



Workshop Agenda

Decarbonizing The World For A Better Future

(Close-door event on the Chatham House rule, By Invitation-only)

- Venue:** Carlton Hotel Singapore, 76 Bras Basah Rd, Singapore 189558
- Date:** 3-4 December 2024, Tuesday and Wednesday
- Format:** Each session will begin with research presentations by selected participants followed by a roundtable discussion to develop new insights in relevant areas and identify possible future research. Besides the leading discussants, all other participants are free to discuss relevant issues about energy transition and decarbonization in respective sector.
- Motivation:** In a bid to mitigate climate change, a global energy transition is underway as economies attempt to transform their energy sectors from a fossil-based one to zero-carbon by the second half of this century. This is to be achieved through government strategies and policies, as well as the availability of low carbon technologies, and subject to the underlying institutional, political, economic and other factors that promote or constrain progress and the path taken. This workshop examines and analyses decarbonization policies in various sectors, including power sector, industrial sector and technology sector. In addition, geopolitics and international relations are re-shaping the world, which also affects energy transition. This workshop discusses this critical issue as well.
- This workshop is an invitation-only event with the application of Chatham House Rule. There will be no media presence.

Day 1 – 3 December 2024

Registration 9:30 am – 10:00 am

SESSION 1 10:00 am – 10:40 am

Scene setting

10:00 am – 10:10 am Welcome and Introduction

Welcome remarks and introduction by Dr. Yao Lixia,
Energy Studies Institute (ESI), NUS

Introducing Participants:

- Self-introduction of all participants

10:10 am – 10:40 am Scene-setting presentation

Singapore's energy policy and energy transition strategy

Presenter: Mr. Ng Zu Xiang, ESI, NUS

Coffee Break 10:40 am – 11:00 am

SESSION 2 11:00 am – 12:00 am

Power sector decarbonization policies

The energy transition is more than just an energy issue – it impacts multiple sectors including transport, industrial, power and building sectors among other things. Increased production of energy via renewable energy offers a chance to electrify many sectors currently reliant on fossil fuels. This session discusses power sector decarbonization issues, such as phasing out polluting types of electricity generation and replacing them with a new mix of low-carbon generation options. Power sector decarbonization policies in respective countries will be discussed.

Moderator: Dr. Roger Fouquet, Senior Research Fellow, ESI

Lead presenters:

- Professor Xu Yuan, Chinese University of Hong Kong
- Ms. Laura Schwartz, Verisk Maplecroft

Lunch 12:00 pm – 1:30 pm

Session 3 1:30 pm – 3:00 pm

Industrial sector decarbonization policies

Industrial decarbonization is critical to achieving net-zero emission targets. Effective decarbonization pathways require action from both industry stakeholders and governments to decarbonize this 'hard to abate' sector. This session will discuss decarbonization policies of this pivotal sector.

Moderator: Dr. Son Minhee, Research Fellow, ESI

Lead presenters:

- Mr. Zachary Byrum, World Resource Institute, Washington D.C;
- Dr. Boram Kim, Green Energy Strategy Institute, South Korea
- Mr. Duttatreya Das, Ember, India

Coffee Break 3:00 pm – 3:30 pm

Session 4 3:30 pm – 5:00 pm

Technologies for decarbonization

Technologies for decarbonization are still expensive and not feasible in economic sense. This session discusses the decarbonisation technologies, their challenges and potential solutions.

Moderator: Mr. HO Hiang Kwee, Adjunct Senior Research Fellow, ESI

Lead presenters:

- Professor Benjamin-Craig Mclellan, Kyoto University
- Ms. Anne-Sophie Corbeau, Columbia University (join online)
- Dr. Alvin Chew, S. Rajaratnam School of International Studies, NTU

5:00 pm Group Photo

6:00pm Dinner

Meet at the hotel lobby and leave for dinner

Day 2 – 4 December 2024

Registration 8:30 am – 9:00 am

SESSION 5 9:00 am – 10:30 am

Geopolitics and international relations – how do they reshape energy transition?

