

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.

During the years 2006 - 2012 the Winter and Summer School was organized by University of Economics, Prague and University Graz. This year it was the first time when the Winter and Summer School was formally organized by Jan Evangelista Purkyně University in Ústí nad Labem and Vienna University of Technology. The aim and concept of this event was the same as well the net of collaborating experts.

Winter School was organized in Prague in February and Summer School in Vienna in May, 2013.

Participants

The participating students came from different universities: University of Vienna, Vienna University of Technology, University of Natural Resources and Life Sciences, Vienna, University of Economics in Prague, Czech Technical University in Prague and Charles University in Prague. That means that educational background of participating students was quite heterogeneous, generally it was mixture of social sciences (economics, environmental sciences) and technical sciences. The idea of the Winter and Summer School is to show to the students the interdisciplinary approach to energy topics. So the mixture of students and lecturers from different universities help to fulfill this goal.

10 students from Czech Republic and 10 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:

Reihard Haas – Vienna University of Technology, Austria

Jaroslav Šípál and Jiřina Jílková – Jan Evangelista Purkyně University in Ústí nad Labem, Czech Republic

Together with their project partners:

Wolfgang Streicher - Innsbruck University 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, Jaroslav Šípál and Jaroslav Knápek were the coordinators, for the Summer School in Vienna Reinhard Haas. 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. Number of lectures concerning energy topics was held, giving students sufficient background and enable them to get acquainted with current situation in both states and make possible from them to understand difference and similarities. Lectures were professed not only by people from academic sphere but from private sector as well, so participants can establish whole picture on this particular matter. Theoretical part was backed up by practical excursions, this year it was - among others - visit of research atomic reactor in Řež and coal power plant Ledvice near to Ústí nad Labem (Winter School) and excursion to company Austrian Power Grid and to Central Heating Station (Summer School). The program of the Winter and Summer School is available in Annex 3.

The time in between the Winter and Summer School was used for writing the bilateral seminar papers where Czech – Austrian bilateral student team analysed the situation in their home country, discussed it with her colleague and brought together one compact paper. Students were kindly advised, this was lesson learned from previous projects, to focus their paper more concretely and to analyse actual situation with up-to-date data. Students fulfilled this requirement and almost every paper has a structure of comparison between Czech and Austria focusing on present issues concerning energy. Students also had to prepare their joint presentation for the Summer School in Vienna. 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 Prague is in Annex 4.

Next to a certificate for the participation in this project, all students, which sent their seminar paper and met other duties of the course, were awarded with 6 ECTS-points by the University of Economics in Prague for the Czech students and by the Vienna University of Technology for the Austrian students. Each student has delivered required prerequisite to gain ECTS credits.

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 (both username and password: "V3A").

Annex 1

Application for the Interdisciplinary Bilateral Winter and Summer School of the Czech-Austrian Energy Expert Group

Application deadline: January 15, 2013

Contact details

Name:
Address:
E-mail:
Tel:

Education

Field of study:
University:
Number of semesters at the University:
Achieved academic title:
- Bakk /when (year):
- Master/Magister/ when (year):
- Doktor/PhD/ when (year):

Successful attended university classes/courses on: (which)

when (year)

- Energy policy:
- Energy economics:
- Energy technologies:
(renewables, efficiency)
- Other energy relevant topic:

Other experiences in the energy field

- work experience:
- internship/workshop:
- seminar papers:
- other:

Experience with/in the Austria

- language courses:
- seminar papers:
- work experience:
- university exchange programme in the Austria:

