



Problems and Solutions for Decarbonisation and Energy Transition: a Cross-National Dialogue

December 7-9, 2021

FREE, via Zoom

FULL PROGRAM (LATEST - 3/12/2021)

Organised by

- The [Climate Justice Research Centre](#) at the University of Technology Sydney;
- The [Institute for Advanced Sustainability Studies](#) (Potsdam);
- The [Climate and Energy Policy Research Lab](#) at the Indian Institute of Technology (Kanpur) and;
- [Global Institute of Sustainability and Innovation](#) (Phoenix).

Funded by The Australian Research Council

Through both the:

- 'Future Fellow' project: *Society and climate change: A social analysis of disruptive technology* and the;
- 'Discovery' project: *Decarbonising Electricity: A Comparison in Socio-Ecological Relations*.

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EVENT DETAILS

Date

December 7-9, 2021

Zoom Login

Address: <https://utsmeet.zoom.us/j/8637645831>

Password: 345711

Same Zoom address for every session and workshop of the conference

Zoom access issues: james.goodman@uts.edu.au

Time Zones

Aus.= Australian Eastern Daylight Time

India= Indian Standard Time

Germany = Central European Time

US = Mountain Time

Recordings

Sessions will be recorded and made available via the
'Decarbonising Electricity' project website:

<https://decarbenergy.net/>

Conference Themes

This Conference brings together the latest research on energy transitions from across several countries. It involves institutes, researchers and key participants in the process of energy transition, to learn from experience and to reflect on obstacles and possibilities.

It is focused on the following five themes:

1. Socio-technical innovation, institutional change and the transition;
2. Narratives of transition: technological versus behavioural, centralised versus decentralised, market mechanisms versus direct intervention;
3. Models for transition: regulatory, community and business;
4. Putting people at centre of energy transition: communities, workers, Indigenous Peoples;
5. Visions for transition – energy justice, energy commons, energy democracy.

The Conference will gather papers for a Special Issue of the *Journal of Environmental Innovation and Societal Transitions*.

Hosted in

- Germany (IASS)
- India (IIT Kanpur)
- Australia (CJRC)
- United States (Arizona State University)

Rationale

Decarbonisation, the lowering of greenhouse gas emissions, and energy transition are among the most important social and technical challenges that humanity currently faces. These challenges mainly arise due to the increasing pressures of climate change, which is largely caused by GHG emissions, most of which arise from the burning of fossil fuels.

However, human problems exist in a social context and the difficulties of transition are not purely technical but are dramatically increased by social factors and processes. 'Modern' industrial/post-industrial society has been supported by cheap easily available fossil fuel energy. The social system has encouraged the dumping of pollution, including greenhouse gases, without much care for the ecological consequences. Economic and power structures have grown together with the social formations fashioned around this organisation and use of technology, and those structures appear to resist change, both conceptually and in terms of action; they may even resist recognition of problems. While change is happening, it is possible to question whether the change is happening fast enough, or if it is slowing real solutions and the development and use of new technologies. Similarly, old habits may remain, as when corporations install renewable energy in ways that have harmful consequences, even if those consequences are less deleterious than those that come with fossil fuels.

In addition, different narratives about the transition compete for local, national and international recognition. The technocratic narrative assumes that the transition can be managed by technological innovation and replacement of fossil fuel by green alternatives. The behavioural narrative is based on the assumption that lifestyles need to be drastically changed to accommodate the need for less energy and material consumption. Furthermore, some narratives emphasize the need for decentralized locally adapted solutions while others design centralized, global solutions. Finally, there is a debate whether changes can be implemented by market incentives (such as cap and trade) or by direct policy interventions such as setting deadlines for phasing-out coal or prohibiting combustion engines for cars. It is important to investigate how these choices embedded in different narratives impact local communities and in particular social justice and fairness.

This conference aims to specify the problems of transition with greater precision so they may be overcome, and investigate the modes of change in action, the inhibitions to change, possible solutions (from community energy to degrowth) and to gain greater understanding of examples of failed transitions as well as successful ones. Due to the interactions of so many factors: social, ecological, technological, economic, philosophical etc., unintended consequences are likely to arise and disrupt attempts at organised change and may need to be factored-in.

The conference aims to explore the following kinds of questions:

- What are the processes by which renewable energy and other forms of decarbonisation gain the widest possible sense of social, political and economic 'legitimacy' and how is that legitimacy undermined?
- In what ways do legitimacy processes work in different social contexts?
- Which of the present narratives have the power to be convincing for whom and what impacts can we expect from each with respect to effectiveness, efficiency, resilience and social justice?
- What new forms of social organisation or action, help the change?
- What are the new conceptions which help change and make that change appear imperative?
- What policies or actions can be recommended for different 'levels' of society to help the change?
- What are the specific factors inhibiting change and how can they be overcome?
- How does technology of transformation interact with other social dynamics?
- How does technology of transformation interact with other social dynamics?

This list of questions is not intended to be exhaustive: any account which considers the social dynamics of transition under climate change is welcome.

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SUMMARY PROGRAM

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1: Welcome + Implications of the Glasgow COP for Global Energy Transition

Aus. (AEDT): Dec. 7, 4-6pm. India (IST): Dec. 7, 10:30am-12:30pm. Germany (CET): Dec. 7, 6-8am. US (MT): Dec 6 10pm-12 midnight

Chair: Devleena Ghosh (UTS)

Paper: Patrick Bond (University of Johannesburg)

Panel: Dominic Boyer (Rice University); Cymene Howe (Rice University); Aarti Khosla (Climate Trends / Carbon Copy, India); Sven Teske (Institute for Sustainable Futures); Nicky Ison (World Wildlife Fund)

Organised by the Climate Justice Research Centre, University of Technology Sydney, Australia.

2: COP26 and India's Energy Transition?

Aus. (AEDT): Dec. 7, 6:30-8:30pm. India (IST): Dec. 7, 1-3pm. Germany (CET): Dec. 7, 8:30-10:30am. US (MT): Dec. 7, 12:30- 2:30am.

Chair: Pradip Swarnakar (IIT)

Panel: Kalyani Raj (All India Women's Conference); Vinuta Gopal (ASAR Social Impact); Nitin Sethi (Reporters' Collective); Kashish Shah (Institute for Energy Economics and Financial Analysis)

Organised by the Climate and Energy Policy Research Lab, Indian Institute of Technology Kanpur, India.

3: Social benefits of transition - US perspectives

Aus. (AEDT): Dec. 8, 2:30-4:30am. India (IST): Dec. 7, 9-11pm. Germany (CET): Dec. 7, 4:30- 6:30pm. US (MT): Dec. 7, 8:30-10:30am.

Chair: Sander Van Der Leeuw

Panel: Clark Miller, Sonja Klinsky, Lauren Withycombe Keeler (all at the College of Global Futures, Arizona State University), Elizabeth Monoian and Robert Ferry (Land Art Generator).

Organised by Global Institute of Sustainability and Innovation, Arizona State University, USA.

4: Community Power and Community Energy?

Aus.(AEDT): Dec. 8, 12:30-2:30pm. India (IST): Dec. 8, 7- 9am. Germany (CET): Dec. 7, 2:30- 4:30am. US (MT): Dec. 7, 6:30-8:30pm.

Chair: Linda Connor (University of Sydney)

Panel: Jarra Hicks (Community Power Agency); Gopal Sarangi (The Energy Research Institute); Heidi Norman (UTS); Jon Marshall (UTS); Stuart Rosewarne (University of Sydney)

Organised by the Climate Justice Research Centre, University of Technology Sydney, Australia.

5: Just Transitions, beyond fossil fuels

Aus. (AEDT): Dec. 8, 3- 5pm. India (IST): Dec. 8, 9:30am-11:30am. Germany (CET): Dec. 8, 5- 7am. US (MT): Dec. 7, 9-11pm.

Chair: Gareth Bryant, University of Sydney

Panel: Srestha Banerjee (iForest), Ashwini Swain (CPR), Chris Briggs (ISF), Pradip Swarnakar (IIT), Warwick Jordan (Hunter Jobs Alliance), Souvik Bhattacharya (TERI).

Organised by the Climate and Energy Policy Research Lab, Indian Institute of Technology Kanpur, India.

6: Transition from Coal and Populism

Aus.(AEDT): Dec. 8, 8- 10pm. India (IST): Dec. 8, 2:30- 4:30pm. Germany (CET): Dec 8, 10am to Noon. US (MT): Dec. 7, 2- 4am.

Chair: Johannes Staemmler (IASS)

Panel: Amanda Cahill (CEO, The Next Economy), Tom Maltby (Kings College London), Tobias Haas (IASS), James Goodman (UTS)

Organised by the Institute of Advanced Sustainability Studies, Potsdam, Germany.

