Whispers in the Wind: Ethical dimensions of social conflict in offshore wind

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Abstract. The current European energy crisis in combination with the international climate agreements dictate the need for strong investment in green energy. Among others, offshore wind is widely considered an efficient low-impact low-carbon technology. Despite the positive institutional landscape for the adoption of this form of energy generation, European nations witness societal resistance to its deployment. This paper explores the critical ethical dimensions of offshore wind fuelling relevant societal controversies surrounding its deployment and governance. I argue that at the core of most societal disputes lay normative issues shaping and contributing to the polarisation of the discourses and affecting the viability of initiatives. The method applied to characterise the social controversies is ethical analysis. Using the conceptualisation of the three tenets of energy justice- distributive, procedural, and recognition - I uncover the prevailing justice dimensions present in thematic literature and specific European offshore wind initiatives (Taggen park and Utsira Nord). I also use ethical analysis to characterise further normative implications of offshore wind. At the end, I offer normative insights on how project developers and policymakers can lower the barriers to offshore wind energy implementation and improve governance mechanisms.

1. Introduction

The current energy crisis in combination with the international climate agreements dictate a need for strong investment in green energy. In the European context, meeting the ambitious targets for carbon dioxide reduction and energy generation from renewable sources requires an increased emphasis on wind energy. Wind energy is considered a particularly efficient and low-impact low-carbon energy by both researchers and governments [1,2]. This is mainly the case for offshore wind (OSW) [3].

The European offshore renewable energy strategy is key to the green transition because the main form of energy generation should be green electricity [4]. According to the European Commission's Long Term Decarbonisation Strategy, Europe will need between 700 and 1,200 GW of wind capacity from today's 190 GW [5]. With the plan RePower EU, European countries set a short-framed goal of increasing wind energy production of 480 GW by 2030 [6]. All possible scenarios that allow achieving the proposed energy generation and climate targets demand offshore wind, and related infrastructure, to grow in a particular accelerated manner. To reach climate neutrality by 2050, OSW in the EU should

grow from current 15 GW to 300 GW by 2050 [7]. The growth to such capacities will not be a path without technological, environmental, social and administrative challenges [8]. Furthermore, it will not be a homogeneous effort, as the European Commission and the countries are well aware of. It is already established that meeting the proposed OSW goals implicates harnessing the wind potential of all European 5 sea basis with a particular focus on the North and the Baltic Seas [9].

So far, there has been a positive institutional landscape for the adoption of this form of energy generation [10] with single countries, like Norway, Belgium or Spain scaling up their ambitions to boost OSW power production [11,12]. Just at the end of last year, the Norway government announced the launch of the first offshore tenders and published the criteria for companies to take part in the bidding. Meanwhile, public hearings are taking place, giving a potential opportunity to stakeholders to influence the process [13].

Despite the optimistic scenario described so far, Norway and other European nations have witnessed societal resistance to the deployment of OSW projects. This situation has the potential to escalate and spread since there is an immediate need to speed up greatly the implementation pace of OSW.

Given the pivotal moment for OSW power in Europe, this article explores the critical ethical dimensions fuelling relevant societal controversies surrounding its deployment. The novelty of the article resides in the dual approach to this phenomenon: axiological and normative. The ethical analysis performed here combines the two approaches to uncover tensions arising from the interpretation and adoption of different values and principles of action. So far, the discussions on the ethical repercussions of OSW have been approached mainly from a social conflict perspective [14] and framed basically on justice terms [15], missing out on the analysis of other equally relevant values for social controversy.

I argue that at the core of societal disputes over OSW, there are normative issues that shape and contribute to the polarisation of the discourses on the subject, affecting the viability of initiatives, and ultimately endangering the feasibility of the energy transition. Moreover, an ethically deficient governance framework for OSW has the potential for profound and long-lasting social impacts that threaten the feasibility and pace of the decarbonisation of society.

