2015 INTERNATIONAL ENERGY WORKSHOP

ABU DHABI, 3–5 JUNE 2015

WELCOME

Dear Colleagues,

It is with great pleasure that I welcome you to the 34th International Energy Workshop (IEW), the latest congregation of energy modellers from all corners of the world. The IEW takes place on this occasion in Abu Dhabi, the capital of the United Arab Emirates, and in the Middle East for the first time in its 34-year history.

Energy scenarios and modelling matter, and not just to a highly specialised cadre of professionals, because they inform policy making. To take one example, scenario-based planning, aimed at discovering and designing the most effective technological approach to renewable power integration, was crucial to Denmark obtaining the high renewable energy shares we see today.

Within the current decade, countries in the Middle East and North Africa (MENA) have also emerged as research and development leaders for renewable energy technologies (RETs), with some eyeing rapid deployment of RETs within just a few years. The UAE has brought 100 megawatts (MW) online with Shams 1, one of the largest concentrated solar power (CSP) plants in the world, while plans foresee its capacity growing to 3 000 MW. The world's record-low price for solar photovoltaic-generated electricity, USD 0.6 per kilowatt-hour, was also achieved through a tender in the UAE.

Bringing the IEW to this dynamic region gives the global energy modelling community the chance to exchange knowledge and foster inter-regional co-operation with MENA-based modellers.

Other regions have also embarked on important modelling exercises aimed at near-future sustainable energy breakthroughs. In Africa, the System Planning Test (SPLAT) models designed by the International Renewable Energy Agency (IRENA) have helped to highlight the potential for scaling up renewable power generation across the continent's five power pools, given different policies and scenarios.

For this year's IEW, the outstanding quality of papers submitted has allowed us to put forth an engaging programme covering a range of topics, including the Gulf energy landscape, the latest research into low-carbon technologies and the status of international climate policy, in the run up to key climate talks in Paris later this year. In parallel sessions, over 90 papers are to be presented over three days. The demanding, as well as rewarding, schedule also offers social events, during which I hope you will take the opportunity to sample the UAE's rich cultural heritage.

IRENA wishes to extend its gratitude to the sponsors, the Electric Power Research Institute (EPRI) and the Energy Technology Systems Analysis Programme (ETSAP), as well as to the IEW organising committee and co-directors for all the support they have provided during the preparations. I would especially like to thank the Government of the UAE for its generous financial contribution, which has helped make this meeting happen.

I wish you a pleasant stay in Abu Dhabi and a successful and rewarding IEW 2015.

Adnan Z. Amin
Director-General
International Renewable Energy Agency

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ABOUT THE INTERNATIONAL ENERGY WORKSHOP

The International Energy Workshop (IEW) is one of the leading conferences for the international energy modelling research community. In a world of environmental and economic constraints, energy modelling is an increasingly important tool for addressing the complexity of energy planning and policy making.

The IEW provides a venue for analysts to compare quantitative energy projections, to understand the reasons for diverging views of future energy developments, and to observe new trends in global energy production and consumption.

The annual conference typically includes three plenary sessions and more than 100 presentations in parallel sessions focusing on a wide array of topics, including energy supply and price forecasts, energy savings and efficiency, renewable and innovative energy technologies, environmental and climate policy, and the intersection between energy analysis, economics, and the natural sciences.

The first International Energy Workshop was organised in Palo Alto in 1981 by Stanford University's Alan S. Manne, one of the founding fathers of energy economics. With the cooperation of Leo Schrattenholzer, a leading energy technology systems specialist at the International Institute of Applied Systems Analysis (IIASA), the workshop became an annual conference, first alternating between IIASA and the United States, and more recently expanding to other locations in Europe, Asia and Africa.

Throughout the history of IEW, a number of organisations have contributed to the success of these annual conferences, including notably the Energy Modeling Forum (EMF), the Electric Power Research Institute (EPRI) and the International Energy Agency (IEA).

From 1981 to 1997 the IEW published annual editions of the IEW Poll, which became an important part of the Morita Database, compiled as basis for the IPCC Special Report on Emission Scenarios (SRES). From 2006 to 2008, the IEW was organised by co-directors Leo Schrattenholzer and Joseph E. Aldy.

In June 2009 three new co-directors were elected by the IEW Steering Committee to run the International Energy Workshop:

- Geoffrey Blanford, Electric Power Research Institute (EPRI), USA;
- Massimo Tavoni, Fondazione Eni Enrico Mattei (FEEM), Italy;
- Bob van der Zwaan, Energy research Centre of the Netherlands (ECN).

ABOUT IRENA

The International Renewable Energy Agency (IRENA) is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international cooperation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy. IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity.

IRENA helps countries worldwide address sharply rising energy needs in an effective and sustainable manner. This support includes the provision of data and statistics, advice on the best practices and policies, insights on financial mechanisms, technological expertise, and capacity-building programmes, along with a large and growing range of publications and tools on renewable energy.

These include knowledge products:

- REsource: A search engine for renewable energy data and analysis, where users can find country-specific data and crea te customised charts and graphs;
- Renewable Energy Costs: Reliable data on the cost and performance of all forms of renewable energy;
- Global Atlas for Renewable Energy: An online tool mapping renewable energy resources, country by country, to aid in renewable energy project development;
- REmap 2030: A roadmap indicating the realistic potential for countries, regions and the world to double the share of renewables in the global energy mix, a key step in mitigating climate change;
- Renewable Energy Benefits: Detailed analysis on the socio-economic impact of renewable energy deployment.

IRENA's work also includes country, regional and global programmes:

- Clean Energy Corridors: Initiatives to develop indigenous renewable power to support regional social and economic growth;
- Renewables Readiness Assessments: Country-led holistic evaluations and recommendations for action to accelerate renewable energy deployment;
- SIDS Lighthouses: A framework for Small Island Developing States to scale up renewable energy holistically and sustainably;
- IRENA Renewable Energy Learning Partnership (IRELP): An online source for education, training and job opportunities;
- IRENA/ADFD Project Facility: A USD 350 million concessional loan programme providing finance to innovative, replicable renewable energy projects in developing countries.

IRENA is the only international agency with an exclusive mandate for renewable energy and the first global intergovernmental organisation to be headquartered in the Middle East. Its establishment in 2011 signalled the international community's commitment to the transition to renewables as a key element to ensure a sustainable future. With a mandate from governments worldwide, IRENA serves as a network hub of country, regional and global programmes and activities, as an advisory resource on planning, policy development and deployment, and as the global voice for renewable energy.

SPONSORS

The Energy Technology Systems Analysis Programme (ETSAP) is an Implementing Agreement of the International Energy Agency (IEA), first established in 1976. It functions as a consortium of member country teams and invited teams that actively cooperate to establish, maintain, and expand a consistent multi-country energy/economy/environment/engineering (4E) analytical capability.

Its backbone consists of individual national teams in nearly 70 countries, and a common, comparable and combinable methodology, mainly based on the MARKAL / TIMES family of models, permitting the compilation of long term energy scenarios and in-depth national, multi-country, and global energy and environmental analyses.

ETSAP promotes and supports the application of technical economic tools at the global, regional, national and local levels. It aims at preparing sustainable strategies for economic development, energy security, climate change mitigation and environment.

ETSAP holds open workshops twice a year, to discuss methodologies, disseminate results, and provide opportunities for new users to get acquainted with advanced energy-technologies, systems and modelling developments.

