PUBLIC SUPPORT AND OPPOSITION TOWARD FLOATING OFFSHORE WIND POWER DEVELOPMENT

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Overview

The offshore wind power industry is developing rapidly, driven by high energy prices, growing energy demand, and the need to transition to low-carbon energy systems. Earlier offshore wind power projects were located in shallow waters, near the shoreline and used low-cost conventional fixed technology (GWEC, 2022). Due to the abundant wind resources in areas with deep seas, project developers are now led to explore high-cost floating wind power technologies. However, the technology is still immature and needs financial support to be commercially feasible.

Method

The study uses Discrete Choice Experiment(DCE) to elicit willingness to pay (WTP) for offshore wind power using floating technology. DCE is used extensively in the literature, and it is dynamic in nature which capture the multidimensional features of floating offshore wind power and elicit preferences for mutually exclusive policy relevant alternatives. The study includes five attributes, three adopted from existing studies; (i)project size, (ii) use of electricity, (iii) increase in annual households' electricity bill by 2030, and two novel attributes created based on existing market, (i) share of Norwegian technology, (ii) reduction of technology cost by 2030. The study employs a between-sample policy framing treatment. Respondents are randomly assigned to two sub-samples and presented with information about the need to develop floating offshore wind power to either cover increasing electricity demand or meet climate objectives. We analyse the data using a mixed logit model (Train, 2009) using 1000 mlhs draws in Apollo package (cite)

Results

The results show that respondents are willing to pay for medium sized projects, supplying electricity domestically for use in households and decarbonize the offshore oil and gas industry. In terms of technology, households' WTP increase with an increase in share of Norwegian technology in the proposed projects. Albeit respondents positive WTP for the aforementioned attributes, they are not willing to pay to build floating offshore wind power projects for future reduction in technology costs. Overall, respondents in the electricity framing have higher WTP than those in the climate framing.

Conclusions

At a policy level, energy supply to Norway and the use of Norwegian technology should be prioritized when planning and designing offshore wind policy packages. Floating offshore technology is still expensive and relies heavily on subsidies. Therefore, it is crucial to prioritize projects that directly benefit citizens by utilizing technology from local offshore industries and supplying electricity to domestic households and industries. The size of the project is an important consideration in the development of floating offshore wind power. Concisely, people are seemingly more concerned about energy security than fulfilling climate objectives.

References

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