

Wind Energ. Sci. Discuss., referee comment RC2
<https://doi.org/10.5194/wes-2021-118-RC2>, 2022
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Comment on wes-2021-118

Anonymous Referee #2

Referee comment on "Public acceptance of wind energy – concepts, empirical drivers and some open questions" by Michael Ruddat, Wind Energ. Sci. Discuss.,
<https://doi.org/10.5194/wes-2021-118-RC2>, 2022

2022-01-29

Review WES 2021-119

This is a wonderful idea for a review article. The literature on wind and acceptance is so huge, it is very difficult to discern what we have learned. Certainly, this is not a problem unique to wind. Facility siting in general suffers from this problem – it's the problem that local context matters and every place is different. That said, I believe there are some lessons that are broadly applicable, by that I mean forces which can overwhelm local differences, for example local economic investment. I'm excited for what we can learn from this review. It certainly has policy relevance in Germany as it seeks to ramp up wind energy as it continues to close the last three nuclear power plants at the end of 2022.

My review is based on a line-by-line reading and I reference the line numbers in my comments:

Are there really two different representative telephone surveys that both had N=2006, and both asked for the acceptance of solar farms, wind farms and high-tension power lines in 500 m distance to the respondents' home? You cite Schweizer-Ries and colleagues (2015) for one on l.74 and Sonnberger and Ruddat, 2016: 36 on l.95? This just seems unusually similar.

On l. 98-102 you conclude: "Altogether, acceptance means a positive evaluation of a topic (like wind energy or wind parks) by a social group (e. g. stakeholders, residents, the public) under certain circumstances". I don't agree that this definition is the most prevalent in the literature (nor should it be) and it's not consistent with what you said on l.40-71. As you point out, acceptance can also mean a lack of opinion or even grudgingly negative evaluation. For example, I don't like it if a police officer gives me a ticket, but I accept it as proper and legal. The idea is more complex than you are letting on. So I am perplexed as to why you are using this relatively narrow definition?

L.106 you really evaluated the literature over several centuries? Must be a typo. You must mean decades.

- 112 it's obvious that wind turbines can have negative and positive impacts. What would be interesting is if you would tease out what makes some positive and others negative.

l.113 a conclusion from 2001 that European wind farms are less ugly than American ones seems out of date and a gross overgeneralization that probably does not hold true today and if it does, you would need to tease out the subjective dimensions, not just offer up the opinion of Pasqualetti. There has been much more work done into how people perceive wind turbines than you reviewed here.

I.119 Wolsink did indeed say that, but there are lots of cases where economics was the dominant factor shaping support. Also, be careful about drawing generalities from Wolsink's article 15 years ago. Things have changed a lot, namely the size of turbines but also climate awareness, cost of wind electricity, etc.

I.144 I don't agree that cultural theory is not transferable across countries. Certainly, arguments made about political culture would be less transferable, but Mary Douglas's work has been noted to be quite cross national. See: Mamadouh, V. (1999). Grid-group cultural theory: an introduction. *GeoJournal*, 47(3), 395-409.

I.154 Yes "offshore" but the point you are making, I believe, is that they need to be offshore far enough that they cannot be seen from anywhere on land, including a 37-story condominium.

- 200-210 It's good that you mention NIMBY, but I feel that the topic is worthy of a great deal more consideration. It is a major argument made about acceptance. I feel it was giving too short consideration in this article. There is an extensive literature on NIMBY. Can you reference the key articles as it applies to wind?

- 235 You do a good job of explaining some of the nuances around the definition of trust. As you get into the empirical literature, it would be important to know how researchers have operationalized the term – in other words, which definitions are they using?

- 240 You write: "Trust in big energy companies and the acceptance of offshore wind farms correlates negatively and trust in big energy companies and the local acceptance of wind farms correlates positively (Sonnberger and Ruddat, 2017). "

But this seems counter-intuitive and I wonder if it's a German result? Could it be instead that people's distrust of large energy companies is really linked to their perception of those companies' willingness to support *Energiewende*? We are talking about the Big 4, right?

- 252-255 Your conclusion is underwhelming. Overall, trust matters. Yes, we know that. But how is trust built or lost in the wind industry? Is it different than in other technologies? Or, if the data are not there to allow you to conclude something interesting such as that, maybe it would be more useful to point out what kinds of studies are needed so that we get at the right questions?
- 269-271 This is an interesting finding – that acceptance is linked to meeting certain risk-benefit conditions. If so, this would mean a risk-based approach could be productive at resolving siting disputes. However, I imagine that qualitative dimensions of risk matter as well, and not simply a hard and fast number as produced by a technocratic approach to risk? What does the wind literature say about risk-benefit trade-offs and public acceptance?
- 309 Lots of people agree that participation can produce consent, but what does the wind literature add to this? Are there data about wind specifically (besides the Firestone 2018 piece)? Could you unpack that? It would be nice to learn what they found out.

l.316-323 this idea of financial reward and acceptance is important. I would really like to

see the literature on this reviewed more thoroughly. For instance, what kind of financial participation did Schweizer-Ries identify?

- 390 I was interested in what you meant by saying ELM or SARF are possible integrative theoretical frameworks. Where were you going with that? ELM is a model that explains how people can be persuaded to adopt certain attitudes or behavior, but SARF explains how risks are amplified through societal processes– although it's not a theory, as we've been told a million times. But how do you think these frameworks could be used to help answer the pivotal questions about wind? I don't see ELM and SARF as interchangeable at all, but perhaps that is not your claim?

Given all this literature that you have reviewed, and your findings that community acceptance matters, I would be most interested if you would entertain the question: Why do we continue to spend money on characterizing physical and biological impacts when so little is spent on working to build trust, recognition of benefits, how to do public participation well, the options for financial engagement, etc.? This is what frustrates me. We know wind turbines are not being sited for lack of public consent, but the answer is, instead, to do more research about impacts to bats and birds. I wonder if, after reviewing the literature, you agree with this position?

This is a nice review of a lot of literature – mostly European, which is fine, but the real question is: How can we build popular and local support for more wind installations? What did you learn after reading all those articles? Can you summarize the best plan for action? Of, if the knowledge is not yet mature, can you recommend further research to do?

Final point: I also would say that offshore wind is a totally different animal than onshore wind. Almost all the literature you reviewed is for onshore wind. That's okay since that's what most of the literature is, but I think you should note this more explicitly, add a caveat that says perhaps none of this applies to offshore wind, and point out the need for more work into offshore wind.