Despite looking into the societal disputes over OSW, this work takes an ethical perspective and not a scientific one (e.g., social sciences perspective). It utilises ethical frameworks as benchmarks to conduct an analysis of values and normative principles embedded in OSW. In specific terms, it examines clashing valuative frameworks and value conceptions which create opportunities for (environmental and social) injustice that ultimately drive many of the societal controversies around this type of green energy technology.

The article is organised in the following way: First, I conduct an examination of the social controversies associated with OSW followed by a characterisation of the phenomenon at the axiological level, looking for justice and other relevant embedded moral values, in recent thematic literature. In the second stage, I identify and typify valuative and ethical principles at the core of the social resistance to specific Scandinavian projects devoted to OSW generation- Taggen Wind park and Utsira Nord. The ethical analysis was performed in these two North Sea initiatives due to their crucial role in European energy independence and security but also because of the leading role of Norway and Sweden in OSW. At the end, I offer some normative insights on how project developers and policymakers can lower the barriers to OSW energy implementation, hoping to contribute to fairer energy transitions.

2. Methodology: Ethical analysis

This study follows the tradition of bodies of work in the field of applied ethics, where I draw upon several ethical perspectives (Table 1), to analyse normatively social controversies associated with OSW.

Ethical perspective	Associated ethical principal(s)
Deontology Rule-based ethics, such as Kantian deontology, guides and assesses choices based on what ought to be done. Whether a situation is ethical or not depends on whether the action that brought it about was conforming to a principle or moral norm.	Act according to what is morally required, forbidden, or permitted.

If an act is not in accord with what is *right*, it may not be undertaken, no matter the *Good* that it might produce [16].	
Consequentialism Consequence-based ethics, such as utilitarianism employs the principle of achieving '*good'* outcomes from actions as a moral guide. For some, the most relevant is to achieve 'more *good* for the greatest number' of people [17]. They tend to weigh positive (*good*) and negative consequences (*bad, harm*) for all the involved parties. The preferred option or course of action is the one with the highest *'net good'* (the total of the positive consequences minus the number of negatives).	Act so that the consequences of your actions are *good* and/or increase and/or maximise *good*
Energy justice A conceptual lens through which energy issues are addressed. It serves as a conceptual, analytical, and decision-making tool examining distributional, procedural and recognition aspects of the energy systems. The aim is to achieve social and economic equity as well as meaningful participation for all stakeholders. Energy justice envisions energy system(s) that fairly distribute energy services (benefits and burdens) while identifying and minimising energy injustices [18, 19].	Act to eliminate and/or mitigate energy inequity.

Table 1. Ethical perspectives and associated principles utilised in the ethical analysis.

I perform what can be described as an ethical analysis of two cases that illustrate some of the social controversies on offshore wind. Ethical analysis is a well-established method within applied ethics and is utilised for examining societal phenomena that include relevant normative dimensions and implications. Energy transitions, systems and technologies are some of the topics where this approach is frequently referenced [20, 21, 22]. Here, the method serves to uncover the moral values and evaluate each case from the perspective of the ethical principles described above. Since the objective here is to explore the critical ethical dimensions fuelling relevant societal controversies surrounding the deployment of offshore wind, it requires the characterisation of values and ethical principles in the discourse, and ethical analysis is the right tool to accomplish this task. Ethical analysis was also chosen as an evaluative method because it helps in the consideration of potential trade-offs and normative prioritisation as a means to promote social acceptance and engagement in OSW projects.

In this research, the starting point of the ethical analysis is the research in the general literature recognition of the relevant normative implications embedded in discourse on social controversies of OSW power (general thematic literature). After, that I move on to the assessment of the two cases: the Swedish Taggen wind power project and the Utsira Nord Norwegian initiative. Fig 1. summarises the main steps of the ethical analysis performed here.