As part of its outreach activities, ETSAP collaborates with many other research teams throughout the world, participates in various global forums (EMF 22, for example), and makes its Newsletter and its Workshop Proceedings available online to the public at large.

The Electric Power Research Institute, Inc. (EPRI) conducts research, development and demonstration (RD&D) relating to the generation, delivery and use of electricity for the benefit of the public. An independent, nonprofit organisation, EPRI brings together scientists and engineers as well as experts from academia and the industry to help address challenges in electricity, including reliability, efficiency, affordability, health, safety and enviroment.

EPRI's work spans nearly every area of electricity generation, delivery and use, management and environmental responsibility, and provides both short- and long-term solutions in these research areas for the electricity industry, its customers and society.

Since its beginnings in 1972, the Electric Power Research Institute's membership has grown to represent approximately 90% of the electricity generated in the United States and extends to more than 30 countries internationally.

2015 PROGRAMME COMMITTEE

Geoffrey Blanford
Electric Power Research Institute (EPRI)

Dr. Geoffrey J. Blanford is a leading expert on integrated assessment and energy economy modelling. His research activities include development of analytical tools such as the MERGE model and the US-REGEN model with applications including international climate policy, electricity markets, and decision-making under uncertainty. He was Program Manager for Global Climate Change Policy Costs and Benefits at the Electric Power Research Institute (EPRI) in Palo Alto, CA until 2013. Geoffrey currently resides in Munich, Germany, where he is a visiting researcher at the Ifo Institute for Economic Research and an independent consultant working with EPRI and other clients in Europe and North America. He was a lead author for the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report and serves as co-director of the International Energy Workshop (IEW). He holds a B.A. in mathematics from Yale University, a M.S. in operations research from Columbia University, and a Ph.D. in management science and engineering from Stanford University.

Dolf Gielen
International Renewable Energy Agency (IRENA)

Dolf Gielen is the director of the IRENA Innovation and Technology Centre in Bonn since the beginning of 2011. The International Renewable Energy Agency has a mandate to accelerate global renewable energy deployment. The Centre advises member countries in the area of technology status and roadmaps, energy planning, cost and markets and innovation policy frameworks. Before joining IRENA, Dolf was Chief of the Energy Efficiency and Policy Unit at the United Nations Industrial Development Organization (UNIDO), Vienna. Previously, he was a Senior Energy Analyst in the Energy Technology Policy Division of the International Energy Agency, Paris. Dolf has a PhD in Energy and Materials Modelling from the Technical University of Delft. He graduated with an MA in Environmental Sciences at the University of Utrecht, the Netherlands.

Rabia Ferroukhi
International Renewable Energy Agency (IRENA)

Rabia Ferroukhi joined IRENA as Senior Policy Advisor in 2011. She is the Deputy Director of IRENA's Knowledge, Policy and Finance (KPFC) division and she leads the Policy unit, which is responsible for the work on a range of renewable energy policy issues including design, socio-economic benefits and integrated resource management. Rabia brought to this position over 20 years of experience in the fields of energy, development and environment. She worked in both public and private sectors, including with governments in the Middle-East and North Africa, energy companies in the Mediterranean region and the GCC, and international institutions. Rabia holds a Masters in Applied Economics and a Ph.D. in Economics from the American University in Washington DC.

Asami Miketa
International Renewable Energy Agency (IRENA)

Asami Miketa is a Programme Officer with the IRENA Innovation and Technology Center. Since 2012, she has been leading a program to build energy planning activities in Africa, Asia, and Latin America. Key components in the program include development of African power pools models, provision of training seminars to government officials, development of regional renewable roadmaps, and modelling variable renewable energy for policy making. Asami received her Ph.D. from Keio University in Japan in 2002, while working with the Energy Program at International Institute for Applied Systems Analysis (IIASA) in Austria. In 2005, she joined the International Atomic Energy Agency (IAEA) where she executed energy planning capacity building programs mainly in Africa and Asia and also contributed to several energy assessment studies together with government officials in these regions.

Sgouris Sgouridis
Masdar Institute (MI)

Sgouris Sgouridis is an Associate Professor at Masdar Institute of Science and Technology (MI). His research interests focus on understanding sustainable energy transitions using socio-technical systems modelling. He has worked on sustainable transportation systems and sustainable energy systems management. Sgouris is involved in projects and writes about the energy currency concept, electric vehicle adoption, sustainable aviation, and local and global sustainable energy transitions. Previously, he initiated the development of the Sustainable Bioenergy Research Consortium and was head of Institute Center for Smart and Sustainable Systems (2013-2014). Sgouris has also supported governmental and private organisations including the U.S. Department of Transportation, the Port Authority of Thessaloniki, and the Hellenic Army. He holds a PhD in Engineering Systems (MIT-2007), MSc in Technology and Policy and MSc in Transportation (MIT-2005) and a BS (Hons.) in Civil & Env. Engineering (1999-Aristotle University).

Bob van der Zwaan
Energy research Centre of the Netherlands (ECN)

Bob van der Zwaan is a senior scientist at the Policy Studies department of the Energy research Centre of the Netherlands (ECN), Professor of Sustainable Energy Technology at the Faculty of Science of the University of Amsterdam, and Adjunct Professor of International Relations at Johns Hopkins University's School of Advanced International Studies (SAIS) in Bologna. He is co-director of the International Energy Workshop (IEW), member of the Council of the Pugwash Conferences on Science and World Affairs, and lead author for Working Group III of the Intergovernmental Panel on Climate Change (IPCC, 4th and 5th Assessment Reports). Bob held several visiting professorships and research positions at various higher educational and research institutions and was trained in economics (MPhil, University of Cambridge, King's College), physics (PhD, CERN/NIKHEF, University of Nijmegen; MSc, University of Utrecht) and international relations (Certificate, IUHEI, University of Geneva). His research includes the fields of energy and climate change, environmental economics and technological innovation.

Massimo Tavoni
Fondazione Eni Enrico Mattei (FEEM)

Massimo Tavoni is a 2014-15 fellow at the Center for Advanced Studied in Behavioural Sciences (CASBS) at Stanford University, and associate professor at the Politecnico di Milano, Department of Management. He is also the deputy director of the Climate Change programme at FEEM (Fondazione Eni Enrico Mattei). Massimo's research is about modelling climate change mitigation policies and he was a lead author of the 5th assessment report of the IPCC, the co-director of the International Energy Workshop and deputy editor at Climatic Change.From 2007 to 2013 he was visiting senior research scientist at Columbia University's Lenfest Center for Sustainable Energy (Earth Institute) in New York.

KEYNOTE SPEAKERS

Laura Diaz Anadon

Laura Diaz Anadon is an Assistant Professor of Public Policy, Associate Director of the Science, Technology and Public Policy program, Co-Principal Investigator of the Energy Technology Innovation Policy research group, and Member of the Board of the Belfer Center for Science and International Affairs, at the Harvard Kennedy School of Government (HKS). Laura's research focuses on energy and environment oriented technological progress and she teaches on energy innovation and policy analysis. She has advised policy makers internationally, and has worked as a consultant for various international organisations. In addition to her work on systems analysis in energy and technology policy, she has published in chemical engineering and nuclear magnetic resonance journals. Laura holds a Ph.D. in Chemical Engineering from University of Cambridge (UK), a Master in Public Policy from the Harvard Kennedy School (USA), and a Masters in Chemical Engineering from the University of Manchester (UK).

