



Negative Externalities from Electricity Generation and the Right Remedy: A Comparative Analysis of Alaska and Sweden

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Abstract

Electricity generation, whether from renewable or conventional sources, produces negative externalities that may affect common goods. Despite the rich debate, common goods are still in search of an identity. Therefore, international practice has developed several forms of protection, such as litigation, legislative policies, or negotiations. The aim of this paper is to investigate the different remedies adopted by Alaska and Sweden to address externalities arising from non-renewable and renewable electricity generation, respectively. The analysis leads to the conclusion that the European approach seems to be more in line with the theory of the commons, by directly empowering local communities through policies and the use of agreements. It prevents the uncertainty associated with the compensation for damages as pursued by the Alaskan authorities in the proposed case study. In addition, this approach helps to ensure energy justice and avoids delays in achieving sustainability goals, while safeguarding that no one is left behind.

Keywords

Electricity Generation, Negative Externality, Common Goods, Right Remedy, Information and Participation, Just Energy Transition.

I. Introduction

Electricity is a form of energy produced by converting another form of energy into electricity. The energy we use to make electricity can come from renewable or non-renewable sources. Most renewable energy sources are based on kinetic energy. Kinetic energy is the energy of movement. Wind turbines are powered by moving air. Hydroelectric turbines are driven by moving water. Wave turbines are driven by the movement of the sea. Non-renewable energy sources (nuclear, biomass and fossil fuels) are all based on chemical energy.¹ Originally, electricity generation was based solely on

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the combustion of coal. Later, other fuels such as natural gas and oil were introduced. The entry of renewable energy was a milestone.

Electricity generation produces negative externalities.² The externalities cover both the production of energy from fossil sources and the production of energy from renewable sources.³

From a legal perspective, negative externalities from electricity generation undermine the use of common goods, such as clean water, clean air or fertile soil.⁴

Debate on the *commons* has evolved both in Europe and in the United States.⁵ Scholars agree that they are defined as goods that, irrespective of

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¹ For complete information, see B. Novakovic and A. Nasiri, ‘Introduction to Electrical Energy Systems’, in M.H. Rashid ed, *Electric Renewable Energy Systems* (Cambridge: Academic Press, 2016), 1-20.

² On the meaning of externality as intended in this paper, see A. Zerrahn, ‘Wind Power and Externalities’ 141 *Ecological Economics*, 245-260 (2017): ‘A negative externality is an effect outside market mechanisms that affects an individual or a firm beyond its control by reducing its utility or its expected perfect production set. In neoclassical theory, it represents a market failure and reduces social welfare by driving a wedge between the private and social costs’. See also T. Helbling, ‘Externalities: Prices Do Not Capture All Costs’ *Back to Basics: Finance & Development*, 38-39 (2017); P. Lemieux, ‘The Threat of Externalities’ *Regulation*, 18-24 (2021).

³ On these points, see A. Bielecki et al, ‘The Externalities of Energy Production in the Context of Development of Clean Energy Generation’ 27 *Environmental Science and Pollution Research*, 11506-11530 (2020). Nuclear power, for example, produces radioactive waste. Conventional thermal power plants, which generate thermal energy through chemical combustion of fossil fuels such as coal, oil or natural gas, cause significant pollution of the air, water and soil through the emission of toxic substances and carbon dioxide and through transport. Mining causes deep destruction of the soil. In the case of hydropower, the presence of a large dam can significantly alter the ecosystem. On the other hand, biomass leads to the expansion of agricultural land or a change in the use of existing land from food and feed production to energy crops. This not only leads to higher food and feed prices, but also causes environmental degradation, such as water consumption and loss of biodiversity. Potential risks of geothermal energy include groundwater contamination and the release of hydrogen sulphide and other gases into the atmosphere. Solar energy causes problems with the storage of materials from solar panels. Wind turbines generate continuous low-intensity noise and vibration from airborne components and their structure. Theoretically, they can cause stress, which in turn can affect health. Wind farms also have a significant impact on the environment and the landscape.

⁴ D. Elliot and D. Etsy, ‘The End Environmental Externalities Manifesto’ 506 *NYU Environmental Law Journal*, 506-542 (2021).

