

Program

International Energy Workshop 2021

June 14-17, 2021 | online
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Monday, 14.06.2021

13:00 - 15:00

Welcome & Plenary Session 1

13:00 - 15:00

Welcome and Opening Remarks by the IEW Directors

Dr. Keigo Akimoto, Research Institute of Innovative Technology for the Earth (RITE)

Prof. Dr. Gunnar Luderer, Potsdam Institute for Climate Impact Research

Dr. Thomas Longden, Australian National University

16:00 - 18:00

Energy Investments

16:00 - 16:24

Will R&D accelerate the energy transition? A multi-model framework to assess decarbonization pathways
 Dr. Larissa Pupo Nogueira, TNO Energy Transition

16:24 - 16:48

Revenue and risk of variable renewable electricity investment: the cannibalization effect under high market penetration
 Prof. Tommi Ekholm, Finnish Meteorological Institute

16:48 - 17:12

Estimating Elasticity of Substitution in CES Production Function: Examining Different Nesting Structures and EU Regions
 Vedunka Kopecna, Charles University

17:12 - 17:36

The impact of negative oil shocks on military spending and democracy in the oil states of the greater Middle East: Implications for the oil sanctions
 Dr. Sajjad Faraji Dizaji, Tarbiat Modares University

17:36 - 18:00

Interdependencies Between Countries in the Provision of Energy
 Prof. Doina Radulescu, University of Bern

Carbon Neutral Future

16:00 - 16:24

Alternative roads to achieve mid-century CO2 net neutrality in Europe
 Dr. Renato Rodrigues, Potsdam Institute for Climate Impact Research - PIK

16:24 - 16:48

Acceleration strategies for energy systems models: insights using the TIMES modelling framework
 Dr. Evangelos Panos, Paul Scherrer Institute

16:48 - 17:12

Towards a sustainable energy system for the Netherlands in 2050
 Martin Scheepers, TNO

17:12 - 17:36

Assessing of persistence, non-acceptance and sufficiency in the energy transformation of Germany
 Dr. Christoph Kost, Fraunhofer ISE

17:36 - 18:00

Tightening EU ETS targets in line with the European Green Deal: Impacts on the decarbonization of the EU power sector
 Sebastian Osorio, Potsdam Institute for Climate Impact Research

Impact Assessment

16:00 - 16:24

Analysing the Trade-offs between Mitigation and Development Objectives for South Africa using a Linked Modelling Framework
 Bruno Merven, Energy Systems Research Group University of Cape Town

16:24 - 16:48

From Factor-Four Mitigation to Zero-Net Emissions: Is a fair energy transition possible? Evidence from the French Low-Carbon Strategy
 Emilien Ravigné, CIRED and Université Paris-Saclay

16:48 - 17:12

Modeling the Raw Material Requirements of the German Energy Transition
 Dr. Antonia Loibl, Fraunhofer Institute for Systems and Innovation Research ISI

17:12 - 17:36

Free Power, Irrigation and Groundwater Depletion: Impact of the Farm Electricity Policy of Punjab, India
 Disha Gupta, Delhi School of Economics

17:36 - 18:00

Modelling environmental impacts of nonfood crops based bioenergy production: an integrated life cycle and water footprint perspective
 Jun Li, Sun Yat-sen University

Electricity System Modeling

16:00 - 16:24

Unraveling the Black Box of Power Market Models
 Dr. Valeriya Azarova, ifo Institute

16:24 - 16:48

A long-term electrification outlook for Ethiopia
 Andreas Sahlberg, KTH Royal Institute of Technology

16:48 - 17:12

The Influences of Non-optimal Investments on the Scale-up of Smart Local Energy Systems in the UK Electricity Market
 Dr. Pei-Hao Li, UCL Energy Institute

17:12 - 17:36

Cost-benefit analysis of coal-plant repurposing: A case study for India
 Dr. Gireesh Shrimali, Stanford University

17:36 - 18:00

Deep Decarbonization Impacts on Load Shapes and Peak Electricity Demand
 Dr. John Bistline, EPRI

