

# **Interdisciplinary Winter and Summer School on Energy Systems in Austria and the Czech Republic**

## **Final Report**

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## **Aim and content of the Winter and Summer School**

The idea for this Winter and Summer School has arisen through an intense cooperation of the Czech and Austrian energy experts since 2002. Also positive experience with this project in 2006 and the following years led to the intention to organize it again.

The Czech-Austrian Energy Expert Group (CZ-AT EEG) was established in 2002 by the Austrian and Czech Governments. The aim of this high level task force is to jointly study the problems of energy systems in both countries. The members, appointed by their governments, are affiliated with Czech and Austrian universities and institutions. One of the major aims of the CZ-AT EEG is the dissemination of results of the joint research projects to assist not only in a better understanding of national problems with the energy systems but also to contribute shaping future energy policies in both countries.

The Bilateral Winter and Summer School for 20 students fulfils this aim by transferring the results of already finished research projects to Czech and Austrian students who are interested in this issue. The participating students have to prepare their bilateral seminar papers and to present them during the Summer School. Best students will continue in their work as bilateral diploma thesis. The cooperation of students with different specializations from different universities provides incentives for their interdisciplinary approach to the topic.

Winter and Summer School is also a perfect way for students to get to know the actual situation in Austria and the Czech Republic. Therefore, Winter School was organized in Prague in February and Summer School in Graz in June/July, 2009.

## **Participants**

The participating students came from different universities: University of Graz and Technical University of Graz, University of Economics in Prague, Czech Technical University in Prague and Charles University in Prague.

10 students from Czech republic and 11 students from Austria were elected through a formal selection process. The students had to fill in an application form concerning their energy-related background. The application form is in Annex 1. All students had studied for at least 2 years and could prove that they had already dealt with some energy related topics at the university or some practical experience. They were nominated by the project partners and selected in accordance to their study success and experience with the seminar topics.

The list of participants (students, lecturers, organization team) is in Annex 2.

## Organization and program of the Winter and Summer School

The project was proposed and carried out by:

Stefan Schleicher - Wegener Center, University of Graz, Austria

Jiřina Jílková - Institute for Economic and Environmental Policy, University of Economics in Prague, Czech Republic

Together with their project partners:

Reinhard Haas - Vienna University of Technology, Austria

Wolfgang Streicher - Graz University of Technology, Austria

and Jaroslav Knápek - Czech Technical University in Prague, Czech Republic.

The activities were organized by the home universities. For the Winter School in Prague Jiřina Jílková and Jaroslav Knápek were the coordinators, Stefan Schleicher and Wolfgang Streicher for the Summer School in Graz. Topics of the courses and excursions were the topics that the CZ-AT energy experts had already been working on in the joint research projects. Additionally to the lectures, plenty of interesting excursions and discussions were carried out. The program of the Winter and Summer School is in Annex 3.

The time in between the Winter and Summer School was used for writing the bilateral seminar papers, when a small international team of up to three students from both Austria and Czech Republic analysed the situation in their home country and put it together in one paper. Students also had to prepare their joint presentation for the Summer School in Graz. For every seminar paper one advisor was elected depending on the background of the different experts. The list of all seminar papers which were successfully presented during the Summer School in Graz is in Annex 4.

All the papers written by bilateral teams of Czech and Austrian students were edited and printed in one textbook: Czech-Austrian Winter and Summer School, Student's papers, Prague and Vienna, 2009. The symposium of papers has 8 chapters and 163 pages. The books were distributed to each student, lecturer, to University of Economics, Prague (Institute for Economic and Environmental Policy), Czech Technical University, University Graz (Wegener Center) and to the AKTION office in Prague.

Next to a certificate for the participation in this project, all students were awarded with 6 ECTS-points by the University of Economics in Prague for the Czech students and by the University of Graz for the Austrian students.

All these data, presentations, seminar papers, background literature, etc. can be found on the restricted area of the project website under [www.ieep.cz/projekty](http://www.ieep.cz/projekty) (both username and password: "V9A").

## Financial report

A separated detailed financial report was already sent to the AKTION office in Prague (from the Austrian project leader for the EURO budget and from the Czech project participant for the CZK budget).

The table below shows the total costs where the students' contributions (Austrian students 100 EUR, Czech students 1000 CZK) have already been subtracted.

