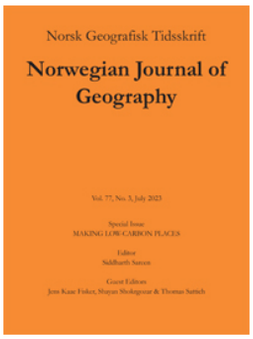

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"We have been invaded": Wind energy sacrifice zones in Åfjord Municipality and their implications for Norway

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ABSTRACT
Following the "green" growth tradition, the construction of lower carbon energy (renewable energy) infrastructures, such as wind power, has gained prominence in Norway. This has led to indigenous Saami herders confronting pastureland dispossession, some citizens fearing the industrialization of nature, and municipal councils losing formal governance power in favor of national agencies and private-sector project developers—justified by the urgency of the climate crisis. The purpose of the paper is to explore how energy infrastructures aimed at decarbonization have led to social fragmentation and ecological degradation alongside claims of economic revitalization potential in Åfjord. The authors draw upon fieldwork conducted within Saepmie (or Sápmi), the cultural region traditionally inhabited by the Sámi, and investigate the Fosen Vind energy project in the Åfjord Municipality. They find that lower carbon energy infrastructures, such as "wind farms," have been normalized as unavoidable, and damage to habitat and encroachment on Saami livelihoods are positioned as necessary sacrifices for the greater good of fighting the climate crisis. The authors conclude that avoiding the creation of green sacrifice zones in making low-carbon places requires a more transformative vision than the visions offered by techno-solutionism, such as degrowth.

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Introduction

On one hand, a rapidly changing climate threatens the foundations of organized human life, and on the other, the obsession of the current modality with the expansion of energy and material throughput for attaining "growth" and "development" dominates much of human imagination. The combination of these two variables has entailed the expansion of lower carbon energy infrastructure as a *deus ex machina*[1] (Stock 2021), promising limiting climate change on a planet with biophysical limits (Gómez-Baggethun & Naredo 2015), while allowing for the expansion of the economy around the globe. In this context, Norway has emerged as a pioneering country in global climate politics, continuing its tradition of exchanging "natural resources" (e.g., salmon, oil, wood) to create surplus value, while being engulfed in debates on "sustainable" development and "green" growth, through a process often referred to as "energy transitions." This paper, by drawing from ethnographic research on the Fosen Vind project in central-western Norway, seeks to situate these debates and explore their implications for the lived experiences of the citizenry and habitat.

The 1970s marked a decade rich in possibilities—for sustainability policy—with the publication of *Limits to Growth*, which identified the unsustainable nature of growth (Meadows et al. 1972), the strength of deep ecologists who sought to transform socio-ecological relations (Næss 1972), and new economic thinking stemming from the emerging field of ecological economics (Gómez-Baggethun & Naredo 2015). At the same time, there was the looming strength of the

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[1]A plot device used in Ancient Greek theatres, in which an unresolvable problem was solved by using an unexpected solution, primarily with the aim of bringing the story to a happy ending.

Washington consensus, which continues fundamentally to transform global politics. Also, the document 'Report of the World Commission on Environment and Development' (United Nations 1987) entailed a shift away from thinking about socio-ecological crises brought about by the commodification of nature and relationships (Daggett 2019) and pioneered financial/technological-based climate-mitigation pathways (Anker 2018). It continued the ontological tradition of nature/society dualism, rejecting the alternatives suggested and lived by myriad human societies and ecological movements of past decades (Sullivan 2017), including those of the indigenous peoples of Norway—the Saami (Joks et al. 2020).

As the debates continue to manifest themselves in academic debates such as the one between Gómez-Baggethun (2020) and Robbins (2020), and in the infrastructural realities of everyday life (Larkin 2013; Wakefield 2018), energy infrastructures are central to both the creation of climate change and the continuation of the modality (Daggett 2019). As energy needs continue to rise, due to growing economies and population, so does the imperative of transitioning away from fossil fuels to lower carbon energy infrastructures. However, these infrastructures are not devoid of challenges. With sacrificial consequences as habitat, some scholars have gone to the extent of arguing that an energy project that does not consider or address threats of industrial development, exploitative relations, and increased consumption cannot be considered as producing renewable energy as a sustainable and equitable response to climate change (e.g., Siamanta 2021, 54), Along similar lines, Dunlap (2021, 94–95) argues industrial humans divert "energetic" or "elemental flows," such as wind, sun, tides, and energy forces, into "industrial-computational infrastructures that propel capitalist processes and institutions" as opposed to serving the flora and fauna. In line with the newfound international consensus to invest in "sustainable" forms of growth, Norway rejected the socio-ecological alternatives presented by the deep ecologists (Naess 1972) in the 1970s and 1980s[2] and instead prioritized an *extractivist* economy. As Szemana & Wenzel (2021, 511) point out extractivism comprises human instrumentalisation of nonhuman nature: the use of nature only as a means toward human ends – or […] a means toward the ends of some subset of humans." Today, Norway is pursuing a path of market-based energy and environmental policies, which sideline limits in pursuit of "green" growth and ecomodernism. According to Tilsted et al. (2021), this pursuit falls short of demonstrating any absolute decoupling or even relative decoupling at rates necessary to attain goals set by the Paris Agreement, without relying on unproven negative emission technologies.