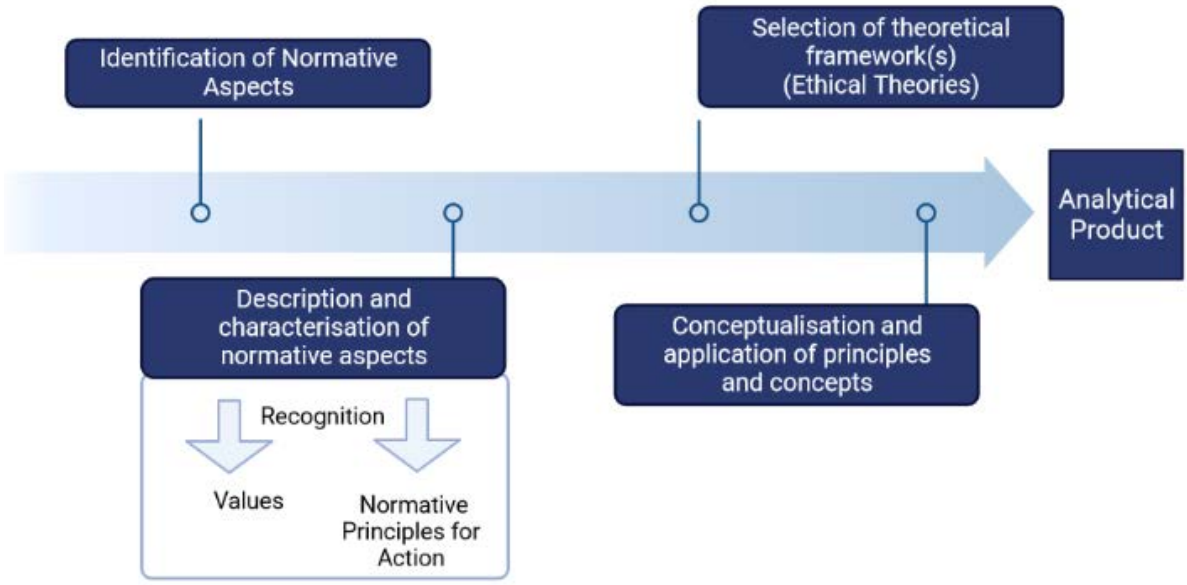

Figure 1. Principal stages of ethical analysis developed in this study.

3. Values and ethical principles in offshore wind discourse

Accomplishing the first steps of the ethical analysis of the social conflict in OSW- identification, description and characterisation of normative aspects- required searching relevant literature for potential ethical dimensions.

The analysed bibliographic sources abundantly referred to justice as being paramount in the OSW debate. Given this, I used the conceptualisation of energy justice from Jenkins et al. [23] [18] and continued by McCauley et al [24] since they gather high consensus [19] [25] to perform both the axiological and normative examinations. Its influence is such that it goes beyond the scientific literature and influences even governance organisations [26, 27]. In the context of energy and according to the authors, it is possible to distinguish 3-tenets of justice: distributive (or distributional), procedural, and recognition. Distributive justice relates to equity in the allocation of goods and burdens in a particular setting, society or group, requiring reflection and construction of principles around this intent. In a more restrictive interpretation, distributive justice is a set of norms for the allocation of resources that rational individuals see as legitimate or fair [28]. It is worth noting that distributive justice is not limited to economic and financial aspects and includes common goods and community assets such as environmental quality [18]. Just as important within distributive justice are the allocation criteria, types of resources or goods and agents involved in the distribution. Usually, allocation principles are mostly based on merit/desert, equality and need [28]. In the OSW debate, distributive justice is for the most part connected to the possibility of stakeholders receiving a fair share of the benefits coming from the projects implemented referred by Lundheim et al. (2022), 'perceived distribution of benefits was an important factor in the acceptance of local wind energy projects' [29]:8. Equally relevant, is the ongoing debate on how and who should be compensated by the negative (environmental and social) impacts that come along with OSW initiatives, both in the present and the future [30].

