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Aiming for Success Case Creation of Offshore Wind Farms in Japan

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Abstract:

In order to promote for discharge reduction of greenhouse gas by avoiding too much dependency on nuclear power generation, introduction of the renewable energy needs to be strongly carried out. Up to present, among various ocean renewable energy potential, ocean wind-generated electricity is supposed to be most practical to be realized. This paper introduces research activities related to offshore wind power generation in Japan. Challenges towards the creation of the success stories of the offshore wind farm business are important for both types of wind farms of bottom fixed ones and floating ones. This paper also introduces overview of the special session relating to offshore wind power of the utilization of the Ocean Development Symposium of the Japan Society of Civil Engineers (JSCE), of which the author had served as a session organizer. At the special session held in the years of 2014 and 2015, several field research activities were presented with the aim of successful future of offshore wind farm business. And the panelists discussed following points in order to clarify future activities to be carried out.

1) Support Ports and Harbors It is confirmed that ports and harbors infrastructure development is an important issue towards the offshore wind farm implementation.

2) Access to offshore wind farms For the easy access to the offshore wind turbines, design of access vessels and offshore wind turbine towers is important. It is recommendable to take into consideration of directional wave characteristics.

3) Consensus building For smooth consensus building, the participation of the stakeholders of the project is desirable. Joint management with local stakeholders is ideal.

4) Strengthening of the electrical power system acceptance Strengthening of the electrical power system acceptance ability as a social infrastructure is desired.

5) Economic rationality For offshore wind farm project has economic rationality, it is important to consider following items;

a) Wind conditions should be good.

b) Possible reduction of the construction cost per unit of output.

c) Stable continuous operation avoiding operational failures.

6) Creation of the first successful case For the development of the offshore wind farm project, it is important to create the first successful case by overcoming the above mentioned problems.

Conflicts around the German Energiewende: social tipping points in a socio-technical transition

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Abstract:

The German ‘energy transition’ (Energiewende: EW) is a long-term socio-technical transition in the sense of Grin et al. (2010), encompassing the phasing-out of nuclear power, the significant improvement of energy efficiency in many sectors, and the massive roll-out of renewable energy. But especially this latter goal is facing a growing social resistance. While on a country-wide and projectunspecific level a majority of Germans supports the EW, at a local level resistance is increasing and

conflicts are spreading. According to a popular explanation this resistance follows a NIMBY (‘Not In My Back Yard’) logic, i.e. protesters are following selfish and irrational motives. But this explanation is missing many points (Devine-Wright 2011). By taking a closer look at a case study in Germany’s Southwest, the author applies the social tipping points approach popularized by Gladwell (2006), together with a discourse-actor-network analysis (Janning et al. 2009) and the micro-sociological approach of Randall Collins (2000). This case study is interesting because it analyzes how a critical mass of well-networked citizens with particular mass and social media skills did manage to ‘turn around’ a basically very favorable local situation for a small wind park. The author tries to identify the social tipping points—especially the issues of critical mass formation and the ‘power of the few’—

that led to a shift in local public opinion. Finally, the author draws some general conclusions for the German EW from this case and compares it to Japan. The case study might be interesting as it can be regarded as a kind of ‘second-order’ tipping point, i.e. a shift in social settings that have been taken in order to overcome the overexploitation of natural resources (energy) and sinks (climate). It thus can illustrate the general relevance of the tipping point approach.

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How to Achieve Local Acceptance for the Expansion of Onshore Wind Power while Supporting Local Development, Energy Democracy and Lower Electricity Prices

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Abstract:

The full transition to renewable energy (RE) to mitigate climate change and reduce the level of pollution is a challenge that many countries around the globe are now committed to face. This will require, among others, the construction of several new RE production units. RE is decentral by nature, meaning citizens will have to live closely to an increasing amount of energy installations, especially in rural areas, where most of the resources are located.