More specifically, in the realm of energy infrastructure, green transition efforts have led to the appropriation of agropastoral land, allegedly for "green" ends, termed "green grabbing" (Fairhead et al. 2012). Our findings, alongside those reported in the literature, suggest that green grabbing has led to social fragmentation and ecological degradation, resulting in what we argue are sacrifice zones, which consist of what Reinart (2018, 598) describes as "forms of environmental violence, degradation and destruction that operate spatially, at the level of landscape and regions." Specifically, they can be understood as green sacrifice zones (GSZs), whereby under the guise of climate mitigation, the implementation of lower carbon infrastructures results in negative cost shifts to local and indigenous communities in which colonial values of growth and whiteness are prioritized (Zografos & Robbins 2020).

In this paper we explore the relationship between wind energy rollout in Norway for climate mitigation and the creation of GSZs. By doing so, we add to a growing list of literature on the relationship between industrial-scale energy transitions anchored in extractivism and harms inflicted by infrastructures to justice, care, and dignity (Lawrence 2014; Franquesa 2018; Dunlap 2020; Normann 2020; Damgaard et al. 2022). We ask the following question: *Has the implementation of Fosen Vind, as a climate change mitigation project, led to the creation of new sacrifice zones, within this modality's ongoing processes of appropriating habitat?*

In what follows, we first describe the methods and then the theories used for analysis and discussion. Thereafter, we provide a background to the Fosen region and Fosen Vind energy project. Following that, we presents our findings and their implications. We conclude by arguing that Norway's decision to prioritize lower carbon energy expansion and values of "green" growth and sustained energy consumption and production over ethical modifications to society and local, community-based mitigation livelihood has resulted in ecological and societal harms. In doing so, we consider the social and ecological consequences of energy infrastructure, alongside the demonstrated failure of decoupling of growth from emissions in the Nordic countries (Tilsted et al. 2021) and elsewhere (Hickel & Kallis 2019).

[2]Historic environmental movements (and some strands of deep ecology) have a history of classism, racism, and speciesism, alongside overt or tacit complacency in anti-indigenous politics (e.g., Dowie 2009).

These findings suggest the need to pursue a different pathway to attain a decent living within our planet's boundaries.

Methods

This paper is the outcome of two instances of qualitative research in Åfjord Municipality, in the county of Trøndelag, conducted in August and September 2020 and October 2021. The first period of fieldwork included windshield surveying, which involved cycling around Fosen for one month. Fieldwork included visits to the Storheia, Roan,[3] Geitfjellet, and Kvendallsfjellet wind farms, as well as participant observation in Åfjord Municipality. A total of 32 unstructured and semi-structured interviews were held on a one-to one basis, in English, with interviewees identified by using the snowball sampling method. The interviewees comprised residents of the municipality, representatives of both the public sector (e.g., regulators) and the private sector (e.g., NGOs) sectors, and a Sami herder. In this paper we draw on 29 of the 32 interviews (see Appendix 1). All interviewees' names are anonymized in this paper.

In the interviews, we asked about the municipality's relationship with Fosen Vind and other actors, such as the Norwegian Water Resources and Energy Directorate (NVE), Ministry of Petroleum and Energy, and the Saami. In the second fieldwork session in October 2021, it was possible to ask participants about the recently issued Supreme Court verdict against the Storheia and Roan wind energy projects. The fieldwork and interviews were supplemented with desk-based research.

Green grabbing and sacrifice zones

Green grabbing—a "calibrated" form of land grab to suit the current period of climate change, in the name of mitigation and energy transition—creates opposition between climate and nature through "the appropriation of land and resources for environmental ends" (Fairhead et al. 2012, 238). John Vidal (2008), who coined the term green grab, understood this trend as an element in the "new wave of eco-colonialism." The word "grab" politicizes the administrative "acquisition" and emphasizes the histories of exclusion and dispossession that have created favorable conditions for change in the control over land (Margulis et al. 2013). The grab relies on marginalizing common property systems that do not follow the formalized rules of international governance (Dell'Angelo et al. 2017), through "low levels of transparency, consultation and respect of local communities living off the land" (Margulis et al. 2013).

Green grabbing is possible due to the integration of nature into the market logic. Transforming nature into natural capital allows actors to claim to protect nature while simultaneously creating new profit-making opportunities (Arsel & Büscher 2012), as illustrated by the Economics of Environment and Biodiversity (TEEB) initiative: "we cannot manage what we cannot measure." A green grab maintains the rent-seeking objective of a land grab by increasing the "productive" capabilities of land (Davis et al. 2015; Dell'Angelo et al. 2017) under the alleged motivation of nature protection and conservation. Land control then becomes morally justified based on the new green credentials ascribed to it (Peluso & Lund 2011; Fairhead et al. 2012). Thus, green grabbing is rationalized by dual concerns of economic efficiency (increased productivity, new industry opportunities) and environmental sustainability (climate change mitigation) (Fairhead et al. 2012; Dell'Angelo et al. 2017; Franco & Borras 2019). A major discursive consequence of green grabbing is the valorization of technocratic-backed science and management regimes for climate change mitigation over common property and smallholder land regimes, which results in the further enclosure of the land and dispossession of the people (Peluso & Lund 2011; Margulis et al. 2013). It also reflects the "climatization" of the world, which redefines social, political, economic, and ecological questions when viewed through a climate lens (Aykut & Maertens 2021), which in turn has led to the ignoring of alternative ontologies relating to land and nature.