⁵ On the subject, see, *inter alia*, S. Rodotà, *I beni comuni. L’inaspettata rinascita degli usi collettivi* (Napoli: La scuola di Pitagora, 2018); U. Mattei, ‘I beni comuni come istituzione giuridica’ 2 *Questione giustizia*, 59 (2017); A. Ciervo, ‘Agire per tutti e per

whether they belong to the public or private domain, are characterized by the fact that they are pledged for the purpose of realizing the fundamental rights of the individual. Common goods are recognized by a community that is committed to managing and caring for them, not only in its own interest, but also in the interest of future generations.⁶ The common good combines care, duty, reciprocity and participation. The common good is what we all, individually and collectively, have not only passive rights to use, but active rights and duties to protect.⁷

Despite the flourishing debate, the common goods are still looking for identity and protection.⁸ The protection of common goods is not a simple theoretical solution, mainly because it depends on an approach marked by an individualistic view of property.⁹ However, as several authors have pointed out, we are faced with a 'fluid' concept that is constantly in motion, so that it is difficult to contain it in a regulatory formula.¹⁰

As a result, international practice has developed various forms of commons protection. The first is litigation. Strict enforcement of the jurisdiction can contribute to efficient investment and greater social benefits. In addition, regulatory agencies can be strong mediators. The second option is the promotion of legislative policies. The third and final approach, which is usually the most effective, is negotiation.

Against this backdrop, the question which arises in this work is the following: What is the right remedy when negative externalities from both renewable and non-renewable electricity generation affects the common goods?

nessuno. Appunti per una teoria processuale dei beni comuni' 2 *Questione giustizia*, 97 (2017); G. Perlingieri, 'Criticità della presunta categoria dei beni c.dd. «comuni». Per una «funzione» e una «utilità sociale» prese sul serio' *Rassegna di diritto civile*, 1, 137-163 (2022); B. Sirgiovanni, 'Dal diritto sui beni comuni al diritto ai beni comuni' *Rassegna di diritto civile*, 1, 229-246 (2017); E. Ostrom, *Governing the Commons. The Evolution of Institutions for Collective Action* (United Kingdom: Oxford University Press, 1990).

⁶ See on this point U. Mattei, n 5 above, according to which 'a common good can be anything that the community recognizes as meeting a real, fundamental need outside of market exchange. In addition to public physical space, institutional organizations such as cooperatives or municipalities, trusts managed for the benefit of future generations, village economies, water-sharing facilities and many other organizational structures, both ancient and contemporary, can be covered by the concept. The usefulness of the common good is created through shared access by the community as well as widespread decision-making at all levels'.

⁷ Thus S. Rodotà, *Il diritto di avere diritti* (Roma: Laterza, 2013), 109.

⁸ In this sense, see A. Di Porto, 'I "beni comuni" in cerca di identità e tutela', in G. Conte, A. Fusaro, A. Somma and V. Zeno-Zencovich eds, *Dialoghi con Guido Alpa* (Roma: Roma Tre-Press, 2018), 163-178.

⁹ Thus, A. Ciervo, n 5 above.

¹⁰ The expression is by M. Francesca, 'Beni comuni e razionalità discreta del diritto', in G. Perlingieri and A. Fachechi eds, *Ragionevolezza e proporzionalità* (Napoli: Edizioni Scientifiche Italiane, 2017), 476.

The answer to this question takes shape through a comparative analysis of the United States and the European Union, in particular between Alaska and Sweden. The first part of the work is devoted to examining the remedies adopted in Alaska to repair the damage caused by the spillage of oil, which is commonly used as a fossil fuel for the production of non-renewable energy. The second part of the work focuses on the legal solutions enacted in Sweden to limit the negative externalities generated by the production of renewable energy. The aim of this work is to show how the energy transition, conceived as a shift from fossil to renewable energy sources, enables the adoption of legislative and/or negotiated solutions that respect the rights of the individual and of the community and ensure better protection of the common goods.

