

# **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 Graz in February and Summer School in Prague in June, 2012.

## **Participants**

The participating students came from different universities: University of Graz, 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, represented especially by students from Czech Technical University. This was further a cornerstone for plentiful debate during the courses.

11 students from Czech Republic<sup>1</sup> 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

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<sup>1</sup> One Czech student (Petr Spodniak) is currently studying in Finland - Lappeenranta University of Technology. He was very motivated to take part on the W/S School and we found, that we will have some money to pay the expenditure for his participation.

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 - 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 Graz, Stefan Schleicher was the coordinator, for the Summer School in Prague Jiřina Jílková and Jaroslav Knápek. 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 academic atomic reactor and small hydropower plants (Summer School) and excursion to company producing technology of biomass burning (Winter 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 Prague. 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 University of Graz 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](http://www.ieep.cz/projekty) (both username and password: "V2A").

## 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 150 EUR, Czech students 1000 CZK) have already been subtracted.

| Kostenart / typ nákladů  | 2012           |
|--|----------------|
| Aufenthaltskosten tschech. Projektteilnehmer in Österr. (gemäß den Sätzen des BMBWK, s. Merkblatt) / úhrady za pobyt českých účastníků projektu v Rakousku (dle sazeb rak. min. vědy, viz Pokyny)                | 2966,00        |
| 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) | 771,30         |
| Honorar f. Lehrtätigkeit f. österr. Projektteilnehmer (gemäß d. Sätzen d. BMBWK, s. Merkblatt), honorář za výuku rak. účastníkům projektu (dle sazeb, viz Pokyny)  | 0,00           |
| Publikations- und Editions-kosten (Rezensenten-honorar, Druckkosten) / publikační a ediční náklady (lektorský posudek, tisk)   | 0,00           |
| Gebühren der Studenten (poplatky studentů)   | 1500,00        |
| <b>Gesamtkosten in EUR / celkové náklady v EUR</b>   | <b>2237,30</b> |

| typ nákladů / Kostenart  | 2012          |
|--|---------------|
| Úhrada ubytování účastníků projektu v ČR (viz Pokyny) / Unterkunftskosten für Projektteilnehmer in d. ČR (s. Merkblatt)  | 22800         |
| Stravné a kapesné účastníků projektu v ČR (s. Merkblatt) / Verpflegung für Projektteilnehmer in der ČR (viz Pokyny)  | 29200         |
| 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) | 48799         |
| Odměna za výuku českým účastníkům projektu (viz Pokyny) / Honorar für Lehrtätigkeit tsch. Projektteilnehmer (s. Merkblatt)   | 16798         |
| Publikační a ediční náklady (lektorský posudek, tisk) / Publikations- und Editions-kosten (Rezensenten-honorar, Druckkosten)   | 0             |
| Ostatní náklady / sonstige Kosten  | 0             |
| Verwaltungs- und Regiekosten (nur bei den Sommerkollegs) / správní a režijní náklady (pouze pro letní kolegia)   | 0             |
| Gebühren der Studenten (poplatky studentů)   | 10960         |
| <b>Celkové náklady v Kč / Gesamtkosten in CZK</b>  | <b>106637</b> |

Before the Winter School the contribution from Austrian students (10 x 150 EUR/ student) and contribution from Czech students (10 x 1000 CZK/ student) was collected and totally spent for daily meals (for the Austrian and Czech participants) and refreshment during the lectures which was not covered by the AKTION budget. Each student received a confirmation of his/her contribution delivery. The overview of expenses (and comments) during the Summer 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.