Across Saepmie (or Sápmi), which is the cultural region traditionally inhabited by the Sámi, the Saami landscape concept of *meahcci* ("place-time-tasks"; plural form *meahcit*) does not match, for example, the Norwegian vision of *innmark*/*utmark* (cultivated land/outlying fields and other natural resources) (Bertelsen 2005), which leads to a mistranslation and misunderstanding of the approach to land (Joks et al. 2020). While colonial languages enforce a binary between *natur* and *kultur*, *meachit* hold them together. *Meachit* are not single fixed places; they include but are not limited to, wilderness, and hence *utmark*. Instead, *meachit* are plural, and contain productive relations between human and non-human entities, and productive tasks such as collecting wood (*muorrameahcci*) and fishing (*guollemeahcci*). Therefore, *meachit* are best conceptualized as "unfolding encounters" in terms of place, time, and tasks, involving humans, animals, and natural landscapes (mountains, lakes) (Joks et al. 2020). By contrast, Norwegians distinguish *innmark* and *utmark*, as agricultural approaches to land, from *friluftsliv* (outdoor life),

[3]Since February 2021, the Roan project has been a separate entity called Roan Vind DA.

which embodies the leisure quality of land. Similar differences can also be witnessed in the power of the Norwegian legal culture over that of customary Saami, which has placed Sámi legal culture "under massive pressure in all four states where Sámi traditional land is located" (Ravna 2010, 156). Norwegian law has synonymized *meahcci* with *utmark* (Joks et al. 2020), but this binds the former, a fluid, context-dependent concept, into the strict limits of the latter's colonial notions of private property.

The narrative of "empty" or "underused" land with roots in an old colonial discourse that considers indigenous peoples and nature as immaterial (Abram 2016) has become an imperative ingredient in green grabbing processes. Altering lands for infrastructural projects does at times lead to sacrifice zones—consisting of "spaces, areas, habitats and tracts of land that have been destroyed, poisoned or otherwise rendered uninhabitable in return for some sort of benefit" (Reinert 2018, 599). It places the burden of environmental harm onto low-income and racialized communities, and it reflects structural inequities in energy policy (Scott & Smith 2017). The appropriation of land (transference of ownership) under the pretense of a green agenda is a process that through creating winners and losers leads to sacrifice zones—the ignored environmental impacts of energy production that directly and indirectly impact local communities (Hernandez 2015). More specifically, the creation of green sacrifice zones means sacrificing a "certain space or ecology" for the purpose of the "sourcing, transportation, installation, and operation of solutions for powering low-carbon transitions" and its related material waste (Zografos & Robbins 2020). The GSZ logic considers that cost shifts occur when private enterprises outsource the "harmful consequences and damages of economic production to third parties […] and communities." Coloniality refers to European values that prioritize "material entitlements and cultural elements associated with 'whiteness'" (Zografos & Robbins 2020). Norway's historic internal colonialization of the Saami has attempted to transform Saami relationships and claims to the land, as reflected in the opposition between *meahcci* and *utmark*. The phenomenon of green grabbing, and the subsequent creation of GSZ, can elucidate whether and how Norway is reproducing colonization on Saami lands and livelihoods by sidelining *meahcci* through its onshore wind industry.

Background

Just as steam power, coal, and oil developments have disrupted populations in the past (Daggett 2019), wind energy infrastructures, in the push for lower carbon transitions—with a lifecycle consisting of extraction, processing, manufacturing, transportation, installation, and decommission (Sovacool et al. 2020)—lead to green grabbing and alienation from land, and entail ecological, cultural, and economic injustices. In Norway, these consequences demonstrate themselves through their effects on pastoral and agrarian lands, which in regions such as Fosen are also used by the indigenous Saami alongside residents, adding unique dimensions of internal colonization (Nilssen 2019; Fjellheim 2020). Normann (2020, 9) found that the Saami "reflected on wind power as yet another project in a long history of dispossession," since they repeatedly carried the "accumulated burdens caused by infrastructural and extractive projects." This colonization follows a history of Norwegianization, a period of cultural assimilation that aimed to transform the Saami into a culturally and ethnically uniform Norwegian population, and was carried out from the 1850s until the end of World War II, during which time assimilation was an official state policy (Minde 2003).

Norway's energy sector

Given Norway's abundant oil and gas reserves, and an expansive hydropower industry, resource and energy management are central to Norwegian politics. Hydropower development helped to industrialize Norway in the early 20th century, following its independence from Sweden in 1905, and burgeoning industrialization at the end of the century stemmed from increased funding and the construction of large power plants (Lindström & Ruud 2017). These developments were followed by the discovery of oil and gas reservoirs with the first drilling season in 1966, and the first major discovery at the Ekofisk field in 1970. In 1972, the Norwegian government established the state-owned oil company Statoil (now Equinor), the responsibilities of which included "controlling the pace of extraction, making sure that Norwegian labor and safety standards were generally accepted […] and ensuring that extraction took place in an environmentally defensible way" (Ryggvik 2015). The shipbuilding and oil crisis of 1973–1974 led to lobbying efforts from shipyards for government policy that was more protectionist than existing policy (Ryggvik 2015). Thus, during new concession rounds for oil deposits, foreign firms were subject to "Norwegianization" of their activities (e.g., by soliciting Norwegian contractors).

As seen with hydropower and oil, the Norwegian state has developed a tight governance system with "mandatory licenses [granted] by central authorities

[…] [to establish] public and national control vis-a-vis private and foreign investors" for wind power resource management (Lindström & Ruud 2017). The major difference between the former and the latter is the heavy involvement of foreign investors versus Norwegian control of investment, production, and export (Idso 2021). More specifically, 90% of hydropower projects are owned by the state, county, or municipalities, while 75% of wind power projects are controlled by foreign investment.