When procedural justice is referred in the energy debate, it is usually tied to several limitations of current socio-political processes in dealing with a fair representation and inclusion of individuals in processes of technology and policy design and implementation. In other words, it is about the right of all to participate in an open and inclusive processes of decision-making. In the case of OSW (and

onshore wind), the processes of decision can still be problematic even if oriented by popular and well-intentioned approaches consisting mostly of multistakeholder involvement of individuals, organisations, and businesses. The contribution to policy and the delivery of shared goals is greatly affected by the vagueness and lack of practical implementation tools [31]. As Herrera (2020) and Leer et al. (2020) point out, several challenges in individuals having an active voice in the siting of OSW developments, their characteristics, ownership structure and the possibility of compensating communities disproportionately impacted by the projects [32, 33]. Such issues inevitably contribute to social (un)acceptance of OSW which can be considered in its several implications of procedural, distributional, and recognition justices, particularly when routinely disadvantaged communities feel the negative effects due to their social disadvantage or minority status [32, 33]. In a positive tone, 'good policies could hopefully ensure that affected communities have a sense of justice, regardless of the outcomes' [29]:20.

As discussed in literature, finding distributional equity [34] and ensuring adequate societal representation and engagement are further complicated by intergenerational justice considerations, which feature the trade-off between the welfare of the current and future generations [35].

In the energy context, recognition justice is about the need to acknowledge vulnerable groups and how they are negatively affected by distributional and procedural injustices, taking specific measures to include them fairly at both levels. This requires the identification of differing perspectives embedded in social, cultural, ethnic, racial and gender differences [18]. In practical terms, it requires the recognition of vulnerability and disadvantage conditions which characterise the lives of groups such as low-income communities, migrants, or ethnic minorities. Specifically, in OEW, this refers to the missed opportunities and political will to benefit those who bear the heavier burdens without gaining proper benefits. Evidently, recognition of justice underlines the pernicious relation of distributional and procedural injustices that harm disproportionally vulnerable individuals and groups.

On the axiological level, it was possible to identify in specialised literature other values besides justice such as nature. Some stakeholders advocate that the natural environment, mostly living beings hold intrinsic value i.e., biodiversity and its elements deserve moral consideration in themselves. Consequently, they and their wellbeing must be considered independently of their (potential or effective) worth for society [36]. A similar reasoning holds for those who consider that natural landscape holds inherent value for socio-cultural reasons, for example, associated with its role in religion [37, 38] or spirituality [39].

On one side, some stakeholders consider OSW as an environmentally friendly technology supporting the decarbonisation of society with negligible impact on nature, while others consider it to be a danger to biodiversity and a disturbance of the natural landscape. Offshore energy production is challenged by the moral notion of nature as an ecosystem threatened and in need of protection due to human (destructive and deliberate) exploitation [40]. Many opponents of OSW attribute (higher) moral worth to nature to the extent of not wanting the 'original' state of the environment to be disturbed. In contrast, stakeholders that back OSW projects usually view nature as a source of resources and life support essential to human survival [41] and to an extent, qualify the environment with extrinsic moral value. For them, nature's worth is tied to what it can provide for human wellbeing and not on its own and for its own sake. This stark contrast rests in those who believe nature should be preserved and protected from human (negative) action and those who think that humans and nature are interconnected in such a way that human interventions are an integrative part of the environment [42]. Thus, different actors employ conflicting concepts of nature- a nature conservation-preservation standpoint *vs*. a tech-friendly, climate-focused sustainability perspective [14]- based on opposed concepts of nature's moral worth. It is also relevant to refer even in the more nuanced (scientific) positions regarding the potential acceptability of the OSW, the argumentation on Nature's worth still mostly circles around how far this human intervention can be 'tolerated' or 'accepted' so Nature is being *de facto* preserved [43, 44].

Supporters and opponents of OSW utilise other lines of normative argumentation resting on different and frequently opposing stances on why we should (or not) back (general and/or specific) technologies and projects. In ethical terms, the debate rests on what action(s) is/are morally defendable- e.g., Is OSW the *best* (or a *good*) option within the green energy production technology?; Is hypothetical OSW project X a *good* initiative for area X?; Are floating turbines the *right* alternative in project X? These types of

questions and associated discussions include reasoning outside of the factual (and scientific) sphere. In a great deal of cases, the arguments on OSW harbour a moral dimension influenced mostly by utilitarian and deontological principles.

