

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 Czech-Austrian Energy Expert Group (CZ-AT EEG) was established in 2002 by the Austrian and Czech Governments to jointly study the issues of energy systems in both countries. The members of this group, appointed by their governments, are affiliated with Czech and Austrian universities and institutions. The Czech-Austrian Energy Expert Group is based on bilateral cooperation on sensitive issues in the field of energy contributing to shaping future energy policies in both countries.

The helpful and successful cooperation between Czech and Austrian energy experts led to the idea to organize the Winter and Summer School on Energy Systems in Austria and Czech Republic. All of those previous Winter and Summer Schools led to the intention to organize it again for the tenth time in 2015.

During the years 2006 - 2012 the Winter and Summer School was organized by University of Economics in Prague and Karl-Franzens University in Graz. Since 2013 the Winter and Summer School has been 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 network of collaborating experts.

The Winter and Summer School on Energy Systems in Austria and Czech Republic is designed for 20 students who want to acquire and deepen their knowledge about energy issues through interesting presentations and excursions. The participating Czech and Austrian students should find a partner from the other country during the Winter School in Prague to start working on their seminar papers. The papers were being written by the bilateral teams during the whole semester, results of their collaboration were presented at the Summer School in Vienna. Students have also the opportunity to keep working on the topic as the bilateral diploma thesis.

Winter School in Prague was organized in February 2015 and Summer School in Vienna at the turn of June and July, 2015.

Students

The participating students came from different specializations and universities, which provides the heterogeneous mixture of approaches to the energy issues. There were students from: Vienna University of Technology, University of Economics in Prague, Czech Technical University in Prague and Jan Evangelista Purkyně University in Ústí nad Labem. The heterogeneous educational background (economics, technical and environmental sciences) of participating students ensures the interesting interdisciplinary varieties between the seminar papers.

There were 10 students from Czech Republic and 10 students from Austria elected through a formal selection process on universities. The students had to fill in an application form concerning their energy-related background. (See application form in Annex 1.) All of those participants had studied for at least 2 years and could prove that they had already dealt with some energy related topics at their university or some practical experience in the field of energy. They were nominated by the project partners and selected in accordance to their study success and experience with seminar topics. The list of participants (meaning all students, lecturers and organization team) can be found in Annex 2. Some of the students from both countries were not able to participate on the Summer School in Vienna because of the examination pe-

riod at their home universities, so some new students were nominated instead of them as alternate-participants.

Organization and program of the Winter and Summer School 2015

The whole project was proposed and carried out by:

Reinhard Haas from Vienna University of Technology, Austria

Jaroslav Koutský and Jiří Louda from Jan Evangelista Purkyně University in Ústí nad Labem, Czech republic

Together in the cooperation with their project partners:

Wolfgang Streicher from Innsbruck University, Austria

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



The program and all the activities were organized by the teams of the home universities. Jiří Louda (in behalf of Jaroslav Koutský) and Jaroslav Knápek were the coordinators of the Winter School in Prague, Reinhard Haas was the coordinator of the Summer School in Vienna. The program of the Winter and Summer School can be found in Annex 3. Topics, excursions and also the lecturers of this whole course were chosen to help students to acquaint with various energy topics as they could compare those gained information with those from their studies at home universities. Students from both countries had the possibility to compare the energy situation in their country with the other one which is supposed to be very helpful in finding and understanding the differences and similarities of both areas.

The lecturers of this course were not only the people from academic sphere but also from the private sector. This fact is an important fact in getting the complete information from more points of view. There was a theoretical part lectured in Vienna University of Technology, this part was enriched by excursions where students may gain the practical view. During the Winter School in Prague the excursions took place in: Institute for Nuclear Research in Řež, two small hydro power plants in Litoměřice and Měříství, dispatching centre of the "Pražská energetika, a. s." company. During the Summer School in Vienna, participants had the possibility to visit: the waste incinerator in Spittelau, Austrian Power Grid and a passive apartment house with the architect's commentary.

During the Winter School in Prague students created bilateral teams of two people to start working on the topics which they could choose. Each team had a supervisor (elected depending on the background of the different experts) for discussing the topics and giving advices. During the time between the Winter and Summer School students were working in Czech-Austrian teams on their seminar papers. The aim of all of the topics was to analyse the current situation in both countries, find up-to-date data and compare it. Students also had to present their seminar papers and results of the comparison during Summer School in Vienna. The list of all seminar papers presented in Vienna can be found in Annex 4. All students successfully participated the course received the certificate.

All data, presentations of students and lecturers, 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: "V5A").