## Annex 3 Programme of the Winter and Summer School 2012

| Interdisciplinary Winterschool 2012 on "The Future of Energy Systems in Austria and the Czech Republic"   |  |  |
|---|--|--|
| <b>Sunday, Feb. 5<sup>th</sup> 2012</b>   | <b>Tuesday, Feb. 7<sup>th</sup> 2012</b>   | <b>Thursday, Feb 9<sup>th</sup> 2012</b>   |
| <div style="border: 1px solid black; padding: 5px;"> <b>Hotel: Hotel Stadthalle Johannes</b><br/> Münzgrabenstraße 48<br/> <b>Lunch: Mensa</b><br/> Sonnenfelsplatz 1<br/> <b>Dinner: Herzl Weinstube</b><br/> Prokopigasse 12<br/> <b>Lectures (Mo-We): WegCenter (SR)</b><br/> Leechgasse 25<br/> <b>Lectures (Th): Economics Department (SR 15.4B)</b><br/> RESOWI, Universitätsstraße 15 </div>   | 09:00 Energy and CO <sub>2</sub> Emissions in Transport<br>Dr. A. Ajanovic, Technical University Vienna<br>10:30 Coffee break<br>10:45 Electricity Markets, Renewables and the Environment<br>Prof. R. Haas, Technical University Vienna<br>12:30 Lunch break at Mensa<br>14:00 Energetic Changes: Local Facts and global Trends<br>Dr. G. Ahamer, University of Graz<br>15:30 End of day and free time for participants<br>19:00 Dinner for Czech participants at Herzl Weinstube | 09:00 Climate and Energy Systems<br>Dr. Ch. Töghofer, Joanneum Research<br>10:30 Coffee break<br>10:45 Coordination of bilateral seminar paper writing Teams<br>A. Kawka, University of Economics, Prague<br>12:30 Lunch break at Mensa<br>13:30 End of day<br>14:00 Sightseeing tour in Graz (optional)<br>19:00 Dinner for Czech participants at Herzl Weinstube |
| 18:33 Arrival in Graz<br>20:00 Dinner for Czech participants at Herzl Weinstube   |  |  |
| <b>Monday, Feb. 6<sup>th</sup> 2012</b>   | <b>Wednesday, Feb. 8<sup>th</sup> 2012</b>   | <b>Friday, Feb 10<sup>th</sup> 2012</b>  |
| 08:45 Registration<br>09:00 Welcome Address and General Introduction<br>Prof. J. Jilková, University of Economics, Prague<br>09:45 Thinking Green, voting Nuclear<br>Prof. F. Janouch, Royal Institut Stockholm<br>10:30 Coffee break<br>10:45 Part II<br>12:30 Lunch break at Mensa<br>14:00 The EU energy system: Understanding the need and potential for Innovation<br>Prof. S. Schleicher, University of Graz<br>15:30 Coffee break<br>15:45 Part II<br>17:00 End of day<br>19:00 Dinner for Czech participants at Herzl Weinstube | 09:00 Low energy Buildings and renewable energy use<br>Prof. W. Streicher, University of Innsbruck<br>10:30 Coffee break<br>10:45 Part II<br>12:30 Lunch break at Mensa<br>14:00 Part III<br>15:30 Coffee break<br>15:45 Part IV<br>17:00 End of day<br>19:00 Dinner for Czech participants at Herzl Weinstube   | Excursion to Ecopark Hartberg and KWB Biomass<br>09:00 Bus in front of Wegener Center<br>10:00 Lecture and guided Tour at KWB Biomass<br>13:00 Lunch at Ecopark Hartberg<br>14:00 Lecture and guided Tour at Ecopark Hartberg<br>17:00 Dinner at Buschenschank "Jöbstl"<br>Open End  |
|   |  |  |

| Interdisciplinary Summerschool 2012 on "The Future of Energy Systems in Austria and the Czech Republic"   |   |  |
|---|---|--|
| <b>Sunday, June 24<sup>th</sup> 2012</b>  | <b>Tuesday, June 26<sup>th</sup> 2012 - ČVUT</b>  | <b>Thursday June 28<sup>th</sup> 2012 - ČVUT</b>   |
| <div style="border: 1px solid black; padding: 5px;"> <b>Important addresses:</b><br/> Hotel Krystal<br/> J. Martho 2, tram # 8 or 36, station Nad Džbánem<br/> ČVUT - lecture room<br/> Šolínova 7 (corner of streets Žitkova and Šolínova)<br/> Kloknerův ústav, room Z2-B1 233, 1st floor<br/> Restaurace Pod Loubím<br/> Evropská 26, tram station Dejvická<br/> Academic Restaurant<br/> Thakurova 1<br/> Menza Studentský dům<br/> Bla 90<br/> VŠE NB 211 - lecture room<br/> nam. W. Churchillia 4 </div>   | 9:00 Investment into energy projects<br>Dipl.-Ing. R. Kříž, Czech Technical University<br>10:30 Coffee break<br>10:45 Part II - Interactive exercises<br>12:30 Lunch break at Mensa<br>14:00 Presentations of seminar papers by students and discussion<br>Moderator: Dipl.-Ing. Radko Kříž<br>Czech Technical University Prague<br>15:30 Coffee break<br>15:45 Presentations of seminar papers by students and discussion<br>16:30 End of day<br>19:00 Dinner at Academic Restaurant for Austrian participants | 8:30 Departure (by bus, meeting point: Czech Tech. University, Šolínova 7)<br>Excursion to small hydropower plants in Libčice nad Vltavou and Miřejovice<br>doc. J. Knapek, Czech Technical University Prague<br>13:30 Lunch break at Mensa<br>14:00 Presentations of seminar papers by students and discussion<br>Moderator: Doc. Jaroslav Knápek<br>Czech Technical University Prague<br>15:30 Coffee break<br>15:45 Presentations of seminar papers by students and discussion<br>17:00 End of day<br>19:00 Dinner at Restaurace Pod Loubím for Austrian participants |
| 19:00 Dinner at Restaurace Pod Loubím for Austrian participants   |   |  |
| <b>Monday, June 25<sup>th</sup> 2012 - VŠE NB 211</b>   | <b>Wednesday, June 27<sup>th</sup> 2012 - ČVUT</b>  | <b>Friday, June 29<sup>th</sup> 2012 - ČVUT</b>  |
| 08:45 Registration<br>09:00 Welcome Address and Introduction:<br>doc. Daniel Štastný<br>vice-dean of Faculty of Economics<br>University of Economics, Prague<br>9:15 Blowing in the wind - How reliable is the renewable energy supply?<br>Dipl.-Ing. Alois Tost<br>10:45 Coffee break<br>11:00 Part II and discussion<br>12:45 Lunch break at Mensa<br>14:00 Eco-efficiency buildings and architecture<br>Dipl.-Ing. Roman Gruenner<br>BOCU University Vienna<br>16:00 End of day<br>19:00 Dinner at Academic Restaurant for Austrian and Czech participants | 9:00 Visit of Nuclear Research Institute Řež<br>meeting point: Czech Technical University Šolínova 7<br>Dipl.-Ing. Jiří Louda<br>University of Economics, Prague<br>13:00 Lunch break at Mensa<br>14:00 Free afternoon and visiting Prague<br>19:00 Dinner at Restaurace Pod Loubím for Austrian participants   | 9:00 Economic effectiveness of RES-E projects<br>doc. J. Knapek, Czech Technical University Prague<br>10:30 Coffee break<br>10:45 Part II and discussion<br>13:30 Official ending of the Summer school<br>Conclusions, discussion<br>13:30 Lunch break at Mensa<br>19:00 Dinner at Restaurace Pod Loubím for Austrian and Czech participants   |
|   |   |  |