II. Negative Externalities of Conventional Energy Production on Local Communities: The Case of Alaska

In 1973, the Arab Oil Crisis arose from an oil embargo against the US stemming from the geopolitics of the Yom Kippur War. This prompted the US Congress to pass legislation for massive petroleum extraction and transport via pipeline, for bolstering domestic oil reserves. This challenge was addressed with the US Congress passing the Alaska Native Land Settlement Act, opening the way for drilling and transporting oil from Prudhoe Bay on Alaska's Arctic North Slope.¹¹

Many residents in the area of Valdez and other Prince William Sound coastal communities were directly dependent on seasonal economic activity around eco-tourism, subsistence, and mariculture in the open, pristine waters that were shared with the variously nation-flagged tankers passing back through to the refineries in the lower 48 States. The health of biological ecosystems in the waters that the tankers travel through to pick up the oil is inextricably tied to seafood and tourism activities. Thus, one

¹¹ E.W. Kenworthy, 'Judge Orders Hickel to Delay Permit for Alaska Pipeline, Road' *The New York Times*, 2 April 1970. The US Congress approved the provisions for the pipeline, but many Native tribes had demanded payment of land loans that had been granted when Alaska became a State. As a result, the US Supreme Court upheld an injunction on the right of way for the pipeline on behalf of five Athabascan villages (Allakaket, Betties, Minto, Rampart and Stevens Village), based on a 1948 law that prohibits the US Department of the Interior from granting rights of way (without consent) over land used by tribes organized under the famous Indian Reorganisation Act of 1934. The Supreme Court case brought by indigenous tribes against the original US Congressional approval of the Alaska oil pipeline was a solution to finally settle the permanent ownership, or 'land claims', of the land they had used in perpetuity as a kind of property rights issue per se. Once these ownership issues were codified in the Alaska Native Claims Settlement Act of 1971, this legislation became the basis for Native corporations, subsistence food rights and even the legal argument for damages from the oil spill's impact on local tribal communities in Prince William Sound.

detrimental event on the environment may cripple aggregate economic activity for years.

On 24 March 1989, the Exxon Valdez, an oil tanker owned by the Exxon Shipping Company, spilled 11 million gallons of crude oil into Alaska's Prince William Sound.¹²

There were personal health costs to the outside workers who developed long-term chronic respiratory problems from cleaners and the hydrocarbons dispersed widely to remove the oil from rocks on beaches. There were also intangible costs such as the cultural loss by Alaskan Chugach Natives who were reliant on local, subsistence-gathered foods and hunting grounds, which were damaged and coated by the crude oil.¹³ There were over 1,300 miles of coastline affected, including wildlife habitats and breeding grounds.¹⁴ In some cases, the surface oil may not be visible when sailing or even by walking on beaches due to tidal action or Exxon clean-up crews steaming and wiping off the rocks. Yet when turning over shore rocks or drawing a sample several inches deep in the sand or soil there are still reserves of dark petrol present. This creates ecological and potential food chain problems as these are venues for shorebirds to collect food and where sea mammals have traditionally sunned themselves and mated.

As a major tort law case, ultimately courts had to take into account US maritime law.¹⁵ The initial 1991 settlement resulted in a criminal plea agreement (\$25 million), criminal restitution (\$100 million), and civil settlement (\$900 million). Exxon Valdez's captain faced the Alaska criminal court one year later and was found guilty on one of four counts for the negligent discharge of oil, costing him just over \$50,000 in fines and a 90-day jail sentence. The US Coast Guard charges were dismissed, while his master's license was suspended for nine months. Around the same time, in the US Federal court, a grand jury indicted Exxon for felony and misdemeanour charges. Exxon paid close to \$1 billion in fines for environmental claims and was then pressed into a lawsuit against six dozen attorneys representing individuals seeking compensatory and punitive

¹² Alaska Oil Spill Commission, 'Spill: The Sinking of *Exxon Valdez*'s Final Report' (1990). This report contains official details of each aspect of the oil spill and the dynamics of corporate actors. See also C. Rickter and Alaska Oil Spill Commission, 'Spill: The Wreck of the Exxon Valdez' (1990), 4.

¹³ G. Palast, 'The True Cause of the Exxon Valdez Disaster: Vultures' Picnic, chapter 7', available at <https://www.gregpalast.com/my-home-is-now-a-strange-place/> (last visited August 2024).