Laura Cozzi

Laura Cozzi is the Deputy Head of the Directorate of Global Energy Economics at the International Energy Agency. Laura leads a team of fifteen analysts and is in charge of the quantitative analysis and modelling of the IEA flagship publication World Energy Outlook. Laura has been co-author of fifteen editions of the World Energy Outlook, and led the WEO special reports on climate (2013), investment (2014) and Africa (2014). She has also been leading the directorate's analysis on climate change and efficiency for over a decade. Prior to joining the IEA in 1999, she worked for the Italian oil company ENI. Laura holds a Master degree in environmental engineering (from Polytechnic Milan) and a Master in energy and environmental economics (from Eni Corporate University).

Ibrahim Babelli

Ibrahim Babelli is the Renewable Energy Team Leader and the Chief Strategist of King Abdullah City for Atomic and Renewable Energy (K.A.CARE). In this dual capacity, Ibrahim is leading the development of K.A.CARE's Strategy and Operating Model, including energy mix development, policy making, technology evaluation and selection, and developing regulatory and economical models necessary for introducing atomic and renewables to the energy landscape of Saudi Arabia, as well as leading the implementation of the renewable energy roadmap recommended by K.A.CARE.

Prior to his current engagement, Ibrahim served as the Executive Director of the National Industrial Development Program, and steered the development of the National Industrial Strategy and its Implementation Plans for Saudi Arabia. Ibrahim has two patents in the oil industry. He has published widely on various topics, both in technical and non-technical fields.

Carolyn Fischer

Carolyn Fischer is a Senior Fellow at Resources for the Future and currently a Marie Skłodowska–Curie Fellow of the European Commission, visiting at the Fondazione Eni Enrico Mattei (FEEM) in Venice, Italy. She has published widely on policy mechanisms and modelling tools that cut across a variety of environmental and resource management issues; her current research focus lies at the intersection of climate change, international trade, and energy policy.

Carolyn holds a Ph.D. in Economics from the University of Michigan at Ann Arbor. She is also a fellow of the CESifo Research Network and a member of Environment Canada's Environmental Economics and Policy Research Network. She currently serves on the editorial boards of the Review of Environmental Economics and Policy and the International Review of Environmental and Resource Economics, as well as the scientific board of Economics for Energy and the economics advisory board of Environmental Defense Fund.

Glada Lahn

Glada Lahn is a Senior Research Fellow with the Energy, Environment & Resources Department at Chatham House in London. Since joining Chatham House in 2004, she has worked on international oil and gas investment and resource governance. Recent research with in-country experts has focused on reorienting incentives for water and energy use in the Gulf states and in India. Glada leads the Valuing Vital Resources project and is on the management team of the Moving Energy Initiative, which seeks sustainable energy solutions for displaced peoples. Glada has an academic background in Middle East studies, economic development and international relations (School of Oriental and African Studies, UK, London School of Economics, UK & University of Damascus, Syria). She was previously Senior Research Fellow at the Gulf Centre for Strategic Studies (2002-2004) and has worked as an analyst and development consultant for several organisations.

Goran Strbac

Goran Strbac is a Professor of Energy Systems at Imperial College with extensive experience in advanced modelling and analysis of operation, planning, security and economics of energy systems. He led the development of novel advanced analysis approaches and methodologies that have been extensively used to inform industry, governments and regulatory bodies about the role and value of emerging new technologies and systems in supporting cost effective evolution to smart lower carbon future. Goran is a member of the Steering Committee of the SmartGrids European Technology Platform, co-chair of EU WG on Sustainable Districts and Built Environment of Smart Cities, Director of the UK Centre for Grid Scale Energy Storage, participates in working groups and committees within CIGRE, CIRED IET, IEEE and IEA. He has co-authored 4 books and published over 180 technical papers.

Franck Lecocq

Franck Lecocq is the CIRED director and professor of economics at AgroParisTech (the Paris Institute of Technology for Life, Food and Environmental Sciences). He has published extensively on the economics of climate change, and his current research focuses on the role of infrastructure in the mitigation of climate change policies, the relationship between climate change and sustainable development, the economy of the adaptation to climate change and the relationship forest / carbon. Franck was previously deputy director of the forestry laboratory (INRA / AgroParisTech) in Nancy, France, and economist for Economic Development Group of the World Bank. He holds a PhD in economics from AgroParisTech. He is a member of the Business Council for Sustainable Development of the French Ministry of Environment, Energy and Sustainable Development, and a lead author of the fourth and fifth IPCC assessment reports.

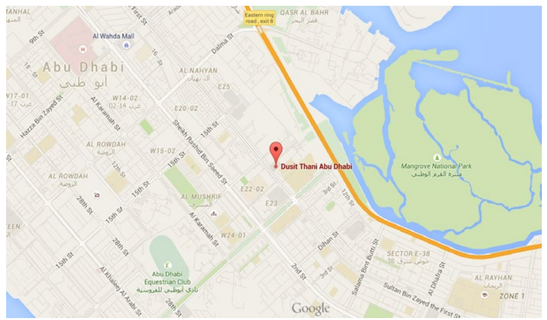
GENERAL INFORMATION

Conference Venue

The 34th Edition of the International Energy Workshop will take place at the Dusit Thani Abu Dhabi Hotel.

Address:
925 Muroor Street,
P.O. Box 52799,
Abu Dhabi,
United Arab Emirates

Phone: +971 (2) 698 8888
Fax: +971 (2) 698 8899



Registration and Information Desk

The Registration and Information Desk will be open at the Skydome Pre-function Area during these hours:

Tuesday, 2 June	3:00 p.m. – 7:00 p.m.
Wednesday, 3 June	8:30 a.m. – 6:00 p.m.
Thursday, 4 June	8:30 a.m. – 6:00 p.m.
Friday, 5 June	8:30 a.m. – 4:00 p.m.

If you have any questions, please feel free to visit the Registration and Information Desk, or contact the workshop secretariat:

Sina Tabrizi, STabrizi@irena.org, +971504461882 (UAE)

Fungai Sandamu-Gueldemann, FSandamu@irena.org, +4915221530237 (Germany)

Participant Identification

All participants are required to wear the IEW 2015 badge at all times.

Attendees with the badge will have access to all plenary sessions, parallel sessions, dinner reception on Thursday night, excursion on Friday, as well as the coffee breaks and lunches.

Lunches and Coffee Breaks

Lunch and coffee will be served at the foyer area of the ballroom. For the lunch time seminars, finger food will be available at the seminar room.

Dinner Reception

4 June 2015, 6:30 p.m. – 8:30 p.m.

A dinner reception is scheduled at the Urban Kitchen at the Dusit Thani Abu Dhabi Hotel.

Visit to the Grand Mosque and Safari Excursion

5 June 2015, 5:00 p.m. – 10:30 p.m.

An excursion to the Sheikh Zayed Mosque followed by an evening buffet dinner at Al Wathba Desert Camp is planned. A direct bus to the airport will be organised from the Camp for those who are taking flights after midnight.