Tuesday, 15.06.2021

12:00 - 13:30	Emission Trading	Mobility	Digitalization	Renewables
12:00 - 12:30	An Endogenous Emission Cap Produces a Green Paradox R.J.R.K. Heijmans, Tilburg University	12:00 - 12:30 An assessment of the GHG mitigation potential of land transport pathways presented in the Green Transport Strategy for South Africa and their economy-wide impact	12:00 - 12:30 Digital Energy Transition: The disruptive effect on new social practices on the energy system Lidia Stermieri, Paul Scherrer Institut	12:00 - 12:30 Deployment of wind power - model assumptions vs reality Prof. Fredrik Hedenus, Calmers
12:30 - 13:00	Carbon pricing and household welfare: Evidence from Uganda Raavi Aggarwal, Mercator Research Institute on Global Commons and Climate Change	Fadiel Ahjum, University of Cape Town	12:30 - 13:00 Climate Protection Potentials of Digitalized Production Processes: Microeconomic Evidence? Janna Axenbeck, ZEW Mannheim	12:30 - 13:00 Bioenergy-induced land-use change emissions with sectorally fragmented policies Leon Merfort, Potsdam Institute for Climate Impact Research
13:00 - 13:30	Trade in Carbon and Carbon Tariffs Dr. Emmanuel Asane-Otoo, University of Oldenburg	12:30 - 13:00 Redistributive and Revenue Effects of Policies Promoting Fuel Efficient and Electric Vehicles Patrick Bigler, University of Bern	13:00 - 13:30 Telecommuting, Carbon Emissions, and Urban Form Dr. Waldemar Marz, ifo Institute/ LMU	13:00 - 13:30 Nearly Cost-Optimal Alternatives in a Renewable Power System Which Are Robust to Cost Uncertainty Fabian Neumann, Karlsruhe Institute of Technology (KIT)
		13:00 - 13:30 Integration of E-mobility into the power system: an assessment of security of supply, demand-side response opportunities, economic and environmental impacts Dr. Simona De Lauretis, RTE		

15:00 - 16:40	Energy Policy	Energy Investments	Electricity System Modeling	Power-to-X	Renewables
15:00 - 15:30	Costs and benefits of political and physical collaboration in the European power market Dr. Mathias Mier, ifo Institute / University of Munich	15:00 - 15:25 A climate investment trap in developing economies Dr. Nadia Amelie, University College London	15:00 - 15:25 The impacts of the electricity demand pattern on electricity system cost and the electricity supply mix: a comprehensive modeling analysis Xiaoming Khan, Chalmers University of Technology	15:00 - 15:25 Renewable Natural Gas as Climate-Neutral Energy Carrier? Dr. Remko Detz, TNO Energy Transition	15:00 - 15:25 Scenarios for geothermal energy deployment in Europe Dr. Jon Limberger, TNO
15:35 - 16:05	Dynamic Evaluation of Policy Feasibility, Feedback and the Ambitions of Coalitions Stephen Bi, Potsdam Institute for Climate Impact Research	15:25 - 15:50 Battery storage paving the way for solar PV in India Ahmad Murtaza Ershad, Potsdam Institute for Climate Impact Research (PIK)	15:25 - 15:50 Influence of electrification pathways in the electricity sector of Ethiopia - policy implications linking spatial electrification analysis and medium to long-term energy planning Ioannis Pappis, KTH Royal Institute of Technology	15:25 - 15:50 Market-based renewables: How flexible hydrogen electrolyzers stabilize wind and solar market values Oliver Ruhnau, Hertie School	15:25 - 15:50 Experts predict 50% lower future costs for onshore and offshore wind than they did in 2015 Philipp Breiter, National Renewable Energy Laboratory (NREL)
16:10 - 16:40	Achieving Negative Carbon Leakage through Sectoral Border Adjustment Reductions Prof. Timothy Fitzgerald, Texas Tech University	15:50 - 16:15 Innovation Trends in Electricity Storage: What Drives Global Innovation? Siyu Feng, University of Wisconsin - Milwaukee	15:50 - 16:15 Too Much of a Good Thing: Reducing Emissions by Curtailing Renewables in Power Systems Operation Dr. Germán Morales-España, Netherlands Organisation for Applied Scientific Research (TNO)	15:50 - 16:15 The Prospects for Offshore Hydrogen Production Dr. Joost van Stralen, TNO	15:50 - 16:15 Sources of uncertainty in long-term global scenarios of solar photovoltaic technology Dr. Marc Jaxa-Rozen, University of Geneva
		16:15 - 16:40 Energy Transitions and Technology Change: "Leapfrogging" Reconsidered Dr. Rob Fetter, Duke University		16:15 - 16:40 The Interaction between Hydrogen and Power Generation Dr. Geoffrey Blanford, Electric Power Research Institute	16:15 - 16:40 Modeling all alternative solutions for highly renewable energy systems Tim Pedersen, Aarhus University

16:15 - 16:40
Electrification Futures
Study: Impact of Electric
Vehicles on Bulk Power
Systems
Dr. Matteo Muratori, NREL

18:00 - 20:00 **Plenary Session 2**

Chair: IEW Board

18:00 - 20:00
Plenary Session 2
Dr. Trieu Mai, National Renewable Energy Laboratory (NREL)
Prof. Bob van der Zwaan, TNO and University of Amsterdam
Sergey Paltsev, MIT