**Please summarize your motivation to participate in this Winter and Summer School
(2-3 sentences)**

Annex 2 List of participants

List of participants for the Winter/Summer School, February/May 2013, Prague/Vienna					
Surname	Name	E-mail	Phone	University	
Austrian Delegation					
Prof. Dr. Haas	Reinhard	haas@eeg.tuwien.ac.at	(+43)6769702600	TU Vienna	
Prof. Dr. Streicher	Wolfgang	wolfgang.streicher@uibk.ac.at	(+43)664608737306	UIBK	
Prof. Dr. Schleicher	Stefan	stefan.schleicher@wifo.at	(+43)6765913150	KFUG	
Dr. Ajanovic	Amela	ajanovic@eeg.tuwien.ac.at	(+43)15880137364	TU Vienna	
Dipl.-Ing. Gruenner	Roman	roman.gruenner@boku.ac.at	(+421)90750368	BOKU	
Austrian Students					
Hasanah	Uswatun	uswahh@gmail.com	(+39)3313034156	University of Vienna + University of Rome	
Moisl	Fabian	fabian.moisl@gmx.at	(+43)436911082810	TU Vienna	
Petz	Marlene	marlenepetz@hotmail.com	(+43)6644630871	TU Vienna	
Pichler	Oliver	o.pichler@gmx.at	(+43)6602514722	BOKU	
Saglampinar	Gürkan	guerkan.saglampinar@gmail.com	(+43)664608503739	TU Vienna	
Salomon	Felix	felix.salomon@hotmail.com	(+43)680334791	TU Vienna	
Salvatori	Christian	salvatori@outlook.com	(+43)6767629292	TU Vienna	
Schenzel	Karl-Wilhelm	karl.schenzel@hotmail.com	(+43)6767235369	TU Vienna	
Schroll	Edith	edithschroll@gmx.at	(+43)6645935948	TU Vienna + BOKU	
Schwalt	Lukas	lukas.schwalt@hotmail.com	(+43)6509514802	TU Vienna	
Austrian Team					
Prof. Dr. Haas	Reinhard	haas@eeg.tuwien.ac.at	(+43)676 9702600	TU Vienna	
		KFUG TU Vienna UIBK BOKU	Karl-Franzens University Graz Technical University Vienna University of Innsbruck University of Applied Live Science Vienna		
List of participants for the Winter/Summer School, February/May 2013, Prague/Vienna					
Surname	Name	E-mail	Phone	University	
Czech Delegation					
Prof. Jílková	Jiřina	jilkova@ieep.cz	(+420)602240403	UJEP	
Prof. Janouch	František	fjanouch@volny.cz	(+420)603435667	Royal Academy Stockholm	
Doc. Knápek	Jaroslav		(+420)603219844	CVUT	
Doc. Šípál	Jaroslav		(+420)608334209	UJEP	
Czech Students					
Gruberová	Veronika	gruberovav@gmail.com	(+420)775671166	VSE	
Kratochvíl	Martin	martin.kratochvil@windowslive.com	(+420)605283278	VSE	
Kratochvíl	Štěpán	kratoste@fel.cvut.cz	(+420)721816237	CVUT	
Lachmanová	Michaela	misa.lachmanova@seznam.cz	(+420)724991854	CVUT	
Matúška	Ján	jnmatuska@gmail.com	(+420)776789866	CVUT	
Mráz	Vít	mraviz@gmail.com	(+420)775144412	VSE	
Rakovská	Zuzana	zuzana.rak@gmail.com	(+420)777636105	VSE	
Smetana	Jiří	jiri.smetana@hotmail.com	(+420)728523560	VSE	
Stárková	Eva	eva.starkova@gmail.com	(+420)728057426	VSE	
Šperková	Lenka	lenka.sperkova@post.cz	(+420)728946267	UK	
Bořil	Tomáš	tobo@email.cz	(+420)603971151	ČVUT	
alternate members	Jedlička	Roman	Roman.Jedlicka@email.cz	(+420)605752629	VSE
Czech Team					
Louda	Jiří	louda@ieep.cz	(+420)608468676	VSE	
		VSE UK CVUT UJEP	University of Economics, Prague Charles University, Prague Czech Technical University Jan Evangelista University in Ústí nad Labem		