5:00 p.m. –A bus will depart from the Dusit Thani Abu Dhabi Hotel to the Sheikh Zayed Grand Mosque

6:30 p.m. –Departure to Al Wathba Desert Camp

9:00 p.m. –Departure from the camp to the Abu Dhabi International airport

10:00 p.m.–Departure from the camp to Dusit Thani Abu Dhabi Hotel

10:30 p.m.–Arrival at the Dusit Thani Abu Dhabi Hotel

Transportation

Please note that participants will be responsible for organising their own transportation to and from the hotel and airport.

The distance between the **Abu Dhabi International Airport** and the city centre is approximately 20 km (30 minutes) and costs AED 70 by taxi.

From *Dubai Airport* to Abu Dhabi, it is 180 km (2 hours) at a cost of AED 350.

Please make sure to change your existing currency to UAE dirhams (AED) upon arrival. The airport has a number of ATMs accepting most major cards.

Useful Information

Climate: June in Abu Dhabi is hot and humid with maximum temperatures averaging above 38 °C (100 °F). However, air conditioning can make it relatively chilly indoors, so it is advisable to dress accordingly.

Electrical Current: 220-240 volts- (3 pin plug/UK).

Currency: The local currency in the UAE is the Dirham (AED).
USD 1= AED 3.67,
EUR 1=AED 4,98

Time Zone: GMT+4 - please adjust for summer time.

Telephone Use: We advise you to consult with your telephone operator to verify that your mobile phone device works in Abu Dhabi. Most major cell phone operators have full mobile and data service.

CONFERENCE FORMAT

Background and Structure

The 34th edition of the IEW includes three plenary sessions in the mornings and more than 90 presentations in 32 parallel sessions in the afternoons, focusing on a wide array of topics. In addition, three lunchtime seminars and one evening seminar will be organised during the three days. The ETSAP regular workshop will take place preceding the IEW on 2 June.

Instructions to Chairpersons

Each session has been assigned a chairperson. Every session has two to five papers, and each paper has a total time slot of 25 minutes. This includes a presentation of 20 minutes followed by 5 minutes for questions and discussion. We ask the chairpersons to observe the start and closure time of each session, and to be strict on the time allocation as a way to give equal opportunity to all speakers.

All rooms are equipped with a projector and a laptop computer for PowerPoint presentations. Each room also has a host who will make sure that presentations are loaded and ready to run. We advise the chairperson to arrive a few minutes before the start.

Instructions to Speakers in Parallel Sessions

We have reserved 20 minutes for presentation of your paper followed by 5 minutes of questions and discussion. We kindly ask all speakers to strictly adhere to their time allocation in consideration towards other speakers and participants and ensure smooth running of the sessions.

All conference rooms will be equipped with a projector and computer for PowerPoint presentations. Each room will have a host who can provide some basic support. We recommend that you arrive a few minutes before the session begins and make contact with the host and the chair of the session.

We would like to request that your presentation be loaded to the IEW 2015 website no later than 1 June. This will ensure the timely running of the paper presentations and avoid wasting time loading presentations during the sessions.

PROGRAMME OVERVIEW

Wednesday, 3 June 2015

Registration

8:30 a.m. – 9:00 a.m.

Opening

9:00 a.m. – 9:30 a.m.

Plenary Session 1

9:30 a.m. – 12:00 p.m.

Lunch / Lunchtime Seminar

12:00 p.m. - 1:30 p.m.

Parallel Session 1

1:30 p.m. – 3:15 p.m.

Coffee Break

3:15 p.m. – 3:45 p.m.

Parallel Session 2

3:45 p.m. – 4:35 p.m.

Parallel Session 3

4:45 p.m. – 6:00 p.m.

Evening Seminar

6:15 p.m. – 7:00 p.m.

Thursday, 4 June 2015

Plenary Session 2

9:30 a.m. – 12:00 p.m.

Lunch / Lunchtime Seminar

12:00 p.m. - 1:30 p.m.

Parallel Session 4

1:30 p.m. – 3:15 p.m.

Coffee Break

3:15 p.m. – 3:45 p.m.

Parallel Session 5

3:45 p.m. – 4:35 p.m.

Parallel Session 6

4:45 p.m. – 6:00 p.m.

Dinner Reception

6:30 p.m. – 8:30 p.m.

Friday, 5 June 2015

Plenary Session 3

9:30 a.m. – 12:00 p.m.

Lunch / Lunchtime Seminar

12:00 p.m. – 1:30 p.m.

Parallel Session 7

1:30 p.m. – 2:50 p.m.

Excursion

5:00 p.m. – 10:30 p.m.

WEDNESDAY, 3 JUNE 2015

Opening Session

9:00 a.m. – 9:30 a.m.
Room:Onyx 1&2

Moderator: Timothy Hurst, Chief Communications Officer, International Renewable Energy Agency

Opening Remarks: Adnan Z. Amin, Director-General, International Renewable Energy Agency
Introduction to the 34th Edition of International Energy Workshop: Geoffrey Blanford, Electric Power Research Institute

Plenary Session 1: Low-Carbon Technologies and R&D

Moderator: Bob van der Zwaan (Senior Scientist at Energy Research Centre of the Netherlands)

9:30 a.m. – 10:10 a.m.	***Global Energy Transition – Modelling Challenges*** *Dolf Gielen, Director, International Renewable Energy Agency Innovation and Technology Centre (Bonn, Germany)*
10:10 a.m. – 10:50 a.m.	***Role and Value of Flexible Technologies in Supporting Cost Effective Transition to Lower Carbon Energy Future*** *Goran Strbac, Professor of Electrical Energy Systems, Imperial College (London. UK)*
10:50 a.m. – 11:20 a.m.	*Coffee Break*
11:20 a.m. – 12:00 p.m.	***The Future of Energy Technologies and the Role of Policy*** *Laura Diaz, Assistant Professor of Public Policy at Harvard Kennedy School, Harvard University (Cambridge, USA)*

Lunch Break

12:10 p.m. – 1:10 p.m. *Room: Onyx 3*	***Lunchtime Seminar*** *IEA-ETSAP: Launch of Book "Informing Energy and Climate Policies Using Energy Systems Models" published by Springer*

3 June, 2015 — Session 1 | 1:30 p.m. — 3:15 p.m.

Parallel A Room: Onyx 3	Parallel B Room: Emerald 1	Parallel C Room: Emerald 2
Modelling Methodologies Chair: Nadia Maizi	**Renewable Energy Prospects** Chair: Steve Griffiths	**Abatement Costs** Chair: Nico Bauer
Quantifying Uncertainty in Baseline Projections of CO_2 Emissions for South Africa *Bruno Merven, Energy Research Centre, University of Cape Town*	Cost and Benefits of Doubling the Global Share of Renewable Energy Between 2010 and 2030: A Countries Perspective *Deger Saygin, International Renewable Energy Agency*	The Price of a Degree: Marginal Mitigation Costs of Achieving Long-Term Temperature Targets *Geoffrey Blanford, Ifo Institute*
The Value of Global Sensitivity Analysis for Energy System Modelling *Will Usher, UCL Energy Institute*	Overlapping International Green R&D Agreements, *Emilson Silva, University of Alberta*	Global Mitigation of Non-CO_2 Greenhouse Gases: Marginal Abatement Costs Curves and Abatement Potential through 2030 *Shaun Ragnauth, U.S. Environmental Protection Agency*
Augmenting Deterministic Models with Real Options Analysis to Capture the Impact of Uncertainty on Investment Timing: An Australian Electricity Case Study *Luke Reedman, CSIRO*	Invention, Innovation and Diffusion in the European Wind Power Sector *Jonas Grafstrom, Lulea University of Technology*	Marginal Abatement Cost Curve Responses to Alternative Gas Production Scenarios - A Look at Methane Emissions and Mitigation Potential in the Energy Sector *Jeffrey Petrusa, RTI International*
How do Energy-economy Model Responses to Carbon Pricing Compare? First Insights from the Advance Open Community Study on Model Diagnostics *Elmar Kriegler, Potsdam Institute for Climate Impact Research*	Fostering Photovoltaic Technologies in Mediterranean Cities: Consumers Demand and Social Acceptance *Vania Statzu, Department of Social Sciences and Institutions, University of Cagliari*	Abatement Performance Evaluation of Climate Policy in China - A Study Based on Regional Integrated Assessment Model *Lei Zhu, CEEP, Institute of Policy and Management, Chinese Academy of Sciences*