Most people are supportive of RE however, at the local level, a growing movement refuses to have RE installations –such as large wind turbines near their homes. This is the case in Denmark where local protests are preventing the development of onshore wind power, by resulting in delays and even cancellation of specific projects as well as full municipal wind plans. In this context, offshore wind power was presented as an alternative, even though this is 2-3 times as expensive as onshore wind power —which nowadays is the cheapest source of electricity in Denmark. Therefore, it can be concluded local opposition to large onshore wind turbines is resulting in unnecessary additional costs —to be ultimately paid by all consumers.

The Danish Act for Promotion of Renewable Energy 2008 includes different measures that aim to increase the acceptance of onshore wind turbines. Nevertheless, the current opposition shows they are not effective. Some experts state 100% local ownership is the key for local acceptance whereas others present alternative solutions that intend to reduce local opposition in the interest of commercial investors.

Based on various Danish case studies, this paper argues those solutions might not lead to higher local acceptance. Instead, it maintains community power for common good is the most effective solution. In contrast to the for-profit commercial ownership models, community power for common good results in local development, enhanced energy democracy and lower electricity prices.

Therefore, this solution enables the full exploitation of the socio-economic benefits of RE, unlike other investor-oriented solutions. That is the reason why this paper encourages policy makers to integrate specific targets for community power for common good in national, regional and local energy policies. This will be particularly relevant for rural areas, which could significantly benefit from the development opportunities RE offers.

How social outcomes are intrinsically linked to Australia's wind future.

Taryn Lane

Hepburn Wind, Embark Australia & The Australian Wind Alliance

Abstract:

How social outcomes are intrinsically linked to Australia's wind future. The Australian wind industry came to a virtual standstill in 2013 through to mid 2015 and is just now finding its momentum again. This paper will set the context and share the journey of the social and political factors that contributed to this and how a new approach is being defined by industry, government and communities in order to rapidly deploy wind in the face of the transition from a coal economy. Australia is an important example of where a well-resourced anti-wind campaign effectively impacted community perceptions about the safety of wind and then directly impacted the ability of the industry to develop. Poor social acceptance of some large-scale wind development led to much of the State of Victoria, with the highest wind resource in Australia, being a 'no-go' area for wind development through the delivery of VC82 in 2011, the toughest wind regulations in the world. Further impeding the uptake of wind energy was the fracturing of 16 years of bipartisan support for renewable energy which culminated first in the removal of the price on carbon in 2014 and then followed by a non-statutory review of the Renewable Energy Target (RET). This created devastating conditions for wind energy in Australia. The RET was finally resolved mid 2015 when the Federal Government and Opposition finally agreed on a reduced RET. Currently new investment is largely coming from state government initiatives, but there will be rapid development of wind energy as Australia is now set to build as much in the next few years as has been built in the last 15 to meet the RET. In regards to politics driving social outcomes in wind and adding a direct value proposition, The Australian Capital Territory (ACT) was the first to lead with its reverse auction for wind with a preference for projects with a high level of community engagement. This paper will explore the tools and approaches that were defined in the Best Practice Community Engagement in Wind Guide that was commissioned by the ACT Government. This auction has resulted in the bar being raised by commercial developers with Coonoer Bridge wind farm being successful with an innovative benefit sharing model and CWP partnering with Embark to deliver a community investment partnership project. This paper will also showcase practical on the ground learnings from the first community-owned wind farm – Hepburn Wind, now five years into operating and celebrated for its unique approach to community engagement. It will also explore the work of the Australian Wind Alliance in advocating for wind farms and sharing the good news stories about wind energy. In addition, this paper will showcase the current approach and initial findings for the national research project "Enhancing Positive Social Outcomes from Wind Development in Australia: Evaluating Community Engagement". This project includes benchmarking and evaluating current community engagement and benefit sharing practices in wind development in Australia, to develop pathways for achieving positive social outcomes and to build awareness about these.