



Original research article

Wind in the sails or choppy seas?: People-place relations, aesthetics and public support for the United States' first offshore wind project

Jeremy Firestone^{a,*}, David Bidwell^b, Meryl Gardner^c, Lauren Knapp^d^a University of Delaware, 373 Harker ISE Lab, Newark, DE, 19716, USA^b University of Rhode Island, 209 Coastal Institute Building, Kingston, RI, 02881, USA^c University of Delaware, 306 Alfred Lerner Hall, Newark, DE, 19716, USA^d University of Delaware, 356 Harker ISE Lab, Newark, DE, 19716, USA

ARTICLE INFO

Keywords:

Wind power
Place attachment
Landscape
Public opinion
Social acceptance

ABSTRACT

The primary social challenge of offshore wind power development may be local community members' struggle to come to terms with the transformation of the ocean. In this study of local residents' perceptions of the first wind power project off the North American coast, we consider whether factors such as aesthetics and place attachment, dependency and identity might serve as barriers or gateways toward an offshore wind power future. Respondents are 420 coastal Rhode Island and Block Island residents who were randomly sampled by mail or internet prior to turbine installation and after project commissioning. Data were analysed using weighted descriptive statistics and multiple imputed regression analysis. 87% of respondents who live in census tracts bordering the coast support or lean toward supporting the project despite paying significantly above-market prices for the electricity generated. Regression models show that support for the project is influenced, at least in part, by general disposition toward wind power and whether a respondent likes the turbines' appearance, with place-related measures having less influence. Descriptions of the wind turbines that resonated with supporters and opponents include respectively, "Symbolic of progress towards clean energy" and "Cause the loss of something intangible, where all you see is the ocean".

1. Introduction

As of January 2018, Europe had successfully deployed more than 15,000 megawatts (MW) of offshore wind power, providing clean, renewable energy to its citizens and benefits to the climate. The industry has progressed substantially in Europe over the past 25 years, so much so that a sophisticated and reliable technology can now generate price-competitive electricity [1,2]. It likewise holds much promise to deliver clean air, climate mitigation, competitively priced power and economic development to the United States (US), particularly along its eastern seaboard. However, to meet its promise, it is imperative for the US to confront social (the focus here) and regulatory challenges.

The US has moved slowly despite Congress' 2005 direction to the Department of the Interior to establish a program to facilitate the development of offshore wind projects in federal waters. Congress' action proved prescient, as later analyses documented that the Mid-Atlantic wind resource is proximate to demand and large enough to power the regions' entire electricity, automobile transport and building heat needs [3]. The US Department of Energy (DOE) [4] envisions 86 GW of installed US offshore wind capacity by 2050, much of it occurring off the

Atlantic. Although offshore wind power development has faced choppy seas since the first US project was proposed in 2001, with the first two projects (Cape Wind in Massachusetts, and Bluewater Wind in Delaware) abandoned, developments since 2016 suggest a burgeoning industry. Markers include the completion of the 30-MW Block Island Offshore Wind Project (BIOWP) off of Block Island, Rhode Island; Massachusetts legislation committing to develop 1600 MW by 2027; Maryland approving bids from two developers totaling 368MW; approval of the first of what appears to be many projects that will power parts of New York, followed by a request to the Bureau of Ocean Energy Management (BOEM) for the designation of four additional wind energy areas beyond those already designated and leased off of Massachusetts, Rhode Island, New York, New Jersey, Delaware, Maryland, Virginia and North Carolina; and experienced European developers joining the fray.

The primary social challenge may be local community members' struggle to come to terms with the transformation of the ocean [5]. In this first of its kind study of local residents' perceptions of a built offshore wind power project off the North American coast, we consider whether socially-constructed factors such as sense of place and

* Corresponding author.

E-mail addresses: jf@udel.edu (J. Firestone), dbidwell@uri.edu (D. Bidwell), gardnerm@udel.edu (M. Gardner), knlauren@udel.edu (L. Knapp).

aesthetics might serve as barriers or gateways toward an offshore wind power future. Given the present posture of US development, our survey of public perceptions of the BIOWP among Rhode Island (RI) coastal and island residents is timely, and here we report the first of the results from that research.

1.1. People, place, landscapes and wind power

Perhaps the most defining characteristic of a wind turbine other than its provision of economic, environmental, climate and health benefits [6,7] is its effect on people, places and landscapes [8]. This may be particularly true of the offshore environment given the qualities that humans ascribe to the sea [9] and their related desires to avoid human intrusion into offshore environments [10]. Moreover, given offshore wind power project scale and the “lack of meaningful mitigation” to scenic views other than placing infrastructure beyond the horizon, the “dynamic visual qualities” (turning blades, flashing lights) are pronounced [11,12].

The relationship between wind turbines and people is perhaps most succinctly summed up by Wolsink [13, 2695]: “It’s the landscape, stupid!”; however, Pasqualetti [14, 914], who speaks of “land and life” being intertwined, may get us closer to the essence of the matter. In more recent writing, Wolsink [12], describes three misconceptions regarding wind turbines and the landscape, which are germane: (1) visibility of wind turbines equates with visual impact; (2) visibility equates with negative perceptions, and (3) visual impact equates with mere aesthetics. In other words, the visual impact of a wind project is “not an assessment of infrastructure as such, but of landscape quality change invoked by siting of the infrastructure,” which requires consideration of “cultural, social, historical and functional” facets of the landscape change to individuals beyond the project’s visibility [12, 11–12].

