

Factors in Place-Technology Fit of Ocean Renewable Energy

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RESEARCH QUESTION

How can the concept of place-technology fit support community needs in ocean renewable energy (ORE) siting?

BACKGROUND

- Place-technology fit measures suitability of an energy project as determined by place-specific values, beliefs, economies, and ecologies.
- Current Bureau of Ocean Energy Management (BOEM) approval processes explicitly assess ecological and geophysical aspects of place-technology fit.

METHODS

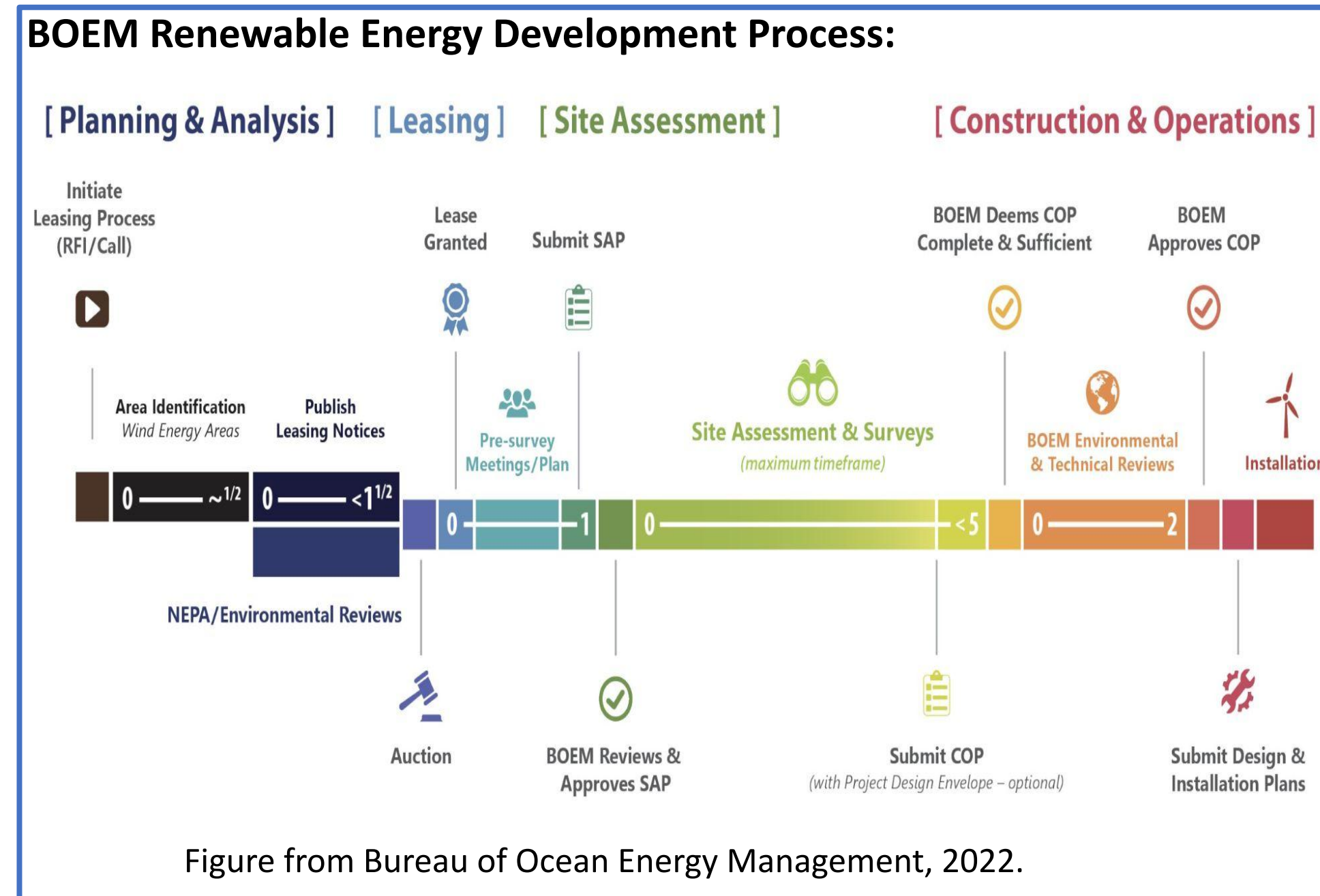
- Literature review conducted using key terms including "offshore wind," "community benefits," "fishery impacts";
- Literature reviewed included peer-reviewed journal articles (n=18), reports (n=4), white papers (n=4), book chapters (n=8), interviews with key informants (n=4), and a BOEM stakeholder meeting (n=1) for a total of 39 sources;
- Sources considered current and future ORE developments in the U.S., Europe, and Asia; related participatory processes; and fundamental social science concepts and methodologies.

