

## **Tourism and turbines**

### **an exploratory literature review of the relations between tourism and wind turbines**

Liburd, Janne; Dragin-Jensen, Christian; Hjalager, Anne-Mette

*Publication date:*  
2024

*Document version:*  
Final published version

*Document license:*  
CC BY-NC

*Citation for polished version (APA):*  
Liburd, J., Dragin-Jensen, C., & Hjalager, A.-M. (2024). *Tourism and turbines: an exploratory literature review of the relations between tourism and wind turbines*. University of Southern Denmark. TIC TALKS

Go to publication entry in University of Southern Denmark's Research Portal

#### **Terms of use**

This work is brought to you by the University of Southern Denmark.  
Unless otherwise specified it has been shared according to the terms for self-archiving.  
If no other license is stated, these terms apply:

- You may download this work for personal use only.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying this open access version

If you believe that this document breaches copyright please contact us providing details and we will investigate your claim.  
Please direct all enquiries to [puresupport@bib.sdu.dk](mailto:puresupport@bib.sdu.dk)

## Tourism and Turbines: An exploratory literature review of the relations between tourism and wind turbines

Liburd, Janne; Dragin-Jensen, Christian; Hjalager, Anne-Mette

*Publication date:*  
2024

*Document version:*  
Final published version

*Document license:*  
CC BY-NC

*Citation for pulished version (APA):*  
Liburd, J., Dragin-Jensen, C., & Hjalager, A.-M. (2024). *Tourism and Turbines: An exploratory literature review of the relations between tourism and wind turbines*. University of Southern Denmark. TIC TALKS

Go to publication entry in University of Southern Denmark's Research Portal

### Terms of use

This work is brought to you by the University of Southern Denmark.  
Unless otherwise specified it has been shared according to the terms for self-archiving.  
If no other license is stated, these terms apply:

- You may download this work for personal use only.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying this open access version

If you believe that this document breaches copyright please contact us providing details and we will investigate your claim.  
Please direct all enquiries to [puresupport@bib.sdu.dk](mailto:puresupport@bib.sdu.dk)

Department of Design, Media and Educational Science  
Centre for Tourism, Innovation and Culture (TIC)  
December 2024

# Tourism and Turbines:

An exploratory literature review of the relations  
between tourism and wind turbines



Janne Liburd  
*University of Southern Denmark*  
[liburd@sdu.dk](mailto:liburd@sdu.dk)

Christian Dragin-Jensen  
*Business Academy SouthWest*  
[cdje@easv.dk](mailto:cdje@easv.dk)

Anne-Mette Hjalager  
*University of Southern Denmark*  
[hjalager@sam.sdu.dk](mailto:hjalager@sam.sdu.dk)

TIC is University of Southern Denmark's multidisciplinary research centre with focus on tourism, innovation and culture. The centre is based at the Kolding campus. TIC strives to transform the university to an engaged, collaborative institution where academics and students pursue an unrelenting examination of knowledge, and its uses. TIC defines the university as a centre for a higher order knowledge development, and for collaboration with, and for society. We do this through research-based education, education-based research, and collaborative engagements. We aim to charter new territory in international academe, as well as in multi-level collaboration based on interdisciplinary research with a strong foundation in the Humanities.

TIC engages in research dialogues through both a traditional peer-review publication strategy and through free access to knowledge in progress. Supplementing traditional journal articles, TIC TALKS is TIC's contribution to open access sharing and collaborative development of knowledge.

To cite:

Liburd, J., Dragin-Jensen, C., & Hjalager, A.M. (2024). *Tourism and Turbines: An exploratory literature review of the relations between tourism and wind turbines*. Kolding: University of Southern Denmark. Center for Tourism, Innovation and Culture. ISBN 978-87-85268-67-9 [CC BY NC](#).

TIC TALKS are provided by Centre for Tourism, Innovation and Culture, University of Southern Denmark  
Universitetsparken 1, Kolding, DK-6000  
[http://www.sdu.dk/en/Om\\_SDU/Institutter\\_centre/C\\_Tik.aspx](http://www.sdu.dk/en/Om_SDU/Institutter_centre/C_Tik.aspx)

Front page photo: *A landscape showing the interplay between wind turbines (operation, maintenance, and work) and tourism (on land and in the sea). Created by Dall-E.*

## Introduction

Growing concerns of energy supply and security have accelerated interest in developing renewable energy sources. In this respect, wind energy has become the most dynamically developing sector. At face value, it may seem harmless to advance decarbonization of energy systems and accelerate transitions to green, scalable, and more decentralized renewable energy (Baily, 2016). However, wind turbines, whether on land or in the ocean, have to be physically located and may pose negative consequences for people and nature. This raises important questions about the relationships between tourism and wind energy industry in overlapping spatial, often coastal contexts, including relations to other economic activities, regulation, and environmental justice. Relatively few studies have analyzed these and this paper documents extant knowledge and presents key findings. The overarching aim of this literature review is to compile key research contributions, methods and results, hereby enabling others to benefit in an open and accessible format. We summarize the most important themes of the relations between tourism and wind turbines. Finally, as relatively few studies have focused on this topic, we point to research gaps to be addressed in the future.

## Methodology

In the academic construction of knowledge, referencing and peer review play crucial roles in validating and ensuring the quality of scholarly work. Since the organization of universities in the 12th century, socio-material, discursive, technological, and institutional practices have developed into a self-sustaining system of truth verification (Schmidt, 1991). This system is especially evident in the practices of referencing and peer review. Researchers usually publish in peer-reviewed academic journals. Peer review of scholarly work is provided by fellow researchers selected by the editor, publisher, or scholarly communities among experts in the topical area discussed. Peer review is a well-established and taken-for-granted norm of self-governance within academe. In many national and academic contexts, only what is published in this way counts as academic research, simply because peer-review is academia's quality assurance system that guarantees (minimum) standards for rigor and sound research practices. The anonymity of submitting authors is preserved just as they may not be informed of the names of reviewers. At times, researchers might not even know the identity of the associate editor who is responsible for handling the paper.

Still, academia's reliance on peer-reviewed journals as the primary channel for disseminating research presents several challenges (Liburd, 2011). First, because it restricts the audience of our research to those who have a license to access these publications (i.e., other scholars) and second, because the process of producing and revising papers acceptable to publish in these journals is lengthy (Björk & Solomon, 2013). Third, accentuating the interrelated, self-interested acts and underlying ethics in academic publishing Wheeler (2010: 81) boldly asks: "Do we publish our 'research' findings where we genuinely believe our work will have the greatest good, or do we opt for publication where it will most benefit our own CV and careers?". The closed-system tendencies of research activities mean that the propensities to operate are largely generated by internal stimuli

validated through responses from the somewhat closed circle of international scholarship (Macdonald & Kam, 2007; Liburd, 2013).

In other words, the development and claims of valid knowledge in tourism studies is largely an internally driven process (Liburd, 2011). To first conduct research, then analyze data, write a manuscript, engage in the long process of submitting and revising a paper to a journal until it is published severely slows down the dissemination of scholarship. Consequently, journals publish 'cutting edge' research based on results identified years before publication. If researchers wish to contribute to current discussions of contemporary issues, this delay prohibits researchers from advancing current discussions of societal relevance with unbiased, research-based knowledge.

One of the first steps taken by researchers when exploring a new topic is to conduct a rigorous literature review. This serves to identify and scrutinize existing research to make sure that we do not embark on a needless journey of reinventing the wheel, and to ensure that we ground new findings in extant research. Surprisingly, our literature research suggests a hitherto limited attention to the relations between tourism and renewable energy transition. In a bibliometric search, we combined the words 'tourism and wind' in Google Scholar and the University Library of Southern Denmark in a 25-year period, which identified 50 relevant peer reviewed articles. Articles of metaphorical resemblance, such as 'Gone with the Wind', 'Against the Wind: Belgian post-colonial marketing' and "Windsurfing tourism' were manually excluded.

Supplementing traditional journal articles, TIC TALKS are our contribution to Open Access sharing and collaborative knowledge development. This includes acknowledgement of the original author(s) in future versions and use. In this article, we present the findings of 50 published articles on relations between tourism and wind turbines over the past 20 years, so that others might draw on this pool of knowledge for a more informed and nuanced discussion, planning and policy making of green and renewable energy transitions in tourism areas on land and at sea.

## Literature review

Contributions are listed alphabetically.

**Baily, I. (2016). *Renewable energy, neoliberal governance and the tragedy of the Cornish commons*. *Area*, 48 (1), 119–121, doi: 10.1111/area.12244**

In this commentary (hence no description of methods), Baily explores how a scheme to promote renewable energy development (i.e. the UK feed-in-tariff, FiT) has led to large-scale placement of single wind turbines in Cornwall's unique nature. Baily sees FiT and the National Planning Policy Framework of 2012 as government-sponsored neoliberal environmental governance and criticizes the combination of centrally-driven government agendas for renewable energy with market instruments. He provides a threefold conclusion: (1) Governance aiming to promote renewable energy combined with financial incentives for private-sector actors created dogmatic agendas in which narratives of carbon control and economic emergencies overshadowed other aspects of sustainability and severely reduced opportunities to not approve wind turbine locations, unless the adverse impacts significantly and demonstrably outweighed the benefits. (2) As each individual wind turbine has a marginal impact on the landscape, applications were approved with minimal constraints. Developers stand to receive nearly 97% of the financial gains, whereas local communities and Cornish nature bear the noise, landscape, heritage and wildlife impacts. There is a real risk to Cornwall's tourism sector, which currently represents 25% of employment. (3) The adoption of unreflexively green-economy narratives and market instruments constricted local democratic processes and enabled market actors to apply self-serving interpretations of the public good with minimal concern for local communities and other sustainability and justice issues.

**Beer, M., Rybár, R. & Kaľavský, M. (2018). *Renewable energy sources as an attractive element of industrial tourism*, *Current Issues in Tourism*, 21(18), 2139-2151.**

**DOI: 10.1080/13683500.2017.1316971**

The paper explores the interaction between renewable energy sources (RES) and industrial tourism. The problem addressed in the study is how RES, such as wind farms and geothermal plants, can be leveraged as tourist attractions, potentially offering an increase in tourism attractiveness in their respective areas. The authors argue that such facilities can increase tourism potential in regions when they are sensitively integrated into the landscape, contributing to both economic growth and environmental awareness.

The study involves an analysis of tourism interactions with RES (study sites from UK, USA, Denmark, Iceland and Canada), categorizing them into four levels of interaction: (1) lowest: RES are the attraction in the area, but without the other tourism infrastructure; (2) middle: Simple info points and nature educational (hiking) trails are built close to RES; (3) higher: Near RES are built simple visitor centres; and (4) RES are directly linked to the educational centres. Visitor numbers at the educational and visitor centres were used to assess the attractiveness of specific renewable energy sites.

Results revealed that the highest number of visitors reached the visitor centres next to geothermal power plants and wind parks, which can in part be explained by their unique visual aspects (e.g., architectural design). The authors also note that, despite initial concerns, RES infrastructure can, in fact, be a positive factor when combined with appropriate educational and recreational facilities.