Parallel D Room: Sapphire 1	Parallel E Room: Sapphire 2
GHG Emissions Chair: Nawfal Saadi	**Transport Sector** Chair: Adrian Stone
A Multi-Model Regional Decomposition of CO_2 Emissions: What are the Main Drivers Affecting Regional Differences? *Michele Maurizio Malpede, Fondazione Eni Enrico Mattei*	Road Transport Energy Demand and CO_2 Emissions in APEC Economies through 2040 *Atit Tippichai, Asia Pacific Energy Research Centre*
Carbon Tax, Spatial Heterogeneity and Distribution: Evidences from the French Energy Consumption *Kirat Djamel, University of Orleans*	Urban Transport Modal Shift: An Energy Systems Approach *Steve Pye, University College London*
National Energy Outlook of the Netherlands 2014 *Michiel Hekkenberg, ECN Energy Research Centre of the Netherlands*	The Transportation Sector as a Lever for Reducing Long-term Chinese Mitigation Costs *Hamdi-Cherif Meriem, Centre International de Recherche en Environnement et Developpement*
	Welfare and Sustainability of Urban Transport Policies: The Case of Spanish Metropolitan Areas *Alessandro Danesin, Instituto de Investigacion Tecnologica, Universidad Pontificia Comillas*

3 June, 2015 — Sessions 2 | 3:45 p.m. — 4:35 p.m.

Parallel A Room: Onyx 3	Parallel B Room: Emerald 1	Parallel C Room: Emerald 2
Smart Energy Systems Chair: Brian O' Gallachoir	**Bio-Energy (1)** Chair: Maryse Labriet	
Large-scale Integration of Variable Renewables: Higher Temporal Analysis with Optimisation Model Considering Hydrogen Storage and Rechargeable Battery *Ryoichi Komiyama, The University of Tokyo*	The Political Economy of Joining in the Global Value Chain (GVC) of Biodiesel *Nazia Mintz-Habib, University of Cambridge*	
Modeling Energy and Technology Choices in Smart Regional Energy Systems *Alain Haurie, ORDECSYS*	Modeling Growth Scenarios for Biofuels in South Africa's Transport Sector *Adrian Stone, Energy Research Centre, University of Cape Town*	

3 June, 2015 — Sessions 3 | 4:45 p.m. — 6:00 p.m.

Modelling Intermittency Chair: Brian O' Gallachoir	**Bio-Energy (2)** Chair: Maryse Labriet	**Macroeconomic Impacts (1)** Chair: Babonneau Frederic
Bridging the Scales: Representing the System Integration Challenge of Wind and Solar in Integrated Assessment Models *Robert Pietzcker, Potsdam Institute for Climate Impact Research*	The Potential for Improved Cookstoves to Reduce Carbon Dioxide Emissions *Adrian Whiteman, International Renewable Energy Agency*	Optimal Equitable Burden Sharing - Modelling Global Macroeconomic Impacts of the Carbon Constrained Energy System Using ETSAP-TIAM-MSA *James Glynn, Environmental Research Institute, University College Cork*
The Temporal Dimension in Bottom-Up Energy System Planning Models – Selecting Representative Days *Kris Poncelet, KU Leuven/EnergyVille*	Simulating the Use of Biomass in Electricity with the Green Electricity Simulate Model: An Application to the French Power Generation *Bertrand Vincent, Laboratoire d'Economie Forestière, Climate Economics Chair*	The "Second Dividend" and the Demographic Structure *Frederic Gonand, University of Paris-Dauphine*
Including Sustem Integration of Variable Renewable Energies (VRE) in a Constant Elasticity of Substitution Framework: The Case of the WITCH Model *Samuel Carrara, Fondiazone Eni Enrico Mattei and Centro Euro-Mediterraneo sui Cambiamenti Climatici*	An Optimisation Model for Supporting Investment Decisions in Bio-refineries: a European Case Study *Sara Giarola, Imperial College London*	Economics of Transiting to Renewable Energy in Morocco: A General Equilibrium Analysis *Govinda Timilsina, The World Bank*

Parallel D Room: Sapphire 1	Parallel E Room: Sapphire 2
Climate Policy (1) Chair: Geoffrey Blanford	**Decarbonisation Pathways (1)** Chair: Deger Saygin
Sharing the Pie of Future Emissions — An Integrated Framework of Multi Equity Principle Approaches *Xueqin Cui, Renmin University of China*	Energy Technology Roll-Out for Climate Change Mitigation: A Multi-Model Study for Latin America *Bob van der Zwaan, ECN and University of Amsterdam*
Efficient and Equitable Scenarios of Climate Change *Socrates Kypreos, Honorary Member of Paul Scherrer Institute*	Energy Supply Investments in Latin America under Climate Control Policy *Tom Kober, Energy research Centre of the Netherlands*

Climate Policy (2) Chair: Geoffrey Blanford	**Decarbonisation Pathways (2)** Chair: Deger Saygin
Assessing the Risks of the 2°C Target - How Delaying Climate Change Mitigation and Limiting Critical Technologies Boosts Risk Trade-offs *Christoph von Stechow, Mercator Research Institute on Global Commons and Climate Change*	Pathways to Deep Decarbonisation for Russia *Vladimir Potashnikov, Russian Presidential Academy of National Economy and Public Administration*
Achieving the 2°C Target Will Not be Facilitated by Relying on a Global Abundance of Natural Gas *Jerôme Hilaire, Potsdam Institute for Climate Impact Research*	Effect of the Energy and Climate Policies in the Future Mexican Electricity System *Helena Cabal, CIEMAT*
Hedging the Climate Sensitivity Risks of the 2°C Target *Tommi Ekholm, VTT Technical Research Centre of Finland*	The Inspection of CO_2 Emission Targets of Industry Sector in Taiwan *Wei-Chen Liao, Institute of Nuclear Energy Research*

THURSDAY, 4 JUNE 2015

Plenary Session 2: Gulf Energy Landscape in the Context of the Global Economy

Room:Onyx 1&2

Moderator: Rabia Ferroukhi (Head of Policy Unit and Deputy Director, Knowledge, Policy and Finance, International Renewable Energy Agency)

