



Social Science Perspectives on Wind Energy

Suzanne Tegen

CETP TRI2 Grand Challenges in Wind Energy Workshop

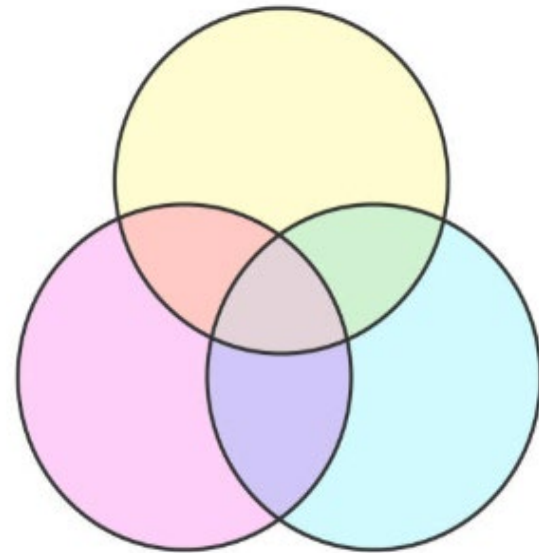
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Social Science for Collaborative Wind Energy Planning & Participation (IEA Wind Task 62)

Leveraging social science research and insights to encourage and enable successful relationships between

- wind energy developers/industry,
- communities, and
- authorities

with the goal of fair, value-balancing, responsible wind energy projects.





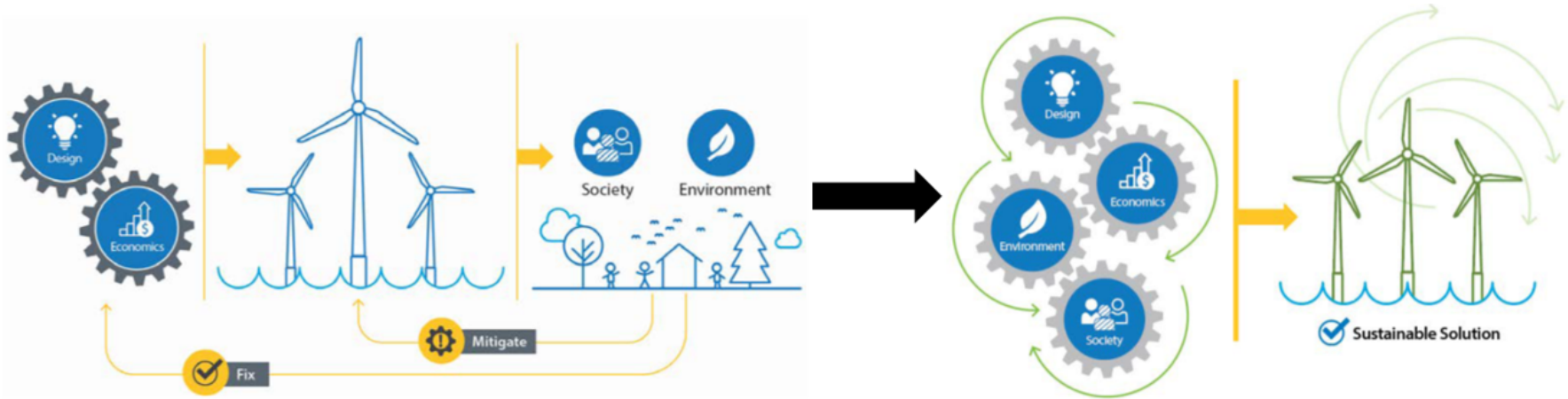
Why social science in wind energy?

Wind energy development isn't just technical; it's rooted in social contexts and community dynamics.

Social science enables us to address community concerns, fairness, and participation from the outset.



Grand challenges of wind energy: include potential host communities (societal burdens and benefits) into the process.