**Bidwell, D. (2023). *Tourists are people too: Nonresidents' values, beliefs, and acceptance of a nearshore wind farm.* *Energy Policy*, 173, 113365.**

<https://doi.org/10.1016/j.enpol.2022.113365>

This longitudinal long survey captured viewpoints of visitors to and seasonal residents of Block Island, USA, prior to, during, and after construction of America's first nearshore windmill farm. An eight-page, self-administered paper survey distributed in the summer months (June – August 2015 - 2017) included questions on the Block Island Wind Farm, general beliefs and values, and personal characteristics. Because renewable energy technologies are often viewed as having collective environmental benefits (cleaner air, climate change mitigation) but higher individual costs (electricity costs, loss of valued landscapes), support for renewable energy is often associated with higher levels of biospheric and altruistic values and lower levels of egoistic values. Findings demonstrate that, despite the frequent portrayal of tourists' interests as homogenous, their attitudes towards wind energy development are influenced by varied values, beliefs, and personal experiences with a project. Altruistic values (concern for the welfare of others) are a strong predictor of beliefs among the survey participants that the project will benefit socioeconomics and—to a lesser extent—have positive or less negative impacts on natural resources. Biospheric values, which place priority on the welfare of non-human aspects of the environment, are not significant predictors of beliefs or attitudes in this analysis. Overall, visitors' wind farm attitudes were quite positive, with a mean rating of 5.57 on a 7-point scale across three years of data. Bidwell notes that the visibility of the rather small, five wind turbines depends heavily on local weather conditions.

**Broekel & Alfken (2015). *Gone with the wind? The impact of wind turbines on tourism demand.* *Energy Policy*, 86, 506–519. <http://dx.doi.org/10.1016/j.enpol.2015.08.005>**

This nation-wide quantitative empirical study focuses on wind turbines and tourism demand in Germany. Since the 1990s, few countries have experienced growth of renewable energy production like Germany. Based on secondary statistics from 2008-2012 on tourism and wind turbine locations at the municipal level, spatial panel regression techniques provide evidence of a negative relationship between wind turbines and tourism demand for municipalities not located near the coast. In coastal regions, the relation between wind turbines and tourism demand is more complex. It is argued that size and capacity dimensions must be added to analysis of wind turbines and tourism, as larger wind turbines appear to have a stronger effect on the aesthetic image of landscapes and therefore on regional tourism demand. Findings further underline the importance of coordination in the planning of wind turbines between neighboring regions. Wind turbine noise and visual externalities are not restricted to their immediate surroundings but may also matter for economic activities (e.g., tourism) in neighboring regions. The dataset does not include accommodation facilities with less than 10 beds or private holiday flats, which means that results are not valid for municipalities where these facilities are dominant.

**Brudermann, T., Zaman, R. & Posch, A. (2019). *Not in my hiking trail? Acceptance of wind farms in the Austrian Alps.* *Clean Technologies and Environmental Policy*, 21, 1603–1616**

<https://doi.org/10.1007/s10098-019-01734-9>

The paper addresses the problem of public acceptance of wind farms in the Austrian Alps, specifically from the perspective of tourists and day-trippers. Authors argue that while wind farms are crucial for transitioning to low-carbon energy systems, their location in scenic or recreational areas like the Alps raises concerns about landscape disruption and their potential impact on tourism.



Brudermann et al. (2019) identify that public opinion and/or acceptance of wind farms is a more hotly contested topic – both from a research and political perspective – far less (research) attention has been placed on tourists and day trippers. Moreover, a research gap also exists on acceptance of wind farms in remote locations (with no or few residents).

The study conducted a quantitative survey of 137 visitors to four wind farms in the Austrian Alps. The survey measured acceptance levels of these wind farms and aimed to identify the drivers of acceptance and non-acceptance – using bivariate correlations and multiple linear regressions to determine which factors most influenced attitudes toward wind energy. Key variables included perceived benefits, visual impact, noise annoyance, and concerns about environmental impacts. The study found that while there is generally high acceptance of wind energy technology, acceptance decreases slightly when it comes to wind farms in the Alps specifically. The strongest predictor of higher acceptance was the perceived benefits and reliability of wind power, while visual and noise-related annoyance was the most significant factor lowering acceptance. Moreover, with greater distance to a project, acceptance grows, yet established (finished) projects generated more acceptance than potential projects.

The study concludes that policy makers should emphasize the benefits of wind farms and address concerns about visual and noise pollution to maintain high levels of acceptance among visitors. The authors also suggest that future projects in alpine areas should carefully consider the balance between renewable energy development and landscape preservation.

***Carr-Harris, A., & Lang, C. (2019). Sustainability and tourism: the effect of the United States' first offshore wind farm on the vacation rental market. Resource and Energy Economics, 57, 51–67. <https://doi.org/10.1016/j.reseneeco.2019.04.003>***

“One concern with offshore wind energy development is a negative impact to tourism” - Carr-Harris and Lang investigate the potential impact of the Block Island Wind Farm (BIWF) – the first of its kind in the US - on tourism, specifically on the vacation rental market. The authors address the concern that offshore wind farms may deter tourism by altering the visual landscape or reducing the attractiveness of coastal destinations.

Study used Airbnb data (publicly available data) to analyze rental activity on Block Island before and after the construction of the BIWF, employing a difference-in-differences (DiD) model, comparing Block Island with nearby tourist destinations (Narragansett, Westerly, and Nantucket) over the same period. Key variables analyzed include nightly rates, occupancy, reservation nights, and revenue, using data from 2014 to 2017.

The findings indicate that the BIWF did not negatively affect tourism on Block Island. Instead, it led to increased tourist activity during peak summer months (July and August). The wind farm was associated with a significant increase in nightly reservations, occupancy rates, and revenue, suggesting that the turbines may act as an **attraction** rather than a **deterrent**. The study concludes that offshore wind farms could be integrated into coastal tourism without harming the local economy and may even enhance it during peak tourism periods.

**de Sousa, A. J. G., & Kastenholz, E. (2015). Wind farms and the rural tourism experience – problem or possible productive integration? The views of visitors and residents of a Portuguese village. *Journal of Sustainable Tourism*, 23(8–9), 1236–1256.**

<https://doi.org/10.1080/09669582.2015.1008499>

The study employed a qualitative methodology, utilizing semi-structured interviews with 35 visitors and 15 residents in Linhares da Beira, Portugal, to assess perceptions of wind energy and its impact on rural tourism. The findings indicated that while there were generally positive attitudes towards wind energy (in general), concerns about its visual impact were significant, yet most visitors did not feel that the presence of wind farms adversely affected their tourism experience – there was rather a ‘mixed bag’ of responses, ranging from negative to very positive on the presence of wind turbines.

Negative: The article does raise the issue that respondents found that wind farms seem to be at odds with the locations they are situated in – (tourists travel to experience the essence of the place, these wind turbines are not the essence of the place) – yet, was still seen as more favorable compared to alternatives, e.g., a refinery.

Neutral: Saw it as modernity and development – which was at odds with landscape, but not necessarily implying a negative opinion.

Positive: Associations to traditional windmills, seen as inspiring, and even beautiful when placed on the mountainous landscape.

The conclusions suggested that wind farms could serve as *neutral* elements within the tourism landscape and might even be integrated as attractions with appropriate planning. Recommendations for future research included examining the cumulative impacts of wind farms and enhancing community knowledge to foster acceptance and strategic integration into tourism development.

**Eichhorn, M., Tafarte, P., & Thrän, D. (2017). Towards energy landscapes -"Pathfinder for sustainable wind power locations". *Energy*, 134, 611–621.**

The study utilized a GIS-based approach (using a multi-criteria assessment methodology) to identify potential locations for sustainable wind power development, particularly focusing on ecological, social, and economic factors, centered on landscapes in Germany. The findings underscored the significance of integrating renewable energy infrastructure into the landscape while respecting ecological conservation and local acceptance to improve sustainability. If all sites were to be installed, this would generate 2 – 4.5 times the overall annual electricity demand of the study region.

The study concludes that effective wind power development necessitates a balanced approach that addresses energy needs alongside environmental and social considerations. A significant challenge here lies in how the criteria in the model should/could be weighted – as in, does human well-being trump environmental considerations and criteria (or vice-versa)? Recommendations for future research include enhancing public participation in site selection processes and investigating the long-term effects of wind energy on local communities and ecosystems.

**Ellis, G., Barry, J., & Robinson, C. (2007). Many ways to say “no”, different ways to say “yes”: Applying Q-Methodology to understand public acceptance of wind farm proposals. *Journal of Environmental Planning and Management*, 50(4), 517–551.**

<https://doi.org/10.1080/09640560701402075>

The study utilizes *Q-Methodology* to explore public acceptance of wind farms, specifically examining the discourses surrounding an offshore wind farm proposal in Northern Ireland. The authors highlight how previous research has often been descriptive rather than explanatory, failing to inform policy effectively. Specifically, authors argue that “instead of seeing it as an unnecessary battle of good vs. evil, progressive vs. conservative or self-interest vs. altruism, such differences are seen as a feature of discursive practice (e.g. Schön & Rein, 1995; Fischer, 2003), which may provide positive benefits in itself. From this perspective it is not the ‘truth’ that wins the debate, but those who are able to best assert their narrative into public discourse emerge as dominant parties” (page 522).

The research identifies dominant discourses of support and objection, aiming to bridge traditional positivist approaches with more subjective analyses. 4 factors were identified each for objectors and supporters, highlighting the statements with most (dis)agreements. These findings reveal complex views among stakeholders, emphasizing the need for nuanced policy recommendations that address both opposition and support.

The study concludes that successful public engagement requires understanding the underlying values and beliefs that inform public perceptions of wind energy projects. Recommendations for future research include further exploration of the dynamics between public attitudes and renewable energy development. The paper also makes a note that “that coastal communities are just as sensitive to threats to seascapes as rural society is to visual disturbance in highland areas. This implies that developers of offshore proposals should recognize the potential for objection and adopt processes that are sensitive to such a context” (page 536)

**Frantál, B., & Urbánková, R. (2017). Energy tourism: An emerging field of study. *Current Issues in Tourism*, 20(13), 1395–1412. <https://doi.org/10.1080/13683500.2014.987734>**

The study employs questionnaire surveys to explore energy tourism in the Czech Republic, focusing on three attractions: Coal Safaris, a nuclear power plant information center, and Dragon Kite Festivals held under wind turbines. The findings reveal that energy tourism can positively influence public attitudes towards various energy sources, with one-third of respondents reporting a shift in perception post-visit. The conclusions emphasize that energy tourism should be regarded as a significant niche within industrial tourism, which can enhance energy literacy and public engagement with energy issues. However, further research is recommended to better understand the impact of such tourism on local economies and attitudes towards energy development.

**Frolova, M., Pérez-Pérez, B., & Herrero-Luque, D. (2022). Diverse responses of coastal communities to offshore wind farming development in Southern Spain. *Moravian Geographical Reports*, 30(4), 324–339. <https://doi.org/10.2478/mgr-2022-0021>**

The study, conducted in the coastal region of Cádiz, Spain, utilized a multi-phase methodology including documentary analysis, field observation, and in-depth interviews with local stakeholders. The researchers examined the perceptions of onshore and offshore wind farms (OWFs) among coastal communities, noting the shift in local attitudes towards OWFs over a decade. Findings highlighted the complexity of societal relationships with marine resources, particularly seascape impacts and the perceived exclusion from decision-making processes. Coastal communities expressed concerns over OWFs' visual impacts, socioeconomic benefits, and potential conflicts with other sea uses. The paper highlighted that “while OLWFs are generally viewed as compatible with other uses, such as farming, there is much greater resistance to the construction of offshore wind facilities” (p. 335). That is, “their attitude towards OWFs is also influenced by less tangible aspects of the underlying social, aesthetic, and cultural values that coastal communities attribute to the sea” (p. 335).

