

# The role of ‘behavioural aspects’ for reaching net zero emissions by 2050

IEA CERT thematic discussion

Virtual meeting on 16 February (13h00-16h00)

International  
Energy Agency

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## Context

Since November 2019, the IEA's Committee on Research and Technology (CERT) holds thematic discussions focussing on relevant R&D and technology topics. The objective is to provide a forum for CERT delegates to exchange experience with peers and raise knowledge among IEA family country members. The discussions also provide an opportunity for greater dialogue between CERT members and the Technology Collaboration Programme under the IEA. Past CERT thematic discussion topics have included hydrogen, digitalisation as a driver for energy efficiency, Covid-19's impact on RD&D priorities, and governments' approaches to sustainable recovery.

The CERT thematic discussion in February 2021 will focus on the role of behavioural aspects for governments' ambitions to reach net zero emissions by 2050. The webinar will look at this topic from three different angles: policy best practices, the role for citizens in supporting clean energy transitions, and behavioural aspects in energy modelling. Each session will start with presentations from three leading experts followed by a Q&A session.

The main goal of the CERT thematic discussion is to give governments an overview of the chosen topic, an opportunity to exchange best practices and current priorities, and to deep-dive into certain examples of ongoing research programmes and projects. The preparation of this CERT thematic discussion is led by Switzerland with support from the IEA Secretariat and the Experts' Group on R&D Priority-Setting and Evaluation (EGRD).

The CERT co-ordinates and promotes the development, demonstration and deployment of technologies to meet challenges in the energy sector. Experts' groups such as the EGRD are also created under the CERT. EGRD is an informal advisory group under CERT with the role of supporting CERT delegates with advice on R&D priority-setting and the linkage to governmental policy objectives, methods and approaches for evaluation of R&D activities, and understanding of emerging and systematic R&D topics.

Please register [at this link](#) to participate in the webinar.

Tuesday 16 February	
13h00	<b>Opening and scene-setting remarks</b> <ul style="list-style-type: none"> <li>- Mechthild Wörsdörfer, Director, IEA</li> <li>- Anne-Kathrin Faust, Swiss Federal Office of Energy, Switzerland</li> <li>- Birte Holst Jørgensen, Chair, EGRD</li> </ul>
13h15	<b>Session 1: How to design policies that can drive behavioural change and public engagement and acceptance</b> <p>This session focuses on lessons learned from policies designed to drive behavioural change in societies for reducing greenhouse gas emissions. It will in particular look at how governments have mobilised support for these policies and be looking at common denominators behind policy successes and failures.</p> <p><u>Moderator</u> Herbert Greisberger, Executive Director, Energy and Environmental Agency, Austria</p> <p><u>Speakers</u></p> <ul style="list-style-type: none"> <li>- <i>As behaviour-change practitioners, how should we think about public acceptance?</i>, Toby Park, Principal Advisor, UK Insight team, United Kingdom</li> <li>- <i>Building broad community consensus for climate action</i>, April M. Salas, Executive Director, Revers Center for Energy, Tuck School of Business at Dartmouth College, United States</li> <li>- <i>Inclusive processes for increased behavioural compliance</i>, Lars Klüver, Director, Danish Board of Technology, Denmark</li> </ul>
14h10	<b>Session 2: The role of citizens and communities in clean energy transitions</b> <p>This session focuses on the thematic area of behavioural change in the context of governments' efforts to accelerate the clean energy transition. It will discuss the role of the citizens and communities in deep mitigation scenarios and their potential in relation to governments and industry stakeholders for driving change. The session will look at lessons learned from policies and activities that encourage citizens to use energy more efficiently.</p> <p><u>Moderator</u> Johannes Tambornino, Head of Energy Strategies and Systems Analysis, Project Management Jülich, Germany (EGRD vice-chair)</p> <p><u>Speakers</u></p> <ul style="list-style-type: none"> <li>- <i>Supporting transformative change: a social practice-based approach to energy sufficiency</i>, Marlyne Sahakian, Professor, University of Geneva, Switzerland</li> <li>- <i>Energy sufficiency and potentials for behavioural change: a Swiss study</i>, Roman Seidl, Senior Researcher, University of Hannover, Germany</li> <li>- <i>Experiences from the Research Centre FME</i>, Tor Håkon Jackson Indreberg, Senior Research Fellow, Fridtjof Nansen Institute, Norway</li> </ul>