DISCUSSION

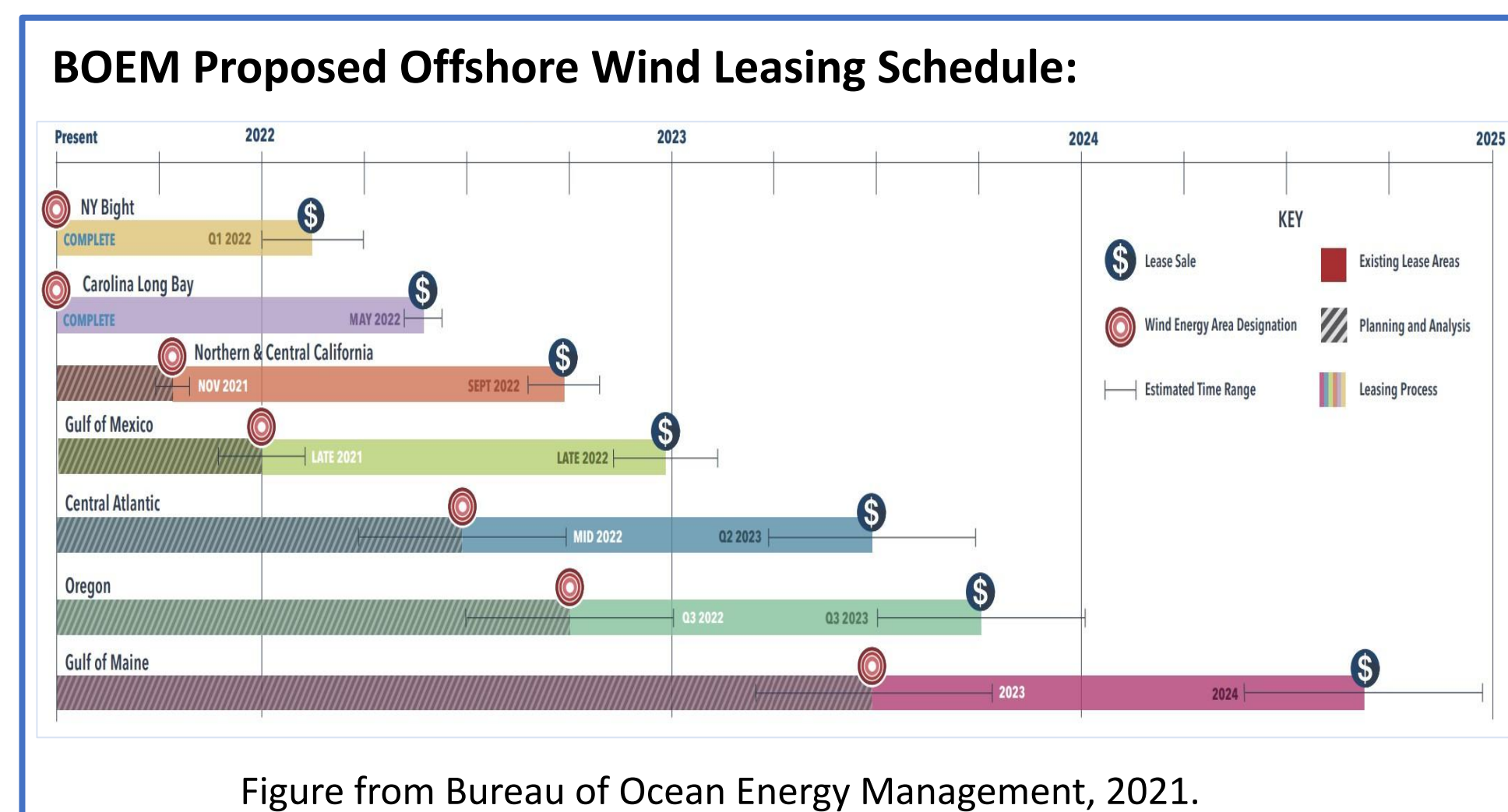
Three themes emerged:

- 1. Communities identify diverse aspects of place with which ORE should fit.**
 - Symbolic beliefs include land or sea as industrial vs natural and undeveloped vs active workspaces.
 - Important local industries include fisheries and tourism.
 - Identity- and community-forming elements of place include heritage livelihoods, cultural practices, and recreation.
- 2. Procedural and distributional justice help inform place-technology fit.**
 - Procedural justice: fair distribution of decision-making power. Good practice includes early and frequent communication, community liaisons, meaningful influence from local knowledge.
 - Distributional justice: balancing losses and benefits to impacted communities. Consideration of communities outside of spatially-defined locations may improve accounting of impacts and losses.
- 3. Future benefits of ORE should align with place.**
 - Understanding benefits of ORE will vary with positionality.
 - Multi-purpose infrastructure and spaces can support local industries and values.
 - Community benefits packages and compensation should directly address current and future community needs.

Understanding “place-technology fit” can illuminate complexities of place and process and align future benefits with community needs.



- ORE development, e.g., offshore wind, is planned to increase significantly over the decade, with national targets of deploying 30 gigawatts of offshore wind by 2030.



Center for Environmental and Resource Economic Policy, NC State University, 2016.

TO LEARN MORE

Devine-Wright, P., & Wiersma, B. (2020). Understanding community acceptance of a potential offshore wind energy project in different locations: An island-based analysis of 'place-technology fit.' *Energy Policy*, 137, 111086.

Haggett, C., ten Brink, T., Russell, A., Roach, M., Firestone, J., Dalton, T., & Mccay, B. J. (2020). Offshore wind projects and fisheries: Conflict and engagement in the United Kingdom and the United States. *Oceanography*, 33(4), 38–47.

Rudolph, D., Haggett, C., & Aitken, M. (2014). *Community benefits from offshore renewables: Good practice review*. University of Edinburgh.

See <https://tinyurl.com/OREreflist> for a full list of reviewed papers.

ACKNOWLEDGEMENTS

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