9:30 a.m. – 10:10 a.m.	***The Needs and Contribution of Fossil Fuel Exporters in the Context of a Global Sustainable Energy Transition*** *Sgouris Sgouridis, Associate Professor of Engineering Systems and Management, Masdar Institute (Abu Dhabi, UAE)*
10:10 a.m. – 10:50 a.m.	***The Gulf Exporter's Paradox: Should Cheaper Oil Abroad Mean More Expensive Energy at Home?*** *Glada Lahn, Senior Research Fellow, Chatham House (London, UK)*
10:50 a.m. –11:20 a.m.	*Coffee Break*
11:20 a.m. – 12:00 p.m.	***How Close are we to Mitigating Climate Change? A Perspective from the GCC Region.*** *Ibrahim Babelli, Chief Strategist, King Abdullah City for Atomic and Renewable Energy (Riyadh, Saudi Arabia)*

Lunch Break

12:10 p.m. – 1:10 p.m. *Room: Onyx 3*	***IRENA Lunchtime Seminar (1)*** *Addressing Variable Renewable Energy in Long-Term Planning (AVRIL)*

4 June, 2015 — Session 4 | 1:30 p.m. — 3:15 p.m.

Parallel A Room: Onyx 3	Parallel B Room: Emerald 1
Learning Curve Chair: Bob van der Zwaan	**Investment for Sustainable Development** Chair: Hamed Ghoddusi
Epidemic, Rank, Stock and Order Effects in Renewable Energy Diffusion: A Model and Empirical Evidence from China's Wind Power Sector *Liu Yang, Department of Economics, Ecole Polytechnique*	Renewable Energy Investment Ratio: A Critical Parameter for the Global Energy Transition *Sgouris Sgouridis, Masdar Institute*
Global Learning Curve and LCOE Decomposition of Onshore Wind Power *Andrei Ilas, International Renewable Energy Agency*	Who Gets Finance for Electrification and Why? *Pueyo Ana, Institute of Development Studies*
Bending the Learning Curve *Jan Witajewski-Baltvilks, Fondazione Eni Enrico Mattei*	Universal Access to Clean Cooking in Guatemala: Magnitude of the Clean Cookstove Market and Decision Factors for LPG Scale-Up *Maryse Labriet, Eneris Environment Energy Consultants*
New Approach to Analyse the 'Grid Parity' of Renewable Energy Technologies Via a Bottom-Up Energy System Model: Focus on Solar and Wind Energy *Dong Gu Choi, Korea Institute of Energy Research*	Achieving Universal Electricity Access by 2030 in a Sustainable Way: A Model-Based Analysis *Evangelos Panos, Paul Scherrer Institute*

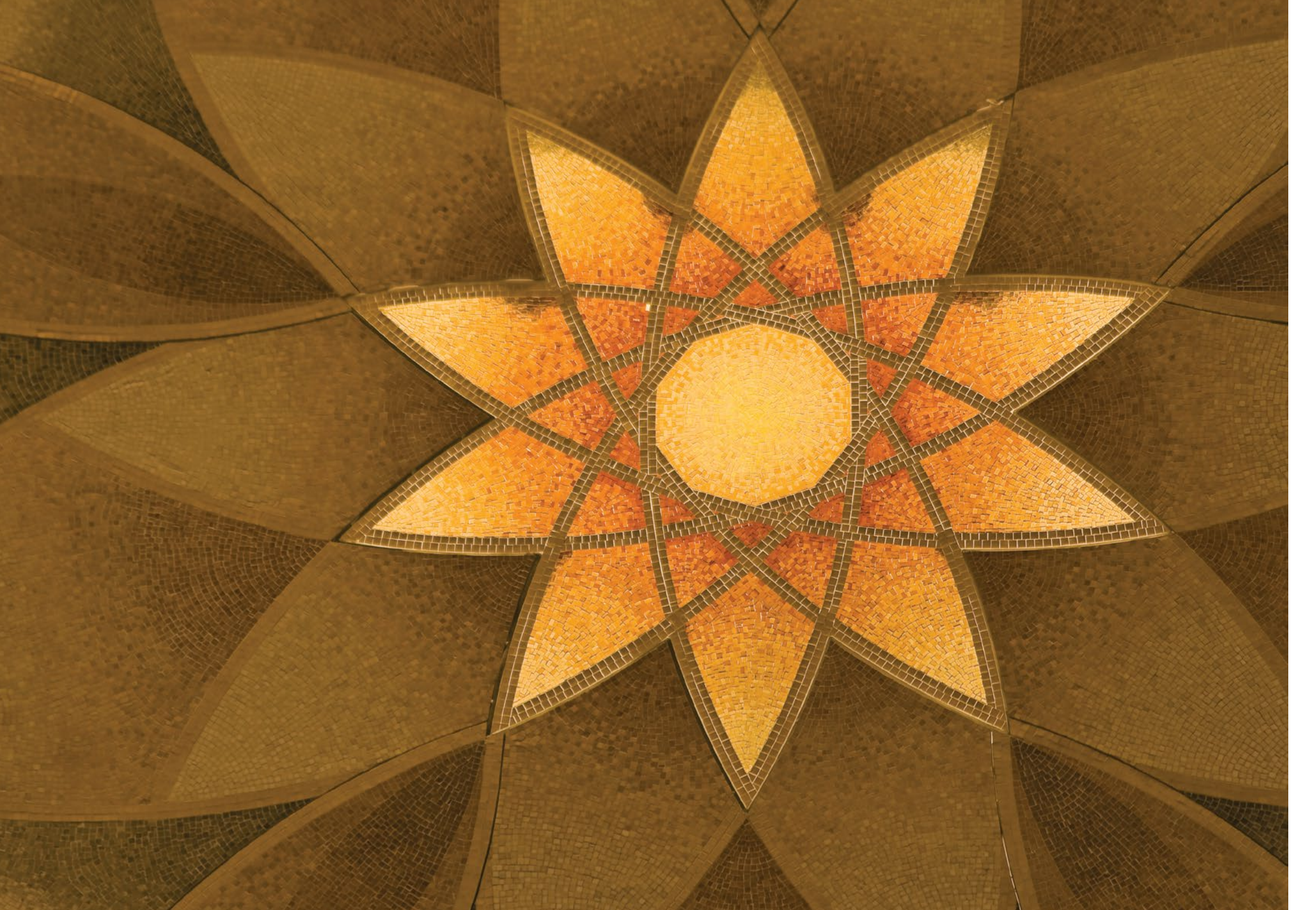
Parallel C Room: Emerald 2	Parallel E Room: Sapphire 2
Macroeconomic Impacts (2) Chair: Jinhua Zhao	**Low-Carbon Technology Options** Chair: Elmar Kriegler
Small States, Big Effects? Oil Price Shocks and Economic Growth in Small Island Developing States *Alrick Campbell, Australian National University*	Enhanced Weathering and BECCS - Are Carbon Dioxide Removal Technologies Complements or Substitutes? *Jessica Strefler, Potsdam Institute for Climate Impact Research*
The Geographical Distribution of UK Energy System Decarbonisation Costs and the Implications for Utility Companies, Governments and Communities *Francis Li, UCL Energy Institute*	Multi-Criteria Analysis of Nuclear Power in the Global Energy Systems: Trade-Offs between Cost, Energy Security and Climate Impacts *Mariliis Lehtveer, Chalmers University of Technology*
The Impact of Environmental Policy on Welfare and Growth *Giacomo Schwarz, ETH Zurich*	Arbitrage between Energy Efficiency and Carbon Management in the Industry Sector: An Emerging vs. Developed Country Discrimination *Nadia Maizi, MINES ParisTech*