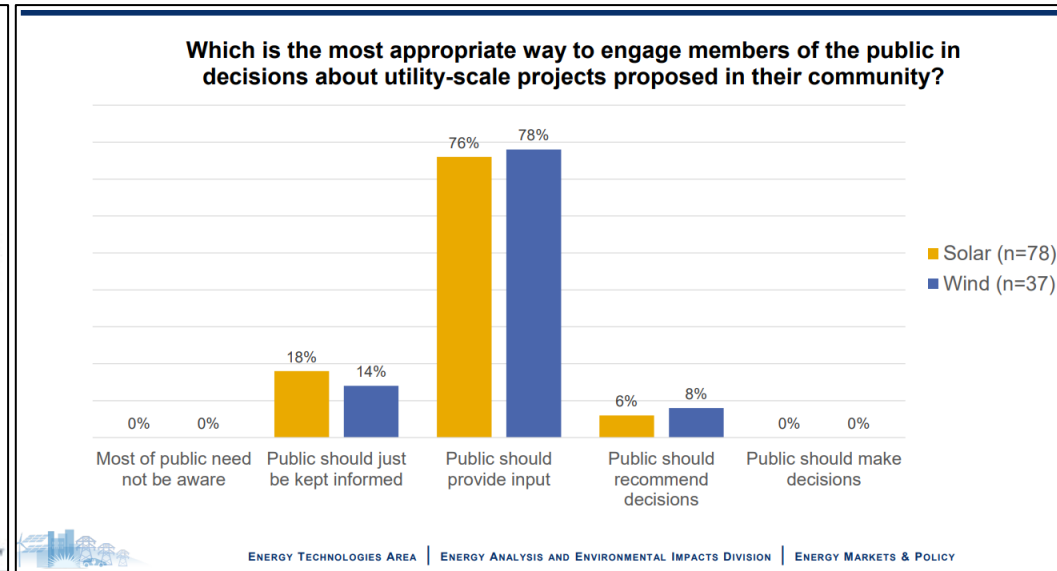
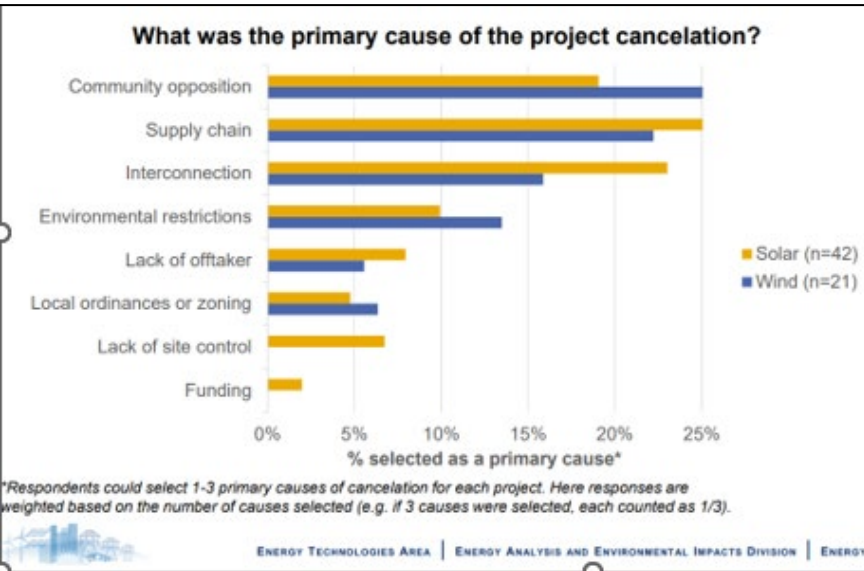


Transition from the current approach (Left) where social & environmental aspects are considered after the fact, to a co-design approach (Right).

Image by Carlo Bottasso, Technical University of Munich.

Developer survey – the challenge is grand.

By Joe Rand (Task 62) and colleagues





We Have Learned...

- We know that wind farms get blocked because of public opposition.
- Even if you design the most perfect turbine, in the best array possible, people might stop it from being deployed, and then the hard work and funding were not worth the effort.
- We have learned over the years about how to involve potential host communities in early planning stages – listen first, then put the project in terms that the community can understand and appreciate. How can it benefit them?
- The easier challenges (lights, shadow flicker) can be solved by technology. The grand challenges take time, money, and trust.

Task 62 - Experts Learning from Experts

Task 62 members are active in their respective countries doing the following

In Canada, we work with project owners/developers and **First Nation residents to explain benefits, listen to concerns, and solve issues** that arise with the community-owned wind project.

In Finland, we work with local authorities and the federal government to **encourage collaboration and understanding about the ways wind energy development can negatively and positively impact local community members.**

In Germany, we work with wind project neighbors who are strongly annoyed by the project and with project owners and engineers to **try and solve issues around sound, annoyance, and flicker.**

John Aston (Ireland), Ayano Ukekuchi (Japan), and Liisa Nyrölä (Finland) attended the International Association of Impact Assessment's conference "Impact Assessment for a Just Transformation" **between social and environmental scientists.**

In Japan, we work with **local prefecture leadership and fishing communities to help determine policies for deploying offshore wind that create co-benefits** for fishing communities, wind project owners, and local and national authorities.