As the world moves towards a low-carbon based energy system, geopolitical competition and international relations are spurring the clean energy transition. During this process, however, geopolitics may both accelerate and hinder the global energy transition. This session will discuss the geopolitical map and how it has been re-shaping energy transition.

Moderator: Mr LEOW Foon Lee, Visiting Senior Research Fellow, ESI

Lead presenters:

- Professor Eunjung Lim, Kongju National University, South Korea
- Professor Sonia CHIKH M'HAMED, ESSCA School of Management, France
- Dr. Mirza Sadaqat Huda, ISEAS–Yusof Ishak Institute

Coffee Break 10:30 pm – 11:00 pm

Session 6 11:00 pm – 12:30 pm

Roundtable discussion: Implications and lessons for Singapore

All participants are welcome to give: 1) policy recommendations and implications; and 2) suggestions for future research

Lunch 12:30 pm – 2:00 pm

PARTICIPANTS



MR. ZU XIANG, NG

Research Assistant, Energy Studies Institute, National University of Singapore

Zu Xiang is a research assistant at the Energy Studies Institute. His current work is focused on decarbonisation and net zero carbon strategies of key economies, including Malaysia, where he examines how different sectors like power generation and heavy industries are reducing their carbon footprints. He graduated from the National University of Singapore with a Bachelor of Environmental Studies and has conducted policy research with the International Association of Labour Inspection. Prior to ESI, he was a research assistant under the Asian School of the Environment at Nanyang Technological University, where he studied the effectiveness of grievance mechanisms in addressing sustainability issues in the palm oil sector. With his interdisciplinary background, Zu Xiang is interested in exploring environmental political economy and human-nature relations to confront how we might live responsibly in an age of deepening climate crisis.

DR. YUAN, XU

Associate Professor, The Chinese University of Hong Kong

Yuan Xu is an associate professor in the Department of Geography and Resource Management and leads the Environmental Policy and Governance Programme at the Institute of Environment, Energy and Sustainability as well as the Center for Urban Innovations at the Hong Kong Institute of Asia-Pacific Studies, the Chinese University of Hong Kong. He has published widely on energy and environmental policy, governance and strategy, and technological and industrial development, covering fossil fuels and renewables.



He has been the President of the Professional Association for China's Environment (PACE) since 2022. Before joining CUHK in August 2010, he received a Ph.D. degree in public policy from the Woodrow Wilson School of Public and International Affairs, Princeton University and was a postdoctoral research associate in the Industrial Performance Center, Massachusetts Institute of Technology. He also holds an M.S. degree in climatology, a B.S. degree in atmospheric sciences and

a bachelor's degree in economics, all from Peking University.



MS. LAURA, SCHWARTZ

Senior Asia Analyst, Verisk Maplecroft

Laura Schwartz is a Senior Asia Analyst focusing on Southeast Asia, ESG and Geopolitics in Verisk Maplecroft's Asia team, based in Singapore. Laura came to Verisk Maplecroft from Washington, DC, where she served as Senior External Relations Officer for the North American Representative Office of the Asian Development Bank (ADB). In this role, Laura supported efforts to mobilize financing and support for ADB's sustainable development work across Asia and the Pacific.

Laura previously worked in consulting and research roles centered on the intersection of international affairs and business, with a particular focus on energy and sustainability. This included roles at International Technology and Trade Associates, Albright Stonebridge Group, Crumpton Group Intelligence, and the National Bureau of Asian Research. Laura holds a Master of Science in Foreign Service from Georgetown University, with a concentration in Global Business and Finance. She also holds a BA in Government and East Asian Studies from Cornell University.

MR. ZACHARY, BYRUM

Associate, World Resources Institute

Zachary Byrum is an Associate in WRI's U.S. Climate Program on the Carbon Removal and Industrial Innovation team, where he provides policy and technology analyses. His industrial decarbonization work focuses on how to achieve large-scale GHG reductions in the chemical sector, and other industries, using key policies that advance key technologies like clean hydrogen, non-fossil feedstocks, CCUS, and clean heat. He also holds expertise in technological carbon removal (e.g. direct air capture, mineralization) and is a facilitating member of the Industrial Innovation Initiative (i3).