## 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  | Lovorko Maric       | Jakub Doubal       | Photovoltaics policy development and comparison in Austria and Czech Republic | What were the main differences in PV energy policies in Austria and Czech Republic that resulted in dramatically different results? | Doc. Jaroslav Knápek     | <a href="mailto:knapek@fel.cvut.cz">knapek@fel.cvut.cz</a>                       |
| 2  | Robin Vorauer       | Pavel Hotovec      | Real costs of Electricity   | What are the real Cost of Electricity?  | Prof. Jirina Jilkova     | <a href="mailto:jilkova.jirina@gmail.com">jilkova.jirina@gmail.com</a>           |
| 3  | Wolfgang Lackner    | Simon Barczy       | Austrian school of regulation   | Is the energy market liberated, does it find its equilibrium?   | Prof. Reinhard Haas      | <a href="mailto:haas@eeg.tuwien.ac.at">haas@eeg.tuwien.ac.at</a>                 |
| 4  | Maria Hecher        | Václav Novák       | Development of energy technologies in the building sector                     | What are the main characteristics and impact factors for the development of energy technologies in the building sector?             | Prof. Wolfgang Streicher | <a href="mailto:wolfgang.streicher@uibk.ac.at">wolfgang.streicher@uibk.ac.at</a> |
| 5  | Andreas Essl        | Michaela Vánišová  | Implementation potential of RES   | How much we can use the potential of RES?   | Prof. Stefan Schleicher  | <a href="mailto:Stefan.Schleicher@wifo.at">Stefan.Schleicher@wifo.at</a>         |
| 6  | Martin Schoenberg   | Rostislav Moric    | The social acceptance of energy forms in AT and the CZ Republic               | What are the attitudes/preferences of Austrians and Czechs regarding energy forms?  | Dr. Jan Tesitel          | <a href="mailto:jtesitel@zf.jcu.cz">jtesitel@zf.jcu.cz</a>                       |
| 7  | Gerold Muggenheimer | Radka Fabianova    | New storage possibilities of RES  | Can use of new innovative storages make RES a reliable source?  | Doc. Jaroslav Knápek     | <a href="mailto:knapek@fel.cvut.cz">knapek@fel.cvut.cz</a>                       |
| 8  | Patrick Reiter      | Tereza Vobornikova | Biofuels - difference between Czech and Austria                               | Are they good solution for the future?  | Prof. Jirina Jilkova     | <a href="mailto:jilkova.jirina@gmail.com">jilkova.jirina@gmail.com</a>           |
| 9  | Stefan Nabernegg    | Jitka Knapova      | Independency of energy systems  | How to make the energy system in CZ/AT more independent?  | Prof. Stefan Schleicher  | <a href="mailto:Stefan.Schleicher@wifo.at">Stefan.Schleicher@wifo.at</a>         |
| 10 | Wolfgang Pichler    | Petr Spodniak      | Common European electricity market: Policy differences                        | What are the main issues hampering the development of the common electricity market?  | Prof. Reinhard Haas      | <a href="mailto:haas@eeg.tuwien.ac.at">haas@eeg.tuwien.ac.at</a>                 |
|    |                     | Beata Garsicova    |   |   |                          |  |