When justifying their positions, notions of being a *good* technology, beneficiating *more* people and improving human wellbeing by being a green energy generation technology are commonly referenced as supporting arguments of utilitarian nature [28, 45]. At the core, offshore windfarms are defended (or contested) on the grounds of creating (or not) more aggregated *good* which relates to a utilitarian perspective of being morally approvable and desirable [45]. For some, OSW increases the *overall good* because of its contribution to the reduction of carbon emissions, and by extent of the negative impacts of climate change (e.g., extreme weather events), while boosting social (e.g., jobs), economic (e.g., taxes) and health benefits (e.g., pollution). For others, the positive consequences do not overcompensate for negative impacts and therefore, the action of implementing OSW is not morally defendable. Since OWF can compete over marine space with other economic sectors, including aquaculture, tourism, shipping, extraction of seabed resources and commercial fishing, it may not be creating enough societal *good* or benefiting *more* people to be considered morally correct. Areas dependent on tourism may experience economic losses, as the wind farms may interfere with natural landscapes thus decreasing recreational visits [46].

Antagonism against OSW can also be anchored not in the hypothetical (positive or negative) consequences of the technology or initiative but rather on obligations, rules and duties. As mentioned previously, those who consider the intrinsic value of nature mostly feel the duty to prevent actions that may risk the integrity of the environment. For them, it is not morally relevant the potential *good* consequences of offshore farms (may) have as long as they violate the principle of '*no harm'* or '*no interference'*. Along the same line, certain beliefs about the coast being a free recreational area [47] can also be routed in deontological principles.

In summary, the first three phases of ethical analysis of conflicting arguments on OSW revealed differing valuative conceptions around justice and nature and competing action principles utilised by both sides of the spectrum to justify their positions. In the fourth stage, there was the identification of moral principles behind the positionings of the stakeholders as well as the arguments for and against OSW. During this part, the moral framing of the debate was associated with ethical theories, which allowed the more generalised analysis of the moral phenomenon and served as guidance to the analysis of the case-studies that will follow in the next section.

4. What fuels the disputes? Looking closer at Taggen and Utsira Nord projects

Taggen wind park was to be set 12 km outside the cost of Åhus, in the southeast part of Sweden. The implementation was a process of more than 10 years that culminated in 2019. The project was to be financed by the electricity company Vattenfall and comprised 183 wind power poles built in the Bay of Hanö [48].

Taggen wind park initiative was portrayed as an example of a setting trend of governmental support of (offshore) wind power and continued expansion of OSW in northern Europe [48]. At the beginning of 2018, the attitude of local inhabitants was relatively polarized, ranging from superficial and distant indifference to straightforward opposition. Questions and uncertainties regarding the potential drawbacks of the project (e.g., impact on the fish industry [48], recreational cruising [49], incidents and accidents [50]) were the main arguments against the implementation of the initiative. Despite initial support, local politicians and municipal leadership started to show hesitation in the final stages of deliberation, especially after the Vattenfall filed for amendments to the original plan [51]. This process led to a revision of the application and associated risk plan, under a different municipal board [52]. The final stop to the project came after the Swedish Armed Forces rejected the project in 2019. The reason for shutting down the project was the interference with the shooting range Ravlunda, located about 25 km inland from the Taggen development area [53].

The cancellation of the initiative had long term impacts on the Swedish OSW governance. In 2022, the central government moved to centralise further the process of licensing (offshore and onshore) wind and began giving added benefits to the municipalities that agree with the installation of wind power.

