

## Summer Academy 2012

# Energy Transition: Expansion and Integration of Renewable Energy Sources

Saturday and Sunday

July 21-22

Arrival and Introduction

The 9<sup>th</sup> International Summer Academy 'Energy and the Environment' is taking place in Greifswald and Berlin from 21 to 28 July 2012. This year's topic is *Energy Transition: Expansion and Integration of Renewable Energy Sources*. Participants from all over the world will gather in the charming coastal town of Greifswald on **Saturday the 21<sup>st</sup>**. The Academy will be hosted here for the weekend at the historical campus and conference rooms of its original academic home base: the University of Greifswald. Participants are free to arrive at a time of their convenience, and will get the chance to enjoy the beautiful surroundings and white beaches of Greifswald. In the evening the Academy invites participants to a welcome dinner.

**Sunday** will start with an introductory workshop. In the light of Germany's radical move away from nuclear, the Academy has arranged an afternoon visit to the nuclear reactor Lubmin, before closure the largest nuclear plant in East Germany. After a joint dinner, participants can have a drink in the town centre, or gather their strength for the intense upcoming program in Berlin.

On **Monday the 23<sup>rd</sup>** the Academy will move to Berlin, where the applied research institute IKEM (Institute for Climate protection, Energy & Mobility) has set up a comprehensive 5-day program of seminars and lectures. In the heart of Berlin, participants will accumulate and exchange knowledge on the multiple interdisciplinary challenges surrounding renewable energy integration in IKEM's luxurious conference facilities.



## Monday | 23 July

### World energy consumption:

#### Underlying causes, future trends and case studies

The world's energy landscape is changing dramatically. Traditional resources are becoming increasingly scarce, while industrialisation and modernisation are causing energy consumption to grow.

Supply and demand are moving in opposite directions in the constraining context of climate change and a weak financial world market. The aim of today's program is to come to a full understanding of the current state of the energy sector, and the political and economic considerations that shape it. Special attention will be paid to the challenges faced by new - and upcoming large economies and developing countries.

### Morning

11:00

11:30 – 11:45

11:45 – 12:30

12:30 - 13:30

#### Arrival in Berlin

##### **Global Energy Landscape: Consumption and Production Trends**

*Prof. Michael Rodi*

##### **Germany's Sustainability Strategy: Towards 100% Renewables**

*Dr. Klaus Müschen, Head of Department 'Climate Protection and Energy' German Federal Environment Agency*

Lunch

### Afternoon

13:30 - 14:15

14:15 – 15:30

#### Spotlight on developing countries

##### **Challenges and Opportunities for Renewable Energies in Developing Countries**

*Dr. David Jacobs, Director of Renewable Energy at consulting firm IFOK*

##### **RES Integration: The Success of Local Energy Access**

*Thomas Gottschalk, Co-Founder of Mobisol*

15:30 – 16:00

16:00 - 16:45

16:45 – 17:00

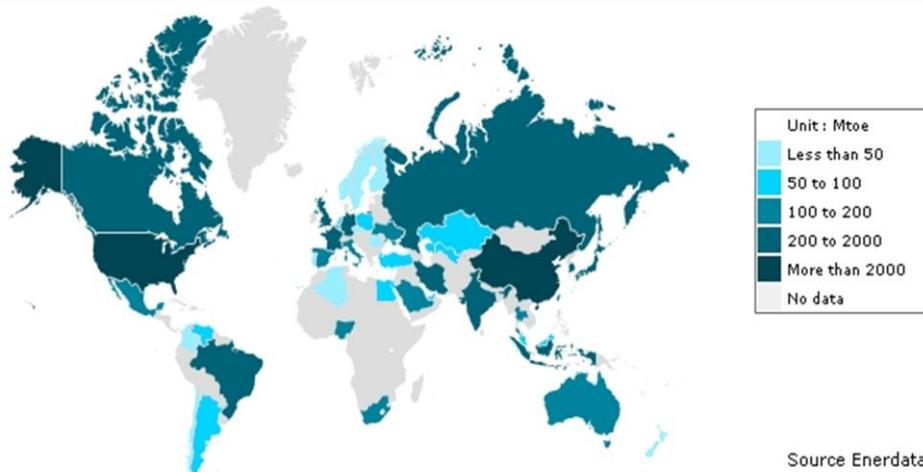
Coffee Break

##### **Global and Regional Emission Trading:**

##### **Interaction between the CDM and the ETS**

*Dr. Alexander Vasa, fellow at Climate Policy Initiative at the German Institute for Economic Research (DIW-Berlin)*

Practical information on Berlin



## Tuesday | 24 July

### Legal and policy framework: Sustainable energy and climate protection

The day will start with an overview of the climate and energy policy framework currently in place on an international level. The Kyoto Protocol's effect on the energy sector will be examined, and its likely predecessor will be presented. The conference's scope will then narrow down from international to regional, with an overview of the EU's energy strategy and target, and the instruments it employs along the way. Prickly issues of potential trade distortion and protectionism will also be discussed, and the policy and legal considerations of Germany's radical move away from nuclear will be considered. Finally, the hows and whys of the development and regression of the solar sector in Germany will be thoroughly analysed.