Annex 3 Programme of the Winter and Summer School 2013

Interdisciplinary Winterschool 2013 on "The Future of Energy Systems in Austria and the Czech Republic"		
Sunday, February 3 rd , 2013	Tuesday, February 5 th , 2013	Thursday, February 7 th , 2013
Important addresses: Hotel Krystal J. Martho 2, tram # 5, 20, 26 and night tram 51 - station Nad Džbánem ČVUT - lecture room Šolínova 7 (corner of streets Zikova and Šolínova) Kloknerův ústav, room Z2-B1 233, 1st floor Restaurace Pod Loubím Evropská 26, tram station Dejvická Mensa Studenský dům Bláha 90	9:00 Electricity markets, renewables and the environment Prof. Reinhard Haas, Vienna University of Tech. 10:30 <i>Coffee break</i> 10:45 Energy and CO₂ emissions in transport Dr. Amela Ajanovic, Vienna University of Tech. 12:15 <i>Lunch break at Mensa</i> 14:00 Economic effectiveness of RES-E projects doc. Jaroslav Knapek, Czech Technical University Prague 15:30 <i>Coffee break</i> 15:45 Part II and discussion 17:00 End of day 19:00 <i>Dinner at Restaurace Pod Loubím for Austrian participants</i>	8:30 Departure (by train, meeting point: Czech Technical University) Excursion to large coal power plant in Ledvice doc. Jaroslav Šípal Jan Evangelista Purkyně University in Ústí nad Labem 17:00 End of day 19:00 <i>Dinner at Restaurace Pod Loubím for Austrian participants</i>
Monday, February 4 th , 2013	Wednesday, February 6 th , 2013	Friday, February 8 th , 2013
08:45 Registration 09:00 Welcome address and introduction prof. Jiřina Jilková Vice-rector of Jan Evangelista Purkyně University in Ústí nad Labem 9:15 Nuclear energy - to be or not to be Prof. František Janouch Royal Institut Stockholm 10:45 <i>Coffee break</i> 11:00 Part II and discussion 12:45 <i>Lunch break at Mensa</i> 14:00 Energy Economics - Introduction Prof. Reinhard Haas Vienna University of Technology 16:00 <i>Coffee break</i> 16:15 How to write a seminar paper and research topics - part I. Prof. Reinhard Haas and Dipl.-Ing. Jiří Louda 17:00 End of day 19:00 <i>Dinner at Restaurace Pod Loubím for Austrian participants</i>	9:00 Energy efficient and ecological Dipl.-Ing. Roman Gruenner BOCU University Vienna 10:30 <i>Coffee break</i> 10:45 Discussion of topics for seminar papers Dipl.-Ing. Jiří Louda University of Economics Prague 11:30 <i>Lunch break at Mensa</i> 13:00 Departure (by train, meeting point: Czech Technical University) 14:00 Visit of Nuclear Research Institute Řež Dipl.-Ing. Jiří Louda University of Economics, Prague 17:00 End of day 19:00 <i>Dinner at Restaurace Pod Loubím for Austrian participants</i>	9:00 Blowing in the wind - how reliable is the renewable energy supply? Simulation game Dipl.-Ing. Alois Tost University of Economics Prague 10:30 <i>Lunch break at Mensa</i> 10:45 Part II and discussion 13:00 <i>Lunch break at Mensa</i> 14:00 Free afternoon 19:00 <i>Dinner at Restaurace Pod Loubím for Austrian and Czech participants</i>

Interdisciplinary Summer School 2013 on "The Future of Energy Systems in Austria and the Czech Republic"		
Sunday, May 12 th 2013	Tuesday, May 14 th 2013	Thursday, May 16 th 2013
Accomodation for Czech students: Meininger Hotel Wien Downtown Sissi Schiffamtsgasse 15, 1020 Wien	Dekanatszimmer CFZ217, Gusshausstrasse 25 9:00 "Prospects for energy savings in industry" Prof. A. Werner (Vienna University of Technology) 10:45 <i>Coffee break</i> 11:15 Sustainable Buildings Dr. Roman Gruenner (BOKU Vienna) 13:00 <i>Lunch break at Mensa</i> 14:00 Presentations of seminar papers by students and discussion with Jiřina Jilková, Amela Ajanovic, Reinhard Haas, Jaroslav Knapek, Marta Osersova 19:00 <i>Dinner for Czech students</i>	Übungsraum CF0426, Gusshausstrasse 25, 4th floor 9:00 Sustainability of Biofuels Prof. Dr. M. Harasek (Technical University of Vienna) 10:45 <i>Coffee break</i> 11:00 The role of biomass in the future energy system Dr. Lukas Kranzl (Technical University of Vienna) 13:00 <i>Lunch break at Mensa</i> 14:00 Start Technical Tour Fernwärme Wien 19:00 <i>Dinner for Czech students</i>
18:24 Arrival of Czech students in Wien Meidling 19:30 <i>Dinner for Czech students</i>		
Lectures: Vortragsraum Bibliothek 5, Stock, Wiedner Hauptstraße 2 Dekanatszimmer CFZ217, Gusshausstrasse 25		
Monday, May 13 th 2013	Wednesday, May 15 th 2013	Friday, May 17 th 2013
Vortragsraum Bibliothek 5, Stock, Wiedner Hauptstraße 2 8:30 Registration Dr. Introduction Prof. Reinhard Haas (Vienna University of Technology) Prof. Dr. J. Jilková (University of Economics, Prague) 9:15 New challenges in Electricity markets Prof. Reinhard Haas (Vienna University of Technology) 10:45 <i>Coffee break</i> 11:15 Specific topics in Environmental Economics Prof. Dr. J. Jilková (University of Economics, Prague) 13:15 <i>Lunch break at Mensa</i> 14:00 End of Day – Free time for working jointly on seminar papers 19:00 <i>Dinner for Czech students</i>	Vortragsraum Bibliothek 5, Stock, Wiedner Hauptstraße 2 9:00 Progress in research on biomass Prof. Dr. J. Knapek (Technical University of Prague) 10:45 <i>Coffee break</i> 11:00 Recent developments on EU electricity markets Prof. Dr. J. Knapek (Technical University of Prague) 12:30 <i>Lunch break at Mensa</i> 13:30 Presentations of seminar papers by students and discussion with Jiřina Jilková, Amela Ajanovic, Reinhard Haas, Jaroslav Knapek, Marta Osersova 15:00 <i>Coffee break</i> 15:15 Presentations of seminar papers by students and discussion continued 17:00 End of day 19:00 <i>Dinner for Czech students</i>	9:00 Interactive Planning game Alois Tost 12:30 <i>Lunch at Mensa</i> 14:00 Start Technical Tour Visit of APG 18:00 <i>Heuriger for all students</i>