Interestingly enough, it was (apparent) *'not seen, nor heard'* characteristics of OSW that gave an extra pull to the political move towards centralisation of the licensing process [54]. The cited objectives of the re-organisation were to enable a national and more uniform examination process, and to increase the efficiency of the assessment and the predictability of the (licensing) process ('Syftet med uppdraget är att möjliggöra en mer enhetlig prövningsprocess nationellt, öka effektiviteten i prövningen samt öka kunskapen och förutsägbarheten avseende processens olika steg' [55]).

The abandonment of Taggen wind park is an example of how several normative dimensions concurred with the unsuccessfulness of the initiative. This might come as a surprise as economic and scientific facts and arguments were neither predominant in the debate nor in the political decision process. The economic and resource investments of a decade in connection with the need to decarbonise Swedish energy generation were not sufficient reasons for the acceptance of Taggen wind park. Ultimately, the fate of the governance process was sealed by normative reasons.

The most relevant cause for the dismissal of Taggen wind park was probably the (perceived) lack of transparency in the licencing process. This shortcoming in connection to the supposed exploitation of additional benefits coming from the requested amendments, created moral grounds- on procedural justice- for justifying political rejection of the project. Coincidently, the same dimension of justice was further applied by the Swedish government to support a more uniform process of licencing areas for wind energy production. This situation reveals a hidden normative stance as a cause and justification for the homogenisation of practices. Predictability and efficiency became the relevant values directing the permit process instead of potentially others such as equity. The latter was far more important for local authorities. According to the local media, Annika Strandhäll (Swedish minister of Climate and environmental at the time) considered that the new institutional setting would enable a more uniform examination process nationally and increase the efficiency of the examination and the predictability of the process ('Hon- Annika Strandhäll- lyfter även fram den myndighetsgemensamma vägledning som Naturvårdsverket (…) fick i regleringsbreven i fjol. Syftet med uppdragen är att möjliggöra en mer enhetlig prövningsprocess nationellt och att öka effektiviteten i prövningen och förutsägbarheten i processen') [54]. The investigation of the discourse related to Taggen wind park revealed a strong focus on the (potentially negative) consequences of the project on economic and recreational well-being [51]. Environmental considerations were existent but not particularly crucial [55]: 39-40 which may come as a surprise since opponents of OSW projects frequently use them in their argumentation [56].

The moral landscape of the second analysed OSW case- Utsira Nord- is quite different from the previous one.

During a boat trip, on 12 June 2020, the Norwegian Minister of Petroleum and Energy Tina Bru announced that the area west of the island municipality of Utsira would be opened for applications for renewable energy production. This came to be the first Norwegian dedicated sea area for the development of wind energy. [57]. The total section for development is more than 100 km2 and will be clearly visible from land [58]. According to specialists, Utsira Nord is best suited for floating OSW turbines since this is a deep-sea area [59]. Several operating companies have made public their intentions to apply for a license for wind power development in this area, and also for Nordsjø II.

Not long after the ministerial announcement, the protests against Utsira Nord development began. Local citizens started a Facebook group 'NO to offshore wind at Utsira, Bokn and Karmøy in Haugalandet!', with the objective of informing people, so all could have a chance to take part in the debate. The movement gathers a considerable number of supporters [60]. The reasons cited for opposition are predominantly the visibility of the wind turbines from land and the unknown consequences of such an investment [61]. Additional contestation comes as expected from the fishing industry. Interestingly, part of the argumentation from the fishing organisations is based on the supposed (excessive) size of the concession area to meet the agreed energy production (Norwegian and European) targets. Other reasons mentioned by fishing organisations were the non-profitability of energy production without ('incredibly') favourable support schemes and the economic benefits for wind companies to build farms in shallow coastal areas. According to fisheries representatives, there is a real danger of offshore wind jeopardizing the best fishing areas i.e., shallow areas [62].

In the specific case of Utsira Nord, contestation is also fuelled by competing scientific analysis of the suitability and best location for wind production in the Norwegian waters given many different

parameters need to be considered [59]. Divergences about potential negative environmental consequences, final energy price, energy production capacity and possible exportation of Norwegian energy add up to the controversy [63, 64].