Norway's expansion in energy capacity in recent years has stemmed partly from the country's international commitments under the EU's Renewable Energy Sources (RES) directive, which led to a bilateral electrical certificate scheme with Sweden to promote investments in lower carbon energy (Blindheim 2015). However, since Norway's onshore energy is primarily based on hydropower, wind energy growth will not lead to emissions reduction, unless it is used for offshore oil and gas installations—a proposal that is deemed infeasible due to cost-effectiveness (Blindheim 2015; Otte et al. 2018). Thus, as pointed out by Gulbrandsen et al. (2021), economic and material considerations and a techno-economic culture of "building the country" play a prominent role in wind energy licensing, while the weight of environmental concerns is unclear. NVE (2019a) predicts that electrifying transportation and power-intensive industries such as data centers will lead to a 23 TWh growth domestically and 47 TWh in the Nordic region by 2040. Simultaneously, the growing number of interconnections between Norway and other countries, such as the UK, Sweden, Denmark, and Germany, have a compounding effect. Motvind (2020), which opposes new energy plant licenses, argues that Norway's 80 TWh annual "energy transition" goal can be attained by upgrading hydropower plants, energy saving, and energy efficiency, as well as by completing the projects that have already been granted a license. Motvind (2020, 21) claims that "for domestic use, new licenses for wind turbines in Norway are not required." This socio-political backdrop has formed because Norway has one of the largest electricity consumptions in the world.

Onshore wind in Norway

Conversations relating to onshore wind in Norway began in the 1990s, but the development of the industry stalled until the start of the green certificate scheme with Sweden in 2012, and a domestic tax amendment in 2015, which made investments more lucrative for developers (WinWind 2018). As discussed by Christophers (2022), recent decades have seen a trend in which governments until recently built or provided subsidies/guarantees to reduce the risk for private money lenders, without whom developers could not gain the necessary resources to materialize their projects. However, these developments have now shifted from state-facilitated to corporate-facilitated development, whereby development has been outsourced to the private sector, which in turn has transformed energy into an asset class within a neoliberal political economy. With state involvement receding, securing funding has become a challenge unless there is a safe "merchant" price or specific purchaser (e.g., Facebook Data Centers), due to the risks involved in non-conventional energy sources (e.g., price volatility of the spot market) and the heavy upfront investments.

In the case of Fosen Vind, Norsk Hydro signed a 20-year fixed-price contract that gave an investor consortium (Nordic Wind Power DA[4]) the confidence to invest in the project (Christophers 2022). Hosting a wind farm also became financially beneficial for municipalities, especially those affected by low population levels and a declining economy, since they benefitted from the receipt of property taxes from companies that built on their land. Consequently, Norway's onshore wind production grew exponentially over the course of a decade (Aanensen 2021). Of Norway's 5525 GWh of wind power production in 2020, the Fosen Vind development contributed 3400 GWh. At its inauguration, the project's production was larger than the total wind power capacity of Norway.

In anticipation of parliamentary elections, the Ministry of Petroleum and Energy announced in 2020 that it would slow down its approval and implementation of onshore wind projects (Taraldsen et al. 2020). The decision was made after the failure of both the Ministry's and NVE's proposed national framework for wind power (Nasjonal ramme for vindkraft) (NVE 2019b), which had received a significant backlash from environmental organizers, municipalities, and Saami herders. The proposed national framework was meant to streamline the application process for developers and preemptively single out suitable locations for wind farms. Instead, it gave the impression of a "carpet bomb of wind turbines" across the country (Vé, study participant, see Appendix 1) that would limit room for appeals by "nailing down" production areas (Birger). Complaints around the proposed national framework

[4]A joint project involving two Norwegian utilities, Statkraft and TrønderEnergi, which respectively own 52.1% and 7.9%, and the European investor consortium, Nordic Wind Power, which hold 40% and is backed by the investment bank Credit Suisse.

(NVE 2019b) followed broader frustrations with the procedure relating to land-use change plans for energy production.

In 2008, the government revised the Planning and Building Act, altering the balance of power during the licensing and consultation process. Inderberg et al. (2019) found that NVE, landowners, project developers, and host municipalities could unilaterally exercise veto power in the informal licensing process, while by contrast the county councils, environmental management organs, and Saami authorities were marginalized. Furthermore, while there are claims of respecting the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) principle of free, prior, and informed consent (FPIC), some of our participants reflected that "it is not used" (Ánde, Kvasir). Prior to the 2008 revision of the Planning and Building Act, municipalities, in parallel with central government's plans, had to formally approve land-use change. However, the power they retained after the revision was informal, meaning that a wind power project was unlikely to be implemented if the municipality disapproved (Inderberg et al. 2019). However, since the municipalities no longer had to officially approve land-use change, bot NVE and developers could change the details of the project (e.g., size and the number of turbines) without further consultation. Thus, controlling land was effectively transferred from the municipality to the state, and to certain extent to project developers, leading to a bureaucracy in which energy developers are considered to be what one study participant described as a "golden situation" (Birgir). These challenges led to a White Paper (Meld. St. 28 (2019–2020)) in which the government recognized potential environmental concerns and the need to update its licensing and consultation process (Reuters Staff 2020).