#### Morning

9:30-10:15

#### **International Climate Policy: Prospect and Effect on the Energy Sector**

*Dr. Camilla Bausch, Ecologic Institute, Berlin*

10:15-11:00

#### **Nuclear Energy: History and Policy in the Wake of Fukushima**

*- Reiner Braun, the International Association of Lawyers Against Nuclear Arms*

11:00-11:15

Coffee Break

11:15-12:15

#### **Energy and Climate Policy Design in the EU: Strategy, Instruments and Obstacles**

*Dr. Dirk Hanschel, University of Mannheim*

12:15-13:30

Lunch

#### Afternoon

13:30-14:15

#### **Economic Justifications for RES Policies: Climate Change and Beyond**

*Dr. Paul Lehmann, Helmholtz Centre for Environmental Research – UFZ*

14:15-14:30

Coffee Break

14:30-15:15

#### **Economics of RES Policy: the German Solar Sector**

*David Wortmann, Consultant at First Solar*

15:15-15:45

#### **Germany's Renewable Energy Law: Changes and Effects**

*Jens Vollprecht, Partner Council Becker Büttner Held*

15:45 -16:00

#### **Panel Discussion**

*David Wortmann, Jens Vollprecht, Prof. Michael Rodi (moderator)*

16:00-16:15

Coffee Break

16:15-17:00

#### **Law and Policy Design for Marine Renewable Energy Technologies**

*Glen Wright, PhD Candidate at the Australian National University, Focus on Law and Policy of Tidal and Wave Energy*

## Wednesday | 25 July

### RES integration: Practical potential of new technologies

Today is dedicated to new energy technologies, and to existing technologies that have not yet reached their full potential. The abundantly available and relatively stable renewable energy source of tidal and wave energy will be discussed. Energy efficiency is next on the agenda. The bulk of the energy consumed in today's society still comes from large-scale power plants. These need no longer follow the traditional polluting model generally associated with the term: New, cleaner versions are already operational and will play a big role in the energy transition. Combined heat and power, hybrid and virtual plants will therefore be examined too, and the conference will address the important role of energy storage (new technology power-to-gas) in the integration process of RES. The final presentation of the day addresses new solar system technology.



### Morning

9:30-9:45

9:45-10:30

10:30-10:45

10:45-11:30

11:30-12:15

12:15-13:15

### Afternoon

13:15-14:00

14:00-14:45

14:45-15:15

15:15 -16:00

### Introduction

#### **Energy from the Ocean: Wave and Tidal Power Technology**

*Dr. Andrew Casebow, Agriculture & Environment Advisor, Commerce & Employment Department, Government States of Guernsey*

Coffee Break

#### **Case study: The Islands of Guernsey**

*Dr. Andrew Casebow*

#### **The (Untapped) Potential of Energy Efficiency**

*Dr. Alexandra Novikova, Senior Analyst at Climate Policy Initiative at the German Institute for Economic Research (DIW-Berlin)*

Lunch

### **The Power Plant of the Future:**

#### **Virtual and Hybrid Models for the Direct Delivery of Renewables**

*Valerie Speth, Dipl.Ing .Management, Corporate development, juwi Holding AG*

#### **Smart Grid – Smart Home – Smart Mobility**

#### **Results from Smart Grid and Electric Mobility Projects in Germany**

*Ludwig Karg, BAUM Consult, Head of Ancillary Research on behalf of the Ministries of Economy and Environment*