¹⁴ National Oceanic and Atmospheric Agency, 'Damage Assessment, Remediation, and Restoration-Valdez Oil Spill', available at [https://darrp.noaa.gov/oil-spills/exxon-valdez#:~:text=Exxon%20settled%20in%201991%20with,civil%20settlement%20\(%24900%20million\)](https://darrp.noaa.gov/oil-spills/exxon-valdez#:~:text=Exxon%20settled%20in%201991%20with,civil%20settlement%20(%24900%20million)) (last visited August 2024).

¹⁵ W. Lovett, 'Valdez Punitive Damages and Tort Reform' 3 *Tort and Insurance Law Journal*, 1071-1128 (2003).

damages. A jury in a subsequent 1994 tort case awarded \$5 billion dollars for punitive damages in 1994 due to reckless conduct by Exxon.¹⁶ After further appeals from Exxon, seven years later the newly persuaded federal courts found the amount to be excessive. Thus, the following year a district appeals judge reinstated only \$4 billion. The following year the US Supreme Court ordered the appeals judge to reconsider and in 2006 the same appeals court cut the punitive damages in half. In 2009, the Supreme Court then reduced the final damages to \$1.5 billion.¹⁷

The complexity of the reparations process was compounded by the fact that it was not easy to determine liability. It ended up that there had been no single person responsible but rather a mix of unheeded corporate protocol, a lack of regulation enforcement, HR departments not following up on employees' conditions, governmental communication, all of which contributed to the oil spill. Some of the legal arguments were based on the Bill of Rights and Reconstruction-Era amendments, and the reduction of damages derived from the application of maritime law and the corresponding subsequent limits.

However, the intangible impact of this fact has been unquantifiable.

One study on the four dozen bird species of Prince William Sound found that the oil spill had clear, initial negative impacts on the habitat of nearly half of the species, suggesting serious initial effects on livability.¹⁸ Coastal villages themselves have been affected in their seasonal routines and in the recreation activities of residents. The 'community' itself was altered with all the new stresses, and the quality of life for many changed, all from the one oil spill and the resultant chaotic clean-up operations.

However, the reality is that the consequences of fossil fuel use are much broader than the single case of the Exxon Valdez spill.

One of the most audacious sets of negative externalities may be raising its head in the Arctic. Though some may debate to what extent crude oil or fossil fuels are contributing to the increase in mean temperatures, in the Arctic it is clear that these increases outpaced the rest of the US by at least

¹⁶ K. Schneider, 'Exxon is Ordered to Pay \$5 Billion for Exxon Valdez Spill' *The New York Times*, 17 September 1994. This made it, at the time the largest standing tort award, until it was surpassed by other larger awards in the 2000's while awaiting appeals. See also D. Barwick, 'The American Tort System's Response to Environmental Disaster: The Exxon Valdez Oil Spill as a Case Study' *Stanford Environmental Law Journal*, 19, 25 (2000); E. Barker, 'The Exxon Trial: A Do-It-Yourself Jury' *The American Lawyer*, 69-77 (1994); J. Hersch and W. Kip Viscusi, 'Punitive Damages by Numbers Exxon Shipping Co v Baker' 18 *Supreme Court Economic Review*, 1 (2010).

¹⁷ L. Cabrasser, Heimann & Bernstein, 'Exxon Valdez Oil Spill Class Action' (2006), available at <https://www.lieffcabraser.com/environment/exxon-valdez/> (last visited August 2024).

¹⁸ R.H. Day, S.M. Murphy et al, 'Effects of the Exxon Valdez Oil Spill on Habitat Use by Birds in Prince William Sound, Alaska' 7 *Ecological Applications*, 593-613 (1997).

200% in the 20th century.¹⁹ This thermal acceleration is exacerbating the melting of permafrost (soils that are frozen for at least 24 consecutive months). Moreover, one of the uncompensated penalties for remote Alaska Native tribal communities as a whole that is tied to the oil or carbon emitted mostly elsewhere is climigration.²⁰ Unfortunately for several coastal Alaskan tribes, the personal 'social' costs are high in this regard as entire communities are having to contemplate leaving their locations where they have lived permanently and to do so without recompense (beyond funding for logistics and material costs to relocate away from shorelines that are losing out to new watermarks). This means that often ancestral graveyards are left to erode and are left to the sea, and old school or tribal buildings are dismantled and burned. In the period of relocation that in some cases lasts several years, some jobs are lost, thus forcing families into urban areas for temporary work.