Åfjord and Fosen Vind

Åfjord Municipality, in the northernmost area of the Fosen peninsula, 85 km northwest of Trondheim, has ca. 4,300 inhabitants (Åfjord kommune n.d.). The Fovsen-Njaarke reindeer district is home to two Saami reindeer herding groups—Nordgruppa Fosen sijte and Sør-Fosen driftsgruppe—each comprising three units. Åfjord's economy relies on agriculture, forestry, fishing, transportation, aquaculture, construction, and services. Fosen Vind has paid NOK 50 million in annual property taxes to Åfjord Municipality (Kleven et al. 2020), and provides employment, education, and investment opportunities.[5]

After a decade-long legal battle between the developers and Saami herders, that made its way to the Supreme Court, judges ruled the license and expropriation decisions for the Storheia and Roan wind farms invalid. The decision was made on the basis that the wind farms violated Saami's rights to enjoy their culture according to Article 27 of the International Covenant on Civil and Political Rights (ICCPR), and recognition of reindeer herding as a protected cultural practice (Supreme Court of Norway n.d.). This outcome may have significant implications for the six herding units in Fosen, as disruptions to reindeer herding and the loss of pastureland threaten the entirety of the Saami way of life (Nilssen 2019). The Saami Parliament has repeatedly asked for the turbines to be taken down (Børstad et al. 2021) but in the follow-up to the judicial decision, a meeting was held between the Fosen developers and the Ministry, without inviting Saami representatives (Lindgaard Stranden & Børstad 2021).

Findings and analysis

Solicited or not, the village of Årnes, in Åfjord Municipality, has been the center of attention in the wind energy debate in Norway: "we have done our part, that is for sure […] we have taken our toll" (Freya, local politician). A project brought about by alleged domestic necessity and international expectations, Fosen Vind has come to be seen as an opportunity, through economic benefit and development, as well as a case of loss and sacrifice due to the transformation of land and creation of what we find are green sacrifice zones.

Beyond its contribution to energy targets, the wind energy sector offers new possibilities for the development and revitalization of poorer, rural municipalities (such as Åfjord), as well as new energy export opportunities for Norway. Exploiting wind resources thus allows for the development of a new industry and increased profit opportunities (economic efficiency), which also furthers Norway's climate commitments, such as the EU's RES directive (environmental sustainability). However, in general there has been a sense of confusion about the purpose of investing so rapidly in onshore wind.

For the anti-wind study participants, the proliferation of onshore wind related to creating a new industry and increasing exports in a way that "capitalized off" current energy transition needs in Europe, since Norway's low-carbon hydropower sector means that it is

[5]Unpublished report titled 'Kompetanse og rekruttering knyttet til drift og vedlikehold av vindkraft', prepared by S. Andreeva, K.R Larsson and A. Tjora for Åfjord Utvikling AS.

not in need of energy from wind farms (Birger, Frode). By contrast, pro-wind participants saw it as an opportunity to develop new economic opportunities whilst contributing to the reduction in emissions, which is further enabled by the European Emissions Trading System (EU ETS) and the existing power grid (Kvasir, Vé). For example, in northern Norway, the Raggovidda wind farm in Berlevåg Municipality, Troms og Finnmark County, has been producing under capacity due to a limited power grid connection. The developer received a concession for the installation of extra power cables that would allow them to increase production from 45 MW to ca. 100 MW (Staalesen 2019), as the host municipality comprises a mere 9,500 households.

Development and economic gain

From the very beginning, Åfjord Municipality considered it imperative that a significant proportion of the investments and business opportunities relating to the construction of wind farms should be placed within the local community: "we wanted 20% of investment [to] be local values or regional values" (Freya). This emphasis should come as no surprise, as recent decades in Åfjord have seen a slow decline in population, whereby many young adults have left for work/education, never to return (Burr). Such participation ambitions were possible because Årnes village had businesses with the experience and expertise to participate in the developments. For example, Johs. J. Syltern was contracted to build many of the roads for the Fosen Vind projects, alongside a new road to the nearby town of Stocksund, which cost ca. 400 million NOK. Stjern, another local business, was contracted to build a new complex comprising a swimming pool, theater, volunteer center, restaurant, and studio, among other amenities, to be funded from the wind farm taxes. Alongside those benefiting directly from the project, there have been opportunities for local tourism. An employee of Fosen Hotel argued that there had been an upsurge in guests both from people connected with the projects and those who wanted to visit the parks (Odin). Furthermore, the local visitor's center, FosenAktiv, advertises a "Wind Turbine Safari," claiming that "For or against? The 'parks' are here," a statement that somewhat ironically is no longer as clear as it sounds, given the recent Supreme Court ruling that the license and expropriation decisions for the Storheia and Roan wind farms are invalid. Overall, there is anticipation that the projects will create new industries and jobs that will make it attractive for the Fosen region to grow, to such an extent that in the Fosen peninsula, municipalities that have not agreed to host a wind farm are considered by their regional peers to be in deep trouble (Ullr, Delling). Several participants argued that the taxes from the projects and the permanent jobs were the main value for the community. Delling stated:

> It's been a great investment. The municipality had a goal of a minimum return of 20% of the total investment, which they managed. And it equals 2.5 or 3 billion kroner, local investments with contractors, employment in the parks, financing of some roads, tunnels. It's a big yearly income for them.

Alongside the story of the development of rural areas, many non-local entities have a stake in the projects. They include multinational corporations such as Vestas, which provides the turbines, financial entities such as Credit Suisse, and state enterprises such as Statnett (grid provider) and Statkraft (energy producer).