<b>Kostenart / typ nákladů</b>		<b>2009</b>
Aufenthaltskosten tschech. Projektteilnehmer in Österr. (gemäß den Sätzen des BMWF, s. Merkblatt) / úhrady za pobyt českých účastníků projektu v Rakousku (dle sazeb rak. min. vědy, viz Pokyny)		4054
Reisespesen: Reisen österr. Projektteilnehmer in die ČR, sowie Reisen von Projektteilnehmern auf österr. Gebiet (s. Merkblatt) / jízdné rak. účastníků do ČR, jízdné účastníků projektu po Rakousku (viz Pokyny)		2038,2
Honorar f. Lehrtätigkeit f. österr. Projektteilnehmer (gemäß d. Sätzen d. BMWF, s. Merkblatt), honorář za výuku rak. účastníkům projektu (dle sazeb, viz Pokyny)		264
Publikations- und Editions-kosten (Rezensenten-honorar, Druckkosten) / publikační a ediční náklady (lektorský posudek, tisk)		150
Sonstige Kosten (nur für Dissertationsnetzwerke)/ ostatní náklady (pouze pro zpracování disertačních prací v tandemu)		
Verwaltungs- und Regiekosten (nur bei den Sommerkollegs)/ správní a režijní náklady (pouze pro letní kolegia)		
Gebühren der Studenten (poplatky studentů)		- 1000
<b>Gesamtkosten in EUR / celkové náklady v EUR</b>		<b>5506,2</b>

<b>typ nákladů / Kostenart</b>		<b>2009</b>
Úhrada ubytování účastníků projektu v ČR (viz Pokyny) / Unterkunfts-kosten für Projektteilnehmer in d. ČR (s. Merkblatt)		58800
Stravné a kapesné účastníků projektu v ČR (s. Merkblatt) Verpflegung für Projektteilnehmer in der ČR (viz Pokyny)		31940
Jízdné česk. účastníků do Rak. a účastníků projektu po ČR (viz Pokyny) / Reisespesen: Reisen tsch. Projektteilnehmer nach Ö., Reisen von Projektteilnehmern auf tschech. Gebiet (s. Merkblatt)		48424
Odměna za výuku českým účastníkům projektu (viz Pokyny) / Honorar für Lehrtätigkeit tsch. Projektteilnehmer (s. Merkblatt)		4800
Publikační a ediční náklady (lektorský posudek, tisk)/ Publikations- und Editions-kosten (Rezensenten-honorar, Druckkosten)		16000
Ostatní náklady / sonstige Kosten		
Verwaltungs- und Regiekosten (nur bei den Sommerkollegs)/ správní a režijní náklady (pouze pro letní kolegia)		
Gebühren der Studenten (poplatky studentů)		- 10000
<b>Celkové náklady v Kč / Gesamtkosten in CZK</b>		<b>149964</b>

Before the Winter School the contribution from Czech students (10 x 1000 CZK/ student) was collected and almost totally spent for daily meals (for the Czech participants) and refreshment during the lectures which was not covered by the AKTION budget and for post services (sending the textbooks – student papers – to Austria). Each student received a confirmation of his/her contribution delivery. We guarantee the return of the remaining sum of money to all students by the end of October 2009. The overview of expenses (and comments) during the Winter School in Prague is in the Financial Report.

Additionally to the AKTION program the Austrian Federal Ministry of Agriculture and Forestry, Environment and Water Management supported this project by financing its administration and organization. We guarantee that there was no overlapping of the financing from AKTION and this extra support and both financial sources were absolutely necessary to realize this successful project.

## **Lessons learned and next steps**

Last year (2008), Winter and Summer School was a very important and positive experience for the whole organization team, so this year (2009) we tried to improve the organization and contents of the whole project.

We asked students to fill in questionnaires (see Annex 5) to get feedback from them. Their answers will be used for planning a new proposal for the similar project in the year 2010 which we are currently discussing and planning.

Concerning the lectures and excursions most of the students appreciated the interdisciplinary character of the whole course (energy-related topics from economics, politics, engineering, architecture, etc.) and the continuation of topics (of lectures). Everyone could obtain new piece of knowledge outside his/her university background. Students also appreciated an interactive form of some lessons (using electronic information sources, discussions etc.). Some of the students even proposed to invite some other experts to have a lecture next time.

All students' answers were very positive concerning the organization of the Winter and Summer School and also the communication with the team. Students also appreciated after school activities, liked city walks or going out together with the other participants. All students liked the excursions in Austria during the Summer School. The excursion in the Czech Republic could have included some more visiting places which cannot be found in Austria. But all students liked the visit of the high-voltage laboratory in the CTU in Prague. As to the size of group and length of the course - none of the students had any negative comment. They appreciated relatively small audience to establish nice friendship among students.