At present, large business players consistently pressure the government to speed up the development of OSW, including in Utsira Nord, while tension and discontent grow among sectors and citizens who disagree with the (national and/or local) OSW strategy [65].

The social controversy around Utsira Nord shows different visions of nature at play: 'undisturbed landscape' *vs.* 'resourceful environment' (e.g., fish, energy). These clashing conceptions tie directly to different normative approaches, either focusing on duty of landscape protection (e.g., 'view of sunset') [66] or on the *good* consequences of using natural resources (e.g., decrease in energy prices) [67, 68]. Even among those who believe that Utsira Nord is an exploitable natural area, there are fears about the project and different views on who should pay for the burdens of OSW implementation [66: 39-40]. The lack of common and agreed upon principles for the distribution of economic benefits within Norwegian economic sectors is another source of normative friction fuelling contestation. Along the same line, there is also a normative disagreement on the amount of *good* Utsira Nord will de facto generate when discounting the harm it can cause to the economic profitability of fisheries (e.g., noise, high biological production) [69, 70]. By raising this point, the moral standing of the project becomes (more) problematic. This reasoning is also picked up by the scientific community via competing viewpoints on the amount of *good* and *bad* that the project can generate and most importantly questioning if the balance is positive.

Both here and in Taggen wind park, the justice of the decision-making process is questioned, but in the Norwegian case, the (alleged) favouritism of policymakers towards OSW seems to be driving the dispute. In their arguments, fishing organisations call for procedural equitability, as they would like to be in similar conditions as the wind energy industry. The same argument makes clear the interconnection among distinct dimensions of justice- procedural and distributional- and how by tackling some unjust aspects it is possible to mitigate the overall controversy.

In sum, it is clear that disputed normative positions and perceptions of (in)justice have affected the governance processes in both OSW initiatives, making evident how much of societal controversy has ethical roots.

5. Discussion and Conclusions

Social controversies in OSW are caused by a multitude of factors as abundantly demonstrated in the literature. However, normative diversity and opposing ethical principles are potentially some of the most challenging barriers to a shared understanding of this form of energy generation. Despite the urgency to tackle this shortcoming, there is still little research and discussion on the matter.

In many cases, researchers, policymakers and companies have relied on providing factual information and use scientific argumentation as a means of communicating their positions and justifying their options [71-73]. To some, this strategy may seem a reliable way to address the ongoing discussion about OSW and somehow diminish contestation. At the same time, in energy research, there is a call for a shift in the way experts communicate with lay people, suggesting the use of stories, narratives and storytelling [74]. In reality, this option could be more effective as it would with more ease integrate normative insights and create improved conditions for a richer and more inclusive debate [75].

An important point to bear in mind is that normative diversity is not exclusively axiological as it has been argued in most social science studies but also occurs at the level of the principles of action. The ethical principles that define the moral value of a particular action are crucial to understanding the potential validity of that action. The moral quality of OSW cannot be considered just in the abstract but also analysed under the different ethical traditions shaping stakeholders' positions. Mapping the variety of moral values as well as what stakeholders consider to be morally desirable and acceptable will allow the development of OSW governance and implementation frameworks that will be far more robust than otherwise.

On axiological terms, and as shown in the previous sections, the value of justice is central to the OSW debate. The preponderance of justice is found both in experts (e.g., researchers and academics) as well as in laypeople (e.g., media reports, and citizen groups). Both in the analysed literature and the

analysed case studies, questions about fairness were fuelling much of the opposition to OSW. However, supporters also used argumentation based on justice to sustain their position. In the first case, the considerations were mostly at individual and sectorial levels, while for those who advocate for OSW, global and intergenerational justice were the reasons for their views.