There is a sense that producing wind energy will lead to new industrial opportunities for Åfjord in particular and Norway more generally due to the wind industry. As such, Mimir (an industry representative) believed that exporting wind energy was just another natural resource, not unlike salmon, wood, or petroleum. At the same time, compared with Norway's hydropower industry, which is tightly controlled by Norwegian players and from which residents feel they benefit directly in terms of jobs, income, and economic and industrial development, developments in onshore wind power in Norway are initiated by foreign investors, for export and particularly to contribute to reducing emissions within Europe, leaving uncertainty about the benefits for Norwegians themselves. For example, in terms of financial compensation for hosting an energy plant, municipalities with wind energy often complain that they do not receive as much as municipalities with hydopower (Dagur). This orientation towards the project has caused some to feel "cheated a bit" because they have come to believe that the mountains "have been ruined" for the benefit of what one local resident, Laufey, described as "capitalists outside our country." Despite the necessity of responding to a changing climate, the proposed mitigation strategies lead to environmental injustices of their own. Thus, as described in the next subsection, despite opportunities for growth, trade, and development, even a pro-wind elected member of Åfjord Municipality Council described the outcome as Åfjord having made a "sacrifice" for Norway.

What is sacrificed

Local identity and local concerns

In Åfjord Municipality, residents have expressed a sense of loss stemming from the wind farms, as the landscape

in the municipality has been altered to make roads for turbine installation and for access and maintenance purposes. Frigg, a municipality employee, said she knew of people who were in sorrow and almost no longer wishes to use their cottages: "some have very strong reactions and are almost grieving about this nature, these mountains that they […] can't visit anymore in the same way as before." Several residents said the nature now resembled an "industrial park," since the turbines had "destroyed" the mountains on which they are placed and had negatively affected the overall scenery in the Fosen region (Heimdall, Laufey, Magni). A local person who regularly ran for exercise explained how when the turbines were first built, she would try to run only where she could not see them, but that it felt like an impossible task. Over time she had to force herself to get used to them, a feeling that was shared by other participants (Jöro, Odr, Ymir), and especially by Heimdall, who said:

> So I have one small, little area left now that I can go to without seeing any windmills at all. One tiny, little spot, and when I am in that area I meet a lot of people who are looking for the same. Before the windmills, we were able to walk all over and you could go everywhere, and you could not see a single sign of human activity and now it's the opposite everywhere. Every mountaintop, every lake, every shore, all over, you see a windmill wherever you're turning. I feel that we have been invaded by these big, huge, strong companies.

However, proponents of wind parks often claimed financial reasons (Njord, Ullr, Delling, Hermóðr) and to a certain degree climate mitigation reasons for their support. Being "anti-wind" in Åfjord is understood to be taking a position against the new job opportunities in Åfjord Municipality and its economic revitalization (Jöro), since for some "[that nature] wasn't being used anyways" and therefore it might as well be repurposed (Ullr, Hermóðr). Such views on nature stem from a philosophy in which "nature must pay its way. It must produce the value that keep it afloat" (Fairhead et al. 2012, 245).

Local residents who witnessed the engineering and technological feat of wind turbines, as well as its contributions to "renewable" energy, also reckoned that modifications to the land would be required for it to be possible (Laufey, Ullr, Hermóðr, Delling). Norwegians' pervasive cultural attachment to the rich and diverse landscape across their country is embodied in the concept of *friluftsliv*, in which leisure purposes are assigned to nature. A local politician, Freya, said: "[I'm] so angry on behalf of those who really grieve, because I really believe that, next to your family, the mountain, or the river, or the island is the thing you love most and when you lose it you're allowed to say that you hate this." At the same time, she felt as though fruitful discussion between the opponents and proponents was difficult, as there was no "in-between" (i.e., in terms of people's struggle to find common ground).

"Anti-wind" residents felt encouraged by the legal developments (Jöro). Many complained about the lack of the municipality's power in revisiting the initial project plans that had been modified with regard to the size and height of the turbines, a problem that has come up in projects across the country (Kvasi, Forseti, Heimdall). Even though the Minister of Petroleum and Energy admitted that the expansion of wind power was a national decision (Freya), and admitted to knowing that the Ministry was responsible for overturning the appeals in 2013 and for ignoring the request of the UN's Committee on the Elimination of Racial Discrimination to suspend the Storheia project, since the verdict in October 2021, residents and municipal councilors had believed that Åfjord was bearing the brunt of public criticism from outsiders (Kvasir, Delling). For some, the wind industry fueled a dichotomous choice between nature preservation and climate change mitigation: prioritize nature and the consequences for the environment in the long-term will be far worse than some wind turbines or accept the wind turbines and help keep global temperatures down (Delling, Vé). Mimir admitted "there is no way around it, wind turbines have negative impacts on nature and the environment. I mean they are huge and you see them from far away and you have internal roads, which will disrupt wildlife and also reindeer herders." Nevertheless, he believed it was inevitable due to both domestic and European needs, arguing (nuclear energy aside) that it was the only technology able to provide enough power, both fast enough and cheap enough. However, wind power's contribution to fighting climate change is not clear to everyone. For example, Heimdall argued as follows:

> It's so lovely to live here. It's so splendid to wake up in the morning, to hear the birds down by the sea, to watch the moon right above this untouched mountains, like God created them. And now we go [messing] that up […] I often lose my temper when I discuss this issue with people who think this is a good thing. And I could have lived with this, if it was for a better good, but it's not. All they do is to rape mother nature around us, everywhere, and for what?