The study concluded that increased public participation and equitable distribution of OWF benefits are crucial to fostering acceptance. Recommendations for future research include exploring ways to *better integrate local cultural and social values into offshore wind energy planning*.

**Goudriaan, Y., Prince, S., & Strzelecka, M. (2023). A narrative approach to the formation of place attachments in landscapes of expanding renewable energy technology. *Landscape Research*, 48(4), 594–607. <https://doi.org/10.1080/01426397.2023.2166911>**

The study used a narrative approach to explore the formation of place attachments in rural landscapes undergoing renewable energy technology (RET) expansion, focusing on the Åby-Alebo Wind Park in Sweden. The methodology involved in-depth interviews with rural dwellers, landowners, and business stakeholders, analyzing how personal stories reflect attachments to changing landscapes. The findings indicate that people construct coherent narratives of rootedness, adapting to changes brought by RET developments while maintaining a sense of continuity and hope for sustainable futures.

The study concludes that place attachments can facilitate proactive responses to landscape changes and support broader sustainability discourses. Recommendations include integrating local community voices and cultural values in future energy planning to enhance acceptance of RET developments.

**Haggett, C. (2008). Over the sea and far away? A consideration of the planning, politics and public perception of offshore wind farms. *Journal of Environmental Policy and Planning*, 10,(3) 289–306. <https://doi.org/10.1080/15239080802242787>**

The article examines the politics, planning, and public perceptions associated with offshore wind farms in the UK. Using case studies and a critical review of both onshore and offshore wind farm developments, Haggett explores whether moving wind farms offshore resolves issues encountered on land. The study focuses on visual impact, environmental concerns, and spatial demands, noting that many of the same challenges persist offshore, such as visual intrusion and conflicts with other sea uses. Empirical evidence from North Wales is used to illustrate ongoing public opposition and planning challenges.

The paper concludes that public participation and spatial planning are crucial for the successful implementation of offshore wind projects. It recommends more research on public perceptions of offshore developments and calls for greater public engagement in the decision-making processes.

**Hamza, N., Borg, R. P., Camilleri, L., & Baniotopoulos, C. (2022). *Experts versus the Public: Perceptions of Siting Wind Turbines and Performance Concerns. Energies, 15(20).***

<https://doi.org/10.3390/en15207743>

The study investigates the contrasting perceptions of experts and the public regarding the siting and acceptance of wind turbines (WT) in various contexts. The methodology involved a three-stage approach: an expert focus group, an expert survey, and a public survey. The surveys included a combination of open-ended textual questions and imagery to assess perceptions of WT installations in urban and natural settings. Data were collected from 69 experts and the public to analyze preferences for WT siting in different environments, such as urban areas, transportation routes, and seascapes. Experts' responses were influenced by technical knowledge and familiarity with WT technologies, whereas the public was more influenced by media portrayals. The analysis showed a higher level of public acceptance in seascapes and transport-related settings, while urban settings received lower support, especially for building-integrated WTs.

Authors show a need for further exploration of WT integration into urban environments, as both groups showed reluctance toward this. The study found a higher acceptance of WTs among younger individuals, indicating a shift in perceptions compared to older generations. Conclusions pointed to a general preference for WT siting in distant, natural landscapes, with proximity concerns in urban areas. The study recommends improving public communication regarding WT safety and performance, as well as further research to enhance WT design and efficacy in urban contexts. Additionally, the authors highlight the importance of public education to increase acceptance and reduce misconceptions surrounding WT technology.

**Hansen, A.S. (2024). *Bridging tourism and energy industry development in the coastal-marine peripheries: The case of Bornholm, Denmark. Tourism in Marine Environments, 19(2), 109-120.***

DOI: <https://doi.org/10.3727/216901924X17186068045875>

A research note that aims to bridge the gap between tourism and large green energy infrastructure on the Danish island of Bornholm. Hansen outlines the frequently associated negative impacts, and points to opportunities for co-existence incl. Energy tourism, 'greening' of the local tourism product and practices. Relatively unexplored opportunities sourced from the UK may encompass community sponsorships and local investment schemes, and on Bornholm a new Power-to-X plant. Whilst the tourism industry appears to be less involved at this stage, visual and noise pollution, as well as concerns over the large size towers and proximity to high voltage cables are raised. The influx of temporary workers will create new hosting and accommodation demands. Hansen mentions retired fishermen as storytellers who can connect the past, present and future of island living. A new interpretation center akin to Østerild is envisioned to educate tourists about green energy, as is increased business tourism, product diversification, such as 'Energy crawls' known from Fredericia and heated beach facilities that can be enjoyed all year. A new Energy Island image may even lead to a 100% sustainable destination, Hansen argues. Lack of local planning skills for massive infrastructure planning is also noted. Tourism destination representatives agree that the island should support the green energy strategies through integration into the new island profile and

promotion of mutual, symbiotic interests. Hansen identifies five areas of knowledge and polity interests: 1) Documentation of impacts and consequences when tourism meets the energy industry. 2) Sector coupling and systems thinking, particularly of relevance for land use planning and circular economy. 3) Greening of other industries and the local communities. 4) Community collaboration based on social innovation principles. 5) Local governance and structural challenges. Lastly, he proposes that researchers act as negotiators or mediators.

**Hattam, C., Hooper, T., & Papathanasopoulou, E. (2017). A well-being framework for impact evaluation: The case of the UK offshore wind industry. *Marine Policy*, 78, 122-131.**

. <http://dx.doi.org/10.1016/j.marpol.2016.10.024>

The authors present an impact evaluation framework designed to assess societal-level effects of change, with a focus on objective well-being. They only state that it is not clear whether the development of offshore wind is leading to lost or displaced jobs in other sectors such as fisheries and tourism. The framework is applied to the case of the UK offshore wind industry. By going beyond conventional economic, social, and environmental impact assessments, it incorporates broader aspects of societal costs, benefits, and sustainable development. The framework serves as a valuable tool for organizing diverse evidence and indicates that the UK offshore wind industry has had a generally positive impact on society.

**Hjalager, A.-M., (2020). Land-use conflicts in coastal tourism and the quest for governance innovations. *Land Use Policy*, 94, 104566. <https://doi.org/10.1016/j.landusepol.2020.104566>**

This study applies media content analysis of 213 land-use conflicts in Danish coastal tourism to explore the patterns of these conflicts, the strategies employed to express dissatisfaction and consequences for governance innovation. Based on 198, Hjalager provides a clear identification of the protesters, and on average 1.5 categories of protesters were seen to be present. Interestingly, the wind-power issue generated the broadest mobilization with eight different categories of protesters. Protests are targeted at municipalities, the governmental agencies responsible for energy planning and Vattenfall, the investor, were found to jointly compromise the interests of residents and tourism actors. Radical governance innovations appear not to be needed. Still, collaborative planning and participatory interventions appear to be underutilized, even if these are known instruments in the toolbox of the municipalities to prevent, mediate in and resolve land-use conflicts in coastal tourism.

**Johansen, K. (2019). Local support for renewable energy technologies? Attitudes towards local near-shore wind farms among second home owners and permanent area residents on the Danish coast. *Energy Policy*, 132, 691-701. <https://doi.org/10.1016/j.enpol.2019.04.027>**

This article examines the differing attitudes toward five renewable energy technology (RET) projects in Denmark among two key stakeholder groups: permanent residents (PRs) and second home owners (SHOs). The analysis is based on survey data collected from nearly 2,000 respondents during the tender process for a Danish near-shore wind farm. As seen in Hjalager (2020) above, second-home owners are the most dissatisfied. Johansen argues that the wind farm tender process illustrates that in Denmark, as in many other European countries, the well documented broad public support for wind power cannot necessarily be translated into local public support for local wind farm projects. She also points to the silent local majority that (are assumed to) support RET projects, which touches upon the fundamental democratic challenges and questions of representation. This



has further implications for community benefit schemes. Her key message is that demographics, inherent community complexities, multiple place attachments, and project stakeholder values matter for the potential effect and impact of incentive schemes.

**Kermagoret, Levrel, Carlier & Dachary-Bernard (2016). Individual preferences regarding environmental offset and welfare compensation: a choice experiment application to an offshore wind farm project. *Ecological Economics*, 129, 230-240.**

<http://dx.doi.org/10.1016/j.ecolecon.2016.05.017>

The study investigates individual preferences regarding environmental compensation measures associated with the development of an offshore wind farm in the Bay of Saint-Brieuc, France. The methodology employed a choice experiment, where data was collected through surveys with 351 respondents, focusing on their preferences for different compensation measures like ecological restoration and monetary subsidies.

Key findings highlight that participants strongly favor compensation measures aligned with ecological sustainability, such as scallop reseeding and sea bottom cleaning, over monetary compensation (e.g. subsidies for local communities, fishers and leisure activities on water), which was often viewed negatively (the “bribe effect”). The analysis also reveals heterogeneity in preferences, with certain groups, like naturalists, preferring ecological measures. The study suggests that future research should further explore the role of local heritage in compensation preferences and the potential for preference divergence between different recreational user groups.

**Kuvlesky, W., Brennan, L., Morisson, M., Boydston, K., Ballard, B., & Bryant, F. (2007). Wind Energy Development and Wildlife Conservation: Challenges and Opportunities. *The Journal of Wildlife Management*, 71(8), 2487–2498. <https://doi.org/10.2193/2007-248>**

The article focuses on the challenges and opportunities of wind energy development, particularly concerning wildlife conservation (which indirectly has relevance for our study as these areas are known for nature tourism).

The study examines the impacts of wind farm development on wildlife, especially migratory birds and bats, and considers mitigation strategies (focuses on the Lower Gulf Coast (LGC) of Texas, USA, as a region of significant concern due to its importance for migratory birds and bats). The methodology involves a comprehensive review of existing literature and data on wildlife mortality due to wind turbines, specifically targeting bird and bat fatalities, as well as habitat fragmentation due to wind farm infrastructure.

Findings suggest that while wind turbines do cause bird and bat fatalities, the extent of the impact is still uncertain and varies across different sites. The article concludes that wind energy development in sensitive areas like the LGC must be approached cautiously, with careful consideration of turbine placement and mitigation strategies.

Authors recommend that placing of wind turbines could be placed in croplands instead: “Placing wind turbines on cropland is an overlooked aspect of the current issues related to wind farms and wildlife in the LGC of Texas. To date, all proposed locations of wind farms in the LGC have been focused on siting turbines on rangelands that are dominated by mostly native vegetation” (p. 2493)



Recommendations for future research include the need for more rigorous and standardized studies using Before-After-Control-Impact (BACI) methods, as well as the use of advanced technologies like radar and acoustic monitoring to better understand and mitigate wildlife impacts. The study stresses that further research is necessary to quantify the long-term effects of wind energy developments on wildlife populations.

**Kyriazi, Z., Lejano, R., Maes, F., & Degraer, S. (2015). *Bargaining a net gain compensation agreement between a marine renewable energy developer and a marine protected area manager. Marine Policy, 60, 40–48.* <https://doi.org/10.1016/j.marpol.2015.06.005>**

The article delves into the issue of integrating marine renewable energy (MRE) projects with marine protected areas (MPAs). The primary challenge addressed in the paper is how to reconcile the need for renewable energy development, which often requires the use of marine spaces, with the conservation objectives of MPAs, which are designated to protect vulnerable ecosystems. These two objectives can conflict when MRE installations, such as wind turbines or tidal energy devices, are located within MPAs, potentially causing harm to the protected ecosystems.