15h05	<b>Session 3: How best to quantify and model ‘behavioural change’ in climate mitigation scenarios?</b>
	<p>This session focuses on approaches to accessing better data and to modeling people’s behaviour in the context of deep decarbonisation pathways. It will look at lessons learned from social sciences and how to integrate these into technology adoption and social diffusion modelling.</p> <p><u>Moderator</u></p> <p>Atsushi Kurusawa, Research Director, Institute of Applied Energy (IAE), Japan (EGRD vice-chair)</p> <p><u>Speakers</u></p> <ul style="list-style-type: none"> <li>- <i>Impact of “Setsuden” - data survey on the potential for Japan’s electricity savings by behavioural change</i>, Naoko Doi, Senior Economist / Group Manager, The Institute for Energy Economics Japan (IEEJ), Japan</li> <li>- <i>Modelling Human Behaviour in Climate Mitigation Scenarios</i>, Charlie Wilson, Professor of Energy and Climate Change, Tyndall Centre for Climate Change Research, United Kingdom</li> <li>- <i>Experience with modeling behavioural change in Integrated Assessment Models</i>, Bas van Ruijven, Research Group Leader Sustainable Service Systems, IIASA, Austria</li> </ul>
16h00	<b>Concluding remarks</b>
	Birte Holst Jorgensen, EGRD Chair

## **Presentation speakers and moderators**

**Mechthild Wörsdörfer** joined the IEA on 1 October 2018 as Director of Sustainability, Technology and Outlooks (STO). Ms Wörsdörfer plans and co-ordinates the IEA's work on energy sustainability, encompassing clean energy technologies and climate change policy. Previously, Mechthild held several senior management positions in the European Commission, where she coordinated the work on the 2030 Energy and Climate Framework, the Clean Energy Package and the 2050 Energy Roadmap. She had been involved with the IEA for a number of years as IEA Governing Board Representative for the EU, and served in the Cabinet of Commissioners, in charge of industry, competitiveness, trade and digital economy.

**Anne-Kathrin Faust**, Anne-Kathrin Faust is a market regulation specialist at the Swiss Federal Office of Energy (SFOE). She has studied business administration, economics and international finance at the University of Geneva and holds a PhD from the Ecole Polytechnique Fédérale de Lausanne (EPFL). At SFOE, Anne-Kathrin heads the Energy-Economy-Society research programme that supports policy relevant socio-economic research projects. She further supervises the model based economic impact assessment of energy policy measures.

**Dr. Birte Holst Jørgensen**, Technical University of Denmark, is Chair of the IEA EGRD. She is an experienced researcher and practitioner in the field of new energy technologies and systems, where she has specialized in energy R&D strategies and technology policies at the national, European and international levels. She is responsible for scientific advice at DTU Wind Energy, including technical assistance to the Danish Energy Agency's Global Cooperation programme (offshore wind and RE integration). She is also Principal Coordinator of sustainable energy at the Sino-Danish Centre for Research and Education. Birte holds a PhD in Political Science (University of Copenhagen) and an MSc in Business Economics (Copenhagen Business School).

**Dr. Herbert Greisberger** (moderator) is the Managing Director of the Lower Austrian Energy and Environment Agency (OGUT), where his projects focus on energy and innovation with a special focus on sustainable buildings and renewables. Dr. Greisberger is also Scientific Manager of the Austrian Futurelab focusing on long-term developments and their consequences for society. He was formerly the Senior Scientist on R&D, innovation and energy technologies for the Austrian Energy Agency and the Austrian Society for Environment and Technology. He is also a Lecturer at the Institute for Research and Education focusing on energy economy and energy management. Dr Greisberger holds a PhD (University of Stuttgart) and studied economics (Universities of Graz and Vienna).

**Toby Park** leads the energy and sustainability work at BIT, overseeing their work on energy and water conservation, sustainable transport, food and agriculture, wildlife, and the circular economy. Recent projects include developing and testing policy ideas to promote the uptake of electric vehicles for the Department for Transport; helping a global conservation charity reduce demand for illegal wildlife products; and providing strategic support across the UK government on behaviour-change principles to achieve net zero emissions. Working with governments, charities and impact-oriented commercial partners, his expertise lies in the behavioural science of pro-environmental behaviours, and its application to policy, service-design and communications. Toby holds degrees in Psychology and Engineering.