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

	Austrian student	Czech student	TOPIC OF SEMINAR PAPER	RESEARCH QUESTION(S)	SUPERVISOR(S)	CONTACT
1	Pichler Oliver	Lachmanová Michaea	Comparison of energy systems in CZE and Austria	What kind of role plays centralisation/decentralisation in development of energy systems?	Doc. Jaroslav Knápek	knapek@fel.cvut.cz
2	Schroll Edith	Stárková Eva	Alternative ways of transport in the cities of Prague and Vienna	What are the differences in alternative transportation in Vienna and in Prague and what are the reasons for that?	Dr. Amela Ajanovic	ajanovic@eeg.tuwien.ac.at
3	Saglampinar Gürkan	Gruberová Veronika	Achievement of energy efficiency in the households by using PV (comparison of different conditions in Czech Republic and Austria) a. Production b. Consumption c. Storage	Is the production and consumption of energy balanced in the households by using PV? How can storage help in this matter? How can the households obtain the most benefit?	Prof. Wolfgang Streicher	wolfgang.streicher@uibk.ac.at
4	Schwalt Lukas	Kratochvíl Martin	Nuclear power plant shutdown in Germany	How are CO2 prices effecting on the powerplant structure over long term, especially if we reactivate coal or build gas engines?	Dipl.-Ing. Alois Tost	tost@alouis-tost.de
5	Hasanah Uswah	Mráz Vít	History, regulation and current situation of electricity market in CZ and AT	How the history of country and the development of regulation influenced the electricity market?	Doc. Jaroslav Knápek	knapek@fel.cvut.cz
6	Moisl Fabian	Smetana Jiří	The application of Hydrogen storage technology to smoothen the variations in energy production of RES	Can the excessive energy generated by RES be effectively tranformed into Hydrogen by the means of electrolysis in order to store it and use it to smoothen the variations in energy production of RES	Prof. Jiřina Jílková	jilkova.jirina@gmail.com
7	Salomon Felix	Rakovská Zuzana	Gain of green energy and elimination of CO2 emissions for the beer production	How big is the potential to gain green energy by using the waste of the production as biomass?	Ing. Jiří Louda	louda@ieep.cz
8	Schenzel Karl	Šperková Lenka	Energy storage systems for balancing windpower volatility	Can energy storage facilities compete with current methods of balancing intermittency??	Prof. Reinhard Haas	mcreini@eeg.tuwien.ac.at
9	Salvatori Christian	Kratochvíl Štěpán	Saving potentials of electricity trading of small and medium enterprises (SME) in industry	How can SMEs in industry reduce their costs of electricity using trading strategies on various markets and how big are the saving potentials comparing to the actual situation?	Prof. Reinhard Haas	mcreini@eeg.tuwien.ac.at
10	Petz Marlene	Matúška Jan	RES potential in Bratislava-Vienna region	Which sources of RES and a amount of capacity are coming up in the next 10 years in this region?	Prof. Jiřina Jílková	jilkova.jirina@gmail.com