Our findings suggest that the alleged contributions of Fosen Vind to environmental sustainability are being challenged. A major complaint faced by NVE and the Ministry of Petroleum and Energy relates to environmental impact assessments (EIAs) and both the short-term and long-term direct and indirect effects of the

turbines in their surrounding environments. The EIAs are conducted by private consulting firms, after being hired by the project developers, and the private consulting firms have asked the authorities to provide good guidelines for consultants conducting EIAs (Dagur). Lawrence and Larsen (2017, 1168) argue that trends are similar around the world, with EIAs being "invariably framed and steered by corporate interests". The EIAs are also criticized for incorrectly assessing the impacts of projects on wildlife and biodiversity, as they are conducted in limited spatial and temporal frames and do not consider compounded regional effects (Hœnir, Dagur). The MPE & Riksantikvaren (2019, 7) admit that research on the landscape effects of wind turbines has been "virtually non-existent, and an empirical basis to assess the landscape effects of wind power in Norway is lacking." Overall, some participants hesitated to discuss their opinions openly, fearing that topic was sensitive one in a small settlement such as the village of Åfjord (Odin). Other participants only spoke on condition that their anonymity would be ensured, and they asked whether we wanted their opinion as a public sector employee or as a private citizen, while some of the companies denied us interviews in Åfjord, saying their colleagues in the municipality were "pure technicians" and did not know "what to say and what not to say" (Tyr).

The above-mentioned losses reflect the cost shifts of a green sacrifice zone. Attaining energy "transition" requires that communities (in this case, Åfjord), must bear the brunt and burden of damage, including ecological damage, caused by the private enterprises behind the wind farms (Zografos & Robbins 2020). Furthermore, there was also a feeling that the new income and business developments related to the wind farms were altering the identity of the space. This finding connects to the coloniality component of green sacrifice zones, in which certain values—in Norway's case, economic wealth and growth, alongside resource development and control over *inmark/utmark*—are prioritized over local values and the attachment to *friluftsliv*.

Saami livelihoods

Alongside those who "mourn" the loss of nature, the Saami reindeer herders have witnessed the loss of ca. 30% of their winter grazing lands to the Storheia and Roan wind farms (Ada, a Saami herder). This change was described by Ada as land expropriated for wind energy development, and Ada said its effects on the environment posed a direct challenge to the preservation of the Sami's livelihoods (*meachit*): "we fear that some of the families have to end the reindeer husbandry or some […] in the future […] never have that opportunity to begin reindeer husbandry" and "maybe it [herding] stops here." The reindeer's fear of turbines, which was recognized by both Saami and non-Saami participants, is supported empirically (Skarin et al. 2018) and by indigenous knowledge (Ada), but it remains largely ignored: "our traditional knowledge about this, and how the reindeers react and how they are, is not taken into account" (Ada). Heimdall said: "it is awful to see that history goes on, just like it did before," referencing the history of Norwegianization in which, he argued, the majority society has slowly been "strangling" the Saami minority.

Faced with the onshore wind industry, the Sami *meahcci* is once again colonized, subsumed by notions of private property. The fluidity of the concept of *meahcci* and the relationship of "place-task-time" are erased and in the process the Sami's livelihoods are threatened. Today, there is a "great distance between the Municipality and the Saami reindeer herders" (Forseti). While some remain largely in favor of maintaining the wind farms, they also recognize that the case brought to the Supreme Court is a human rights issue that stems from Norway's history of internal colonization and forced assimilation (Delling, Jöro). At the same time, Saami concerns are minimized and reindeer are expected to adapt and "co-exist" with the turbines in the long term (Ullr, Delling). Soon after the Supreme Court's ruling, Christina Henriksen, the former President of the Saami Council, stated the following to a reporter:

> The Supreme Court decisions brought relief, but at the same time, it illustrates that Norway is an example of a nation state that is willing to sacrifice the livelihood of the Sámi people and human rights for the sake of industry and profit. The Sámi Council expects Norway to face the consequences of this decision and remove the wind power plants in Fovsen/Fosen. Land is already lost, but the proven invalidity of the concessions' demands for action. (Hætta, 2021)

An important point to make is that with regard to *friluftsliv* for the local residents and the protection of livelihoods for the Saami, the anti-wind positions do not constitute a united oppositional front. This relates in part to the history of racism against, and processes of assimilation of, the Saami, and the subsequent cultural separation between them and non-indigenous Norwegians. As previously explored, there is a fundamental incompatibility between both parties' conceptualizations of the land. Furthermore, in Norwegian schools, a lack of adequate education concerning Saami history has created a reality in which "[Saami] causes are pretty separate from the minds of people" (Jöro). While *friluftsliv* relates to leisure sourced in nature, Vé argued

that "very few of us [Norwegians] lead the kind of life that Saami people do in terms of closeness to nature, and dependency on nature." Thus, making an alliance based on their respective losses is difficult. When anti-wind groups *have* aligned with the Saami, it seems to have been the result of regional and historical conditions. In Åfjord, the Norwegian Society for the Conservation of Nature (Naturvernforbundet), whose interests in conservation overlap with the Saami with regard to maintaining pastureland, has worked in alliance with the Saami regarding the region's herding districts managed by them (i.e., the Saami). Heimdall, who worked with the society, said that Saami rights were the main reason for their activism against Fosen Vind.

With respect to green sacrifice zones, our findings have covered the sacrifices imposed by the construction of wind farms in Åfjord Municipality. The green sacrifice zones created due to the onshore wind farms display two facets of coloniality. First, the zones sideline and minimize local values of *friluftsliv* for the Norwegian growth model and the desire to be a leader in green energy production. Second, they (the zones) erase Sami *meahcci* and impose whiteness. The cost shift is the prioritization of climate change mitigation over local environmental concerns. As one resident in Åfjord told us, ultimately "there is not only a climate crisis, but a natural crisis" (Jöro), something for which the centrality of focusing on emissions fails to account.

Conclusions: wind energy as "*Deus ex Mitigata*"?