Annex 3 Programme of the Winter and Summer School 2015

Interdisciplinary Winterschool 2015 on "The Future of Energy Systems in Austria and the Czech Republic"		
Sunday, February 1st, 2015	Tuesday, February 3rd, 2015	Thursday, February 5 th , 2015
<p>Important addresses: Hotel Krystal J. Martího 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 Academic Restaurant Thákurova 1 Restaurace Evropa - HOTEL DAP*** Vítězné náměstí 4/684</p>	<p>9:00 Electricity markets and the role of renewables and nuclear Prof. Reinhard Haas, Vienna University of Tech.</p> <p>10:45 <i>Coffee break</i></p> <p>11:00 Energy and CO₂ emissions in transport Dr. Amela Ajanović</p> <p>12:45 <i>Lunch break at Restaurace Evropa</i></p> <p>14:00 Workshop: How to write a seminar paper Choose research topic and team - Part II Dr. Amela Ajanovic, DI Sara Fritz, Prof R. Haas</p> <p>16:00 Discussion of topics for seminar papers</p> <p>17:30 End of the day</p> <p>19:00 <i>Dinner at Academic Restaurant</i></p>	<p>9:00 Workshop: Blowing in the wind - how reliable is the renewable energy supply? Dipl.-Ing. Alois Tost</p> <p>10:30 <i>Coffee break</i></p> <p>10:45 Part II - Simulation game</p> <p>12:45 <i>Lunch break at Restaurace Evropa</i></p> <p>14:00 The optimal use of biomass in the CR doc. Jaroslav Knapek, Czech Technical University Prague</p> <p>15:30 <i>Coffee break</i></p> <p>15:45 The optimal use of biomass in the CR - Part II</p> <p>17:00 End of the day</p> <p>19:00 <i>Dinner at Restaurace Pod Loubím</i></p>
<p>17:00 Arrival of Austrian students</p> <p>19:00 <i>Dinner at Restaurace Pod Loubím</i></p>		
Monday, February 2nd, 2015	Wednesday, February 4 th , 2014	Friday, February 6 th , 2015
<p>8:45 Registration</p> <p>9:00 Welcome address and introduction prof. Jiřina Jílková, Doc. J. Knapek, Prof. R. Haas</p> <p>9:15 Energy Economics - Introduction Prof. Reinhard Haas Vienna University of Technology</p> <p>10:45 <i>Coffee break</i></p> <p>11:45 Workshop: How to write a seminar paper Introduction, presentation of topics - Part I Dr. Amela Ajanović, Dipl.-Ing. Jiří Louda, Prof. Reinhard Haas, DI Sara Fritz</p> <p>12:45 <i>Lunch break at Restaurace Evropa</i></p> <p>14:00 Excursion: Switching station 110 kV (Source of electricity for Prague - High voltage cable system) Pražská Energetika a.s. doc. Jaroslav Knapek,</p> <p>17:30 End of day</p> <p>19:00 <i>Dinner at Academic Restaurant</i></p>	<p>9:00 Legislative Process in the Energy Sector and Regulatory Impact Assessment prof. Jiřina Jílková, J.E.P. University in Usti n/L</p> <p>10:00 <i>Coffee break</i></p> <p>10:15 Workshop: How to write a seminar paper Work on topic: structure, timetable... - Part I Dr. Amela Ajanović, DI Jiří Louda, DI Sara Fritz</p> <p>11:15 <i>Lunch break at Restaurace Evropa</i></p> <p>12:00 Excursion: Small hydropower plants in Litoměřice and Mířevovice Departure by bus, meeting point: Czech Tech.University, Šolínova 7</p> <p>17:30 End of day</p> <p>19:00 <i>Dinner at Restaurace Pod Loubím</i></p>	<p>9:00 Excursion: Institute of Nuclear Research Řež Departure by train, meeting point: Czech Tech.University, Šolínova 7)</p> <p>13:00 <i>Lunch break at Restaurace Evropa</i></p> <p>14:30 Time for individual discussion of seminar papers in bilateral teams and with the lecturers</p> <p>16:30 End of the day</p> <p>19:00 <i>Dinner at Restaurace Pod Loubím</i></p>
		

Interdisciplinary Summer School 2015 on "The Future of Energy Systems in Austria and the Czech Republic"

