand, that teachers – getting the offer to visit a university lecture aimed at pupils – use this lecture to deal with climate change and energy without planning further lessons of their own. But school lessons – integrating the visit to the university – are vital to make sure, that the SAUCE lectures have long-term effects for the pupils. Thus, a preparatory meeting to the teachers should be organized to improve the integration of the SAUCE lectures into school lessons. This meeting should not only give information on climate change, renewable energies, energy saving, efficiency etc., but also offer ideas, methods and practical experiments and tasks for the pupils, that the teachers can use easily in their own lessons.

This aim, to help the teachers highlighting climate and energy in their lessons, also defines the content and the structure of the preparatory meetings as described beneath.

## **2.2 Promote the SAUCE lectures**

The preparatory meeting, which should take place about three or four weeks before the SAUCE lectures, should also be used for the promotion of the lectures. But probably not many teachers, who did not already make up their mind about taking part in SAUCE with their classes, will attend the preparatory meeting. So it is hardly possible to use the meeting to attract new participants for the lectures. But the preparatory meeting nevertheless gives a good opportunity for addressing the teachers of the schools in your community.

The promotion for the preparatory meeting as well as for the SAUCE lectures should start early and should use different channels. In general three to four different ways should be tried at the same time:

- Announcement in official school circulars and newsletters, usually published by the school authority.
- Integration of the project into the advanced training scheme for teachers.
- Direct correspondence to teachers known to be interested in climate and energy questions.
- Information via local mass media (This channel can only be used in small communities, where a meeting like this is considered to be worth mentioning by the local media.)

## **2.3 Get to know the university**

The last reason for organizing the preparatory meeting is the opportunity for the teachers to get to know the university, its facilities, lecture halls etc., which they later visit with their pupils. This makes the visit of the SAUCE lectures more comfortable, avoids late arrivals and makes sure that the whole class does not get lost on campus. In general, it makes it easier both for the university and for the teachers to organise the lectures.

### **3 The content of the meetings**

Our experience from other projects teaches us, that there should be a combination of subjects of immediate relevance for the school and topics that broaden the knowledge of the attending teachers and are interesting for them without necessarily being used in the classroom the next day.

#### **3.1 Relevant school subjects**

The content of the meetings should make sure, that they are interesting for teachers of several different subjects. This means, that social sciences should be served in the same intensity as technical subjects and natural sciences (which is not a matter of course in dealing with the topics of climate change and energy in Germany). You should also make sure that the content meets the needs of the teachers defined by the curricula of the different school subjects, grades and age groups. Although theoretically every school subject can focus on the climate question, in practise there are just three or four subjects dealing with climate and energy issues. These are:

- Physics in secondary schools or Natural Sciences which are not subdivided in most German primary schools: These subjects teach the practical and (in higher forms) technical and scientific foundations of energy saving and the use of renewable energies.
- Ethics, Religion, German and Arts usually deal with the ethic, moral and “One World” implications of the energy and climate issue.
- Geography deals with the scientific aspects of climate, climate change and natural resources.

So these school subjects should be served most when arranging the preparatory meetings.

#### **3.2 Issues of general interest to teachers**

Issues of general interest to teachers regarding climate change and energy are e. g.:

- Survey Results on consciousness of youths about environmental questions or climate change,
- Assumed ecological and economic consequences of climate change,
- The EU policy approach to problems arising from dependence on imported energy resources,
- Change of lifestyle with the aim of climate protection,
- Lack of energy resources and climate change as reasons for international crises,
- UNESCO’s work for sustainable development.

#### **3.3 Berlin as example**

At the first teachers training in Berlin, the following topics were covered:

- ESD at primary schools?
- Information on school projects regarding the following groups of subjects
  - German, Religion and Art

- Science and Mathematics
- Geography
- *Choice for get-together and discussions*

## 4 The structure of the meetings

When you plan a preparatory meeting for teachers, you should make sure, that it is of high interest to the teachers and includes a number of different offers, because teachers usually take part after a school day from 7:30 till 14:00 with noisy and difficult children and youths.

So attending teachers should be given the opportunity to learn from the meeting how to integrate climate and energy issues into their lessons. The meeting should have practical and active phases, where teachers can deal with the proposed ideas on their own. But as they have been productive for already 7 hours that day, there should also be phases at the meeting where the teachers can be passive, just listening and grabbing information that is presented to them in an interesting and not too complicated manner.

To make a preparatory meeting more interesting and attract more teachers, it should also be a “Special Event” (e. g. with catering) and it should give the opportunity of an exchange among the participants.

### 4.1 The passive phase

The passive phase can be used to deal with the above described “issues of general interest to teachers”. It makes sense to invite a speaker on a subject that is not an integral part of school education but related to it. So the speaker should generally not be a teacher, but somebody who works in another field and gives another point of view than the school does.

It is recommended to invite a really good speaker, who delivers an exciting presentation that awakes the audience instead of getting it tired. It may be good to have a speaker who finishes with socially and politically thrilling or even provocative theses. This way a discussion is started automatically and does not have to be initiated by the organiser of the meeting.