4 June, 2015 — Sessions 5 | 3:45 p.m. —4:35 p.m.

Parallel A Room: Onyx 3	Parallel B Room: Emerald 1	Parallel C Room: Emerald 2	Parallel D Room: Sapphire 1	Parallel E Room: Sapphire 2
Economics of VRE Chair: Alain Haurie	**Africa Infrastructure Development (1)** Chair: Tom Kober	**Natural Resource Management** Chair: Robert Cairns	**Climate Policy Europe (1)** Chair: Socrates Kypreos	
Modelling the Economics of Intermittent Energy *Liv Lundberg, Chalmers University of Technology*	African Clean Energy Corridor: Regional Integration to Promote Renewable Energy Fueled Growth *Nawfal Saadi, International Renewable Energy Agency*	Macroeconomic Management of Natural Resource Revenues in Developing Countries *Baltasar Manzano, Universidad de Vigo and KAPSARC*	Impact of Uncertain CCS Deployment on EU Climate Negotiations *Babonneau Frederic, ORDECSYS and EPFL*	
On the Market Value of Wind Power in the Chinese Electricity System *Christoph Weissbart, Ifo Institute*	Development Perspectives of Sub-Saharan Africa Under Climate Policies *Marian Leimbach, Potsdam Institute for Climate Impact Research*	Sustainable Growth and Financial Markets in a Natural Resource Rich Country *Emma Hooper, Aix-Marseille University*	Technological Uncertainty in Meeting Europe's Decarbonisation Goals *Johannes Bollen, CPB*	

4 June, 2015 — Sessions 6 | 4:45 p.m. — 6:00 p.m.

Wind Power Forecasting Chair: Nicolas Fichaux	Africa Infrastructure Development (2) Chair: Tom Kober	Socio-Economic Impacts Chair: Sgouris Sgouridis	Climate Policy Europe (2) Chair: Socrates Kypreos	Energy Demand (1) Chair: David Stern
Using the Lasso Method for Space-time Short-term Wind Speed Predictions *Daniel Ambach, European University Viadrina*	Energy Security, Uncertainty, and Resource Use in Ethiopia: A Sector Modelling Approach *Dawit Guta, Centre for Development Research , University of Bonn*	Shared Socio-Economic Pathways of the Energy Sector - Quantifying the Narratives *Nico Bauer, Potsdam Institute for Climate Impact Research*	Border Carbon Adjustment and Trade Retaliation: What Would be the Cost for the European Union? *Stephanie Monjon, Université Paris Dauphine*	Demand System Analysis for Italian Households: Elasticities and Welfare Effects of RES-E Incentives *Elena Verdolini, Fondazione Eni Enrico Mattei and CMCC*
Minimising Asymmetric Loss in Medium-Term Wind Power Forecasting *Carsten Croonenbroeck, European University Viadrina*	The Role of Natural Gas in Balancing South Africa's Energy Trilemma *Mamahloko Senatla, Energy Research Centre, University of Cape Town*	Knowledge Diffusion and Climate Policies: A Dynamic Analysis of the Effects on Economic Growth *Adriana Marcucci, ETH Zurich*	Cost-effectiveness of EU ETS reform Options *Corjan Brink, PBL Netherlands Environmental Assessment Agency*	Climate Change Impacts on U.S. Electricity Demand: Insights from Micro-Consistent Aggregation of a Structural Model *Ian Sue Wing, Boston University*
The Effect of Microscale Spatial Variability of Wind on Estimation of Technical and Economic Wind Potential *Kenneth Karlsson, Technical University of Denmark*	Least Cost Energy Supply Model for a Multiple Scenario Analysis of Northern Africa *Oliver Broad, KTH Royal Institute of Technology*	Revisiting Carbon Kuznets Curves with Endogenous Breaks Modelling: Evidence of Decoupling and Saturation (But Few Inverted-Us) for Individual OECD Countries *Brantley Liddle, Asia Pacific Energy Research Centre*	Limited Sectoral Trading between the EU ETS and China *Claire Gavard, Fondazione Eni Enrico Mattei and Euro-Mediterranean Center on Climate Change*	



FRIDAY, 5 JUNE 2015

Plenary Session 3: International Climate Policy – Road to Paris

Room: Onyx 1&2

Moderator: Geoffrey Blanford (Electric Power Research Institute)

9:30 a.m. – 10:10 a.m.	***Energy Mitigation Strategies: Insights from the World Energy Model*** *Laura Cozzi, Deputy Head of Directorate for Global Energy Economics, International Energy Agency (Paris, France)*
10:10 a.m. – 10:50 a.m.	***Carbon Pricing and Links to Sustainable Development*** *Franck Lecocq, Director, Centre International de Recherche sur l'Environnement et le Développement (Nogent-sur-Marne, France)*
10:50 a.m. –11:20 a.m.	*Coffee Break*
11:20 a.m. – 12:00 p.m.	***The Road After Paris: the Role of Technology Policies in Supporting Future Commitments*** *Carolyn Fischer, Senior Fellow, Resources for the Future (Washington, DC., USA), and Marie Skłodowska-Curie Fellow of the European Commission at the Fondazione Eni Enrico Mattei (Venice, Italy)*

Lunch Break

12:10 p.m. – 1:10 p.m. *Room: Onyx 3*	***IRENA Lunchtime Seminar (2)*** *Gateway to Knowledge on Renewable Energy – Global Atlas and the True Cost of Renewables*

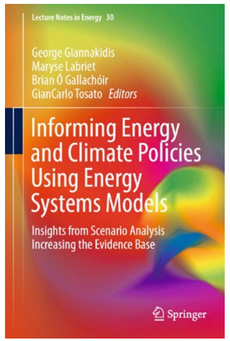
5 June, 2015 — Session 7 | 1:30 p.m. — 2:45 p.m.

Parallel A Room: Onyx 3	Parallel B Room: Emerald 1	Parallel C Room: Emerald 2
Power Sector Modelling Chair: Georgios Giannakidis	**Water-Land-Energy** Chair: Adrian Whiteman	**Green Paradox** Chair: Baltasar Manzano
Estimating the Socio-Economic Costs of Electricity Supply Interruptions *Constantinos Taliotis, KTH Royal Institute of Technology*	Incorporating Impacts on Water and Land Use in an Energy Systems Analysis - a Case Study for the UK *Birgit Fais, UCL Energy Institute*	Are Renewable Energy Policies Climate Friendly? The Role of Capacity Constraints and Market Power *Jinhua Zhao, Michigan State University*
Demand-Side Management by Electric Utilities in Switzerland: Analysing its Impact on Residential Electricity Demand *Nina Boogen, Center of Economic Research, ETH Zurich*	Modelling the Water-Energy Nexus in South Africa: Development of a National Water-Energy System Model with Emphasis on the Power Sector *Fadiel Ahjum, University of Cape Town*	Green Paradox or Green Unorthodoxy? *Robert Cairns, McGill University*
The EU Power System in 2030: Investigating Electricity Sector Challenges *Seán Collins, University College Cork*	Structure Model of China Coal Production and Water Constraint *Helen (Xiangyang) Xu, China University of Mining and Technology*	