When contemplating the dimensions of justice, distributive issues dominate the discussion, mostly in Norway, as cost-benefit arguments are exchanged among supporters and opponents. Is the final economic benefit worth the financial investment as well as the loss of revenue from other human activities?- seems to be a key question. Similarly, how to 'compensate' specific sectors and/ or societal groups gathers consensus as being essential point for OSW acceptance. This last question ties directly to finding a 'just' measure and quality of compensation which immediately makes us consider what justice principles should preside to such (re-)distribution. Proper reflection on how to ensure that the gains from the massive deployment of OSW go to more than the usual suspects is crucial to wider public engagement. Waiting for the benefits (and harms) to mount and then discussing strategies to equitably manage them is not a sensible approach when all parts of society need to be engaged in energy transition. The ethical analysis performed here shows distinctively that, so far, distributive problems have not been given proper consideration by stakeholders who with governance responsibilities, creating opportunities for growing dissatisfaction as the relevance of OSW increases locally and globally.

Another prominent justice dimension fuelling social controversy in OSW is a procedural aspect of its deployment and more broadly in its governance. The lack of clear (enough) and impartial rules for the assessment of initiatives creates grounds for social disregard for the institutional processes that determine the implementation of projects. This was the case of Taggen wind park. There and at Utsira Nord, the temporal development of the processes for stakeholder involvement and implementation are pointed as problematic points. The establishment of procedural guidelines integrating dynamic processes of public and institutional consultation (e.g., Swedish Army) might have prevented the shutdown of Taggen wind park.

Both analysed case studies and literature show the relevance of creating processes that mitigate the imperfect impure procedural justice nature [76] of OSW implementation. Since there is no real possibility of setting up a procedure that will always guarantee a just outcome, it becomes crucial to establish transparent, impartial and inclusive processes within OSW governance to ensure moral validity.

Procedural justice is particularly relevant in the present and future Norwegian context as the country is currently establishing the legislative and scientific requirements that will guide the strong expansion of OSW. The tendering, licensing, and consent processes only recently began (January 1st, 2021) but the licensing authority for offshore wind (Norwegian Ministry of Petroleum and Energy) is bound to be brought up to the frontlines of public discussion, which translates into far more scrutiny by stakeholders.

On the side of recognition justice, fragmented, small and biased representation of stakeholders are common arguments from opponents of OSW. The more acute problem resides in the participation of laypeople. On one side, authorities and companies want an expedited involvement of non-experts while most citizen associations and research organisations push for longer and inclusive consultations. Fast paced implementation processes and lean governance favour underrepresentation and misrepresentation of social groups as experienced in the context of (Scandinavian) onshore wind deployment. Since nowadays there is far more societal awareness about recognition of unfairness within wind energy generation, it is to be expected more conflicts if proper actions are not taken to mitigate this type of (in) justice.

Most importantly, for the reduction of social conflict in OSW is the acknowledgement and management of intersectionality between dimensions of justice. It is essential to take up the question of justice in OSW in a way that addresses the totality of the issues discussed so far in a way that accounts for individuals and groups who have been most harmed by OSW, in particular, and by socio-technological changes, in general.

Intersectionality also happens when considering the different positions towards (the value) nature. Scientific and business discourses (and practices) on OSW leave little space for those who consider a (moral) obligation to protect the environment from exploitation. Such an approach to discussion most likely alienates relevant stakeholders from constructively participating in OSW governance, leaving the

processes exposed to procedural and recognition unfairness, ultimately contributing to unnecessary controversies and energy injustice.

Given what has been discussed so far, I recommend addressing the normative dimensions as early in the process of OSW implementation and governance as possible (e.g., licencing process). As some researchers suggest, by properly identifying and addressing stakeholders and their normative stances, social opposition can be better addressed and, in some cases diminished [77-79]. However, it is crucial to realise that reducing resistance to OSW should not be considered (a *good* and) prime reason for the ethical improvement of OSW governance, but rather recognise that this is (the *right*) task because it prevents and/or lessens injustice(s).

Creating fair(er) implementation and governance strategies for OSW will surely facilitate the deployment of this energy generation technology at the speed and intensity required to reach climate and energy production goals while contributing to the sustainability principle of 'leaving no one behind'.

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