7: Anchors of Identity: The Search for Meaning in Times of Transformations

Aus.(AEDT): Dec. 8, 10.30pm- midnight. India (IST): Dec 8, 5.00pm- 6.30pm, Germany (CET): Dec 8, 12.30 -2.00pm, US (MT): Dec. 7, 4:30- 6:00am

Chair: Linda Connor

Paper: Ortwin Renn (IASS)

Discussant: Katja Muller (Martin-Luther U/IASS) and Jon Marshall (UTS)

Organised by the Institute of Advanced Sustainability Studies, Potsdam, Germany.

8: Generating Legitimacy for Renewable Energy

Aus.(AEDT): Dec. 9, 2- 4am. India (IST): Dec. 8, 8:30pm-10:30pm. Germany (CET): Dec. 8, 4- 6pm. US (MT): Dec. 8, 8-10am.

Chair: Katja Müller (Martin-Luther U)

Panel: Mareike Pampus (Martin-Luther U), Dominic Boyer (Rice U), Valentin Leschinger and Florian Müller (Medical School Hamburg), Cymene Howe (Rice U). Organised by the Institute of Advanced Sustainability Studies, Potsdam, Germany.

9: Indigenous Peoples, Climate Justice and Energy

Aus.(AEDT): Dec. 9, 7-9am. India (IST): Dec. 9, 1:30-3:30am. Germany (CET): Dec. 8, 9-11pm. US (MT): Dec. 8, 1-3pm.

Chair: Gary Dirks

Panel: Paloma Mohammed Martin, (Vice Chancellor, University of Guyana), Ka'eo Duarte (Kamehameha Schools, Hawai'i), Chéri Smith, Founder & CEO at Indigenized Energy Initiative, Melissa Nelson (College of Global Futures, Arizona State U). Organised by Global Institute of Sustainability and Innovation, Arizona State University, USA.

Community Power Workshop – Problems and Solutions in Community Energy

Aus. (AEDT): 11:00am- 3:30pm India (IST): 5:30am- 10am Germany (CET): 2:00am- 6:30am US (MT): 5:00pm- 9:30pm

A practical workshop for people 'doing' community energy the field.

Australia focussed but all welcome.

Organised by the Climate Justice Research Centre, University of Technology Sydney, Australia.

10: Planning and Participation in Transitions, Substate to Global

Aus.(AEDT): Dec. 9, 4- 6pm. India (IST): Dec. 9, 10:30- 12:30pm. Germany (CET): Dec. 9, 6- 8am. US (MT): Dec. 8, 10- 12 midnight

Chair: Tom Morton

Panel: Sven Teske (ISF), Katja Muller (IASS), Tom Morton (Martin-Luther U); Devleena Ghosh (UTS) and Gareth Bryant (USyd); Linda Connor (USyd) and Lisa Lumsden (UTS); Franziska Mey (IASS)

Organised by the Climate Justice Research Centre, University of Technology Sydney, Australia.

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Organised by the Climate Justice Research Centre, University of Technology Sydney, Australia.

Chair

Devleena Ghosh

Devleena is Honorary Professor in the School of Communications in the Faculty of Arts and Social Sciences. Her research interests lie in the fields of colonial, postcolonial, environmental and gender studies, specifically in the Indian Ocean region. Her current projects include ones on coal mining and climate change in India and transitions to renewable energy sources in India. In both projects, a chief focus has been on the rights and demands of indigenous peoples, affected by the processes of resource extraction and land acquisition.

Paper

Patrick Bond

Patrick Bond is at the University of Johannesburg where he is Professor of Sociology. He learned politics in the U.S. anti-apartheid, labor, student and community movements and after PhD research in Zimbabwe he has lived mainly in Johannesburg and worked as a researcher within urban social movements. His best-known work is *Elite Transition: From apartheid to neoliberalism in South Africa*, and he also authored or edited four books on climate change - including *Politics of Climate Justice: Paralysis above, movement below* - and hosted South Africa's civil society meetings during the 2011 UN Framework Convention on Climate Change summit in Durban.

Paper: 'Bottom-Line Climate Justice Policy Failures in Glasgow'

There are typically a half-dozen categories of demands associated with the Climate Justice agenda:

- *Cut greenhouse gases*: adopt sufficiently ambitious and binding global emissions reduction requirements that are fairly distributed, and in the process impose accountability mechanisms including substantial penalties;
- *Transition gracefully*: ensure a job-rich 'Just Transition' from carbon-addicted economies for affected workers and communities in what will be radically transformed energy, transport (and tourism), agriculture, urbanisation, production, consumption and disposal systems;
- *Redress social injustice*: prioritise empowerment strategies for gender, racial, Indigenous, Global South and youth constituencies, and provide rights for nature, for climate migrants/refugees and for future generations;
- *Manage technology properly*: avoid 'False Solutions' based on Dr.Strangelove-type tech-fix fantasies or dangerous nuclear energy, allow poor countries to adopt climate-friendly technology without Intellectual Property restrictions, and incorporate military, maritime and air-transport sectoral emissions as urgent priorities;
- *Leave fossil fuels underground*: compel owners or managers of oil, gas and coal reserves to cease new exploration (and most current extraction), simultaneously revalue their 'unburnable carbon' and 'stranded assets' accordingly, and end \$trillions worth of fossil fuel state subsidies;
- *Finance planetary and social survival*: apply carbon taxation judiciously, but dispense with failed emissions trading, offsets and other financing gimmicks, while respecting historical 'polluter-pays' responsibilities for the 'climate debt' that large emitters - both historical and contemporary - owe to cover 'loss and damage' and adaptation reparations and also compensate for poor countries' use of carbon space that is now precluded by others' overuse.

With respect to these mandates, the Glasgow COP26 climate summit was expected to offer slight improvements on the Paris Climate Accord, but nothing to suggest genuine justice is being pursued seriously within the United Nations Framework Convention on Climate Change. Before Egypt hosts the 2022 summit, a ratcheting of pressure on national and global leaders will be essential.

Discussants Panel

Dominic Boyer

Dominic Boyer is an anthropologist who teaches at Rice University where he also served as Founding Director of the Center for Energy and Environmental Research in the Human Sciences (2013-2019). His most recent books are *Energopolitics* (Duke UP, 2019), which analyzes the politics of wind power development in Southern Mexico and *Hyposubjects* (Open Humanities Press, 2021), an experimental collaboration with Timothy Morton concerning politics in the Anthropocene. With Cymene Howe, he made a documentary film about Iceland's first major glacier (Okjökull) lost to climate change, *Not Ok: a little movie about a small glacier at the end of the world* (2018). In August 2019, together with Icelandic collaborators they installed a memorial to Okjökull's passing, an event that attracted media attention from around the world. During 2021-22 Boyer will be a Berggruen Fellow with a research project, "Electric Futures," which focuses on efforts to decarbonize the global economy via greater electrification.

Cymene Howe

Cymene Howe is Professor of Anthropology at Rice University. Her books include *Intimate Activism* (Duke 2013), *The Anthropocene Unseen: A Lexicon* (Punctum 2020) and *Ecologics: Wind and Power in the Anthropocene* (Duke 2019), which follows human and more-than-human lives intertwined with renewable energy futures. Her current research focuses on adaptation to ice-loss in the Arctic region and sea level rise in coastal cities around the world. She co-produced the documentary film *Not Ok: A Little Movie about a Small Glacier at the End of the World* and co-created the Okjökull memorial in Iceland, the world's first memorial to a glacier felled by climate change.

Aarti Khosla

Aarti Khosla is Director of Climate Trends, a communications strategy initiative based in India, which focuses on climate change, clean energy and clean air. She is also the Network Director of Global Strategic Communications Council, an international group which works on climate and energy issues across 23+ key countries. She has over

eighteen years of experience as a communications professional, and has worked on effectively communicating issues around environment, development and conservation. Prior to this, Aarti was a senior campaigner at WWF, where she managed several key campaigns, from wildlife to energy conservation, for over seven years. She has worked in TERI and taught briefly at the University of Delhi. Aarti has a Masters in Business Administration and Bachelor in life sciences from the University of Delhi. She is based in New Delhi.

Sven Teske

Sven Teske is an Associate Professor and Research Director at the Institute for Sustainable Futures, University of Technology Sydney with a research focus on energy decarbonisation pathways for specific industry sectors and regions. 100% renewable energy concepts required to achieve the Paris Climate Agreement for countries, regions, cities, microgrids for islands and the development of National Determined Contribution (NDC) reports. This includes technical analysis of power grids regarding integration of solar electricity, onshore and offshore wind power generation and electricity and heat storage systems. Furthermore, he has over 20 years' experience in renewable energy market and policy analysis. as well as solar and on- and offshore wind power grid integration concepts in public grids.

Nicky Ison

Nicky Ison is energy transition manager at WWF-Australia and a research associate at the Institute for Sustainable Futures at the University of Technology Sydney. She holds a doctorate and was a Founding Director of the Community Power Agency – established in 2011 to help community groups navigate the complex process of setting up community owned renewable energy projects; she has also been a Strategist at Climate Action Network Australia.