Parallel D Room: Sapphire 1	Parallel E Room: Sapphire 2
Climate Policy (3) Chair: Geoffrey Blanford	**Energy Demand (2)** Chair: Ian Sue Wing
The Effect of Financial Constraints on Energy-Climate Scenarios *Hamed Ghoddusi, Stevens Institute of Technology*	Long-Run Estimates of Interfuel and Interfactor Elasticities *David Stern, The Australian National University*
A Multi-Dimensional Feasibility Matrix to Compare the Achievability of Mitigation Scenarios in a Model Inter-Comparison *Adam Hawkes, Grantham Institute, Imperial College London*	Econometric Forecasting of Final Energy Demand Using In-Sample and Out-Of-Sample Model Selection Criteria *Roming Niklas, Potsdam Institute for Climate Impact Research*
Robust Technological and Emission Trajectories for Long-Term Stabilisation Targets with An Energy-Environment Model *Nicolas Claire, Economix, UPOND and IFPEN, Rueil-Malmaison*	The Role of Resource and Market Access on Household Fuel Switching Behaviour In Rural and Peri-Urban Kenya *Bianca van der Kroon, Vrije Universiteit*

SIDE EVENTS

Book Launch
"Informing Energy and Climate Policies Using Energy Systems Models", published by Springer



3 June 2015, 12:10 p.m. – 1:10 p.m., room Onyx 3

This event launches the new book Informing Energy and Climate Policies Using Energy Systems Models.

The book brings together, for the first time in one volume, a range of methodological approaches and case studies of good modelling practice on a national and international scale from the IEA-ETSAP multilateral technology initiative. The editors will introduce the book and invited speakers will discuss where ETSAP modelling fits within broader energy modelling research.

This book presents methodologies and case studies to demonstrate how energy systems models are used to support energy and climate mitigation policy decision-making at the national, multi-country and global level.

It provides a critical analysis of the rich and varied applications of energy systems models, their underlying methodologies and the policy questions they can address.

It also includes diverse global case studies, maximising reader insights into the role of technology in energy systems models and in providing a basis of evidence.

Open Source Energy Modelling System (OSeMOSYS) Side Event

3 June 2015, 6:15 p.m. – 7:00 p.m., room Onyx 3

OSeMOSYS (the Open Source Energy Modelling System) is the most used fully open (programming language, solver and code) optimising energy systems software. It is an ideal teaching tool and excellent entry into the world of optimisation tools.

The side event wil cover recent advancements in OSeMOSYS, applications, interfaces and forthcoming milestones:

Recent advancements will include code to model various ancillary services, changes in operating characteristics of power plants as a function of load, energy security indexes and smart grids, and a simple excel interface for simplified country level modelling.

The meeting will report on applications, including modelling efforts for the World Bank, mapping indicative investment opportunities for 20 countries for the AfDB, as well as energy security in the Baltics.

Forthcoming milestones include the development of official support for 5 national governments, including key applications that rely on LEAP as the primary interface.

Members of the community and all others are most welcome to attend.

IRENA Lunchtime Seminar (1)
Addressing Variable Renewables in Long-Term Energy Planning (AVRIL)

4 June 2015, 12:10 p.m. – 1:10 p.m., room Onyx 3

System integration of high shares of variable renewable energy (VRE) requires both long term techno-economic planning in the energy sector as well as short-term network design in the power sector. In particular, long-term planning is key to enabling the transition to a renewables-based energy system, as experience from countries that are on the way to such a transition shows. There is a lack of established best practices on energy planning with high shares of renewables, which hinders countries' efforts to establish credible long-term energy plans to guide their policy decisions.

IRENA initiated the AVRIL (Addressing the Variable Renewables in Long-term Planning) project, which aims at collecting methodologies and best practices for long-term planning and scenario analyses in particular in developing and emerging countries.

Last year at IEW 2014 in Beijing, IRENA organised a special session "Brain-storming Session on the Modelling of Renewables for Policy Making". Since then IRENA has been preparing a catalogue of methodologies on modelling variable renewable energy in consultation with energy planning offices at governmental institutions as well as with energy modelling community.

In this seminar, IRENA will share the progress on the AVRIL project, and discuss the way forward. The detailed program will be distributed during the IEW.

IRENA Lunchtime Seminar (2)
Gateway to Knowledge on Renewable Energy – Global Atlas and the True Cost of Renewables

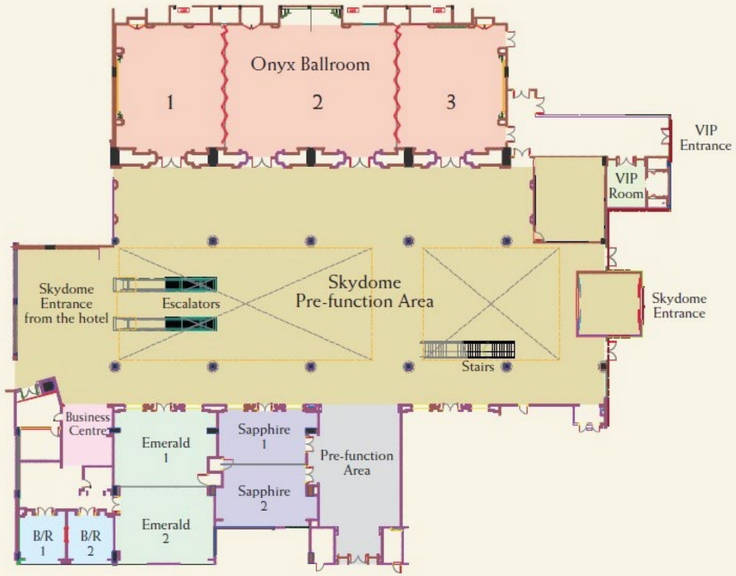
5 June 2015, 12:10 p.m. – 1:10 p.m., room Onyx 3

An important barrier to deployment of renewable energy is the lack of accurate, objective and reliable data and information. During the past year, IRENA has expanded its efforts to become the centre of excellence for global renewable energy information, to increase awareness and inform stakeholders of the state of play in markets, policies, financing, and technology options, including their costs and benefits. During this lunch time seminar, two of IRENA's flagship initiatives – Global Atlas and True Cost of Renewables – are presented, providing access to a rich source of information on renewable resource potentials and cost, which are of particular importance to building energy scenarios.

IRENA's Global Atlas is today the world's largest database on renewable energy potentials. The Global Atlas links its Geographic Information System (GIS) to a number of data centers and renewable energy resource datasets worldwide. Building on a large repository of publicly available information, this free online resource-assessment tool (www.irena.org/globalatlas) is further enriched by private sector information.

IRENA's cost analysis programme collects and analyses up-to-date, verifiable data on renewable technology costs and performance, thereby helping governments, policy-makers, investors and utilities make informed decisions about the role renewables can play in their energy sector. Similarly, by providing energy or climate modellers with the latest cost data, IRENA is reducing the risk that poor input assumptions mean that modelling results seriously underestimate the economic potential of renewables to contribute to the energy sector.

FLOOR PLAN


Onyx Ballroom
1
2
3
VIP Entrance
VIP Room
Skydome Entrance from the hotel
Escalators
Skydome Pre-function Area
Stairs
Skydome Entrance
Business Centre
Emerald 1
Sapphire 1
Pre-function Area
Sapphire 2
Emerald 2
B/R 1
B/R 2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