**April M. Salas** is Hanover NH's Chief Sustainability Officer, and Executive Director of the Revers Center for Energy at Dartmouth's Tuck School of Business. She brings nearly two decades of public and private sector experience in energy finance, power delivery, energy reliability, markets analysis, sustainability, and new technology integration. The Revers Center - one of 6 research centers at Tuck - helps build pathways of learning and connection to industry for MBA students, to include advising on climate, sustainability, and clean energy related projects with companies leading the charge on sustainable innovation. Additionally, April co-teaches a course in Morocco focused on energy innovation in frontier

economies, leads consulting projects in Singapore and Australia, and works domestically with companies and students wishing to explore all aspects of sustainability, climate, and clean energy. Prior to Tuck, April started her career in energy finance consulting in mid-/downstream oil and gas. Mrs. Salas has held various senior positions within the US Department of Energy in power delivery, energy reliability and systems analysis. Most notably, Mrs. Salas directed the White House's Quadrennial Energy Review Task Force Secretariat, the State Energy Assurance Program – working to monitor and upgrade the US electric, petroleum, and natural gas infrastructure - and led Planning and Analysis for all federal energy emergency response events with FEMA. Globally, Mrs. Salas founded the global energy security advisory program, supporting DOE's country-to-country engagements, as well as, US government support to international energy emergency response. Mrs. Salas represented US government energy security interests at NATO, led engagements in Colombia, Haiti, Iraq, and within the EU. Today's April's work focuses on helping Hanover achieve its 100% renewable energy targets by 2050, and working with companies on re-envisioning their role in climate mitigation. April holds an MBA from Cornell University's Johnson School; two Masters degrees, in International Security and Economics, with a focus on energy poverty and development; and her BA from the College of William and Mary.

**Lars Klüver** is director at the Danish Board of Technology Foundation (Fonden Teknologirådet, DBT). He has more than 30 years of experience in parliamentary policy advice, technology assessment (TA), foresight and Responsible Research and Innovation. His main focus has been on providing policy advice and solutions to societal challenges through engagement involving representatives from societal groups, including experts, stakeholders, politicians and citizens. The DBT is a front-runner within policy analysis that involves interactivity and participation, and the toolbox of the DBT includes a wide range of methods, which have been developed or adapted by the Board. Lars Klüver has led many policy projects on energy and climate and he was the initiator of the "World Wide Views" initiative – a global citizen participation method, which has engaged more than 80 countries on climate and energy policies. He is at the moment facilitating the Danish Citizen Assembly on Climate for the Danish Parliament and government, and leading an EU project that develops eLearning know-how on energy conscious consumption [www.Act4ECO.eu](http://www.Act4ECO.eu).

**Dr. Johannes Tambornino** (moderator) is the head of the Energy Strategies and Systems Analysis Unit at Project Management Jülich, where he is responsible for the R&D program on energy systems analysis funded by the German Ministry of Economic Affairs and Energy. He is leading a group that covers a broad range of topics along the energy innovation chain and currently serves as the German representative in the IEA Experts' Group on R&D Priority Setting and Innovation. He holds a PhD in Mathematical Physics and has actively pursued research in quantum gravity and cosmology at different laboratories in Canada, France and Germany before changing fields and devoting his time to energy-related issues.

**Marlyne Sahakian** is Assistant Professor of Sociology at the University of Geneva, where she brings a sociological lens to consumption studies. Her research interest is in understanding resource consumption patterns and practices, in relation to environmental promotion, social equity, and transformations to more sustainable societies. Her inter- and trans-disciplinary research projects focus on food consumption and energy usage in urban spaces, as well as societal wellbeing, and writes regularly for journals on these themes. Her recent books include *Keeping Cool in Southeast Asia: energy consumption and urban air-conditioning* (Palgrave Macmillan, 2014) and an edited volume *Food Consumption in the City: Practices and patterns in urban Asia and the Pacific* (Routledge Studies in Food, Society & the Environment, 2016). She gained a PhD in Development Studies from the Graduate Institute in 2011, and co-founded SCORAI Europe in 2012 – a network in the field of sustainable consumption research and action, and the ENOUGH network on energy sufficiency in 2019. She is also a board member of the European Sociological Association's Research Network on consumption.

**Dr. Roman Seidl**, industrial clerk and graduate psychologist (with doctorate). Post-Doc and senior assistant at the Transdisciplinarity Laboratory of ETH Zurich (TdLab) from 2009 – 2017. Here he was particularly concerned with socio-technical systems and the social relation to environmental risks, at the interfaces between disciplines and between science and practice. One focus was the work on the Swiss process for deep disposal of radioactive waste another was sustainable behavior. Roman joined the the Products & Material Flows department of the Öko-Institut in Freiburg in January 2018. There he worked on the topics of sustainable consumption and the final disposal of nuclear waste. Currently he again is engaged in the nuclear waste topic and works for the Institute of Radioecology and Radiation Protection at the Leibniz University Hannover.