Prior to WRI, Zach was a researcher in the Carbon Management Research Initiative at the Center on Global Energy Policy. In the preceding years, he served as White House Intern in the National Economic Council under the Obama Administration and then an Assistant Analyst at the Congressional Budget Office. Zach holds a Master of Public Administration in Environmental Science and Policy from

the School of International and Public Affairs at Columbia University and a B.A. in Economics and Political Science from Goucher College.



DR. BORAM, KIM

Senior Researcher, Green Energy Strategy Institute (GESI)

Boram Kim is a senior researcher at Green Energy Strategy Institute (GESI), a South Korean think tank focused on advancing the renewable-based energy transition through evidence-based policy recommendations and transparent analysis. At GESI, Kim's research centers on the environmental and socio-economic impacts of renewable energy system on both national and regional scales, as well as on industrial decarbonization, with particular interest in the chemical industry and resource availability.

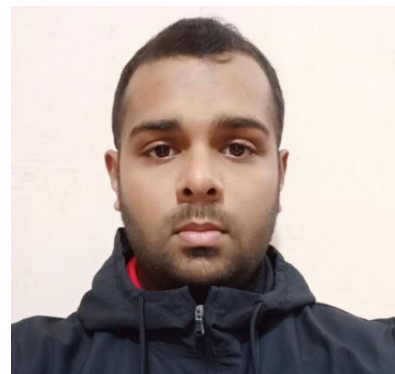
Kim earned her Ph.D. in Urban Planning (Environmental Management) from Seoul National University's Graduate School of Environmental Studies in 2023. During her studies, she led several research projects focused on renewable energy and carbon neutrality. She also holds Bachelor's and Master's degrees in Engineering from the University of Cambridge, specializing in Energy, Sustainability, and Environment, where her master's thesis explored sustainable rainwater harvesting systems in Uganda through field research. Before joining GESI, Kim worked as a research engineer at Hyundai Engineering & Construction, specializing in membrane-based desalination.

MR. DUTTATREYA, DAS

Research Analyst, Ember

Duttatreya is a research analyst and currently developing the industrial electrification research vertical at Ember. Duttatreya is also a Research Fellow at the School of Public Policy, Indian Institute of Technology (IIT) Delhi, where his doctoral thesis explores the energy transition within India's oil and gas sector.

His research specialises in technology, strategy, and policy for industrial decarbonization, with a focus on heavy industries in India. His career began as an engineer at India's national oil company, ONGC, where he contributed to corporate sustainability projects before transitioning fully into research.





DR. BENJAMIN, MCLELLAN

Professor, Kyoto University, Graduate School of Energy Science

Professor McLellan graduated from the University of Queensland with a Bachelor of Chemical Engineering and Bachelor of Arts, then a PhD in Chemical Engineering. He worked at the Sustainable Minerals Institute (also at UQ) until 2010. He has been at Kyoto University since then. His research currently focuses on Just Transitions and Critical Minerals, largely within the context of energy systems. Notably, he has a long research interest in the hydrogen economy and its potential sustainability implications.

MS. ANNE-SOPHIE, CORBEAU

Global Research Scholar, Center on Global Energy Policy

Anne-Sophie Corbeau is a Global Research Scholar at the Center on Global Energy Policy at Columbia University and a visiting professor at Sciences Po. She leads the Center's research on hydrogen and natural gas. Anne-Sophie has around 25 years of experience in the energy industry and is a recognized expert on natural gas and hydrogen. She is the author of many publications focusing on gas, LNG markets, hydrogen, Asia, China, India and Africa, including the book "LNG markets in transition: the great reconfiguration". She is also the co-chair of Gastech's governing body.