While federal agencies such as the Department of the Interior can impose a royalty surcharge on fossil fuel and mineral extraction leases, it may not be as easy for Alaska agencies overseeing their own oil and gas leases. Penalty fees are also another tool for agencies to internalize social costs into production costs that would then be accounted for in producers' supply curves. Generally, in the United States, a regulatory agency such as the Environmental Protection Agency would be the one exacting penalties for excess pollution. Such fees can shift the demand curve or the willingness to pay by producers who manufacture products and cause emissions, yet the monies from the fines may not be internalized and put toward increasing the overall social benefit. Rather, the collected fees may instead end up supporting another project that has a different marginal (incremental) benefit over some other product type.

It should be noted that not all costs to society can be monetized, such as cultural and language heritage disintegration or extinction due to the climate-induced diaspora that is becoming increasingly familiar. When tribal and small agricultural communities are dispersed into urban areas, the day-to-day economic transactions and homogeneous school bodies there often do not help promote local languages and other customs. There are concentrated efforts by non-government organizations and community

¹⁹ US Global Change Research Program, 'Monitoring Change in Alaska and the Arctic', available at <https://www.globalchange.gov/highlights/monitoring-change-alaska-and-arctic>. Climate change in the Arctic and Boreal Region is unfolding faster than anywhere else on Earth and work is being done to see how Wildfires and melting permafrost are progressing and changing patterns.

²⁰ See M.P. Nico, 'The Recognition of International Protection to Environmental Migrants in the Recent Orientation of Corte di Cassazione', in L. Ruggeri and K. Zabrodina eds, *Making Production and Consumption Sustainable: A Global Challenge for Legislative Policies, Case Law and Contractual Practices. Guidelines for changing Market* (Wien: SGEM, 2023), 627-644.

groups to revive many of the language and cultural skills that are best preserved by the generation of elders, yet these knowledge bearers are passing away with time.²¹ Considered in some countries as ‘national treasures or national assets’, often the elders reside on their ancestral lands and their knowledge and transmission of it is tied directly to that land. When forced to leave due to changes in subsistence food or fur hunting, the increasing patterns of effects of climate change, or the destruction of homes from extreme weather events, then culture, or the ability to transmit it to younger generations, ultimately vanishes.

There is no way for pricing *per se* to compensate, mitigate, or reclaim traditional culture when it disappears. Even in cases where oppressed groups demand historical restitution funds based on race (such as African Americans for reparation for US slave labour or the German Democratic Republic making transfer payments to first and second generation Holocaust victims), reparations may make up financially for lost wages and/or property stolen, but will not restore forgotten or lost heritage.

In March 1994, Judge Russell Holland found no base for financial compensation for the damage to Alaskan Native culture of the local Chugach tribes, stating that ‘Alaskans have the right to lead subsistence lifestyles, not just Alaska Natives’. He went on to add that ‘Neither the length of time in which Alaska Natives have practiced a subsistence lifestyle nor the manner in which it is practiced makes the Alaska Native lifestyle unique’. Quite simply, he noted that the choice to ‘engage in activities is a lifestyle choice that was made before the spill and was not caused by the spill’.²²

Nevertheless, it is notable that environmental and social analysis has recently received increased attention, as in the case of the Willow Project. The Willow Project is an approximately \$7 billion proposal by ConocoPhillips to drill for oil and gas in Alaska. It would be located in the National Petroleum Reserve Alaska, a 23-million-acre (93 million hectare) area on the North Slope. The full project was initially approved by the Trump administration years ago, but a federal judge in Alaska overturned that decision in 2021, saying that the environmental analysis was flawed and needed to be redone.²³ Biden’s Interior Department scaled back the project to reduce its impact on the habitat of species like the polar bear and

²¹ Denakkanaaga is an Alaskan 501c3 non-profit that acts on the Elders’ behalf, working to ensure that their concerns are addressed regarding teaching young people such things as native cultures, traditions, languages, subsistence food, and social issues. Available at <https://www.denakkanaaga.org> (last visited August 2024).

²² E. Rhoan, ‘The Rightful Position’ 20 *San Joaquin Agricultural Law Review*, 181 (2011).