Devine-Wright [15] writes more broadly about people-place relations, and more specifically about place attachment and its relationship to opinions regarding energy infrastructure at the individual and community level, and more recently, with Batel, at the country and global level [16]. Some researchers conceptualize place attachment as being comprised of emotional, functional and social ties [17], although others have thought of the emotional (“place identity”) and functional (“place dependency”) constructs as distinct [18], which together with place attachment form a “sense of place,” e.g., [19]. Under this perspective, conflicts over land or ocean uses are based on a “disruption” of these bonds, identity, and dependency [15,20].

Bidwell’s 2015 pre-construction, random intercept study of support for the BIOWP is particularly germane to the present study [21]. He finds that beliefs about anticipated (natural resource and economic) effects have the most explanatory power, with ocean beliefs contributing modestly and place attachment being insignificant. Bidwell surmises that “fit of a project within the landscape may be more important than attachment [21, 105].” In a related vein, researchers considering onshore wind suggest that socially-constructed aspects of a wind project [22] such as its representation as progress toward clean energy may be more important than fit [23].

Research indicates that a nuanced appreciation of place is warranted. Take second homeowners. Stedman [24] finds second homeowners have strong attachments, but unlike year-round residents, whose attachment is rooted in community, theirs is rooted in a setting’s environmental quality and its perception as a place of escape—that is, they ascribed different place meanings. Or take individuals engaged in recreational pursuits. In an early study of offshore wind power perceptions and economic preferences in Europe, Ladenburg [25] finds visual impact perceptions differ by recreational pursuit such as sailing, fishing at sea, and making frequent trips to the beach.

Moreover, not all place-related responses emanate from an interpretation of a given change as disruptive [26]. For example, while place attachment lowered odds of support for a proposed offshore wind power demonstration project in one coastal community (Atlantic City,

New Jersey), in a coastal community in an adjacent state (Delaware), the odds of support of a similar project increased substantially [27]. The driver of support and opposition was not the proposed change per se, but rather whether the change is perceived as being in- or out-of- place [28]. Another example is Devine-Wright’s [29, 341] work on tidal energy installations, where place attachment can have a positive or negative effect on attitude depending on fit between “meanings associated with both place and project.” Indeed, it may be the “symbolic meanings that people adopt when interpreting change ... which are critical in shaping evaluation” [26, 272–273].

As noted by McLachlan [30], wind turbines themselves have meanings, and can represent “stewardship” or “progress” to some and landscape impairment to others. Thus, it is perhaps unsurprising that van Veelen and Haggett [17, 10] found that “different forms of place attachment” (e.g., emotional) can exist side by side within a given locality, which, in turn, influence opinion of local projects.

Given a prime objective of the present research is to inform on-the-ground policy practices as applied to a “new” technology, we take a generally agnostic approach [31] to competing perspectives/theories of place [32], although we adopt a “sense of place” attitudinal framework [19], examining attachment, identity, and dependency separately. Much of the literature on people-place relations and energy infrastructure has used a place attachment and to a lesser extent a place identity framework, yet in our view, place dependency may be particularly germane in an ocean, coastal and island setting enmeshed in a summer tourist economy.

The aforementioned considerations lead us to pose the following research questions:

- 1 Is an offshore wind project’s visual effect on individuals, that is, its appearance, more a function of the physical transformation of the landscape or socially-constructed aspects of that transformation?
- 2 What are the roles of sense of place, visibility, project appearance and project fit in relationship to support and opposition for offshore wind power by island and coastal inhabitants?
- 3 Do different constructs of place—attachment, identity, and dependency—play different roles in support and opposition?

1.2. The setting and the project

Block Island (BI), which The Nature Conservancy [33] named in 1991 as one of the 12 last great places in the western hemisphere, is about 25 km², nearly half of which is protected from development. BI, which can be accessed by regular ferry service, has 27 km of coastal beaches and more than 300 freshwater ponds. The Island averages only 4 m above sea level, although the iconic Mohegan Bluffs sit 61 m above the ocean and are home to the brick Southeast Lighthouse, which dates to the 1870s. BI (aka, Town of New Shoreham) has a year-round population of about 1000 residents; however, it plays host to up to 20,000 individuals at the height of the summer tourist season.

The BIOWP is the first offshore wind project in the US. It is comprised of five 150–6 MW GE Haliade wind turbines that are located in the Atlantic Ocean about 5 km from BI and about 26 km from the mainland RI coast in the Northeast of the United States, along with a transmission cable from the project to the island and a second one from the island to Narragansett, RI (see Fig. 1, which was used in the first survey). Prior to the project, BI was isolated from the mainland electric grid and relied on diesel generation for electricity, thus paying some of the highest electricity costs in the nation.

In 2008, under the authority of the US Coastal Zone Management Act, RI initiated the study of an Ocean Special Area Management Plan (OSAMP) encompassing approximately 3900 km² of ocean. This OSAMP is effectively what is more generally referred to as a marine spatial plan [34]. The OSAMP was motivated by a desire to develop the ocean in order to meet RI’s renewable energy goals. In that same year, RI selected Deepwater Wind as its preferred offshore wind power

Download English Version:

<https://daneshyari.com/en/article/6557473>

Download Persian Version:

<https://daneshyari.com/article/6557473>

[Daneshyari.com](https://daneshyari.com)