Sunday, June 28th 2015		Tuesday, June 30 th 2015		Thursday, July 2nd 2015	
	Accommodation for Czech students: A&O Hotel Sonnwendgasse 11, 1100 Wien		Seminarraum 124, Gusshausstrasse 27, 3. Stock, Stiege 1		Seminarraum 124, Gusshausstrasse 27, 3. Stock, Stiege 1
		9:00	New challenges in Electricity markets Prof. Reinhard Haas (Vienna University of Technology)	8:30	Technical Tour Austrian Power Grid
		10:30	<i>Coffee break</i>		
18:24	Arrival of Czech students in Wien	11:00	Sustainability of Biofuels Prof. Michael Harasek (Technical University of Vienna)		
19:30	<i>Dinner for Czech students</i>	12:45	<i>Lunch break at Mensa</i>	12:45	<i>Lunch break at Mensa</i>
All Lectures:		14:30	Technical Tour Waste incineration plant	14:00	Working jointly on seminar papers Incorporation of comments from the presentations
Seminarraum 124, Gusshausstrasse 27, 3. Stock, Stiege 1		17:30	End of day	17:00	End of day
Seminarraum 384, Gusshausstrasse 27, 4. Stock, Stiege 1		19:00	<i>Dinner for Czech students</i>	19:00	<i>Dinner for Czech students</i>
Monday, June 29th 2015		Wednesday, July 1st 2015		Friday, July 3rd 2015	
	Seminarraum 124, Gusshausstrasse 27, 3. Stock, Stiege 1		Seminarraum 124, Gusshausstrasse 27, 3. Stock, Stiege 1		Seminarraum 384, Gusshausstrasse 27, 4. Stock, Stiege 1
9:00	Registration	8:30	The tragedy of the commons Alois Tost	9:00	Working jointly on seminar papers Incorporation of comments from the presentations
9:15	Introduction Prof. R. Haas, A. Ajanovic (Vienna University of Technology) Prof. Dr. J. Knappek (University of Economics, Prague)	10:15	<i>Coffee break</i>	10:15	<i>Coffee break</i>
9:30	Recent developments on EU electricity markets Prof. Dr. J. Knappek (Technical University of Prague)	10:30	The tragedy of the commons (continuation) Alois Tost	10:45	Sustainable Buildings Dipl. Ing. Roman Grünner (BOKU Vienna)
10:45	<i>Coffee break</i>	11:15	Presentations of seminar papers by students and discussion with A. Ajanovic, S. Fritz, R. Haas, J. Knappek		
11:15	Biomass in Europe Prof. Dr. J. Knappek (Technical University of Prague)	13:00	<i>Lunch break at Mensa</i>	12:00	<i>Lunch break at Mensa</i>
12:45	<i>Lunch break at Mensa</i>	14:00	Part 1: Energy efficient buildings and renewable energy in buildings Prof. Wolfgang Streicher (University of Innsbruck)	13:00	Technical Tour Solarbuildings
14:15	Presentations of seminar papers by students and discussion with A. Ajanovic, S. Fritz, R. Haas, J. Knappek	15:15	<i>Coffee break</i>	17:30	<i>Social event for all students and lecturers</i>
17:00	End of day	15:30	Part 2: Energy efficient buildings and renewable energy in buildings		
19:00	<i>Dinner for Czech students</i>	17:00	End of day		
		19:00	<i>Dinner for Czech students</i>		



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

	Austrian student	Czech student	TOPIC OF SEMINAR PAPER	SUPERVISOR(S)
1	Felix Hembach	Dian Hrozek	RENEWABLE ENERGY POLICY STRATEGIES (TARGETS, PROMOTION BY SECTOR)	Prof. Haas
2	Thomas Kopf	Barbora Řehořová	ALTERNATIVE FUELS (BIOFUELS, ELECTRICITY, GAS, HYDROGEN)	Prof. Knapek
3	Haik Davtjan	Pavel Peterka	COSTS OF SUPPORTING RENEWABLES FOR ELECTRICITY GENERATION	Prof. Knapek
4	Michael Böhm	Lenka Želechovská	BUILDING RETROFIT POLICIES	Prof. Streicher
5	Thomas Steinberger	Vojtěch Fučík	HOUSEHOLDS ENERGY PRICES (ELECTRICITY, NATURAL GAS, PETROL AND DIESEL) AND INCOME	Prof. Haas
6	Sara Shafiee	Lenka Zemková	ECONOMICS OF E-MOBILITY: COSTS, FUEL & ELECTRICITY PRICES, TAXES & Legislation	Dr. Ajanovic
7	Bezhad Salmani	Jaroslav Štěpán	14. CHP (AND COOLING) AND DISTRICT HEATING POLICIES	Prof. Haas / Sara Fritz
8	Jasmin Aliefendic	Diana Ježková	CLIMATE POLICIES	Prof. Jilkova/Jiri Louda
9	Richard Schlesinger	Lenka Rychterová	SMART CITIES: STATE OF THE ART AND COMPARISON	Sara Fritz
10	Vera Ellmeier	Tereza Pudová	E-MOBILITY: A COMPARISON OF INFRASTRUCTURE, NUMBER OF VEHICLES AND LESSONS LEARNED FROM MODEL REGIONS AND PILOT PROJECTS	Dr. Ajanovic