In times of global crisis, discussions relating to infrastructure, which were once far and few between, have become key political issues (Larkin 2013), with respect to both deterioration in climate conditions (Truscello 2020), and resilience and managing disasters (Wakefield 2018). There are always hegemonic imaginaries of the future, and the present one is built on a techno-scientific future anchored in a capitalist and statist political economy (Trescello 2020). It is one that will require reliance on non-existing negative emission technologies, and decoupling at rates that are unfeasible even under favorable conditions (Hickel & Kallis 2019). However, with direct relevance to our studied case, the present hegemony is one that renews land grabbing and sacrifice zones, with a green pretext and the vindication of climate mitigation.

Within the dominant modality of neoliberalism, energy "transitions" implies that not only the largest brunt of climate change adaptation is paid by the most marginalized, who have the least with which to adjust to these conditions, but also that simple fuel switching, without changing the modality under which it takes place, will result in them paying the cost of mitigation too (Sovacool 2021). Similar to the insights relating to Mexico that were gained by Avila-Calero (2017), Norway's onshore wind industry—spearheaded by the national government in alliance with foreign multinationals—is an emerging space of confrontation between large-scale state and private sector actors on one hand and indigenous/ecological resistance on the other. In its history of internal colonialization of the Saami, Norway has attempted to transform Saami relationships and claims to the land, as explored by the opposition between *meahcci* and *utmark*.

In Norway's traditional industries such as hydro and oil, foreign private sector intervention is tempered by state actors, but the new wind industry is marked by increased intervention by foreign private sector players, leading to public-private partnerships in infrastructure development, with claims to the land as precondition for energy production. Thus, the land, and control of it is at the center of any onshore wind plans for energy "transition." Given that *friluftsliv* and *meacchit* are, by definition, incompatible with the "productivist" vision of land as a resource for energy production, the tension gives way to green grabbing. In the appropriation of land for climate mitigation through neoliberal processes, which in our paper is theorized through the lens of green grabbing, new inequalities/environmental inequalities are created (Avila-Calero 2017) when certain ontologies are prioritized (land for economic growth over emotional and/or livelihood attachments to land) and burdens of production and subsequent export are placed on local and Indigenous communities. Similar to the struggles in the Global South documented by Avila-Calero (2017), Saami herders in Fosen have dedicated a decade of their lives to fighting the loss of much of their winter pastureland. This should serve as a reminder that the Global South, alongside being a geographic location, is a metaphor for the suffering caused by capitalism and colonialism. Accordingly, Sousa Santos (2012, 51) asserts that the Global South "also exists in the Global North, in the form of excluded, silenced and marginalised populations." It is a Global South that manifests itself through lack of political influence and ability to prevent the reproduction of green sacrifice zones. Reinert (2018, 614) asserts that sacrifice "works as a mechanism that surrenders or destroys a 'lower' or 'base' value in return for benefits that accrue in a 'higher' one," and in our case this manifests itself as exchanging habitat in Åfjord for the good of Norway and the planet—a vision that while presented as apolitical, has roots in a deluge of ideological building blocks going back decades.

The products and institutions that exist "shape our conception of reality," leading defining alternatives

and the construction of new possibilities to demand "a concentration of will and intelligence in a higher degree than ordinarily occur by change" (Illich 1997, 101). These alternatives need not eliminate capitalist state forms so much so as to displace their discursive and social centrality (Escobar 2012) to create tools for action, or the construction of a *concrete* or *feasible* utopia, through a scientific understanding of the world (Martinez Allier 1992). Such "feasible utopias" are manifest in initiatives such as EUROGREEN (D'Alessandro et al. 2018), which calls for work time reduction, job guarantees, degrowth, and basic income. Organizations such as Rethinking Economics Norway are working on many similar initiatives. For our case in Fosen, it requires a kindling/rekindling of post-extractivist thinking that can bring about decent living and sufficiency while avoiding new sacrifice zones in making low-carbon places. More broadly, the sacrifice zones are a reminder that as scholars, we must acknowledge the failures of "green" growth in the Nordic countries (Tilsted et al. 2021), and elsewhere (Hickel & Kallis 2019), while engaging with transformative alternatives, such as degrowth, which Norway is arguably ripe for, and can serve as a model for the EU and the North Atlantic world (e.g., Capasso 2021; Khan et al. 2021).

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Appendix 1: Interview participants and their status

Participants (pseudonyms) (interview year)	Status (in Åfjord Municipality, unless specified)
Tyr (2020)	Senior employee of a wind park company
Mimir (2020)	Special advisor, wind energy industrial organization
Thor (2020)	NVE official, in Oslo
Freya (2020)	Åfjord politician
Burr (2020)	Municipal councilor
Odin (2020)	Senior hospitality employee
Jöro (2021)	Activist, resident
Kvasir (2021)	Climate lobbyist, in Oslo
Forseti (2021)	City councilor
Heimdall (2020)	Conservationist and activist
Delling (2021)	Development executive
Ullr (2021)	Business owner
Laufey (2020)	Resident, retired
Frigg (2020)	Municipality employee
Magni (2020)	Second-home owner (visitor)
Ymir (2020)	Catering worker
Odr (2020)	Hospitality and retail store business owner
Hermóðr (2021)	Local resident
Njord (2020)	Business development representative
Vé (2021)	Climate lobbyist, in Oslo
Ada (2021)	Saami reindeer herder
Dagur (2021)	Researcher in wind power, in Oslo
Ánde (2021)	Saami Parliament representative
Hel (2021)	Researcher, in Oslo
Hermod (2020)	Business development representative
Iðunn (2020)	Fosen journalist
Hœnir (2021)	Researcher in wind power, Trondheim
Frode (2021)	Environmental activist for conservation
Birger (2021)	Environmental conservation group member