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Organised by the Climate and Energy Policy Research Lab, Indian Institute of Technology Kanpur, India.

Chair

Pradip Swarnakar

Pradip Swarnakar is an environmental sociologist at the Indian Institute of Technology Kanpur where he is Director of the Climate and Energy Policy Research Lab. He specializes in climate change policy, social network analysis, and sustainability transition. He has been a visiting scholar at the Climate Justice Research Centre, University of Technology Sydney, Australia, the Department of Environmental Studies, University of San Francisco, USA, the Department of Social Research, University of Helsinki, Finland, and the Department of Urban and Environmental Sociology, Helmholtz Centre for Environmental Research GmbH-UFZ, Germany.

Panel

Kalyani Raj

Kalyani Raj has extensive experience working on gender and climate change and has advocated for disaster preparedness, adaptation and mitigation as well as alternate energy, which she has worked on for over a decade with the All India Women's Conference (AIWC). For the past four years, she has participated in the UNFCCC processes including attending several COPs where she worked closely with the Women and Gender Constituency. With AIWC, Kalyani draws attention to the wealth of knowledge women have to share on adaptation in terms of traditional knowledge and skills. She has conducted a variety of advocacy workshops including on disaster preparedness and risk reduction as well as socio-economic impacts of climate change

on women. She consistently works on bringing the voices of grassroots women to the international level.

Vinuta Gopal

Vinuta Gopal is a founder and CEO of Asar Social Impact Advisors, a consulting group that builds collaborative networks for impact on climate and climate related issues. She has two decades of experience in campaigning and engagement on various environmental and justice issues in India. Before joining Asar, Vinuta headed Greenpeace India and had spearheaded the organisation's climate and energy work.

Nitin Sethi

Nitin Sethi is a journalist, the Media Lead at the National Foundation for India and a Partner and Editorial Advisor at Land Conflict Watch. He has written, reported and investigated for two decades on the intersections of India's political economy, natural resources, environment, climate change, economy, public finance and development. His reportage has won several awards, including the Asian College of Journalism's award for investigative journalism and the Prem Bhatia award for environmental journalism.

Kashish Shah

Kashish Shah is an energy finance analyst at the Institute for Energy Economics and Financial Analysis. He has worked in the banking and public sectors in India and has a master's degree in economics from the University of Sydney and an engineering degree from NMIMS University in Mumbai.

3: Social benefits of transition - US perspectives

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Chair: Sander Van Der Leeuw

Panel: Clark Miller, Sonja Klinsky, Lauren Withycombe Keeler (all at the College of Global Futures, Arizona State University), Elizabeth Monoian and Robert Ferry (Land Art Generator).

Organised by Global Institute of Sustainability and Innovation, Arizona State University, USA.

Chair

Sander Van Der Leeuw

Anarcheologist and historian, Prof. Sander van der Leeuw has been specializing in the long-term interactions between humans and their environments. He is a pioneer in the application of the Complex Adaptive Systems (CAS) approach to socio-environmental challenges, technology and innovation. As coordinator of the ARCHAEOMEDES interdisciplinary research program (1991-2000) using the CAS perspective on socio-natural interactions and environmental problems in S. Europe – the first of its kind worldwide. Co-director of the ISCOM project on invention and innovation from a CAS perspective (2003-2007). In both projects modelling played an important role, despite the limited technical means available at the time. After teaching positions in Amsterdam, Leyden, Cambridge and Paris (Sorbonne), he became founding director of Arizona State University's School of Human Evolution and Social Change (2003-2011) and Dean of its School of Sustainability (2010-2013).

Panel

Clark A. Miller

Clark A. Miller is Professor and Director of the Center for Energy & Society in the Global Futures Laboratory at Arizona State University. His latest writings include [Cities of Light](#) and The [Weight of Light](#) two free-to-download collections of stories, art, and reflections

on human futures powered by solar energy.

Paper: Problems and Solutions for Decarbonisation and Energy Transition

Humanity has a unique opportunity to reshape its relationships with the energy systems of the future: to achieve carbon neutrality and tackle climate change and also to weave new, more just societies and economies around some of the world's most powerful economic institutions and critical infrastructures. For a century, global political economies have been dominated by carbon. Now, the replacement of those systems -- via perhaps \$100T or more in future investments in carbon-neutral energy -- have the potential to fundamentally reshape planetary-wide distributions of wealth and power around more decentralized, universal, and distributed forms of energy organization. To accomplish this, we must explicitly design the rules of future energy system development to create a level playing field for diverse forms and scales of energy ownership and catalyze generative human-energy relationships for the least well-off of the world's communities.

Sonja Klinsky

Sonja Klinsky is at the College of Global Futures, Arizona State University. After completing her doctoral work at the University of British Columbia, Sonja Klinsky held post-doctoral fellowships with the Centre for Climate Change Mitigation at the University of Cambridge, and the Pacific Institute for Climate Solutions in Vancouver, Canada. Her work has continually centered around the justice dilemmas presented by climate change and climate change policy design. Her work has sought to generate theoretically sound and politically relevant proposals for constructively addressing debates about justice and fairness embedded in climate policy decision-making at all scales.

Paper: "We're Not Bad People, We Just Don't Know What To Do": Encountering resistance in the face of transformative imperatives

The depth of change required for a just transformation into a world with universal access to sustainable development within planetary boundaries necessarily creates a number of political dynamics, not the least of which is resistance by those who benefit from the status quo. The tendency for beneficiary incumbents to resist changes intended to redistribute power is well established. Within the climate context a growing body of scholarship has explored the role large actors have played in slowing or subverting the depth of change required for just responses to climate change. Less attention has been invested in exploring the socio-psychological dimensions of resistance experienced, often unconsciously, by individuals who have benefitted from

existing systems although this is a key feature of the landscape. Even less attention yet has focused on systematically identifying strategies for managing this resistance. In this talk I outline some of the key socio-psychological challenges faced by individuals who have historically and who continue to reap benefits from existing systems and explain how these can manifest as resistance. I then pull on anti-racism and decolonizing education theory and practice to map out opportunities for more seriously identifying and managing the pathways of resistance likely to undermine the depth of change needed for anything approaching a just transformation.

Lauren Withycombe Keeler

Prof. Lauren Withycombe Keeler is a foresight practitioner and futures scholar in the School for the Future of Innovation in Society at Arizona State University. Her work focuses on methods and competences for creating more sustainable futures. She consults with businesses, governments, communities and utilities to help guide futures-oriented sustainability planning. She is currently the interim director of the Center for the Study of Futures and a member of the ASU-Salt River Project strategic partnership steering committee.

Paper: Pathways to a Low Carbon Future for Arizona: Opportunities and Challenges for a Just Transition

In response to growing climate risks, Arizona faces the increasing prospect of economy-wide carbon dioxide (CO₂) emissions regulations or standards, either at the state or national level, including the potential for zero or net-zero targets for emissions of CO₂ into the atmosphere. The state's largest electric utilities have already set targets for reducing or eliminating net CO₂ emissions from the electricity sector by mid-century, as have a number of US states, including Arizona's neighbors in California, Oregon, Washington, New Mexico, and Colorado, and many US and global companies. This presentation will outline pathways to a low carbon future for Arizona's economy. The pathways were created through interviews, focus groups, and a collaborative design workshop with experts from industry, academia, governments, and utilities, supported by the Salt River Project – ASU Joint Research Program. Equity implications of decarbonization for different communities and the opportunities and challenges faced economy-wide for Arizonans will be discussed.

Elizabeth Monoian and Robert Ferry

Robert Ferry and Elizabeth Monoian are the founding Co-Directors of the Land Art Generator. The Land Art Generator is the recipient of multiple National Endowment for the Arts grants and has been awarded the J.M.K. Innovation Prize, a program of the J.M.

Kaplan Fund. Through the Land Art Generator Elizabeth and Robert have published, exhibited, and presented globally on the aesthetics of renewable energy and the role of art in providing solutions to climate change. Their publications include *Regenerative Infrastructures* (Prestel Publishing), *The Time is Now: Public Art of the Sustainable City* (Page One Publishing), *New Energies* (Prestel Publishing), *Powering Places: LAGI Santa Monica* (Prestel Publishing), *Energy Overlays* (Hirmer Publishing), *Return to the Source* (Prestel Publishing), *Land Art of the 21st Century* (Hirmer Publishing), and *A Field Guide to Renewable Energy Technologies*.