Authors argue that rather than adhering to the traditional "no-net-loss" (NNL) principle, which aims to balance any environmental damage caused by development, a "net gain" (NG) approach should be implemented. The NG approach would require the MRE developer to provide compensation that results in an overall environmental improvement for the MPA, ensuring that the value of the protected area increases after the project's implementation. This net gain would incentivize the MPA manager to cooperate with the MRE developer, as it would not only compensate for any potential environmental loss but also provide additional conservation benefits.

The methodology used in the study involves cooperative game theory, which helps model the bargaining process between the two key stakeholders: the MRE developer (the "polluter") and the MPA manager (the "pollutee"). Using a two-person non-zero-sum game, the study explores how to fairly divide the benefits and compensation arising from the coexistence of MRE projects and MPAs. The game's goal is to determine a compensation amount that ensures both players (the developer and the manager) are better off after the agreement than they would have been without it (thus achieving a Pareto improvement).

The study concludes that a cooperative, net gain approach is not only feasible but also beneficial for both parties involved. The cooperative game-theoretic framework provides a fair and efficient way to ensure that MRE development within MPAs can proceed while safeguarding and even improving the conservation objectives of the protected areas. This solution would also help mitigate the potential environmental conflicts associated with renewable energy projects.

Recommendations for future research include further refinement of the cooperative bargaining process, particularly to account for the complexities of asymmetric information and power dynamics between the developer and the MPA manager.

**Ladenburg Jacob, J. (2010). *Attitudes towards offshore wind farms-The role of beach visits on attitude and demographic and attitude relations. Energy Policy, 38(3), 1297–1304.* <https://doi.org/10.1016/j.enpol.2009.11.005>**

The study investigates attitudes towards offshore wind farms in Denmark, particularly focusing on how these attitudes are influenced by beach visits and demographic characteristics. The

methodology involved a survey of 1,082 respondents, using an Ordered Probit Model to analyze the relationships between socio-demographic factors, frequency of beach visits, and attitudes towards offshore wind farms.

The findings revealed that, overall, respondents had positive attitudes towards offshore wind farms, with the most significant factors influencing attitudes being gender, income, education, and frequency of beach visits. Interestingly, the study found that the association between demographics and attitudes was stronger among those who visited the beach less frequently. Frequent beachgoers exhibited weaker demographic associations with attitudes, suggesting that personal connection to the coastal area may affect one's perspective on offshore wind farms.

The study concludes that attitudes towards offshore wind farms are heterogeneous, depending not only on demographic factors but also on the type and frequency of beach use. Recommendations for further research are to explore the underlying reasons for these differences and to investigate the potential implications for policy and public outreach efforts.

**Landry, C. E., Allen, T., Cherry, T., & Whitehead, J. C. (2012). *Wind turbines and coastal recreation demand. Resource and Energy Economics, 34(1), 93–111.***

<https://doi.org/10.1016/j.reseneeco.2011.10.001>

The study explores the potential impacts of offshore wind turbines on coastal recreation demand, focusing on the North Carolina coast. The researchers used a combination of telephone and internet surveys, with respondents from 16 coastal counties, to assess how the presence of wind turbines might influence beach visitation patterns.

The telephone survey focused on recreational visitation behavior, while the internet survey, which included visualizations of wind turbines, used a choice experiment (CE) method to investigate site selection preferences. The findings indicate minimal impact on aggregate recreational visitation, with only a slight decrease in consumer surplus (estimated at \$17 USD per year per household) due to the installation of wind turbines at all 31 major beach destinations along the coast. However, respondents showed aversion to wind farms located near shore (1 mile), with compensating variation for these turbines estimated at \$55 per household. No significant aversion was found for turbines located 4 miles offshore or in coastal estuaries.

The study concludes that the economic impact on coastal tourism is likely small, but there is heterogeneity in preferences, with some visitors strongly opposed to turbines close to the shore. Recommendations for future research include exploring the impacts on tourists traveling from further distances and the potential effects of different turbine placements in more detail.

**Lilley, M. B., Firestone, J., & Kempton, W. (2010). *The effect of wind power installations on coastal tourism. Energies, 3(1).*** <https://doi.org/10.3390/en3010001>

This study investigates the impact of offshore wind farms on coastal tourism in Delaware, USA. Researchers surveyed over 1,000 out-of-state tourists to assess their beach visitation preferences in relation to simulated wind turbine installations at varying distances from the shore (using contingent behavior analysis wind farms and their impact on tourism).

The findings reveal a significant decrease in tourist preference for beaches with wind farms within close proximity, but this effect lessened with increasing distance. 25% would switch beaches if an

offshore wind project was located 10km from the coast, with avoidance decreasing as distance from shore increased. Tourist avoidance of an offshore wind farm was less than avoidance of a fossil fuel power plant located the same distance inland, suggesting a preference for renewable energy sources despite potential visual impact. A significant number of tourists (66%) expressed interest in visiting a beach they wouldn't typically visit to see an offshore wind farm. Additionally, 44% would likely pay for a boat tour of a wind facility, indicating potential for economic development through wind farm tourism. Younger tourists and those surveyed on boardwalks were more likely to visit a beach with a wind farm. Higher income tourists were less likely to visit both familiar and unfamiliar beaches with offshore wind farms. This suggests that demographic factors and activity preferences play a role in how tourists perceive wind farms.

Overall, this study suggests that while visual impact can deter some tourists, offshore wind farms have the potential to be tourism assets.

**Liu, D., Upchurch, R. S., Curtis, C., & Lusby, C. (2016). Chinese domestic tourist perceptions of wind farms experiences. *Journal of Sustainable Tourism*, 24(11), 1569–1583.**

<https://doi.org/10.1080/09669582.2016.1158826>

This study explores the perceptions of Chinese domestic tourists regarding wind farms as a tourist destination, focusing on the motivations and factors driving their interest in this (niche) form of tourism (special interest tourism). The study employed a qualitative research design using grounded theory as the analytical framework (assessed secondary data – online postings found on Google.com and Baidu.com: reviews on wind farm tours in China).

Overall, Chinese tourists view wind farm visits favourably, highlighting their educational value, aesthetic appeal, and contribution to sustainability and environmental protection: “In general agreement with previously reported wind farm studies conducted within the other countries, wind farm visitations in China did yield positive perceptions for these energy tourists” (p. 1577).

Several key themes emerged as significant motivators for wind farm tourism (motivating factors): aesthetics, education, socialization, sustainability & ecological impacts and policy & planning. The study highlights the need for greater collaboration between government agencies responsible for energy and tourism to capitalize on the growing interest in wind farm tourism and develop integrated policies.

**Lloret, J., Turiel, A., Solé, J., Berdalet, E., Sabatés, A., Olivares, A., Gili, J. M., Vila-Subirós, J., & Sardá, R. (2022). Unravelling the ecological impacts of large-scale offshore wind farms in the Mediterranean Sea. *Science of the Total Environment*, 824.**

<https://doi.org/10.1016/j.scitotenv.2022.153803>

This paper examines the potential environmental impacts of developing large-scale offshore wind farms (OWFs) in the Mediterranean Sea (MS). While acknowledging the need for renewable energy sources to mitigate climate change, the authors argue that the unique ecological and socioeconomic characteristics of the MS necessitate a cautious approach to OWF development. Moreover, they argue that “simply importing the OWF models from the northern European seas, which are mostly based on large scale projects, to other seas like the Mediterranean is not straightforward” (p. 1). The article’s main themes are: (i) the rapid expansion of offshore wind farms (OWF) in the Mediterranean Sea (MS) poses potential environmental risks that require careful consideration, (ii)

the unique ecological and socioeconomic characteristics of the MS necessitate a different approach to OWF development compared to northern European seas, (iii) implementing the Precautionary Principle and comprehensive environmental impact assessments is crucial to mitigate potential harm to biodiversity and sensitive habitats and (iv) spatial planning should prioritize the conservation of MPAs, valuable seascapes, and areas crucial for sensitive species.

With regards to tourism, the article focuses on several potential negative impacts of OWFs on the tourism industry in the Mediterranean Sea:

- **Seascape Impacts:** Concern that OWFs, particularly those situated close to the coast, can negatively impact the visual appeal of seascapes, a significant factor for coastal tourism in the Mediterranean region. The presence of large wind turbines on the horizon can detract from the natural beauty of the coastline, potentially deterring tourists seeking scenic views and undisturbed natural environments.
- **Economic Consequences:** Cites a study estimating a substantial welfare loss of up to €203 million per season for beach recreation in the Catalonia region of Spain due to the projected construction of the Cap de Creus/Gulf of Roses offshore wind farm. The study suggests that tourists may choose to visit beaches without visible OWFs, leading to economic losses in areas where these projects are located.
- **Impact on Specific Tourism Activities:** OWFs can have adverse ecological consequences on vulnerable species and habitats that are important for specific types of tourism, such as scuba diving, birdwatching, and whale watching. These activities rely on a healthy and thriving marine environment, and any disruption caused by OWFs could diminish their appeal.
- **Public Perception and Acceptance:** The article acknowledges the strong opposition to large OWF projects from local communities, tourism businesses, and environmental NGOs in the Mediterranean region.
- **Comparison with Northern European Seas:** Tourism sector in the Mediterranean Sea is a more significant economic driver compared to northern European seas where OWFs are more prevalent.

**Machado, J. T. M., & de Andrés, M. (2023). *Implications of offshore wind energy developments in coastal and maritime tourism and recreation areas: An analytical overview. Environmental Impact Assessment Review, 99.* <https://doi.org/10.1016/j.eiar.2022.106999>**

This article summarises key themes and findings from academic literature published between 2015-2019 regarding the implications of offshore wind farm (OWF) developments on coastal and maritime tourism and recreation (T&R) areas. There is a clear consensus (92% of reviewed studies) that OWFs impact T&R activities. The majority (68%) of these impacts are perceived or projected as negative, particularly during the planning, construction, and operational phases: "OWFs can indeed impact coastal communities dependent on maritime tourism and recreational activities" (p. 1).

Key concerns from the paper are:

- **Visual Impacts & Seascape Alteration:** The dominant concern is the visual intrusion of OWFs on the seascape, impacting the aesthetic appeal of coastal areas and potentially leading to tourism revenue loss.

- Place Attachment & NIMBYism: Strong emotional connections to place ("place attachment") fuel protective responses, often manifesting as "Not In My Backyard" (NIMBY) opposition, particularly from locals and recurrent visitors.
- Impact on Specific Activities: Concerns arise regarding potential disruptions to recreational activities like fishing, boating, and scuba diving due to safety regulations, exclusion zones, and perceived environmental changes.

The successful integration of OWFs into coastal areas with significant T&R activities necessitates a proactive and participatory approach. Open communication, thorough impact assessments, and consideration of local values are essential for minimizing conflicts and maximizing benefits for all stakeholders.

**Mordue, T., Moss, O., & Johnston, L. (2020). *The impacts of onshore-windfarms on a UK rural tourism landscape: objective evidence, local opposition, and national politics. Journal of Sustainable Tourism, 28(11), 1882-1904.***

This study suggests that the tourism issues related to the placement of wind farms is largely under-investigated. The assembling of protests from residents and or actors is very difficult and met with NIMBY accusations and the illogical resistance to renewable energies, and even naiveness. Dilemmas about the wind farm location are not raised, and the article suggests a power imbalance. Local democracy is discussed as well as means to create a better insight and balance, but it is not necessarily a way to keep oppositional strategies alive.