Because of the exam period in Austria during the Winter School in Prague, it was difficult to find enough students from Austria to participate. Next time it might be more convenient to organize the Winter School in mid of February and the Summer School in the beginning of June (to avoid exam stress as well).

## Annex 3 Program of the Winter and Summer School 2009

### Interdisciplinary Winterschool 2009 on "The Future of Energy Systems in Austria and the Czech Republic"

#### Sunday, February 1<sup>st</sup> 2009

**Important addresses:**

Hotel Krystal  
 J. Martího 2, tram # 8 or 36, station Nad Džbánem  
 ČVUT - lecture room  
 Šolínova 7 (corner of streets Zikova and Šolínova)  
 Kloknerův ústav, room 635, 2nd floor  
 Restaurace Pod Loubím  
 Evropská 26, tram station Dejvická  
 Academic Restaurant  
 Thákurova 1  
 Menza Studenský dům  
 Bílá 90

17:32 Arrival in Prague (EC 72)

19:00 Dinner at Restaurace Pod Loubím

#### Tuesday, February 3<sup>rd</sup> 2009

 9:00 **Comparative analysis of energy supply and demand and energy intensity in selected EU countries:**

Prof. Stefan Schleicher, University of Graz

10:30 Coffee break

10:45 Part II and discussion

12:30 Lunch break at Mensa

 14:00 **Energy: Data & Trends**

 Prof. Jilková, University of Economics, Prague  
 doc. J. Knápek, Czech Technical University Prg

15:30 Coffee break

15:45 Part II and discussion

17:00 End of day

19:00 Academic Restaurant

#### Thursday, February 5<sup>th</sup> 2009

 9:00 **Visit of "High-Voltage laboratory"**

 at the Czech Technical University in Prague  
 doc. J. Knápek,  
 Czech Technical University Prague

12:30 Lunch break at Mensa

 14:00 **Economic effectiveness of RES-E projects**

 doc. J. Knápek,  
 Czech Technical University Prague

15:30 Coffee break

15:45 Part II and discussion

17:00 End of day

19:00 Academic Restaurant

#### Monday, February 2<sup>nd</sup> 2009

08:45 Registration

 09:00 **Welcome Address and Introduction:**

Prof. Jilková, University of Economics, Prague

 9:15 **Energy and Society:**
**Philosophical and Ethical Context**

Prof. Janouch, Royal Institute Stockholm

10:30 Coffee break

10:45 Part II and discussion

12:30 Lunch break at Mensa

 14:00 **Electricity economics**

Prof. R. Haas, Tech. University Vienna

15:30 Coffee break

 15:45 **Energy economics and the environment in transport:**

Dr. Amela Ajanovic, Tech. University Vienna

17:00 End of day

19:00 Dinner at Restaurace Pod Loubím

#### Wednesday, February 4<sup>th</sup> 2009

 9:00 **Low energy buildings and renewable energy use**

 Ao.-Prof. W. Streicher,  
 Technical University Graz

10:30 Coffee break

10:45 Part II and discussion

12:30 Lunch break at Mensa

 14:00 **Sightseeing tour in Prague**
**and free time for students**

19:00 Dinner at Restaurace Pod Loubím

#### Friday, February 6<sup>th</sup> 2009

 9:00 **Support schemes for renewable energy sources utilization**

 doc. J. Knapek,  
 Czech Technical University Prague

10:30 Coffee break

10:45 Part II and discussion

12:30 Lunch break at Mensa

 14:00 **Free time for students**

19:00 Dinner at Restaurace Pod Loubím



### Interdisciplinary Summerschool 2007 on "The Future of Energy Systems in Austria and the Czech Republic"

#### Sunday, 28 June 2009

Arrival in Graz

19:00 Dinner for Czech participants at Drei Goldene Kugeln

#### Tuesday, 30 June 2009

 9:00 **Technologies for renewable energy use in buildings**

W. Streicher

11:00 Coffee break

11:15 Presentations of seminar papers by students

12:30 Lunch break at Mensa

13:45 Continuing presentations of students

15:45 End of day

19:00 Dinner for Czech participants at Lendplatzl

#### Thursday, 2 July 2009

 9:00 **Tradeable permits and energy taxes as drivers for innovation in the energy sector:**

J. Jilkova

10:30 Coffee break

10:45 Continuing lecture and discussion

12:00 Presentations of seminar papers by students

12:30 Lunch break at Mensa

 14:30 **Visit of TU Graz, Institute of Thermal Engineering:** W. Streicher

15:45 Visit of the Hydrogene Center Graz

16:15 End of day

19:00 Dinner for Czech participants at Lendplatzl

#### Monday, 29 June 2009

8:45 Registration

 9:00 Welcome Address: G. Kirchengast  
 (head of the WegCenter)

 9:05 Introduction: B. Gebetsroither,  
 V. Haberfellner

 9:15 **Climate and Energy Systems**

Ch. Töglhofer, Wegener Center

10:30 Coffee break

10:45 Energy...