### 4.2 The active phase

The active phase can deal with different topics that can be used directly in school education. As mentioned above, the aim should be that teachers of different subjects can benefit from it.

There are several methods of preparing and conducting a workshop that give the participants the chance (or even forces them) to take an active part. Generally, you have to make sure, that the groups are not too big, 15 attendants are the maximum.

UfU e.V. has good experience with different ways of active workshops by:

- **Analysing a situation and making suggestions to improve it with the SWOT-Model**  
In this model, the situation (e. g. the climate and energy education in a given community) is analysed regarding its **S**trengths, **W**eaknesses, **O**pportunities and **T**hreats. A structured discussion leads to proposals on how to improve the situation and how to avoid the threats.
- **Giving a specific task to the workshop-group**  
This task can be to develop a lesson on e. g. energy saving, ecological and

healthy illumination. Information and teaching material on this subject should be supplied by the moderator of the workshop.

- **Having short discussions on a variety of proposals, school projects and lessons**

Different school projects, lessons and teaching materials are presented to small groups of participants. They discuss these items and make suggestions how to use them in their own lessons. This way, they get lots of ideas for their teaching and the people who present their proposals and materials get lots of different ideas and clues how to improve them.

- **Using the workshop-group as a Focus- or Expert-group**

A teaching unit is presented and the teaching materials used - especially all exercises, experiments, specifications, protocol-sheets etc. for the pupils - are discussed and subsequently improved.

In the case of the first SAUCE preparatory meeting for teachers, we used the third method, presenting a variety of teaching proposals to the participants.

### **4.3 The “Special Event” and the exchange between the participants**

A “Special Event”, that is different from day-to-day work, can e.g. be the opening of an exhibition, a short stage play, a film or a reception. If you include a catering in a nice atmosphere, you can combine this special event with the opportunity for an exchange among participants. There are also other, more formalised ways of exchange, like “world coffee”, but we have better experiences with the informal approach e. g. with a buffet.

### **4.4 Berlin as example**

In our case we timetable was as follows on the next page:

Part 1	Introduction and lecture
15:00 – 15:10	Address of Welcome PD Dr. Lutz Mez, Forschungsstelle für Umweltpolitik, Freie Universität Berlin
15:10 – 15:20	Introduction of the Project Schools @ University – Climate + Energy Annette Piening, Environmental Policy Research Centre (FFU), Freie Universität Berlin and Carola Braun-Wanke, Berlin Energy Agency
15:20 – 16:00	Lecture and Discussion ESD at primary schools? Diana Grundmann, Center for Educational Future Science, Freie Universität Berlin
Part 2	Information on school projects for three groups of subjects
16:00 – 17:30	<i>A. German / Religion / Art – Global and Inter-Generational Equity</i>  1. The ecological footprint by Nora Koim, Büro für Nachhaltige Entwicklung, Berlin  <i>B. Science, Mathematics – Renewable Energy and Energy Saving</i>  2. Learning about renewable energies by Arun Hackenberger, Unabhängiges Institut für Umweltfragen (UfU), Berlin  3. Pupils examine their school - fifty/fifty by Malte Schmidthals, UfU, Berlin  <i>C. Geography – Global Change, Climate Change, Greenhouse effect</i>  4. Action Day: “Walking to school – children self-consciously mobile” By Franziska Kupsch und Dorit Slaby, VCD e.V  5. Greenhouse effect - climate change – energy consumption: What is their connection and what are our option to become active? by Heike Müller, UfU, Berlin
Part 3	Get-together
From 17:30	Time and space for discussions and questions over small snacks

## 5 Should preparatory meetings be compulsory?

As described above, there are good reasons for preparatory meetings for teachers, when organising SAUCE lectures for their pupils.

The preparatory meetings definitely are of lower interest to the teachers than the lectures, because they mean extra work, while the lectures for the pupils do not cost extra time but enliven the usual school days that have to be prepared anyway. So you have to assume, that there will be less registrations for the preparatory meetings than for the lectures.

Before organizing the preparatory meetings, we had a discussion whether these meetings should be compulsory for the teachers wanting to take part at the SAUCE lectures with their classes or whether the meetings should only be an offer.

If the meetings are compulsory you force the teachers to get involved in climate change issues and education for sustainable development (ESD). This way, they can't just use the lectures as a mere field day where others are responsible for the content. On the other hand it can be seen as a paternalism against the teachers dictating them, how to prepare their lessons.

In the end, we have decided out of practical considerations not to make the preparatory meetings compulsory the first time, because the time for organising both, the meeting and the lectures, was not very long. So it was not possible to connect them too strongly. We will not link them at the next SAUCE event either with regard to the deadlines shortly after the summer holidays. But perhaps we are going to change this and implement compulsory preparatory meetings for teachers before the SAUCE pupils' university in winter 2010. We will evaluate the results afterwards.