**Nichifor, M. A. (2016). *Public reactions towards wind energy instalments. Case study: Romania and the Netherlands. Management and Marketing, 11(3), 532-543.***

<https://doi.org/10.1515/mmcks-2016-0014>

This paper examines public perceptions of wind energy installations in Romania and the Netherlands. The study used the Delphi method, which involved questionnaires and interviews with 64 Dutch citizens and 40 Romanian respondents. The research explored factors influencing public acceptance of wind turbines, including visual impact, potential property value decrease, health concerns, and financial incentives. The findings revealed that both Romanian and Dutch citizens considered the visual impact of wind turbines as a significant factor in their acceptance. While financial benefits were considered important, particularly by Romanian respondents, subjective factors like visual impact and onshore or offshore placement also played a crucial role in shaping public opinion. The study highlights the need for wind energy companies to engage with local communities and address concerns related to visual impact, potential property value decrease, and health risks. This includes involving the public in the planning phase, conducting research to demonstrate minimal environmental impact, and offering financial incentives such as shares in wind energy projects. The paper concludes that increasing public acceptance requires a multifaceted approach that considers financial, social, psychological, and political factors, along with educating citizens about the importance of renewable energy for a sustainable future.

**Oh, C. O., Nam, J., & Kim, H. (2023). *The Impacts of Offshore Wind Farms on Coastal Tourists' Behaviors in South Korea. Coastal Management, 51(1), 24–41.***

<https://doi.org/10.1080/08920753.2023.2148848>

This study investigates how the presence of offshore wind farms impacts the behavior of coastal tourists in South Korea. The research used a survey of individuals (N= 933) who had visited a beach at least once in the previous year and employed ordered probit, logit, and multinomial logit models to analyze the data.

The findings reveal that individuals' perceptions of wind energy and their attitudes towards tourism are crucial factors influencing their acceptance of offshore wind farm projects. People who view wind energy positively as a clean energy source are more likely to support such projects and less likely to change their beach visitation habits, even with nearby wind farm development. Conversely, those who perceive negative environmental impacts from wind power are more prone to reduce their trips or choose alternative beach destinations. Interestingly, while environmental attitudes impact tourist behavior, they do not significantly affect overall public acceptance of wind farms. The study highlights the importance of considering the potential impact on tourism when planning offshore wind farm projects, suggesting that developers avoid popular beaches, increase the distance of turbines from the shore, and conduct thorough socioeconomic impact assessments.

**Ólafsdóttir, R., & Sæþórsdóttir, A. D. (2019). *Wind farms in the Icelandic highlands: Attitudes of local residents and tourism service providers. Land Use Policy, 88.***

<https://doi.org/10.1016/j.landusepol.2019.104173>

This paper examines local attitudes towards a proposed wind farm in Iceland, focusing on residents of nearby municipalities and tourism service providers. The study utilized a mixed-methods approach, involving a questionnaire survey distributed to residents and semi-structured interviews conducted with residents and tourism service providers. The results indicate that while both residents and tourism service providers generally support wind energy, they are less enthusiastic about the proposed wind farm, primarily due to concerns about its visual impact on the landscape. The study found that respondents perceive the proposed wind farm as a threat to the area's natural beauty and wilderness character, which holds significance for both local residents and the tourism industry.

The paper concludes by highlighting the importance of social acceptance in the development of wind energy projects, particularly in areas valued for their natural landscapes, and emphasizes the need for community planners and decision-makers to involve local communities in the planning process to ensure sustainable management of natural resources.

**Philpott, A., & Windemer, R. (2022). *Repower to the people: The scope for repowering to increase the scale of community shareholding in commercial onshore wind assets in Great Britain. Energy Research and Social Science, 92.*** <https://doi.org/10.1016/j.erss.2022.102763>

This paper examines the potential for increasing community ownership of onshore wind energy in Great Britain as older wind farms are repowered. Authors argue that repowering presents an important opportunity to reconsider how communities benefit from hosting wind energy infrastructure. The research is based on semi-structured interviews with commercial wind energy developers, community energy practitioners, and intermediary bodies. The findings show that both



developers and community stakeholders generally support shared ownership arrangements, though primarily for instrumental reasons, such as increasing public acceptance of projects and increasing the scale of community energy.

The shared revenue model, where communities receive a portion of project revenue without holding equity, was the preferred model for both developers and community actors. The paper identifies several challenges to implementing shared ownership, including the administrative burden on developers, difficulty defining the “community,” and potential conflicts with existing shareholders.

Despite these challenges, the authors suggest that repowering could be a particularly conducive time to introduce shared ownership due to established relationships between developers and communities, the potential for existing community benefit funds to help finance buy-in, and the possibility that communities may be seeking a different form of benefit.

**Riddington, G., McArthur, D., Harrison, T., & Gibson, H. (2010). *Assessing the economic impact of wind farms on tourism in Scotland: Gis, surveys and policy outcomes. International Journal of Tourism Research, 12(3), 237–252.* <https://doi.org/10.1002/jtr.750>**

This article investigates the economic impact of wind farms on tourism in Scotland. The authors used a Geographic Information System (GIS) model to determine the number of tourists and accommodation exposed to wind farms in four case study areas. They conducted internet-based surveys to determine tourists' willingness to pay for landscape views and how it changes with the presence of wind farms. They also conducted intercept surveys to assess visitor intentions.

Authors then used the Detailed Regional Economic Accounting Model (DREAM) system to identify the change in income and employment in the case study areas. The study found that the negative economic impact of wind farms on tourism was small but significant, amounting to less than 0.1% of the estimated tourist workforce nationally. At the local level, however, the potential impact was more pronounced, reaching up to 5.77% of tourism-related jobs in Dumfries and Galloway.

The authors concluded that, while at a national level policy changes were not necessary, local authorities should require Tourist Impact Statements for wind farm developments to ensure that negative impacts are minimized. They also suggested that a "Fewer but Larger" strategy for wind farm development, with larger wind farms in less visually sensitive areas, could help to mitigate negative impacts on tourism.

**Rudolph, D. (2014). *The Resurgent Conflict Between Offshore Wind Farms and Tourism: Underlying Storylines. Scottish Geographical Journal, 130(3), 168–187.* <https://doi.org/10.1080/14702541.2014.914239>**

This paper examines why coastal communities express concerns about the potential negative impacts of offshore wind farms on tourism, despite initial empirical evidence suggesting otherwise. The author focuses on two case studies: the Argyll Array offshore wind farm in Scotland and the Baltic 1 offshore wind farm in Germany.

Through an analysis of consultation responses and interviews with stakeholders, the paper identifies five key storylines used by local opponents to justify their concerns. These storylines highlight the perceived visual disruption of the coastal landscape, potential disruptions to local character and



identities, a specific construction of the tourist persona sensitive to these changes, potential disturbances to recreational activities, and perceived negative environmental impacts.

The author argues that these concerns are often rooted in epistemic uncertainty, driven by the lack of concrete evidence and the potential economic risks posed by wind farms to communities heavily reliant on tourism. The paper concludes that a more inclusive planning process that acknowledges and addresses these concerns and recognises tourism as a legitimate space-related interest, could help mitigate conflict and contribute to more sustainable decision-making.

**Schallenberg-Rodríguez, J., & García Montesdeoca, N. (2018). *Spatial planning to estimate the offshore wind energy potential in coastal regions and islands. Practical case: The Canary Islands. Energy, 143, 91–103.* <https://doi.org/10.1016/j.energy.2017.10.084>**

The paper outlines a methodology for calculating the offshore wind energy potential in the Canary Islands, taking into account spatial, technical and economic constraints. Using a Geographical Information Systems (GIS) methodology, authors identify suitable areas for offshore wind farm development by implementing spatial restrictions (protected areas, harbors, airports, etc.) and techno-economic constraints (bathymetry and minimum wind speed). After identifying suitable areas, wind turbines are placed within those areas, considering the wake effect and optimizing wind farm configuration to minimize energy costs. The paper calculates the wind energy production for each turbine and determines the levelized cost of energy (LCOE) including integration costs. The study finds that the economically viable offshore wind energy production in the Canary Islands is much higher than the current electricity demand. Moreover, offshore wind energy could supply the demand in each island at a lower cost than the current electricity system. The paper concludes that offshore wind energy is a viable and cost-effective solution to meet the electricity demand in the Canary Islands.

With regards to tourism – the article uses population density and lack of space on land (due to local population + tourists) as a justification for why the turbines must be offshore – no other considerations are taken as many other papers have done (visual impact, biodiversity, habitat destruction, etc.)

**Silva, L., & Delicado, A. (2017). *Wind farms and rural tourism: A Portuguese case study of residents' and visitors' perceptions and attitudes. Moravian Geographical Reports, 25(4), 248–256.* <https://doi.org/10.1515/mgr-2017-0021>**

The paper examines residents' and visitors' perceptions and attitudes towards wind farms situated near the built heritage site of Sortelha, Portugal. The study, based on interviews with 21 residents and 68 visitors, explores the impact of these wind farms on tourism and residents' livelihoods. While a majority of residents initially opposed the wind farms due to visual intrusion and perceived negative effects on tourism, this opposition was largely driven by the exclusion of residents from the decision-making process and the unequal distribution of economic benefits. Residents involved in the wind farm projects, either directly or through family ties, expressed support for them. Notably, residents' concerns shifted over time, focusing on the wind farm closer to the village while accepting the one further away. Visitors, while acknowledging the visual impact of the wind turbines, generally accepted their presence and stated that the wind farms did not influence their decision to visit Sortelha. The study concludes that wind farms do not necessarily detract from the

attractiveness of heritage-based rural tourism destinations, highlighting the importance of community involvement and equitable benefit sharing for the acceptance of wind energy projects.

**Smith, H., Smythe, T., Moore, A., Bidwell, D., & McCann, J. (2018). *The social dynamics of turbine tourism and recreation: Introducing a mixed-method approach to the study of the first U.S. offshore wind farm. Energy Research and Social Science, 45, 307–317.***

<https://doi.org/10.1016/j.erss.2018.06.018>

The paper examines the social dynamics of tourism and recreation in relation to the first offshore wind farm in the United States, the Block Island Wind Farm. While communities and policymakers frequently cite the impact of wind energy on tourism as a concern, there is limited research empirically evaluating these impacts. To address this knowledge gap, the authors adopt an iterative mixed-method approach combining media content analysis, ethnographic participant observation, and stakeholder focus groups. The researchers investigate how the wind farm has affected the tourism and recreation experience and quality of life in Block Island and coastal Rhode Island. The paper highlights the importance of including stakeholders in research design conversations to ensure usable solutions for the complex social, technological, and economic dynamics inherent in energy transitions. (Preliminary) Findings presented in the paper suggest that the wind farm is viewed by many visitors as an appealing addition to the region's tourist attractions. However, the lack of a connected fiber optic cable, intended to provide reliable internet access, remains a significant concern for Block Island residents.