Prior to joining the Center, Mrs. Corbeau was a senior Leader and head of gas analysis at BP, where she was responsible for advising the Leadership Team on gas market developments and long term pricing assumptions. She also served as a member of BP France's Comex (board). Before joining bp, she was a Research Fellow at KAPSARC in Riyadh where she set up the natural gas program. She also worked for the International Energy

Agency where she managed the research on global gas markets, and for IHS CERA.



DR. ALVIN, CHEW

Senior Fellow, S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University

Alvin is a Senior Fellow at the Executive Deputy Chairman's Office of RSIS, NTU. His research covers broadly into future energy initiatives, with a particular focus on nuclear energy. He also teaches a module 'Strategic Industries and Technology Planning' under the school's MSc course. Alvin also had experiences in the government sector as well as working alongside international organisation

DR. EUNJUNG, LIM

Professor, Kongju National University (Division of International Studies)

Eunjung Lim is a Professor at the Division of International Studies, Kongju National University (KNU). She was Vice President for International Affairs, Dean of Institute of International Language Education, and Dean of Institute of Korean Culture and Education at KNU. Her areas of specialization include international cooperation in the Indo-Pacific, comparative and global governance, and energy, nuclear, and climate change policies of East Asian countries. From May 2018 to September 2024, she served as a board member of Korea Institute of Nuclear Nonproliferation and Control (KINAC) and is currently a member of Policy Advisory Committee, the Ministry of Unification.



Before joining the KNU faculty, Dr. Lim served as an Assistant Professor at College of International Relations, Ritsumeikan University, in Kyoto, Japan. She also taught at several universities in the United States and Korea, including Johns Hopkins University, Yonsei University, and Korea University. She has been a researcher and a visiting fellow at academic institutes including the Center for Contemporary Korean Studies at Interfaculty Initiative in Information Studies at the University of Tokyo, the Institute of Japanese Studies at Seoul

National University, the Institute of Japan Studies at Kookmin University, and Institute of Energy Economics, Japan.



DR. SONIA, CHIKH M'HAMED

Associate Professor, ESSCA School of Management

Sonia is an Associate Professor of Strategy and International Management at ESSCA School of Management in Angers, France, and a visiting researcher at Potsdam Institute for Climate Impact Research (PIK). She is also leading the EU-Asia Relations Network at the EU-Asia Institute and a senior advisor at Future Navigators Hub. From 2018-2021 she worked in China as an Associate Professor and was in charge of the research coordination of the ESSCA Shanghai campus. Between 2014-2018 she was appointed at Renmin University of China as an Associate Professor of Management Control, where she received the Teaching Excellence Award in 2016.

Her research focuses on sustainability transitions, corporate social responsibility, and digital transformation, with significant involvement in EU-Asia relations and climate policy. Between 2020 and 2022, she conducted a research project on the European Green Deal-Perspectives for EU-Asia Relationship, funded by the German Konrad-Adenauer-Stiftung in Berlin. She has contributed to various academic conferences, publications, and collaborative research networks.

DR. MIRZA SADAQAT, HUDA

Lead Researcher, Climate Change in Southeast Asia Programme, ISEAS-Yusof Ishak Institute

Mirza is a Lead Researcher at the Climate Change in Southeast Asia Programme (CCSEAP) of the ISEAS-Yusof Ishak Institute. He contributes to CCSEAP projects on energy, climate change and natural resource governance in Southeast Asia. In 2023, Mirza led one of the first independent studies on the Laos-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP), which used more than 30 interviews with policymakers and GIS mapping to examine the implications of the 'pathfinder' project on the ASEAN Power Grid. Prior to joining ISEAS, he worked on energy transition issues in Central Asia and South Asia at the Lee Kuan Yew School of Public Policy, the Organization



for Security and Co-operation in Europe (OSCE) and the Nanyang Technological University. Mirza received the 2020-2021 Clean EDGE Asia Fellowship sponsored by the National Bureau of Asian Research and the Bureau of Energy Resources at the U.S. Department of State; and 2021-2022 Asian Development Bank and CAREC Institute Visiting Fellowship.