Hans Schnitzer

12:30 Lunch break at Mensa

14:00 Energy...

A. Türk, Wegener Center inquired

16:00 End of day

19:00 Dinner for Czech participants at Lendplatzl

#### Wednesday, 1 July 2009

 9:00 **Critical Overview:**
**Hydrogen Technologies and Economy**

C. Gutsch

10:30 Coffee break

Continuing lecture and discussion

12:30 Lunch break at Mensa

14:00 Energy ...

J. Jilkova

15:30 Coffee break

15:45 Presentations of seminar papers by students

16:30 End of day

19:00 Dinner for Czech participants at Lendplatzl

#### Friday, 3 July 2009

 9:00 Excursion to Öko-Park Hartberg  
 (Bus from WegCenter)

9:30 Visit of the Gemini House

 10:00 Coffee and welcome in the Ökopark &  
 introduction into the Ökopark-concept

 10:30 **Sustainable Development and Energy:**

H. Schnitzer

 11:15 **Biorefineries:** M. Mandl

12:30 Lunch break

 13:30 **The Austrian concept of the Green Bio Refinery:** M. Mandl/H. Schnitzer

14:00 Film at MAXOOM

15:30 Visit of Ökopark (biogas, abs.cooling, etc.)

17:00 Buschenschank

21:00 Back in Graz



## Annex 4 List of the seminar paper groups with topic and advisor

Austrian student	Czech student	TOPIC OF SEMINAR PAPER	RESEARCH QUESTION(S)	LECTORS
Ainedter Stefanie	Malý Vítězslav	Hydropower sector in Austria and the Czech Republic	Comparing the situation of hydro power in Austria and the Czech Republic and get an overview of the situation in the whole European Union, what can we learn for the future?	doc. Knápek (knapek@fel.cvut.cz)
Krainz Lisa Maria				
Bloder Annette	Hanžlová Barbora	Electricity savings	What are the possibilities to save electricity in households? - why is consumption increasing? - what are the benefits for households for changing behaviour? - what can individuals do?	Ao.-Prof. Streicher (w.streicher@tugraz.at) or doc. Knápek (knapek@fel.cvut.cz)
Pojer Doris				
Kalkgruber Joachim	Čtrnáctý Jaromír	Energy Performance Contracting	How widely is the EPC (Energy Performance Contracting) method spread out in CZ and AT - What are the measures?	Ao.-Prof. Reinhard Haas (mcreini@eeg.tuwien.ac.at) or Ao.-Prof. Streicher (w.streicher@tugraz.at)
Zwanziger Christof	Ošlejšek Petr	Renewable Energy Sources	Potentials of RES in CZR and AT 2008 and in future?	doc. Knápek (knapek@fel.cvut.cz) or Ao.- Prof. Reinhard Haas (mcreini@eeg.tuwien.ac.at)
Kerekes Thomas	Balounová Veronika	Efficiency in Transportation Systems	The dependency on fossil fuels for the individual transport has increased in the last years, what potential has the individual transport sector to receive a cleaner and more efficient mobility?	Dr. Ajanovic (ajanovic@eeg.tuwien.ac.at)
Kollmann René	Králík Tomáš Ladislav Sobotka	Carbon Capture and Storage	CCS- Technology: Are there any economical and environmental risks and what is the total CO2 reducing potential?	prof. Jilková (jilkova.jirina@gmail.com)
Reindl Katharina	Tauferová Michaela	Sustainability in Air-traffic Systems	What are the social, economical and technological potentials of sustainable air- traffic systems?	Dr. Ajanovic (ajanovic@eeg.tuwien.ac.at)
Taupe Natalie				
Svensson Anna	Knápková Veronika Palocko Vladimír	Passive houses	Is a passive house (low energy house) economically efficient? - investment cost vs operational cost - how do you make the people and the companies more aware	Ao.-Prof. Streicher (w.streicher@tugraz.at)