**Dr. Tor Håkon Jackson Inderberg** is Senior Research Fellow at the Fridtjof Nansen Institute and Associate Professor 2 at the University of Oslo. He successfully defended his PhD within political science at the University of Oslo in 2012, with a focus on the changing electricity sector and climate change adaptation. As a political scientist he works on energy and climate policy, policy change, and energy transitions. He has led full or parts of more than ten research projects. Currently he is in the Leadership Group of the Include Research Centre for Socially Inclusive Energy Transitions, and leads the project Land-use change and changing windpower governance: Process, Practices and Pressure (WINDGOV). His primary research interests relate to developing the understanding of policy developments and change within climate and energy policy, interactions between groups, individuals and organisation and legal regulations, and the political feasibility of low-carbon transition pathways. He works with a wide set of jurisdictions, including the Nordic countries, EU, Germany, United Kingdom, as well as Australia and New Zealand. Jackson Inderberg has published 35 scholarly articles on these topics in high-ranking international journals, including Energy Research & Social Science, Energy Policy, Environmental Politics, Global Environmental Politics, Journal of Cleaner Production, and Renewable and Sustainable Energy Reviews. He chief-edited a book on climate change adaptation in 2015.

**Dr. Atsushi Kurosawa** (moderator) is Director, Global Environmental Program, Research and Development Division, Institute of Applied Energy (IAE), where he has led many energy-and environment related projects. Currently his research focuses on integrated assessments of global climate change and energy R&D strategy through the integrated assessment model GRAPE and TIMES Japan model. He has held visiting and fellowship positions at many universities and institutes including Stanford University, the Research Institute of Innovative Technology for the Earth, Kyushu University, Tokyo University of Agriculture and Technology, Japan Science and Technology Agency, New Energy and Industrial Technology Development Organization, and University of Tokyo. He holds a PhD in Electrical Engineering (University of Tokyo), a MSc in Nuclear Engineering (Tokyo Institute of Technology) and a BSc in Nuclear Engineering (Nagoya University).

**Dr. Naoko Doi**, a Japanese national, is currently serving as the group manager of the Energy Efficiency Group, Climate Change and Energy Efficiency Unit, the Institute of Energy Economics Japan. She had received a Ph.D. degree from Kyoto University in Global Environmental Studies. And, she had received a master's degree in Applied Economics from Doshisha University. Dr. Doi specializes in energy efficiency and conservation analysis with the focuses on the residential, commercial and transport sectors. She has published reports and articles in those areas. Since 2013 up to now, she has been leading research projects related to the analysis of the residential/commercial sectors with the focuses on energy savings potential analysis, policies and practices – including behavioural aspects, and smart community development in Japan. As a project leader, she also has published research reports and papers on the urban transport energy use in Asia with the focuses on how to facilitate shifts away from passenger vehicle dependence and reduce traffic congestion. Currently, she is leading a study project on the analysis of the role of zero energy buildings for Japan's path towards 2050 carbon neutral.



**Dr. Charlie Wilson** is a researcher in the Tyndall Centre for Climate Change Research (UK) for which he co-leads the Accelerating Social Transitions research theme, and a Reader in the School of Environmental Sciences at the University of East Anglia. He is also a Visiting Research Scholar at the International Institute for Applied Systems Analysis in Vienna. Charlie's research lies at the intersection between innovation, behaviour and policy in the field of energy and climate change mitigation, working at both a systems level and a micro level.

[https://people.uea.ac.uk/charlie\\_wilson/info?type=researchinterests](https://people.uea.ac.uk/charlie_wilson/info?type=researchinterests)

**Bas van Ruijven** is group leader of the Sustainable Service Systems (S3) group in the Energy, Climate, and Environment (ECE) program at IIASA and co-chair of the International Committee On New Integrated Climate change assessment Scenarios (ICONICS). Between 2011 and 2017, Dr. van Ruijven worked as Project Scientist with the Integrated Assessment Modeling group at the National Center for Atmospheric Research (NCAR) in Boulder, CO, USA and was Research Scientist at Boston University's Pardee Center for the Study of the Longer-Range Future. Before 2011, Dr. van Ruijven was Policy Researcher with the IMAGE IAM group at the Netherlands Environmental Assessment Agency (PBL). Dr. van Ruijven's research interests cover a wide range of topics, from energy and technology scenarios to energy transitions in developing countries and the impacts of climate change. Current projects include global analysis of the role of electricity interconnections in greenhouse gas mitigation, model development to simulate building energy use, exploring hard and soft constraints to mitigation scenarios and guidance of mitigation scenarios for financial sector analysts.