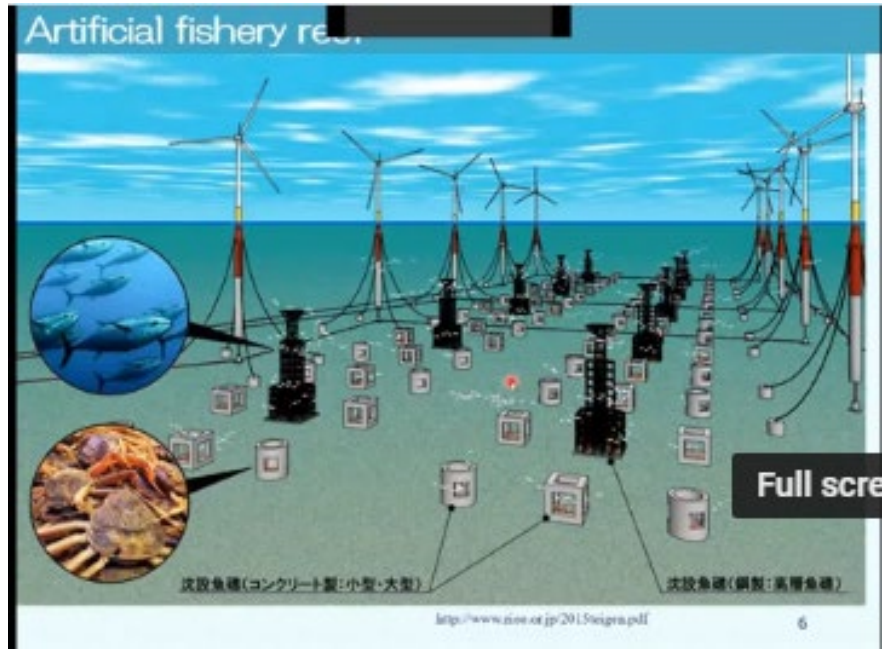
In the U.S., researchers surveyed thousands of wind project neighbors and developers to determine **how developers think potential host community members should be included in deployment and planning.**

In the UK, we are working with local strategic organisations, project developers, and decision-makers (local through to national) to **align development needs with the delivery of social and environmental solutions through the development of locally embedded investment portfolios.**



Example: Offshore Wind Co-benefits in Japan

Japanese artificial reef example of co-benefits: tourism, fishing industry, scientific, weather, climate and other observations.



Task 62 in Action: Work Packages

1. **Socio-Enviro-Technical collaboration:** Addressing impacts like noise and environmental factors and sharing challenges and solutions with technologists.
2. **Local engagement and approval:** Enhancing planning processes to foster community approval - where to go beyond what the law says.
3. **Organisational culture:** The power of integrating meaningful engagement into core business; and the obstacles created by not doing so.
4. **Project participation and business models:** Exploring models for shared benefits such as community ownership or co-ownership.
5. **Tools for improved planning:** Using gamification and other methods for better dialogue.

Our work benefits these groups:

Developers/Industry: Provides tools for effective community engagement, reducing delays and project cancellations.

Communities: Ensures community voices are heard, respected, and partnered with.

Authorities: Supports local, state, and federal policy-making with data, insights on social acceptability, and collaboration.

Researchers: Can enable international collaboration and knowledge exchange before turbine and wind park designs are finalized.



Participants and their institutions

Country	Participants' Institutions	Participants	Status (M/O)
Canada	University of Western Ontario	Jamie Baxter	M
Denmark	Danish Technical University, Aalborg University	David Rudolph, Kristian Borch	M
Finland	University of Eastern Finland	Lasse Peltonen	M
France	Total Energies	Magali Collins	O
Germany	Federal Ministry for Economic Affairs and Climate Action (BMWK) and (MWIDE)	Gundula Huebner, Jan Hildebrandt	M
Ireland	AstonECO, University College Cork, Sustainable Energy Agency of Ireland	John Aston, Bernadette Power, Connor Malloy	M
Japan	Nagoya University, Toho University	Yasushi Maruyama, Memi Motosu, Ayano Takeuchi	M
Netherlands	Pondera	Marielle de Sain	O
Norway	Norges Vassdrags- og Energidirektorat (NVE)	Kristin Mathiesen	M
Sweden	Swedish Energy Agency - Energi Myndigheten Sweden	Amanda Ros	O
Switzerland	Swiss Federal Office of Energy (BFE)	Need a new member	NA
U.K.	Celtic Sea Power, University of Exeter	Neil Farrington, Patrick Devine Wright, Pamela Buchan	O
U.S.	Lawrence Berkeley National Lab, National Renewable Energy Lab, Colorado State University	Joe Rand, Matilda Kreider, Suzanne Tegen	M

National Networks for Global Collaboration

Each country has groups (researchers, industry members, practitioners) to feed into Task 62.



Next Steps for the new Task 62

- ❑ Ongoing collaborations with other Grand Challenge researchers on present & future research e.g., meeting in January with environmental task.
- ❑ Workshops, publications, webinars, and tool development to promote actionable social science in wind energy.
- ❑ Outreach e.g., the Wind Energy Science Conference in 2025 to showcase how social science facilitating collaborative wind energy development can turbo charge the energy transition.
- ❑ Development of guides and recommendations for planners, designers, developers, and local authorities.
- ❑ Establish and implement cross-disciplinary research and knowledge sharing.

Thank you.

Join us in advancing social science in wind energy.

- ❑ Let's have a conversation about where what you are doing that fits with Task 62.
- ❑ Help us learn from each other across the globe.



Suzanne.tegen@colostate.edu and John.aston@astoneco.com