**Smythe, T., Bidwell, D., Moore, A., Smith, H., & McCann, J. (2020). *Beyond the beach: Tradeoffs in tourism and recreation at the first offshore wind farm in the United States. Energy Research and Social Science, 70.*** <https://doi.org/10.1016/j.erss.2020.101726>

The paper examines the impact of the Block Island Wind Farm (BIWF), the first offshore wind farm in the United States, on tourism and recreation. The authors challenge the prevailing narrative that tourists primarily seek pristine natural landscapes and would therefore be deterred by the presence of wind farms. Through focus group discussions with tourism and recreation professionals, the study reveals a more nuanced perspective. While visual impacts were a key consideration, participants largely described the BIWF's appearance in neutral or positive terms, with some even viewing it as an attraction. The study found that the BIWF is functioning as an attractant for tourists, particularly those interested in "green" tourism and recreational fishing. Participants emphasized the importance of physical and visual access to the wind farm, highlighting its role as a potential tourist destination. Notably, participants actively weighed the costs and benefits of the project, considering not just aesthetic impacts but also broader economic and community benefits. The study concludes that offshore wind farms can coexist with tourism and recreation, particularly when projects are sited in proximity to destinations and engage stakeholders throughout the planning process. However, the authors caution that the BIWF's positive reception may be influenced by its novelty and small scale, and that larger-scale projects further offshore may face different challenges.

**Sullivan, R. G., Kirchler, L. B., Cothren, J., & Winters, S. L. (2013). *Offshore Wind Turbine Visibility and Visual Impact Threshold Distances. Environmental Practice, 15(1), 1–17.***

<https://doi.org/10.1017/S1466046612000464>

Paper examines the visibility and visual impact of offshore wind facilities. The authors argue that the trend toward larger turbines and wind farms necessitates updated research on visibility, as

previous studies based on smaller facilities may underestimate the visual impact of current projects. The study involved fieldwork conducted in the United Kingdom, where researchers made observations of 11 offshore wind facilities from various onshore viewpoints. They found that even moderately sized facilities could be visible at distances exceeding 35 km in various weather and lighting conditions. Blade movement was also visible at considerable distances, up to 42 km, and was frequently cited as a significant contributor to visual contrast. The authors stress that these findings have implications for the siting of offshore wind facilities, as underestimating visibility could lead to the placement of wind farms in locations that result in significant visual impacts on sensitive areas and viewing locations. This could, in turn, lead to stakeholder opposition and delays in offshore wind development. The study highlights the importance of accurately assessing the visibility of modern wind facilities to minimize environmental and social impacts while promoting the transition to renewable energy sources.

**Sæþórsdóttir, A. D., & Ólafsdóttir, R. (2020). *Not in my backyard, not on my playground Energy for Sustainable Development, 54, 127-138.***

Surveys create evidence about residents' and tourists' attitudes towards wind turbines/wind farms in Iceland. Generally, residents have more positive perceptions and assessments than tourists. The visual impact is regarded as the most negative factor. Both groups are in favor of renewable energy as such, but the tendency of opinion is that the windfarms should not be developed further in scenic areas. The study compares with hydropower, known and well developed in Iceland, and the acceptance is much higher than wind turbines, as the plants represent less significant visual impact. The study states that the perception of wind turbines is the effect of a variety of socio-economic and spatial factors, and on the interpretation of "meaning" of landscape. The result is a very messy and difficult planning for the development of forms of renewable energies.

**Sæþórsdóttir, A. D., Wendt, M., & Tverijonaite, E. (2021). *Wealth of wind and visitors: Tourist industry attitudes towards wind energy development in Iceland. Land, 10(7).***

<https://doi.org/10.3390/land10070693>

Investigates the potential conflicts between wind energy development and nature-based tourism in Iceland, focusing on the perceptions of tourism service providers. The study is based on 47 semi-structured interviews with tourism providers, analysing their opinions on five proposed wind farm projects. The findings indicate that tourism providers perceive wind farms as having predominantly negative impacts, primarily due to visual pollution degrading Iceland's pristine natural landscape. While acknowledging the potential benefits of local energy production, especially in areas with energy shortages, participants expressed concerns about the negative effects on the tourist experience, Iceland's image as a tourist destination, and potential economic losses for the tourism industry. The study identifies five key factors that influence the perceived severity of wind farm impacts: visibility, tourist traffic, proximity to tourist attractions, the degree of naturalness, and the local need for energy.

The authors conclude that careful consideration of these factors is crucial when selecting wind farm sites to minimize negative impacts on tourism and ensure compatibility between wind energy development and nature-based tourism in Iceland.

**Teff-Seker, Y., Berger-Tal, O., Lehnardt, Y., & Teschner, N. (2022). Noise pollution from wind turbines and its effects on wildlife: A cross-national analysis of current policies and planning regulations. In *Renewable and Sustainable Energy Reviews*. 168, 112801.**

<https://doi.org/10.1016/j.rser.2022.112801>

This paper examines the potential negative impacts of wind turbine noise (WTN) on wildlife and analyses planning guidelines related to WTN in California, Germany, and Israel. While the harmful effects of WTN on humans are increasingly studied and regulated, the authors argue that similar attention has not been given to examining or reducing the potential impact of WTN on wildlife. The paper reviews the current literature on the effects of noise pollution on wildlife, highlighting the potential for WTN to cause physiological damage, disrupt vital survival mechanisms, hinder communication, and lead to habitat loss. The study then analyses planning regulations in the three case study locations, finding that none have clear zoning limitations or obligatory environmental impact assessment (EIA) guidelines that specifically address WTN effects on wildlife. However, the authors point to some promising developments, such as California planning recommendations addressing potential WTN effects on wildlife, a German survey assessing bird species' sensitivity to noise (including WTN) and increasing non-obligatory recommendations to distance wind turbines from protected areas in Israel. The study concludes that mitigating WTN effects on wildlife requires gathering more scientific data on WTN impacts, mapping species presence and auditory sensitivity, and mandating better science-informed practices and technologies for WTN reduction, such as long-term monitoring, zoning regulations, and micro-siting.

**Teisl, M. F., Noblet, C. L., Corey, R. R., & Giudice, N. A. (2018). Seeing clearly in a virtual reality: Tourist reactions to an offshore wind project. *Energy Policy*, 122, 601–611.**

<https://doi.org/10.1016/j.enpol.2018.08.018>

This paper examines the efficacy of using virtual reality (VR) technology to gauge tourist reactions to a proposed offshore wind farm near Monhegan Island, Maine, USA. The authors argue that traditional methods of assessing public perceptions of wind farms, relying on text descriptions or static images, may not adequately capture the visual impact of these projects, potentially leading to inaccurate predictions of public acceptance and opposition. To address this limitation, they conducted a field experiment with tourists visiting Monhegan Island, randomly assigning them to view either a VR rendering or a static picture of the proposed wind farm. The results showed that tourists who experienced the VR simulation felt they had more information, expressed lower levels of uncertainty, and were better able to evaluate the potential impact of the wind turbines on their visit. However, the VR experience also led to more negative reactions toward the wind farm, with respondents indicating a decreased intention to visit the island if the project was implemented. The study concludes that VR technology can be a valuable tool for providing more realistic and immersive visualisations of wind energy projects, leading to more informed public responses. The authors suggest that the use of VR in planning and public engagement processes could improve the accuracy of impact assessments and facilitate more effective communication with stakeholders, ultimately contributing to more sustainable decision-making in wind energy development.

**Trandafir, S., Gaur, V., Behanan, P., Uchida, E., & Lang, C. (2020). How are tourists affected by offshore wind turbines? a case study of the first U.S. offshore wind farm. *Journal of Ocean and Coastal Economics*, 7(1). <https://doi.org/10.15351/2373-8456.1127>**

The article examines the impact of the Block Island Wind Farm (BIWF), the first offshore wind farm in the United States, on tourist preferences for different recreational activities. Using a contingent valuation framework, the study analyzes survey data from 263 US residents who visited Block Island between 2013 and 2018. The researchers investigated how prior knowledge and views of the turbines affect tourist willingness to pay (WTP) for activities like sightseeing, fishing, boating, beach visitation, and bird or whale watching, both at locations with and without a view of the wind farm. Contrary to previous studies that found offshore wind farms to be visual disamenities, the authors find that the average WTP is positive across all activities, suggesting that tourists view the BIWF favorably. Specifically, respondents with prior knowledge of the turbines were willing to pay more for beach locations with a view of them, and those who had seen the turbines in person expressed a higher WTP for fishing and boating locations with a view. Notably, repeat visitors exhibited a consistently higher WTP for locations with a view of the wind farm across all activities.

The study concludes that the BIWF has not negatively impacted tourism on Block Island and may even be contributing to increased tourism revenues. The authors suggest that the farm's small scale and novelty may contribute to its positive reception, highlighting the need for further research on larger-scale offshore wind projects.

**Tverijonaite, E., Sæþórsdóttir, A. D., Olafsdóttir, R., & Hall, C. M. (2022). How close is too close? Mapping the impact area of renewable energy infrastructure on tourism. *Energy Research & Social Science*, 90, 102574. <https://doi.org/10.1016/j.erss.2022.102574>**

This article maps the tourism industry stakeholders' perception of wind turbines and other renewable energy plants in Iceland. There is an accepting attitude towards existing plants, but the tourism stakeholders are critical when it comes to proposed future locations in nature and wilderness areas. The informants refer to the place meaning and the quality of the tourism experience. The impact on the economics of tourism is less clearly expressed, but the mobility of the tourists and the composition of tourists in terms of interest might be affected. The study underlines the need for very careful planning, including planning and decision processes that takes place across administrative borders and that address the composition of the societal functions that utilize the energy produced by the wind turbines. The tourism sector competes with other industries, mainly located in more urbanized zones, detached from the wilderness. This suggests that there is a need to raise further discussions about "fairness " along other lines than previously done, where big users of energy must also tolerate the location of wind turbines and other renewable energy production facilities in their own immediate vicinity. Formulated sharply: should the polluters/high energy consumers accept the plants "in their own backyard" rather than imposing them on others?

**Tverijonaite, E., & Sæþórsdóttir, A. D. (2020). *Interrelationships of onshore wind farms with tourism and recreation: lessons from international experience for countries with an emerging wind energy sector. University of Iceland.***

[https://www.ramma.is/media/rannsoknir/Wind\\_tourism\\_lit\\_review\\_final.pdf](https://www.ramma.is/media/rannsoknir/Wind_tourism_lit_review_final.pdf)

This comprehensive literature review addresses the positive and negative aspects of wind turbines for tourism and recreation. Distance is a main factor of acceptance, but the attitudes are not stable. Hence, too many wind turbines, too high and thereby visible, will influence acceptance negatively. Tourists regard wind farms mainly positively, see them as an expression of sustainable policy and conscience. However, when it comes to proposed wind farms, the acceptance rates drop among tourists. Amenity values are affected by the visual impact as well as noise. The existence of wind farms is found to have a limited effect on the decisions of whether to visit a destination or not. The study also refers to the fact that recreational property becomes less attractive and loses value if located too close to wind parks. Studies of impacts on the tourist industry do not produce definitive results. Many studies lead to the conclusion that wind farms should not be placed in precious, scenic and protected landscapes.