Paper: 'Distributed Energy Resources and the Design of Public Space'

The scale of deployment of renewable energy infrastructure required to meet the challenge of the climate crisis will transform our cities and landscapes in unprecedented ways, impacting our visual resources as well as our social and cultural ecosystems. The presentation will present a model for solar deployment that brings together the often-siloed discipline of energy development with community-centered design within the fields of architecture, landscape architecture, and urban planning. The model proposes that by co-designing solar energy landscapes with the people who live in proximity to them, we can expand urban solar deployment, preserve remote landscapes, and accelerate the energy transition as a popular movement. Public investment in the soft costs of design and community engagement can have a tenfold multiplier effect, paving the way for low-risk private investment in solar deployments within population centers that can aggregate for economies of scale.

Participatory design practices for energy development can also ensure a just and equitable clean energy future and leverage the many co-benefits of solar power infrastructure when it shares land uses with parks, gardens, canals, riverfronts, and streetscapes—reducing heat island effects, expanding opportunities for urban farming, conserving irrigation water, and improving public safety. The wealth of proven technologies for aesthetic solar photovoltaic integration within architecture and landscape architecture offers a path to implementation for a far more ambitious deployment of distributed energy within cities than is ordinarily considered by urban planners and real estate developers. This model naturally lends itself to community investment through cooperative ownership models.

4: Community Power and Community Energy?

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Chair: Linda Connor (University of Sydney)

Panel: Jarra Hicks (Community Power Agency); Gopal Sarangi (The Energy Research Institute); Heidi Norman (UTS); Jon Marshall (UTS); Stuart Rosewarne (University of Sydney)

Organised by the Climate Justice Research Centre, University of Technology Sydney, Australia.

Chair

Linda Connor

Linda Connor is Emeritus Professor at the Department of Anthropology, University of Sydney. She works on the anthropological study of anthropogenic climate change and energy transitions. Our co-authored book *Beyond the Coal Rush: A Turning Point for Global Energy and Climate Policy?* focuses on ethnographic studies of the 'coal rush' and its opponents in Australian, Indian and German mining locales. Current research is funded by the Australian Research Council: *Decarbonising Electricity: A comparison in socio-ecological relations*. My ethnographic research in South Australia is part of a cross-national study of the social legitimacy of clean energy transitions in Australia, India and Germany.

Panel

Jarra Hicks

Jarra Hicks is a founding director of the Community Power Agency, a leading organisation supporting communities in Australia to participate in the renewable energy transition. She holds a PhD and has 10 years experience in community energy in both Australia and overseas, Jarra's expertise spans community engagement, business models, facilitation, policy development and partnership building. Her knowledge and

experience with community energy stems from academia and having worked as a project manager on the ground, as well as consulting to governments, peak bodies, NGOs and the corporate sector. Jarra's research and practice explores the potential for community energy projects to contribute positive social, economic and environmental outcomes for regional communities. She is interested in the development processes, social enterprise models and diverse economic arrangements that community energy projects engage. In particular, her work analyses the implications of enterprise design on community participation and the flow-on impacts this has on a range of social outcomes, such as empowerment, capacity building, and sense of community.

Paper: 'Claiming the double entendre of community power'

Community owned renewable energy creates the ability to provide clean, green electricity as well as opportunities for communities to claim a seat at the table of energy governance and reap experiences of empowerment as a result. However, participant's reports of empowerment vary between projects: while some feel highly empowered and use their experiences with a CORE project as a springboard into other projects and political endeavours, others view their participation on CORE as having a weaker impact on their sense of agency. Through qualitative research involving 70 participants from four community-owned wind energy projects, I found that generating empowerment outcomes is directly related to the depth of people's participation the project.

Diverse and meaningful ways to participate build a rich web of interaction and contribution, which provide opportunities for people to develop personal connections with the project and other people over time. This becomes the foundation for experiences of individual and collective empowerment that can redefine how people feel and act as members of their community, and as participants in energy change. Drawing on the findings of my PhD research, this paper presents the forms of empowerment experienced by participants and the ways these experiences can be enhanced through conscious design of CORE projects.

Gopal Sarangi

Dr Gopal K Sarangi is an economist at the TERI School of Advanced Studies, New Delhi. He has had more than fifteen years of research and consulting experience. His primary domain of research covers energy market and regulation, intersection of energy technologies, fuels and resources with public policies, social systems and processes, energy and climate nexus, governance and institutional analysis of energy transition questions and impact assessment of energy and environmental interventions. He has a PhD on 'Sustainability Assessment of India Electricity Sector'. He is widely published and

teaches courses on development economics, managerial economics and environmental economics.

Heidi Norman

Heidi Norman is Associate Dean (Indigenous) at the Faculty of Arts & Social Sciences, University of Technology Sydney. She works as an Australian researcher in the field of Aboriginal political history. She is a descendant of the Gomeroi people from North-Western NSW.

Paper: 'The sky's the limit': Aboriginal land holders and the redesign of the energy industry

This paper addresses the possibility and limits of Aboriginal engagement with the government curated clean energy transition in New South Wales, Australia. I ask how Aboriginal land holders, organised as Local Aboriginal Land Councils (LALCs) might benefit from this energy redesign, develop their own clean energy strategies, mobilise the innovative new ideas for their benefit and challenge prevailing social, political, and economic marginalisation.

Jon Marshall

Jonathan Marshall is a Research Fellow and Lecturer in Social and Political Sciences at UTS. He is an anthropologist working on renewable transitions and the problems of climate technology.

Paper: 'Problems of transition in three NSW Country towns'

The paper explores the problems and differences faced by people in three NSW country towns as they tried to engage in a renewable energy transition. In Lismore people followed the rules, and lost time and energy working out how to satisfy those rules. Narrabri has been largely overwhelmed by the resource curse having plentiful coal and gas, and a government prepared to increase coal and gas use. Bega is troubled by activists involved in climate generosity and insisting on giving away panels to public buildings and therefore providing 'stuff on the ground' and demonstrating a support base for renewable transition.

Stuart Rosewarne

Stuart Rosewarne is Adjunct Associate Professor in Political Economy, at the University of Sydney. He is co-author of 'Climate Upsurge: The Ethnography of Climate Movement

Politics' (Routledge 2014) and has published widely on environmental concerns. He has recently completed a book on the political economy of community energy.

Paper: 'Contested community energy constructs'

The direct engagement of households and communities in energy generation projects, at their volition, is regarded as being an empowering process. This is especially so with respect to individuals and communities taking advantage of the lower cost of renewable energy technologies to challenge the dominance of a fossil-fuel intensive economy and take action to mitigate greenhouse gas emissions. The transformative character of the responses and the extent to which these are premised on fermenting different visions of the future. This is reflected in the nomenclature that captures the essence of some of the different identities and social actors, from *'loyal customers'*, to *utility citizens*, *prosumers*, *solar citizens*, *climate citizens*, each motivated by a particular agenda of refashioning the place of energy in the political system. However, a critical feature of this is that identity reformation does not take place in a socio-political vacuum. It comes up against an agenda that has been established by the fossil fuel project, a project that is being defended and, especially through the auspices of the state and energy market intermediaries, pressing community energy back into service to underwrite an energy-intensive system dominated by global corporations and which is organised in the interests of expanded growth and accumulation.

5: Just Transitions, beyond fossil fuels

Aus. (AEDT): Dec. 8, 3- 5pm. India (IST): Dec. 8, 9:30am-11:30am. Germany (CET): Dec. 8, 5- 7am. US (MT): Dec. 7, 9-11pm.

Chair: Gareth Bryant, University of Sydney

Panel: Srestha Banerjee (iForest), Ashwini Swain (CPR), Chris Briggs (ISF), Pradip Swarnakar (IIT), Warwick Jordan (Hunter Jobs Alliance), Souvik Bhattacharya (TERI).

Organised by the Climate and Energy Policy Research Lab, Indian Institute of Technology Kanpur, India.

Chair

Gareth Bryant

Gareth Bryant is a political economist at the University of Sydney, where he is an ARC DECRA Fellow in the Department of Political Economy. Gareth researches how public policy and public finance can create more sustainable, equal and democratic economies. Gareth is the author of *Carbon Markets in a Climate-Changing Capitalism* (Cambridge University Press, 2019).

Panel

Srestha Banerjee

Srestha Banerjee is director of Just Transition at the Delhi-based International Forum for Environment, Sustainability and Technology (iFOREST). She has over 12 years of experience working with Indian and US-based environment and public policy think tanks. She has authored/co-authored several scholarly publications in her areas of work, and also engages in public outreach through her writings. She has also been advising policy institutions and government agencies at national and state levels. Presently she also serves as an Advisory Board member of Just Transition Initiative, a collaboration of the Climate Investment Funds (World Bank) and the Center for Strategic and International Studies (US). Srestha holds a PhD in Environmental and Energy Policy

from the University of Delaware, and a Masters in Environmental Studies from Ohio University

Ashwini Swain

Ashwini K Swain is a fellow at the Delhi-based Centre for Policy Research. His research interests include political economy of electricity, interface between energy service needs and climate mitigation goals, and water-energy-food nexus, especially in Indian context. He has also worked on public participation in service delivery, and has a keen interest in political economy of India and political analysis. In addition, he has been actively engaging with civil society organisations and public agencies at national and subnational level on these issues. Ashwini is also a (non-resident) fellow at the Energy for Growth Hub. He has earlier served at Centre for Energy, Environment & Resources, CUTS Institute for Regulation & Competition, Agence Française de Développement, University of York, University of Wisconsin-Madison, and National Institute of Public Finance and Policy. He holds a PhD in Politics from University of York and MPhil and MA degrees in Political Studies from Jawaharlal Nehru University.