Wednesday, 16.06.2021

12:00 - 13:40	Power-to-X	Electricity System Modeling	Energy and Household	Renewables
12:00 - 12:25	Country-Specific Cost Projections for Renewable Hydrogen Production Through Off-Grid Electricity Systems Dr. Jacob Janssen, TNO	12:00 - 12:25 Regional disparities in vulnerability to the European electricity sector transition until 2035 Jan-Philipp Sasse, University of Geneva, Renewable Energy Systems Group	12:00 - 12:25 Distributional consequences of climate change impacts on energy demand across Italian households Dr. Lorenza Campagnolo, Ca'Foscari University of Venice and CMCC@Ca'Foscari	12:00 - 12:25 Optimizing agricultural demand response for reducing costs of renewable energy integration in India Tarun Khanna, Hertie School
12:25 - 12:50	Potential and limitations of hydrogen-based e-fuels in climate change mitigation Dr. Falko Ueckerdt, Potsdam-Institute for Climate Impact Research	12:25 - 12:50 Coal mining investments on shaky grounds: Avoiding overcapacities of coal supply Christian Hauenstein, Technische Universität Berlin	12:25 - 12:50 Transition dynamics of solar photovoltaic (PV) prosumers in Sweden Dr. Sujeetha Selvakkumaran, RISE Research Institutes of Sweden - Chalmers University of Technology	12:25 - 12:50 Renewable Energy Generation Effects on the Electricity Market: An Empirical Study on Japan's Electricity Spot Market Dr. Teng Ma, Kyoto University
12:50 - 13:15	The impact of CO2 reduction targets and imported synthetic energy carriers on the transition pathway of the German energy system Julian Brandes	12:50 - 13:15 Regional impacts of electricity system transition in Central Europe until 2035 Jan-Philipp Sasse, University of Geneva, Renewable Energy Systems Group	12:50 - 13:15 Evaluating the impacts of mini-grid electrification in sub-Saharan Africa Dr. Sinem Ayhan, MCC-Berlin	12:50 - 13:15 Renewable energy potential – a meta-analysis Marie-Alix Dupré la Tour, RTE & CIRED
13:15 - 13:40	Integrated Electricity, Gas and Hydrogen Systems Modelling: A case of North Sea Countries Dr. Binod Koirala, TNO Energy Transition	13:15 - 13:40 Managing intermittency in the electricity market Nandeeta Neerunjun, Aix Marseille School of Economics	13:15 - 13:40 Global residential space heating scenarios towards net-zero emissions Dr. Alessio Mastrucci, International Institute for Applied Systems Analysis (IIASA)	13:15 - 13:40 Modeling intermittency of solar and wind availability: Low-dimensional scenario generation capturing the statistics of both spatial and diurnal variations Dr. Martin Densing, Energy Economics Group, Paul Scherrer Institute (PSI)

15:00 - 17:00 **Plenary Session 3**

Chair: IEW Board

15:00 - 17:00
Plenary Session 3
Prof. Anna Alberini, University of Maryland
Tom Brown, Technische Universität Berlin
Emanuela Colombo, Politecnico di Milano

Announcements
Prof. Dr. Hans-Martin Henning
Fraunhofer ISE

18:00 - 19:40	Emission Trading	Mobility	Energy Policy	Carbon Neutral Future	Buildings
18:00 - 18:30	Do Subsidized Renewables Suppress Energy Storages and can Carbon Pricing be a Solution? Dr. Adhurim Haxhimusa, University of Applied Sciences of the Grisons	18:00 - 18:30 Who Values Future Energy Savings? Evidence from American Drivers Dr. Lutz Sager, Georgetown University	18:00 - 18:25 Comparing environmental and energy policy options in India: Sectoral impacts and interactions Brinda Yarlagadda, PNNL-JGCRI	18:00 - 18:25 Relative role of electricity and gas in a carbon neutral future: insights from an energy system optimization model Dr. Behrang Shirizadeh, CIRED	18:00 - 18:25 Deep decarbonisation of buildings energy services through demand and supply transformations in a 1.5°C scenario Antoine Levesque, Potsdam Institute for Climate Impact
		18:35 - 19:05			