**Vlami, V., Danek, J., Zogaris, S., Gallou, E., Kokkoris, I. P., Kehayias, G., & Dimopoulos, P. (2020). *Residents' views on landscape and ecosystem services during a wind farm proposal in an island protected area. Sustainability, 12(6).*** <https://doi.org/10.3390/su12062442>

This paper explores residents' perceptions of landscape and ecosystem services on the Greek island of Samothraki in relation to a proposed wind farm development within the island's Natura 2000 protected area. The study, conducted using a questionnaire survey with 98 residents, revealed a strong appreciation for the island's natural beauty and 'wildness', with freshwater provision and aesthetic qualities being the most highly valued ecosystem services. Residents expressed concerns about various anthropogenic pressures, particularly overgrazing, government neglect, and erosion with regards to ecosystem services. Regarding the wind farm proposal, 48% of respondents expressed opposition, primarily due to perceived negative impacts on the landscape and aesthetic values. The study highlights the importance of considering local perceptions and values in wind farm planning, particularly in protected areas. The authors argue that a scoping assessment, such as the questionnaire survey used in this study, can help identify potential 'conflict hotspots' for wind farm development and facilitate community engagement in decision-making processes, ultimately promoting more sustainable and socially acceptable renewable energy projects.

**Voltaire, L., Loureiro, M. L., Knudsen, C., & Nunes, P. A. L. D. (2017). *The impact of offshore wind farms on beach recreation demand: Policy intake from an economic study on the Catalan coast. Marine Policy, 81, 116–123.*** <https://doi.org/10.1016/j.marpol.2017.03.019>

Examines the potential economic impact of offshore wind farms on beach recreation demand in Catalonia, Spain. Using a combined revealed and stated preference approach, they surveyed beachgoers to estimate the change in recreation demand caused by the installation of hypothetical offshore wind farms with varying distances from the shore and densities of turbines. The study's findings demonstrate a significant welfare loss associated with the presence of wind farms, primarily due to beachgoers choosing to visit other beaches without wind farms. The authors estimate a potential welfare loss of up to €203 million per season, suggesting that the installation of wind farms could lead to a substantial decrease in tourism revenue. The study highlights the importance of



considering the potential economic impacts of offshore wind farms on coastal tourism and the need for re-distributive instruments to offset the negative impacts in areas where wind farms are located.

**Westerberg, V., Jacobsen, J. B., & Lifran, R. (2013). *The case for offshore wind farms, artificial reefs and sustainable tourism in the French mediterranean*. *Tourism Management*, 34, 172–183.**

<https://doi.org/10.1016/j.tourman.2012.04.008>

The paper uses a choice experiment to investigate the impact of offshore wind farms on coastal tourism in the Languedoc Roussillon region of France. The study examines tourist preferences for wind farms located at different distances from the shore (5, 8, and 12 km), considering the potential for mitigating visual impacts through the provision of wind farm-associated recreational activities (e.g., diving, boating) and the implementation of a coherent environmental policy at the tourist resort.

The results indicate that tourists exhibit heterogeneous preferences, with some segments expressing a willingness to pay more for accommodations with views of wind farms, particularly at distances of 8 km or more. At the same time, they recommend that wind farms should be located no closer than 12 km from the shore. Also, and alternatively, a wind farm can be located from 5 km and outwards without a loss in tourism revenues if accompanied by a coherent environmental policy and wind farm associated recreational activities.

The study finds that the potential negative impact of wind farms on tourism revenues can be mitigated or even reversed through the implementation of complementary policies, such as the promotion of sustainable tourism initiatives and the provision of recreational opportunities associated with the wind farm.

The authors conclude that offshore wind farms can coexist with tourism if policymakers carefully consider the distance from the shore, implement compensatory policies, and engage stakeholders throughout the planning process.



**Wever, L., Krause, G., & Buck, B. H. (2015). *Lessons from stakeholder dialogues on marine aquaculture in offshore wind farms: Perceived potentials, constraints and research gaps*. *Marine Policy*, 51, 251–259. <https://doi.org/10.1016/j.marpol.2014.08.015>**

This paper explores the potential for integrating offshore aquaculture within offshore wind farms in Germany, focusing on stakeholder perspectives and research gaps. The authors conducted a stakeholder workshop and interviews to understand the perceived opportunities, constraints, and research needs associated with this multi-use concept. The findings indicate general acceptance of integrating aquaculture into wind farms to maximize ocean space use. However, concerns were raised regarding potential environmental impacts, economic viability, and the need for a clear legal framework. The authors highlight the importance of continuous stakeholder engagement and transdisciplinary research to address these challenges and ensure the sustainable and socially acceptable development of offshore multi-use installations.

## Results

The intersection of tourism and wind energy development is a complex and multifaceted topic that has garnered significant attention in recent research. Various studies have explored the impacts of wind turbines on tourism, revealing both potential benefits and drawbacks. On one hand, the aesthetic disruption caused by turbines can deter visitors, negatively impacting tourism in affected regions. Local stakeholders often perceive wind farms as harmful to landscape aesthetics, which can diminish the appeal of areas known for their natural beauty and recreational value. For instance, Iceland's tourism industry largely views wind farms unfavorably, citing concerns about the degradation of the natural landscape.

Conversely, wind turbines may also act as unique attractions, contributing to local branding and fostering new tourism trends such as 'industrial energy tourism' or 'windfarm tourism' as evidenced in China and the first offshore wind farm in the USA. Others hypothesize that wind energy development and tourism can coexist under certain conditions, especially if afforded by a visitor center, local investment schemes and compensation.

A significant factor influencing public perception and acceptance of wind turbines is their visual and aesthetic impact. Communities that rely heavily on tourism often resist turbine installations due to fears that these structures might alter the distinctive character of landscapes, a primary attraction for tourists and residents alike. This is particularly evident among coastal communities who also express concerns over conflicting land use and socio-economic benefits. A few studies address noise pollution, the size and capacity dimensions of wind turbines as factors influencing community attitudes and factors of acceptance toward both onshore and offshore wind projects. Protests from residents and (repeat) tourists are often framed as 'not in my backyard' (NIMBY) and an illogical resistance to renewable energies, if not naiveness, in their emotional attachment to place. In order to increase social acceptance, researchers underscore the importance of addressing epistemic uncertainty through community participation in the planning process. The dominating anthropocentric focus of tourism and wind energy research includes a few exceptions in studies on wildlife impact and mortality due to wind turbines, which might negatively impact visitation. In short, while most of the research suggests that wind turbines can negatively impact tourism, other studies highlight their potential as a tourist attraction.

This literature review addressing the relationship between wind turbines and tourism is characterized by impact studies that employ a wide range of both quantitative and qualitative methods. Quantitative methods evidenced in the literature review include surveys on visitor and resident attitudes of which some were longitudinal. Surveys utilized a range of measures, including the Likert scale, Delphi method, Contingent valuation framework, GIS, Spatial panel regression technique, Ordered Probit Model, Q methodology, a Detailed Regional Economic Accounting Model, Virtual Reality and Choice experiment involving cooperative game theory. Qualitative studies applied a range of interview techniques, focus groups, field observations, narrative analysis, document analysis, media content analysis, netnography and case studies. Only a few studies used mixed-methods, combining a questionnaire survey with semi-structured interviews, participant-observation and stakeholder focus groups.

## Future Research

It is important to note that Moscardo and Pearce already in 1999 demonstrated that only too often ‘impacts’ are imposed on respondents by those conducting research or undertaking development (Liburd, 2018). The widespread positive perception of green technology, reinforced by dominant public and political discourse advocating for a green energy transition, along with research efforts focused on balancing energy infrastructure integration with the landscape, highlights the necessity for further critical research that moves beyond normative judgments. The existing research only tangentially addresses several critical issues, such as power imbalances, local democracy, and spatial equity. It also overlooks the significance of understanding the socio-cultural values and beliefs that shape human-environment interactions. Additionally, the role of multiple place attachments, particularly in relation to nature and the sea, is underexplored—especially in contexts where the sea and coastlines are not merely seen as spaces for human exploitation. There is also a need to examine the economic consequences of tourism loss, as highlighted by a study from the tourism-dependent region of Catalonia, Spain, which estimated a loss of €203 million per season (Voltaire et al., 2017). Furthermore, it remains unclear who the local stakeholders are, including the non-human entities that are integral to the land and seascapes affected by both tourism and the installation of wind turbines. How can we move beyond dichotomies like us-them, nature-culture, and human-wildlife to embrace holistic perspectives that acknowledge humans as an integral part of nature? How are local communities defined, and who speaks on their behalf? What are the broader effects of wind turbines on health and quality of life? How do wind turbines influence or alter tourists’ travel motivations and destination choices? How do safety regulations and exclusion zones associated with wind power installations affect biodiversity and recreational activities? What are the policy and governance implications that touch on elements of justice? Who are the winners, and who are the losers, economically and socially, and what types and extents of compensation mechanisms can effectively address the interests of tourism and local communities in both the short-term and long-term perspectives?

## Reference list

- Baily, I. (2016). Renewable energy, neoliberal governance and the tragedy of the Cornish commons. *Area*, 48 (1), 119–121, doi: 10.1111/area.12244
- Beer, M., Rybár, R. & Kaňavský, M. (2018). Renewable energy sources as an attractive element of industrial tourism, *Current Issues in Tourism*, 21:18, 2139-2151, DOI:10.1080/13683500.2017.1316971
- Bidwell, D. (2023). Tourists are people too: Nonresidents' values, beliefs, and acceptance of a nearshore wind farm. *Energy Policy*. 173 (2023) 113365, <https://doi.org/10.1016/j.enpol.2022.113365>
- Björk, B.C. & Solomon, D. (2013). The publishing delay in scholarly peer-reviewed journals. *Journal of Infometrics*, 7(4), 914-923.
- Broekel & Alfken (2015) Gone with the wind? The impact of wind turbines on tourism demand. *Energy Policy*, 86, 506–519 <http://dx.doi.org/10.1016/j.enpol.2015.08.005>
- Brudermann, T., Zaman, R. & Posch, A. (2019). Not in my hiking trail? Acceptance of wind farms in the Austrian Alps. *Clean Technologies and Environmental Policy*, 21:1603–1616 <https://doi.org/10.1007/s10098-019-01734-9>
- Carr-Harris, A., & Lang, C. (2019). Sustainability and tourism: the effect of the United States' first offshore wind farm on the vacation rental market. *Resource and Energy Economics*, 57, 51–67. <https://doi.org/10.1016/j.reseneeco.2019.04.003>
- de Sousa, A. J. G., & Kastenholz, E. (2015). Wind farms and the rural tourism experience – problem or possible productive integration? The views of visitors and residents of a Portuguese village. *Journal of Sustainable Tourism*, 23(8–9), 1236–1256. <https://doi.org/10.1080/09669582.2015.1008499>
- Eichhorn, M., Tafarte, P., & Thrän, D. (2017). Towards energy landscapes -"Pathfinder for sustainable wind power locations". *Energy*, 134, 611–621.
- Ellis, G., Barry, J., & Robinson, C. (2007). Many ways to say “no”, different ways to say “yes”: Applying Q-Methodology to understand public acceptance of wind farm proposals. *Journal of Environmental Planning and Management*, 50(4), 517–551. <https://doi.org/10.1080/09640560701402075>
- Frantál, B., & Urbánková, R. (2017). Energy tourism: An emerging field of study. *Current Issues in Tourism*, 20(13), 1395–1412. <https://doi.org/10.1080/13683500.2014.987734>
- Frolova, M., Pérez-Pérez, B., & Herrero-Luque, D. (2022). Diverse responses of coastal communities to offshore wind farming development in Southern Spain. *Moravian Geographical Reports*, 30(4), 324–339. <https://doi.org/10.2478/mgr-2022-0021>
- Goudriaan, Y., Prince, S., & Strzelecka, M. (2023). A narrative approach to the formation of place attachments in landscapes of expanding renewable energy technology. *Landscape Research*, 48(4), 594–607. <https://doi.org/10.1080/01426397.2023.2166911>
- Haggett, C. (2008). Over the sea and far away? A consideration of the planning, politics and public perception of offshore wind farms. *Journal of Environmental Policy and Planning*. 10(3), 289–306. <https://doi.org/10.1080/15239080802242787>
- Hamza, N., Borg, R. P., Camilleri, L., & Baniotopoulos, C. (2022). Experts versus the Public: Perceptions of Siting Wind Turbines and Performance Concerns. *Energies*, 15(20). <https://doi.org/10.3390/en15207743>