Chris Briggs

Chris Briggs is a Research Director at the Institute for Sustainable Futures, University of Technology and Technical Director, Business Renewables Centre-Australia. Chris has a combination of climate, energy and labour market expertise developed over 20 years of experience working in roles as a political adviser, policy maker, program leader and researcher. Chris has worked as Policy Manager for Lord Mayor Clover Moore, Senior Policy Adviser for Senator Christine Milne, State Coordinator for Renewable Energy Precincts and Senior Economist in the Climate Change Policy Branch, NSW Office of Environment and Heritage. At ISF, Chris specialises in clean energy transition projects including renewable energy employment, energy fairness and just transition, off-site renewable energy procurement and the role of demand-side flexibility to integrate renewable energy into markets, networks and businesses.

Pradip Swarnakar

Pradip Swarnakar is an environmental sociologist at the Indian Institute of Technology Kanpur where he is Director of the Climate and Energy Policy Research Lab. He specializes in climate change policy, social network analysis, and sustainability transition. He has been a visiting scholar at the Climate Justice Research Centre, University of Technology Sydney, Australia, the Department of Environmental Studies, University of San Francisco, USA, the Department of Social Research, University of

Helsinki, Finland, and the Department of Urban and Environmental Sociology, Helmholtz Centre for Environmental Research GmbH-UFZ, Germany.

Warrick Jordan

Warrick is the Coordinator of the Hunter Jobs Alliance, a union and community environment alliance focused on supporting communities through structural change in energy and related industries in the Hunter region in NSW, Australia. He has worked on conservation, resource management and regional economic change issues for the past 20 years. Prior to his current role, Warrick was contracted by the Australian Government, providing direct assistance to resource sector workers and developing on ground economic change initiatives and policy with business, government and community in the Hunter.

Souvik Bhattacharya

Souvik Bhattacharjya is Associate Director in the Integrated Policy Analysis Division of The Energy Resources Institute. He has more than 15 years' experience in energy and environmental research and management consulting. He has undertaken and led various consultancy and research assignments for ministries, bilateral, and multilateral organisations, and multinational corporations. His areas of work include resource efficiency and circular economy, developing policies and strategies along product and service value chains for promoting 6Rs, industrial ecology, material demand/supply assessments, material flow analysis, life cycle analysis, life cycle cost analysis, impact assessments of industrial/infrastructure projects, price build up for environmental goods and services, trade in environment and resources, etc

6: Transition from Coal and Populism

Aus.(AEDT): Dec. 8, 8- 10pm. India (IST): Dec. 8, 2:30- 4:30pm. Germany (CET): Dec 8, 10am to Noon. US (MT): Dec. 7, 2- 4am.

Chair: Johannes Staemmler (IASS)

Panel: Amanda Cahill (CEO, The Next Economy), Tom Maltby (Kings College London), Tobias Haas (IASS), James Goodman (UTS)

Organised by the Institute of Advanced Sustainability Studies, Potsdam, Germany.

Chair

Johannes Staemmler

Since 2018, Dr. Johannes Staemmler is heading the project "Social Change and responsive policy advice" together with Dr. Jeremias Herberg. The goal is to develop and apply democratic means in the social and economic transformation that is accelerated by the end of coal mining. For the German Mining Museum Bochum, he advises the German government and several Länder on how to deal with the scientifically and culturally important remains of Soviet-German uranium mining. He is co-founder of "Third Generation East".

Panel

Amanda Cahill

Amanda Cahill is Chief Executive Officer of 'The Next Economy'. She has spent over two decades supporting communities to manage economic change across Asia, the Pacific and regional Australia. The focus of her work at The Next Economy is to support regional communities across Australia to manage changes in the energy sector in ways that stimulate local economic development. She has worked successfully to support all levels of government, industry, workers and community groups to understand and manage different aspects of the energy transition across Queensland, the Hunter Valley, and the Latrobe Valley. Amanda has a PhD in Human Geography from the Australian National University and has adjunct positions at both the The University of Queensland and the University of Sydney.

Paper: Bridging the Divide: Creating Safe Spaces for Community Action in Fossil Fuel Communities

As one of the leading exporters of coal and gas, Australian climate policy has been plagued with toxic politics for over a decade, politics that has stymied the national discussion about the need to transition the energy sector. The resulting tension spilled over into violence in the lead up to the last Federal Election in 2019, when supporters of Adani's Carmichael coal mine in Central Queensland clashed with environmentalists. The conflict fed a sense of polarisation between the regions and the cities, culminating in a shock election victory for the main conservative party, the LNP. This led to a great deal of soul searching and a shift in approach by climate and environment groups. More campaigns now focus on addressing economic and other regional concerns, and on working directly with regional leaders to support locally led discussions and planning activities. The Next Economy has been at the forefront of this work across coal and gas regions of Australia and will share what we have learned applying participatory action research approaches to working with community groups, local governments, industry representatives, unions, traditional owners and environmental groups to build greater social cohesion and regional leadership over the last seven years.

Tomas Maltby

Dr Tomas Maltby is a Reader in International Politics in the Department of Political Economy at King's College London. His research focuses primarily on the development of climate and energy policy. This includes work related to governance, agenda-setting, policy making, the drivers of and obstacles to energy transitions, climate scepticism/denial and related research on the politics of air pollution.

Paper: 'Right wing populism and the Polish energy transition'

It is assumed that the rise in right wing populism poses a major and severe challenge for climate policy (Forchtner and Kølvrå, 2015; Lockwood, 2018; Huber et al., 2021). Poland has seen some visible democratic backsliding since the right-wing populist Law and Justice party took power in 2015. However, Poland was widely perceived as the laggard of the EU in terms of energy transition and decarbonisation already before the change of government, with the country often prioritising security of energy supply (Judge and Maltby, 2017) and economic development (Szulecka and Szulecki, 2013) over environmental and climate protection. Poland's representatives are often heard voicing strong doubts about both the form of, and the need for, global climate protection efforts, and previous media analysis has found that the mainstream media in the country focused mainly on the views of economic and political elites (Wagner et al.,

2016). This paper discusses the relationship between populism and different degrees of climate sceptical and climate denialist discourses, and also considers how public concern about climate change and air quality, and civil society action is contributing towards minor but limited change.

Tobias Haas

Tobias Haas is at Institute for Advanced Sustainability Studies Potsdam. He studied economics and political science at the FU Berlin and the University of Copenhagen (Denmark). In his doctorate at the Eberhard-Karls-University in Tuebingen he dealt with the controversies about the energy transition in Germany, Spain and in the European context. In the summer of 2018, he was a fellow at the Kolleg Postwachstumsgesellschaften at the Friedrich-Schiller-University in Jena. Since October 2018 he has been a researcher at IASS in the project "Structural Transformation and Policy Advice in Lusatia". His research focuses on political economy and socio-ecological transformation research, particularly in the areas of mobility and energy.

Paper: 'Right-wing populism and coal phase- out in Lusatia'

After years of dispute, the coal phase-out in Germany has been decided by 2038 at the latest. Nevertheless, it is not impossible that the phase-out will take place by 2030. There has been and still is considerable resistance to the coal phase-out, especially in the Lusatian coal mining area. Coal is an anchor of stability for the region, which experienced major upheavals especially in the 1990s after German reunification. In addition, the right-wing populist party Alternative for Germany (AfD) enjoys wide support in the region, not only but also because it is firmly positioned against the coal phase-out. The article analyses how the struggle over coal and the formation of the right-wing populist AfD in Lusatia are intertwined. It is argued that the causes of the AfD's strength are rooted in economic, political and cultural developments and are intertwined with processes of the peripheralisation of Lusatia and the debates on the coal phase-out.

James Goodman

James Goodman conducts research into global politics, socio-cultural change and climate justice. He is a Professor in Social and Political Sciences at the Faculty of Arts and Social Sciences at UTS (FASS) where he has been based since 1996. He draws from a disciplinary background in political sociology, international relations, political economy and political geography, and has led several large collaborative research projects.

Paper: 'Coal Populism and the Right in Australia'

7: Anchors of Identity: The Search for Meaning in Times of Transformations

Aus.(AEDT): Dec. 8, 10.30pm- midnight. India (IST): Dec 8, 5.00pm- 6.30pm, Germany (CET): Dec 8, 12.30 -2.00pm, US (MT): Dec. 7, 4:30- 6:00am

Chair: Linda Connor

Paper: Ortwin Renn (IASS)

Discussant: Katja Muller (Martin-Luther U/IASS) and Jon Marshall (UTS)

Organised by the Institute of Advanced Sustainability Studies, Potsdam, Germany.