18:35 - 19:05 Alternative carbon price trajectories can avoid excessive carbon removal Dr. Jessica Strefler, Potsdam Institute for Climate Impact Research	The Influence of Public Charging Infrastructure Deployment and Other Socio-Economic Factors on Electric Vehicle Adoption in France Bassem Haidar, CentraleSupélec	18:25 - 18:50 The EU green RD&D strategy for the Paris agreement target Dr. Lara Aleluia Reis, RFF-CMCC EIEE	18:25 - 18:50 A multi-objective optimisation approach to explore decarbonisation pathways in a dynamic policy context Chryso Sotiriou	Research 18:25 - 18:50 U.S. residential heat pumps: the private cost, public benefit, and strategic options for pushing adoption rates beyond 32% Dr. Thomas Deetjen, University of Texas
19:10 - 19:40 Avoided Emissions Permanence Prof. Alexander Golub, American University	19:10 - 19:40 Addressing Electric-Vehicle Range Anxiety In Urban And Rural Areas Bassem Haidar, CentraleSupélec	18:50 - 19:15 Tightening the EU 2030 targets in accordance with the EU Green Deal: Impacts of different splits to ETS and non-ETS sectors Dr. Robert Pietzcker, Potsdam Institute for Climate Impact Research	18:50 - 19:15 Assessing global climate change mitigation scenarios from a power system perspective using a novel multi-model framework Maarten Brinkerink, University College Cork	18:50 - 19:15 Estimating energy requirements for thermal comfort in the European Union at individual building level Nikola Milojevic-Dupont, Mercator Research Institute on Global Commons and Climate Change
		19:15 - 19:40 Policy implications of China Coal Power Plants for 2060 Carbon Neutrality Target Mingjian Yin	19:15 - 19:40 How uncertainty in technology costs and carbon dioxide removal availability affect climate mitigation pathways Anastasis Giannousakis, PIK - Potsdam Institute for Climate Impact Research	19:15 - 19:40 Long term, cross-regional effects of building insulation policies and socio-economic trends Dr. Giacomo Marangoni, Politecnico di Milano / RFF-CMCC European Institute on Economics and the Environment

Thursday, 17.06.2021

13:00 - 14:40	Energy and Household	Carbon Neutral Future	Impact Assessment	Energy Investments
13:00 - 13:25	Distributional effects of carbon pricing when considering household heterogeneity: An EASI application for Austria Anna Eisner, Joanneum Research Forschungsgesellschaft mbH	13:00 - 13:25 Roadmap for China's 2060 Carbon Neutrality Pledge Dr. Junling Liu, School of Economics and Management, Harbin Institute of Technology (Shenzhen)	13:00 - 13:20 Beyond aggregated damage functions in an integrated assessment model Koji Tokimatsu, Tokyo Institute of Technology	13:00 - 13:25 Climate Finance and Emission Reductions: What Do the Last Twenty Years Tell Us? Dr. Claire Gavard, ZEW Mannheim
13:25 - 13:50	The effect of providing monetary information on energy savings for household appliances: a field trial in Spain Dr. Amaia de Ayala, University of the Basque Country (UPV/EHU) and Basque Centre for Climate Change (BC3)	13:25 - 13:50 Deep decarbonization of integrated power grid of eastern South Asia considering hydrogen and CCS technology Dr. Khem Gyanwali, Tribhuvan University, Nepal	13:20 - 13:40 Within-country inequality and climate change - A model for IAMs with an application to Brazil and France Dr. Johannes Emmerling, RFF-CMCC European Institute on Economics and the Environment	13:25 - 13:50 Patent Protection and the Transition to Clean Technology Dr. Isabel Hovdahl, NNH Norwegian School of Economics
13:50 - 14:15	Households' energy demand and the effects of carbon pricing in Italy Luciano Lavecchia, Banca d'Italia	13:50 - 14:15 What role of natural gas in Russia's decarbonized future? Dr. Olga Garanina, Graduate School of Management, St. Petersburg University	13:40 - 14:00 Climate policy accelerates structural changes in energy employment Aman Malik, Potsdam Institute for Climate Impact Research	13:50 - 14:15 Population Growth and the Trade-off between Green and Brown Expansion of Electricity Supply in Developing Countries: A Spatial Model and Evidence for Indonesia Dr. Peter Mulder, TNO Energy Transition Studies
14:15 - 14:40	Emission distribution and incidence of national mitigation policies among households in Austria Stefan Nabernegg, Wegener Center, University of Graz	14:15 - 14:40 Sustainable strategies and low emission pathways in Small Island Developing States: a cost-optimization approach for the integration of renewables in the Republic of Mauritius Anna Genave, University of Réunion	14:00 - 14:20 Accounting for the the benefits of mitigation in net zero emission pathways Dr. Laurent Drouet, RFF-CMCC EIEE European Institute	14:15 - 14:40 Energy system developments and investments in the decisive decade for Paris Agreement targets Dr. Christoph Bertram, Potsdam-Institute for Climate Impact Research
			14:20 - 14:40 The multi-level economic impacts of deep decarbonization strategies for the energy system Gaëlle Le Treut, CIRED	