- Hansen, A.S. (2024). Bridging tourism and energy industry development in the coastal-marine peripheries: The case of Bornholm, Denmark. *Tourism in Marine Environments*, 19(2), 109-120.  
DOI: <https://doi.org/10.3727/216901924X17186068045875>
- Hattam, C., Hooper, T., & Papathanasopoulou, E. (2017). A well-being framework for impact evaluation: The case of the UK offshore wind industry. *Marine Policy*, 78, 122-131.  
<http://dx.doi.org/10.1016/j.marpol.2016.10.024>
- Hjalager, A. M. (2020). Land-use conflicts in coastal tourism and the quest for governance innovations. *Land Use Policy*, 94, 104566. <https://doi.org/10.1016/j.landusepol.2020.104566>
- Johansen, K. (2019). Local support for renewable energy technologies? Attitudes towards local near-shore wind farms among second home owners and permanent area residents on the Danish coast. *Energy Policy*, 132, 691-701.  
<https://doi.org/10.1016/j.enpol.2019.04.027>
- Kermagoret, C., Levrel, H., Carlier, A., & Dachary-Bernard, J. (2016). Individual preferences regarding environmental offset and welfare compensation: a choice experiment application to an offshore wind farm project. *Ecological Economics*, 129, 230-240. <http://dx.doi.org/10.1016/j.ecolecon.2016.05.017>
- Kuvlesky, W., Brennan, L., Morisson, M., Boydston, K., Ballard, B., & Bryant, F. (2007). Wind Energy Development and Wildlife Conservation: Challenges and Opportunities. *The Journal of Wildlife Management*, 71(8), 2487-2498.  
<https://doi.org/10.2193/2007-248>
- Kyriazi, Z., Lejano, R., Maes, F., & Degraer, S. (2015). Bargaining a net gain compensation agreement between a marine renewable energy developer and a marine protected area manager. *Marine Policy*, 60, 40-48.  
<https://doi.org/10.1016/j.marpol.2015.06.005>
- Ladenburg Jacob, J. (2010). Attitudes towards offshore wind farms-The role of beach visits on attitude and demographic and attitude relations. *Energy Policy*, 38(3), 1297-1304. <https://doi.org/10.1016/j.enpol.2009.11.005>
- Landry, C. E., Allen, T., Cherry, T., & Whitehead, J. C. (2012). Wind turbines and coastal recreation demand. *Resource and Energy Economics*, 34(1), 93-111. <https://doi.org/10.1016/j.reseneeco.2011.10.001>
- Liburd, J. (2018). Understanding collaboration and sustainable tourism development. In J. Liburd & D. Edwards (Eds), *Collaboration for sustainable tourism development* (pp. 8-35). Goodfellow Publishers.
- Liburd, J.J. (2013). *Towards the Collaborative University. Lessons from Tourism Education and Research*. Odense: Print & Sign.
- Liburd, J.J. (2011). Tourism Research 2.0. *Annals of Tourism Research*. 39(2), 883-907.
- Lilley, M. B., Firestone, J., & Kempton, W. (2010). The effect of wind power installations on coastal tourism. *Energies*, 3(1). <https://doi.org/10.3390/en3010001>
- Liu, D., Upchurch, R. S., Curtis, C., & Lusby, C. (2016). Chinese domestic tourist perceptions of wind farms experiences. *Journal of Sustainable Tourism*, 24(11), 1569-1583. <https://doi.org/10.1080/09669582.2016.1158826>
- Lloret, J., Turiel, A., Solé, J., Berdalet, E., Sabatés, A., Olivares, A., Gili, J. M., Vila-Subirós, J., & Sardá, R. (2022). Unravelling the ecological impacts of large-scale offshore wind farms in the Mediterranean Sea. *Science of the Total Environment*, 824. <https://doi.org/10.1016/j.scitotenv.2022.153803>
- Machado, J. T. M., & de Andrés, M. (2023). Implications of offshore wind energy developments in coastal and maritime tourism and recreation areas: An analytical overview. *Environmental Impact Assessment Review*, 99. <https://doi.org/10.1016/j.eiar.2022.106999>

- Macdonald, S. and Kam, J. (2007). Ring a ring o' roses: Quality journals and gamesmanship in Management Studies. *Journal of Management Studies*, 44(4), 640-55.
- Mordue, T., Moss, O., & Johnston, L. (2020). The impacts of onshore-windfarms on a UK rural tourism landscape: objective evidence, local opposition, and national politics. *Journal of Sustainable Tourism*, 28(11), 1882-1904.
- Moscardo, G. and Pearce, P.L. (1999). Understanding ethnic tourists, *Annals of Tourism Research* Vol. 26(2), 416-434.
- Nichifor, M. A. (2016). Public reactions towards wind energy instalments. Case study: Romania and the Netherlands. *Management and Marketing*, 11(3), 532–543. <https://doi.org/10.1515/mmcks-2016-0014>
- Oh, C. O., Nam, J., & Kim, H. (2023). The Impacts of Offshore Wind Farms on Coastal Tourists' Behaviors in South Korea. *Coastal Management*, 51(1), 24–41. <https://doi.org/10.1080/08920753.2023.2148848>
- Ólafsdóttir, R., & Sæþórsdóttir, A. D. (2019). Wind farms in the Icelandic highlands: Attitudes of local residents and tourism service providers. *Land Use Policy*, 88. <https://doi.org/10.1016/j.landusepol.2019.104173>
- Philpott, A., & Windemer, R. (2022). Repower to the people: The scope for repowering to increase the scale of community shareholding in commercial onshore wind assets in Great Britain. *Energy Research and Social Science*, 92. <https://doi.org/10.1016/j.erss.2022.102763>
- Riddington, G., McArthur, D., Harrison, T., & Gibson, H. (2010). Assessing the economic impact of wind farms on tourism in Scotland: Gis, surveys and policy outcomes. *International Journal of Tourism Research*, 12(3), 237–252. <https://doi.org/10.1002/jtr.750>
- Rudolph, D. (2014). The Resurgent Conflict Between Offshore Wind Farms and Tourism: Underlying Storylines. *Scottish Geographical Journal*. 130(3), 168–187. <https://doi.org/10.1080/14702541.2014.914239>
- Schallenberg-Rodríguez, J., & García Montesdeoca, N. (2018). Spatial planning to estimate the offshore wind energy potential in coastal regions and islands. Practical case: The Canary Islands. *Energy*, 143, 91–103. <https://doi.org/10.1016/j.energy.2017.10.084>
- Silva, L., & Delicado, A. (2017). Wind farms and rural tourism: A Portuguese case study of residents' and visitors' perceptions and attitudes. *Moravian Geographical Reports*, 25(4), 248–256. <https://doi.org/10.1515/mgr-2017-0021>
- Smith, H., Smythe, T., Moore, A., Bidwell, D., & McCann, J. (2018). The social dynamics of turbine tourism and recreation: Introducing a mixed-method approach to the study of the first U.S. offshore wind farm. *Energy Research and Social Science*. 45, 307–317. <https://doi.org/10.1016/j.erss.2018.06.018>
- Smythe, T., Bidwell, D., Moore, A., Smith, H., & McCann, J. (2020). Beyond the beach: Tradeoffs in tourism and recreation at the first offshore wind farm in the United States. *Energy Research and Social Science*, 70. <https://doi.org/10.1016/j.erss.2020.101726>
- Sullivan, R. G., Kirchler, L. B., Cothren, J., & Winters, S. L. (2013). Offshore Wind Turbine Visibility and Visual Impact Threshold Distances. *Environmental Practice*, 15(1), 1–17. <https://doi.org/10.1017/S1466046612000464>
- Sæþórsdóttir, A. D., & Ólafsdóttir, R. (2020). Not in my back yard or not on my playground: Residents and tourists' attitudes towards wind turbines in Icelandic landscapes. *Energy for Sustainable Development*, 54, 127-138.
- Sæþórsdóttir, A. D., Wendt, M., & Tverijonaite, E. (2021). Wealth of wind and visitors: Tourist industry attitudes towards wind energy development in Iceland. *Land*, 10(7). <https://doi.org/10.3390/land10070693>
- Teff-Seker, Y., Berger-Tal, O., Lehnardt, Y., & Teschner, N. (2022). Noise pollution from wind turbines and its effects on wildlife: A cross-national analysis of current policies and planning regulations. *Renewable and Sustainable Energy Reviews*, 168, 112801. <https://doi.org/10.1016/j.rser.2022.112801>

- Teisl, M. F., Noblet, C. L., Corey, R. R., & Giudice, N. A. (2018). Seeing clearly in a virtual reality: Tourist reactions to an offshore wind project. *Energy Policy*, 122, 601–611. <https://doi.org/10.1016/j.enpol.2018.08.018>
- Trandafir, S., Gaur, V., Behanan, P., Uchida, E., & Lang, C. (2020). How are tourists affected by offshore wind turbines? a case study of the first U.S. offshore wind farm. *Journal of Ocean and Coastal Economics*, 7(1). <https://doi.org/10.15351/2373-8456.1127>
- Tverijonaite, E., Sæþórsdóttir, A. D., Olafsdóttir, R., & Hall, C. M. (2022). How close is too close? Mapping the impact area of renewable energy infrastructure on tourism. *Energy Research & Social Science*, 90, 102574.
- Tverijonaite, E., & Sæþórsdóttir, A. D. (2020). *Interrelationships of onshore wind farms with tourism and recreation: lessons from international experience for countries with an emerging wind energy sector*. University of Iceland.
- Vlami, V., Danek, J., Zogaris, S., Gallou, E., Kokkoris, I. P., Kehayias, G., & Dimopoulos, P. (2020). Residents' views on landscape and ecosystem services during a wind farm proposal in an island protected area. *Sustainability*, 12(6). <https://doi.org/10.3390/su12062442>
- Voltaire, L., Loureiro, M. L., Knudsen, C., & Nunes, P. A. L. D. (2017). The impact of offshore wind farms on beach recreation demand: Policy intake from an economic study on the Catalan coast. *Marine Policy*, 81, 116–123. <https://doi.org/10.1016/j.marpol.2017.03.019>
- Westerberg, V., Jacobsen, J. B., & Lifran, R. (2013). The case for offshore wind farms, artificial reefs and sustainable tourism in the French mediterranean. *Tourism Management*, 34, 172–183. <https://doi.org/10.1016/j.tourman.2012.04.008>
- Wever, L., Krause, G., & Buck, B. H. (2015). Lessons from stakeholder dialogues on marine aquaculture in offshore wind farms: Perceived potentials, constraints and research gaps. *Marine Policy*, 51, 251–259. <https://doi.org/10.1016/j.marpol.2014.08.015>
- Wheeller, B. (2010). The Cost of Everything and the Value of Nothing. *Tourism Recreation Research*. 35(1), 81-85.