Chair

Linda Connor

Linda Connor is Emeritus Professor at the Department of Anthropology, University of Sydney. She works on the anthropological study of anthropogenic climate change and energy transitions. Our co-authored book *Beyond the Coal Rush: A Turning Point for Global Energy and Climate Policy?* focuses on ethnographic studies of the 'coal rush' and its opponents in Australian, Indian and German mining locales. Current research is funded by the Australian Research Council: *Decarbonising Electricity: A comparison in socio-ecological relations*. My ethnographic research in South Australia is part of a cross-national study of the social legitimacy of clean energy transitions in Australia, India and Germany.

Paper

Ortwin Renn

Ortwin Renn is Scientific Director at the Institute for Transformative Sustainability Research (Institute for Advanced Sustainability Studies, IASS) in Potsdam and Professor of Environmental and Sociology of Technology at the University of Stuttgart. He also heads the DIALOGIK research institute. His main research fields are risk analysis (governance, perception and communication), theory and practice of citizen participation in public projects, transformation research as well as social and technical change towards sustainable development.

Paper: Anchors of Identity: The Search For Meaning in Times of Transformations

The paper will address the components of local identity: history, relationships (including social recognition) and locality. At least two components are heavily influenced by substantial transformations such as the phase-out of coal in areas that have been traditionally known as coal mining or coal using communities. These changes inflict on the shared understanding of collective culture and destiny and opens the space for new political movements on the right and left. Pathways for a successful transformation require both a realistic economic and social vision of the time to come as well as the inclusion of those who are affected by this process and need to be empowered to be agents rather than victims of change. The paper will provide some examples from the Lausatia area and proposes innovative process designs that are promising for a development towards a sustainable future.

Discussants Panel

Katja Müller

Katja Müller is an anthropologist at the Institute for Advanced Sustainability Studies & Martin Luther University Halle-Wittenberg. She conducts research into energy transitions, mining and climate change, as well as into museum studies and digitization. She analyses the coal exit in Germany for the IASS Potsdam and renewable energy for the University of Technology Sydney, and is Privatdozentin for social anthropology at Halle University.

Jon Marshall

Jonathan Marshall is a Research Fellow and Lecturer in Social and Political Sciences at UTS. He is anthropologist working on renewable transitions and the problems of climate technology.

8: Generating Legitimacy for Renewable Energy

Aus.(AEDT): Dec. 9, 2- 4am. India (IST): Dec. 8, 8:30pm-10:30pm. Germany (CET): Dec. 8, 4- 6pm. US (MT): Dec. 8, 8-10am.

Chair: Katja Müller (Martin-Luther U)

Panel: Mareike Pampus (Martin-Luther U), Dominic Boyer (Rice U), Valentin Leschinger and Florian Müller (Medical School Hamburg), Cymene Howe (Rice U).

Organised by the Institute of Advanced Sustainability Studies, Potsdam, Germany.

Chair

Katja Müller

Katja Müller is an anthropologist at the Institute for Advanced Sustainability Studies & Martin Luther University Halle-Wittenberg. She conducts research into energy transitions, mining and climate change, as well as into museum studies and digitization. She analyses the coal exit in Germany for the IASS Potsdam and renewable energy for the University of Technology Sydney, and is Privatdozentin for social anthropology at Halle University.

Panel

Mareike Pampus

Mareike Pampus is a postdoctoral researcher at the Martin-Luther University Centre for Just Transition and Sustainability (Institut für Strukturwandel und Nachhaltigkeit). Previously, Pampus was employed as a doctoral researcher at the Max Planck Institute for Social Anthropology and now holds a PhD in Anthropology. Currently, Pampus is working on her post-doc project on diverging concepts of “nature” in land restoration and rewilding processes of former mining areas in Germany, as well as supporting the Climate Justice Research Centre at the University of Technology Sydney in their research on wind and solar energy in Brandenburg (Germany).

Paper: 'The Rush for Land –Solar Projects in Brandenburg (Eastern Germany)'

A new conflict in the energy transition is emerging: Instead of sustainable solar subsidies and decentralized models, mega-parks for solar cells are being built on arable land – especially in the east of Germany. Municipalities are overwhelmed, federal politics ignore a smouldering dispute over land, and anger is growing among the population. Sunlight that becomes electricity, clean energy that is practically inexhaustible – what sounds like a green utopia is now a reality. Therein lies enormous potential for climate protection. Yet, financial analysts see something different: investment products made of silicon and glass. For some years now, the prices of the modules have fallen drastically. As a result, solar power became cheap and lucrative. This should be good news as Germany needs large amounts of solar power for the energy transition. Currently, Germany produces around 51 terawatt hours of solar power per year – not even enough to cover the nationwide energy demand for six weeks. The remaining question is where new solar panels are to be built and who benefits from them. This paper investigates the rush for the largest possible areas for solar projects in the context of Germany`s energy politics. Concerning solar power, Germany does not have a plan for a sustainable solar economy and hardly any guidelines, instead the market rules. This results in the fact that brokers and investors are looking for lucrative places especially in the remote regions of eastern Germany, reminiscent of unpleasant memories of staking claims to land during Germany`s reunification

Valentin Leschinger and Florian Müller

Valentin Leschinger studied social and environmental psychology at the Paris-Lodron University of Salzburg and is a research fellow at the MSH Medical School Hamburg in the work group of Prof. Dr. Gundula Hübner and Dr. Johannes Pohl. His research focuses on the factors influencing the social acceptance of renewable energy technologies. His current projects are concerned with the role active citizen participation plays in the planning and acceptance of renewable energy technologies and with the positive direct and indirect effects renewables have on nature (conservation) and thus on acceptance.

Florian Müller studied psychology and environmental psychology at the Universität Hamburg, Germany, the Otto-von-Guericke-Universität Magdeburg, Germany, and the Technische Universiteit Eindhoven, Netherlands. The roll-out of renewable energy technologies in Germany is at the core of his research in the work group of Prof. Dr. Gundula Hübner and Dr. Johannes Pohl at the MSH Medical School Hamburg. The topic of acceptance plays an integral role in the research project "Inter-Wind: Interdisciplinary analysis and mitigation approaches – residents' perception of acoustic and seismic wind

turbine emissions”, where the focus is on noise perception of wind turbines. Acceptance also played an important role in his previous research about cargo bike trans-shipment hubs and their integration into an urban environment.

Paper: ‘Social Acceptance – citizen participation and beyond’

Valentin Leschinger, Florian J. Y. Müller, Dr. Johannes Pohl, & Prof. Dr. Gundula Hübner

While the expansion of renewable energy technologies in Germany is widely approved by the majority of the population, local projects frequently meet controversial discussions and opposition. Opposition leads to innovation, such as bird protection systems, but can significantly delay developments, leading to lengthy procedures and higher costs. It is therefore vital to understand what drives opposition and acceptance. Simple solutions (e.g. setback distances) do not reflect the complexity of the issue, rather several factors affect local acceptance. Beyond the perceived fairness of the planning process further factors are important, such as the economic impacts, attitude to the energy transition, social norms and impacts on nature and residents. The interplay of these factors is presented in a recent acceptance model, based on an interdisciplinary study (n = 118).

Besides local acceptability of wind farms the experienced planning process is linked to how annoying the operating turbines are perceived. Empirical evidence on the relation will be provided from several surveys conducted in the U.S. and Europe. Although participation is not a panacea, it can lead to less opposition and annoyance if the process was perceived to be legitimate.

In a field project we investigated an innovative approach to increase legitimacy by initiating a citizen group (n = 9). Empowered by planning experts this group developed a renewable energy deployment strategy for their region, thereby, introducing local values and experiences into the planning process. Their planning draft was presented in town-hall meetings and discussed in their communities, incorporating a variety of local views. In a survey (n = 55) the plan of the citizen group was compared with two plans that were developed according to conventional planning strategies. Results show a preference for the citizen plan. Participants rated the plan to better fit the regional identity, and evaluated the distribution as fairer than the other plans.

Cymene Howe

Cymene Howe is Professor of Anthropology at Rice University. Her books include *Intimate Activism* (Duke 2013), *The Anthropocene Unseen: A Lexicon* (Punctum 2020) and *Ecologics: Wind and Power in the Anthropocene* (Duke 2019), which follows human and more-than-human lives intertwined with renewable energy futures. Her

current research focuses on adaptation to ice-loss in the Arctic region and sea level rise in coastal cities around the world. She co-produced the documentary film Not Ok: A Little Movie about a Small Glacier at the End of the World and co-created the Okjökull memorial in Iceland, the world's first memorial to a glacier felled by climate change.