Coffee break

#### **CPV Stand-alone Systems: A Technical, Environmental and Economic Analysis**

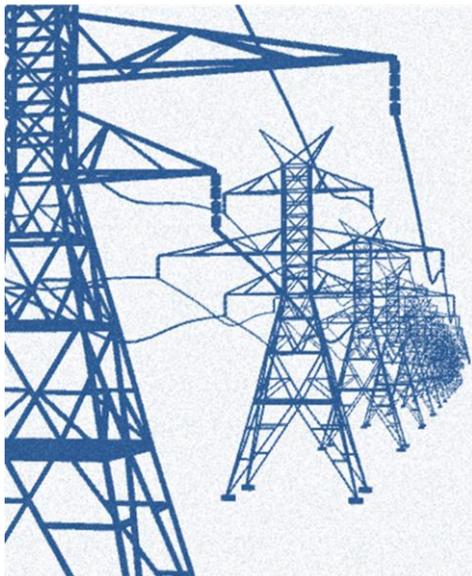
*Binod Prasad Koirala, Fraunhofer Institute for Solar Energy Systems ISE*

## Thursday | 26 July

### Network challenges of RES integration: Grid expansion, stabilization and upgrades

Thursday will examine the current state and shortcomings of today's energy infrastructure and address the legal, technological and economic aspects of possible solutions. On the agenda are exciting new grid technologies such as smart grids and the visionary project of a Europe-wide super grid.

Further integration of RES is not possible without an expansion and reinforcement of current energy infrastructure. This much needed grid expansion can run into many difficulties, economic, political, social acceptance and many more. Eclareon will share their insight into the matter from their RES integration evaluation carried out in the EU-27, and their recommendations to overcoming the obstacles they identified.



#### Morning

9:30-10:00

#### Today's Grid: Expansion and Update Needs

*Dipl. Ing. Jens Bömer, Senior Consultant Grid Integration, Ecofys (tbc)*

10:15-10:45

#### RES in the EU Grid: State of Affairs in the EU-27

**Results from the EU-wide RES Integration Project**

*Edoardo Binda-Zane, Projektmanager Policy Consulting Unit, Eclareon*

Discussion Round

10:45-11:00

11:00-11:15

Coffee Break

11:15-11:45

#### Grid Integration: Barriers in EU and Recommended Solutions

**Results from the EU-wide RES Integration**

*Edoardo Binda-Zane, Projektmanager Policy Consulting Unit, Eclareon*

Discussion Round

11:45-12:00

12:00-13:15

Lunch

#### Afternoon

13:15-14:00

#### Grid Stabilization through Storage: Power-to-Gas

*Henning Thomas, Lawyer at Becker Büttner Held, RES team*

14:00-14:30

#### Steps towards Modernisation of the Energy Grid for 100% RES

*Antina Sander, Renewable Grid Initiative by the European Climate Foundation*

14:30-14:45

Coffee break

14:45-15:30

#### Panel Discussion with Teaching Faculty of the Day

*The Way Ahead:*

*Recommendations on the Way to Tomorrow's Energy Network*

15:30-15:45

Coffee break

15:45-16:30

#### Integrated generation, transmission, and storage capacity expansion modeling with large fractions of intermittent RES

*James Nelson, Ph.D. student in the Energy and Resources Group,  
University of California at Berkeley*

## Friday | 27 July

### Generation, Storage and Integration: Renewable Energy Sources in the Baltic Sea Region

The last day of the Summer Academy will be marked by a festive conference hosted by IKEM and Becker Büttner Held. Large players in regional policy-making (BASREC), the energy industry (DONG energy, TenneT) and legal experts from BBH and Bond Pearce will join the Academy at this occasion, as the knowledge acquired during the week will be put to practice in the context of the Baltic Sea. The region is a rich mix of political and economic history, culture, natural resources and of course, energy policy. Starting with a deeper understanding of the political and historical forces that shaped the region's energy landscape, the conference will zoom in on the challenges faced by the region's most promising RES: Offshore wind. Lessons learned from the Baltic Sea region have a global applicability, and participants are encouraged to use the final panel discussion round to get the most out of the extraordinary convergence of expertise this day.



<b>Morning</b>	<b>RES and the Energy Landscape of the Baltic Sea Region</b>
9:15 – 9:30	Welcome address
9:30 – 10:15	<b>The Baltic Energy Sector: Shaped by History and Politics</b> <i>Prof. Detlef Jahn, Comparative Politics, University of Greifswald</i>
10:15 – 11:00	<b>RES Integration through Regional Cooperation: BASREC</b> <i>Niels Anger, German Federal Ministry of Economics and Technology, Rotating Presidency of BASREC</i>
11:00 – 11:15	Coffee Break
11:15 – 12:00	<b>Compensation and Connection: the Offshore Master Plan</b> <i>Manfred Dittmer</i> <i>Head of Regulatory Affairs, DONG Energy Renewables Germany</i>
12:00 - 13:00	Lunch