9: Indigenous Peoples, Climate Justice and Energy

Aus.(AEDT): Dec. 9, 7-9am. India (IST): Dec. 9, 1:30-3:30am. Germany (CET): Dec. 8, 9-11pm. US (MT): Dec. 8, 1-3pm.

Chair: Gary Dirks

Panel: Paloma Mohammed Martin, (Vice Chancellor, University of Guyana), Ka'eo Duarte (Kamehameha Schools, Hawai'i), Chéri Smith, Founder & CEO at Indigenized Energy Initiative, Melissa Nelson (College of Global Futures, Arizona State U).

Organised by Global Institute of Sustainability and Innovation, Arizona State University, USA.

Chair

Gary Dirks

Dr. Gary Dirks is senior director of the Global Futures Laboratory, and Senior Director, LightWorks®, an Arizona State University initiative that capitalizes on ASU's strengths in solar energy and other light-inspired research. He is also the Julie Wrigley Chair of Sustainable Practices and a professor of practice in the School of Sustainability and distinguished sustainability scientist. Before joining ASU, Dirks was the president of BP Asia-Pacific and the president of BP China. In China, he grew BP from an operation with fewer than 30 employees and no revenue to more than 1,300 employees and revenues of about \$4 billion in 2008.

Panel

Paloma Mohammed Martin

Paloma Mohamed is Vice Chancellor of the University of Guyana. She is a full Professor of behaviour and communications. A futurist scholar noted for her work on change in both humans and human systems, she is the first woman to lead the University in its 58 year history and the first woman to be appointed Vice Chancellor at any University in the Anglo-phone Caribbean. In 2015, she became the first woman Caribbean Laureate for Excellence in Arts and Letters, considered the Nobel prize of the Caribbean. She is credited with developing the University of Guyana's BluePrint 2040 through which the

University is forging its role in national, regional and planet-relevant resiliency and readiness.

Paper: 'Exploring Darkness, My Old Friend...'

All of everything is energy in-form-ation. Therefore, energy must be the most abundant resource in the multi-verse. However, humans have so far only been able to harness the most crude and non-renewable sources with dire consequences perhaps - not for our planet -but for the species that inhabit it at this moment. Can this indigenous understanding of energy as a ubiquitous and multi-various universal constant underpin development of different energy sources, processes and systems that will be known as the great energy transition? What could this mean for homo sapiens constructed as indigenous, energy, equity and earths future? These questions are explored in this short presentation.

Kā'eo Duarte

Kā'eo Duarte is Vicde President of the Kamehameha Schools Community and 'Āina Resiliency Group in Hawai'i. He and his team are charged with stewardship of over 360,000 acres of 'āina (land, water and resource holdings) on five islands. Prior to joining KS, Duarte was a faculty member at the University of Hawai'i at Mānoa where he specialized in indigenous resource management and hydrological sciences. In addition to fulfilling his leadership role at KS, he currently serves as board chair for the Hawai'i Green Growth Local2030 Hub, and chair of the Hawai'i Fresh Water Council. Duarte holds a Bachelor of Science degree in civil engineering from Princeton University and a doctorate degree in environmental engineering from the Massachusetts Institute of Technology.

Paper: Relationship-driven approaches to incubate and scale local, island solutions

Success or failure of sustainability projects and transformative change efforts in Hawai'i have generally hinged on the ability to navigate trust relationships between community (Native Hawaiian and otherwise), business interests, and government. A long history of social injustice and dispossession of our native kingdom, population and worldviews continues to color decision-making, though there is much positive momentum in elevating and embedding the indigenous voice at multiple levels of socio-political influence. At Kamehameha Schools, a native Hawaiian educational trust that is also the State's largest private landowner, we are seeking to (re)weave our education mission with our actions as a land steward and economic engine for overall well-being of the people and places we love. A driving principle is our familial relationship to 'āina (land and waters in all forms) as the living source of physical, spiritual, intellectual and

material nourishment and wealth. External to our organization, efforts like the Aloha + Challenge via the Hawai'i Green Growth Local2030 Hub is an example of coalition-building networks rooted in indigenous knowledge that are emerging to bridge institutional silos and perspectives, create accountability with shared measures and targets, and support the necessary conversations to drive scalable solutions to local and global challenges.

Chéri Smith

A descendant of the Mi'Kmaq Tribe, Chéri founded Covenant Tribal Solar Initiative (now the Indigenized Energy Initiative) in 2016, driven by the desire to leverage her decades of experience to bring the life-changing economic and environmental benefits of solar to Native American communities. Chéri led Workforce Strategy for Tesla, Inc., after serving as Head of Workforce and Training Development for SolarCity. Following five years as Director of Education & Workforce Development for the American Council on Renewable Energy, Chéri spent years in private practice, providing solar energy planning, workforce and curriculum development support to the U.S. Department of Energy, state governments, and colleges and universities.

Paper: Energy Sovereignty is key to a Just Transition

For a true just transition away from fossil fuels to occur, it is essential that investments of funding through programs like ARPA/Build Back Better are carefully applied to fundamentally alter the space which Indian Country holds in the America of the future — creating thriving and flourishing indigenous societies where there is now suffering, and empowering cultural survival and the ability to chart a self-determined path toward a sustainable future for America's longest established inhabitants.

The most powerful economic driver in the global economy is energy. Traditionally dominated by the fossil fuel industry, the energy systems in Indian Country - the Northern Plains of the United States - are ripe for transformation towards modern energy generation, storage, distribution, and management technologies. However, all too often emerging energy projects in this region and beyond are undertaken by out-of-state entities utilizing imported manufactured components and workforces.

Indigenized Energy Initiative was formed to strategically leverage: (1) the workforce and transmission capacity created by shuttering coal generation plants; (2) the declining cost o/and rising demand for renewables by regional Indian Tribes and utilities; (3) the opportunities for manufacturing and new businesses centred on renewable energy and energy efficient housing; and (4), the cultivation of a modern workforce, employing displaced indigenous coal workers and other community members in economically

distressed / COVID stricken Indian Reservations and neighbouring communities. Utilizing a 'by-Native-people-for-Native-people' approach, it is possible to restore vibrancy and vitality to indigenous communities, while restoring self-determination, hope, and true sovereignty.

Melissa Nelson

Melissa K. Nelson, PhD joined Arizona State University in August 2020. She is a professor of Indigenous Sustainability in the School of Sustainability. Nelson is an Indigenous ecologist, writer, editor, media-maker and scholar-activist. She is a transdisciplinary and community-based scholar dedicated to Indigenous rights and sustainability, biocultural heritage and environmental justice, intercultural solidarity, and the renewal and celebration of community health and cultural arts. Melissa Nelson is Anishinaabe, Cree, Métis, and Norwegian (a proud member of the Turtle Mountain Band of Chippewa Indians).

Joining panel for second hour of session.

Community Power Workshop – Problems and Solutions in Community Energy

Aus. (AEDT): 11:00am- 3:30pm India (IST): 5:30am- 10am Germany (CET): 2:00am- 6:30am US (MT): 5:00pm- 9:30pm

A practical workshop for people in the field. Australia focussed but all welcome.

Organised by the Climate Justice Research Centre, University of Technology Sydney, Australia.

This workshop is to discuss the problems being faced by those 'doing' community power in Australia, and to enable people to share any solutions and to talk with others about their experiences.

The workshop will consist of short talks, Q&A, whole group discussion and smaller break out group activities.

The ultimate aim is to enable knowledge sharing, build new networks and begin developing a repository of 'problems and solutions' so that people will not have to 'reinvent the wheel' yet again. The workshop will be recorded, information collated, before being returned for further feedback.

Workshop includes speakers from grass roots community and organisation led energy projects, as well as community energy industry and advocacy organisations, such as:

- Community Power Agency
- Energise Gloucester
- Haystacks Solar Garden
- Enova Energy Australia
- Pingala
- Geni.Energy
- Re-Alliance
- Port Pirie Regional Council
- Clean Energy For Eternity
- Coalition for Community Energy
- Cities Power Partnership
- CORENA
- ARENA
- Co-Operative Power

10: Planning and Participation in Transitions, Substate to Global

Aus.(AEDT): Dec. 9, 4- 6pm. India (IST): Dec. 9, 10:30- 12:30pm. Germany (CET): Dec. 9, 6- 8am. US (MT): Dec. 8, 10- 12 midnight

Chair: Tom Morton

Panel: Sven Teske (ISF), Katja Muller (IASS), Tom Morton (Martin-Luther U); Devleena Ghosh (UTS) and Gareth Bryant (USyd); Linda Connor (USyd) and Lisa Lumsden (UTS); Franziska Mey (IASS)

Organised by the Climate Justice Research Centre, University of Technology Sydney, Australia.

Chair

Tom Morton

Tom Morton is an Associate of the Centre for Interdisciplinary Regional Studies (ZIRS) at the Martin Luther University, Halle, Germany. He was previously Associate Professor of Journalism at the University of Technology Sydney, and a reporter and radio documentary producer with the Australian Broadcasting Corporation. He has a PhD in German Language and Literature.

Panel

Sven Teske

Sven Teske is an Associate Professor and Research Director at the Institute for Sustainable Futures, University of Technology Sydney with a research focus on energy decarbonisation pathways for specific industry sectors and regions. 100% renewable energy concepts required to achieve the Paris Climate Agreement for countries, regions, cities, microgrids for islands and the development of National Determined Contribution (NDC) reports. This includes technical analysis of power grids regarding integration of solar electricity, onshore and offshore wind power generation and electricity and heat storage systems. Furthermore, he has over 20 years' experience in renewable energy market and policy analysis. as well as solar and on- and offshore wind power grid integration concepts in public grids.

Paper: 'Offshore wind – planning certainty through policies for a just transition'

Katja Müller

Katja Müller is an anthropologist at the Institute for Advanced Sustainability Studies & Martin Luther University Halle-Wittenberg. She conducts research into energy transitions, mining and climate change, as well as into museum studies and digitization. She analyses the coal exit in Germany for the IASS Potsdam and renewable energy for the University of Technology Sydney, and is Privatdozentin for social anthropology at Halle University.

'Living the *Energiewende* in Brandenburg: an ethnographic account of local energy conflicts and social legitimacy' (with Tom Morton)

The German state of Brandenburg has been a leader in the expansion of renewable energy, but in recent years growth in wind energy in particular has stalled, at a critical juncture for Germany's *Energiewende* (energy transition) and the country's climate goals. We report on our findings from three years of ethnographic fieldwork in Teltow-Fläming, a district where the scale and density of wind farms has increased steadily in recent years, leading to opposition from some (but not all) local residents. We find that people may be sympathetic in principle to wind energy, and the goals of the *Energiewende* overall, but find their attitudes change when confronted with specific projects in the places where they live and work. We explore how planning processes and opportunities for public participation may influence attitudes, and suggest some lessons from our fieldwork which could help strengthen the legitimacy of renewable energy at a local, regional level and national level.

Devleena Ghosh and Gareth Bryant

Devleena is Honorary Professor in the School of Communications in the Faculty of Arts and Social Sciences. Her research interests lie in the fields of colonial, postcolonial, environmental and gender studies, specifically in the Indian Ocean region. Her current projects include ones on coal mining and climate change in India and transitions to renewable energy sources in India. In both projects, a chief focus has been on the rights and demands of indigenous peoples, affected by the processes of resource extraction and land acquisition.

Gareth Bryant is a political economist at the University of Sydney, where he is an ARC DECRA Fellow in the Department of Political Economy. Gareth researches how public policy and public finance can create more sustainable, equal and democratic economies. Gareth is the author of *Carbon Markets in a Climate-Changing Capitalism* (Cambridge University Press, 2019).

Paper: 'Land, livelihood and large-scale solar power: Evaluating the Pavagada solar park in Karnataka, India'

This paper evaluates the winners and losers of energy transition, as it is playing out around the Pavagada solar park in Karnataka, India. We begin by analysing the innovative land leasing and competitive tendering mechanisms of the 'Pavagada model'. We then evaluate the socio-ecological outcomes of the model for different groups. We show the solar park has provided investors with low-risk returns, state electricity distributors with low-cost power, and larger landowners with new income streams. However, we find that the model is entrenching colonial, gender and caste-based inequalities and oppressions, because landless agricultural labourers have lost income without gaining new employment opportunities. We argue that modes of energy transition that are primarily focused on driving down costs and attracting private investment over other socio-ecological goals exclude and potentially harm the poor and powerless. The case of Pavagada demonstrates the need to for democratic ownership and control of renewable energy.

Linda Connor and Lisa Lumsden

Linda Connor is Professor Emeritus at the University of Sydney. She works on the anthropological study of anthropogenic climate change and energy transitions with colleagues at the Climate Justice Centre, University of Technology Sydney. She is co-author of *Beyond the Coal Rush: A Turning Point for Global Energy and Climate Policy?* which focuses on ethnographic studies of the 'coal rush' and its opponents in Australian, Indian and German mining locales. Current research is funded by the Australian Research Council: *Decarbonising Electricity: A comparison in socio-ecological relations*. Her ethnographic research in South Australia is part of a cross-national study of the social legitimacy of clean energy transitions in Australia, India and Germany.

Lisa Lumsden is a Researcher for the Australian Research Council project, *Decarbonising Electricity: A comparison in socio-ecological relations* and also at the Climate Justice Research Centre, University of Technology Sydney, and also a Project Officer with The Next Economy, working directly with communities facing economic transition across Australia. Lisa was an elected City Councillor of a small regional town through the closure of the local coal power station and has personal experience of what this means for communities. She was also a key community leader in the 'Repower Port Augusta' campaign that sought a just energy transition for the town. She has a passion for supporting the renewable energy transition in a way that delivers real social, economic and environmental benefits to regional Australia (and the planet), and has received South Australian awards for her efforts.

Paper: 'Missing in transition: renewables development in a South Australian region'

South Australia is the leading state in Australia's uneven path to energy transition. In a national electricity market dominated by coal-fired power, South Australia was 58.6% powered by renewable energy in 2020, from a 2006 base of zero renewables. Most renewable electricity is supplied by wind and rooftop solar. There is no coal power and gas, which is in decline, makes up the supply balance. With world class renewable resources, South Australia expects internationally competitive power prices will enable substantial economic growth. The potential to generate 500% of operational demand is a scenario being pursued with household investment in rooftop solar and batteries, government funded transmission infrastructure upgrades, and heavy dependence on private investment in large scale generation assets, increasingly by transnational energy corporations.

Within this macro context, this paper reports on data from ethnographic research in the Upper Spencer Gulf, in South Australia. This is a socio-economically disadvantaged region of intensive utility scale renewables projects and a history of heavy industry employment and cyclical decline, intensified by the 2015/16 closures of the coal mine and power station generators. What has energy transition been like for the people living within this region? We analyse the mixed experiences, values and expectations of new energy industries among residents, organisations and agencies, and consider the implications for the social legitimacy of the private investment model and possible alternatives.

Franziska Mey

Dr. Franziska Mey is a research associate in the Energy Transition and Public Policy Group at the Institute for Advanced Sustainability Studies (IASS) in Potsdam. Her research focusses on socio-political issues in the context of the energy transition. She investigates the dynamics of a socially just coal phase-out and the participation and acceptance of citizens in the energy transition. Her work concentrates on two projects: in the EU project Tipping+, where she investigates tipping point dynamics at the regional and local level based on case study research in coal regions. For the Tripod project, she conducts an international conjoint survey to identify individual preferences about the future design of our electricity system. Furthermore, she analyzes the development of political and policy narratives of a centralized and decentralized energy transition.

In addition to her work at the IASS, Franziska Mey is an honorary board member of the non-governmental organization Community Power Agency. Prior to joining the IASS, Franziska Mey worked at the Institute for Sustainable Futures in Sydney, Australia and the World Wide Fund for Nature (WWF). She completed her PhD at the University of New South Wales on the Development of Community Energy and the Role of

Institutional Factors supported by a scholarship from the Australian Cooperative Research Centre for Low Carbon Living. She holds a degree in political science and a master's degree in regional development and nature conservation.

Paper: Centralisation or decentralisation? Narrative changes in policy direction – what does it mean for the European energy system's future?

Franziska Mey, Diana Süßer and German Bersalli, Institute for Advanced Sustainability Studies Potsdam

While there is a wide consensus that renewable energy sources must be rapidly expanded, it is less clear how the future design of the energy system will look like: What renewable energy sources do we build? Where do we build the renewable energy infrastructure? What visual and landscape impacts are socially acceptable? How do people want to be involved in the energy transition? These questions dominate normative political and scientific debates about preferable energy systems merging in technical and social considerations of either a centralisation or a decentralisation of our future electricity supply. However, the policy preferences and governance choices for a centralised vs a decentralised energy system have not been structurally analysed. Thus, in this article, we will analyse if and how the policy preferences and aims for centralisation and decentralisation have changed. The central research question is: Do EU strategies and policies support a centralised or a decentralised European energy system design? And can we observe changes over the last 20 years? In order to do so, we analyse European policy documents (strategies and legislations) from 2000-2021. This analysis will be complemented by stakeholder interviews to scrutinise the EU documents with motivations and expectations for a decentralised system by EU policy makers, energy industry, NGO's and consulting. The results will be a mapping of the policy process from 2000-2021 and the analysis to what extent the European Union supports/ has supported a centralised or decentralised energy systems. Furthermore, the interviews will provide important insights into the developments, reasons for policy changes and the policies in place to support the one or the other system design. With this research, we will provide important insights on the role of policy strategies and governance instruments for the future energy system design in the EU, and we will demonstrate where policy narratives and actual policies align and where not.