²³ *Sovereign Inupiat for a Living Arctic v Bureau of Land Mgmt.*, 3:20-cv-00290-SLG (D. Alaska Aug. 18, 2021).

the yellow-billed loon²⁴, but decided to allow it to move forward, taking into account the important revenue that it would have brought to Alaska's local governments and communities, including in terms of infrastructures and jobs.²⁵ Environmental groups remain concerned about the decision, arguing that the project does not meet the goal of a clean transition.²⁶ Either way, the case is certain to represent a first and timid attempt to balance corporate and community interests in the US energy sector.

III. Negative Externalities of Renewable Energy Production on Local Communities: The Case of Sweden

In the latest National Climate and Energy Plan submitted to the Commission under Regulation 2018/1999/EU on the governance of the Energy Union and climate action, Sweden plans to achieve a renewable energy share of 67% by 2030.²⁷ This is a very ambitious target considering that only 10 of the 27 Member States submitted an update of their plan by the deadline of 30 June 2024, and that the average of the renewable energy shares reported by the remaining Member States is 37.2%.²⁸ Nevertheless, in its recommendations adopted at the end of the European semester, the Council of Europe calls on Sweden to develop its untapped renewable energy potential by reducing emissions from road transport and

²⁴ More information is available at <https://www.doi.gov/pressreleases/interior-department-substantially-reduces-scope-willow-project>.

²⁵ See <https://www.conocophillips.com/sustainability/sustainability-news/story/responsibly-developing-alaska-s-willow-project/>, where the company involved in implementing the project reaffirms its commitment to the integration of sustainability, stakeholder engagement and biodiversity.

²⁶ See, among others, <https://www.greenpeace.org/usa/news/greenpeace-usa-among-groups-suing-to-stop-the-willow-oil-project-in-alaskas-western-arctic/>. In any case, the Biden Administration's approval has been upheld by the federal judge of Alaska.

²⁷ cf. Sweden National Climate and Energy Plan (30 June 2024) available at https://commission.europa.eu/document/download/26d2c93e-641d-489f-a160-a7052fde58bb_en?filename=SE_FINAL%20UPDATED%20NECP%202021-2030%20%28English%29.pdf (last visited 23 September 2024).

²⁸ The national energy and climate plans (NECPs) were introduced by the European Parliament and Council Regulation 2018/1999/EU on the governance of the energy union and climate action, agreed as part of the Clean energy for all Europeans package which was adopted in 2019. The national plans outline how the EU countries intend to address the five achievements of the energy union: decarbonization, energy efficiency, energy security, internal energy market, research, innovation and competitiveness. This approach requires a coordination of purpose across all government departments, and it provides a level of planning that will ease public and private investment. The National Climate and Energy Plans are available at https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en (last visited 23 September 2024).

streamlining permitting procedures for the development of renewable energy, especially offshore and onshore wind.²⁹

Hydropower and bioenergy are the main renewable energy sources in Sweden: hydropower for electricity generation and bioenergy for heating. Wind power capacity has increased significantly over the last decade. Recent studies show that the Swedish electricity generation system can reach 100% renewable energy by tripling wind capacity in combination with existing hydropower. Based on the current growth rate of wind power installations, the target could be reached within 20 years, as planned by the Swedish government, which aims to produce 100% renewable energy by 2040.³⁰

However, some have already pointed out that wind farms will restrict the reindeer herders from moving and will endanger the reindeer themselves.³¹

Sweden is also fertile ground for research into critical raw materials, which are of strategic importance for the EU, but characterized by a high supply risk. In April 2024, the European Union adopted Regulation 2024/1252/EU, known as the Critical Raw Materials Act. The main aim of this legislation is to maintain the Union's resilience³² by ensuring that 10% of the raw materials needed to build the equipment for the energy and digital transition are extracted in the EU. In this way, the Critical Raw

²⁹ The recommendations for each Member States are available at <https://www.consilium.europa.eu/en/press/press-releases/2024/07/16/european-semester-2024-council-agrees-on-country-specific-recommendations/>. For Sweden, we can read: 'Even though Sweden has the EU's highest share of renewables in total energy consumption, it still has an untapped potential for renewables. This potential could be harnessed to accommodate the ongoing electrification of industries in the south of Sweden, and the innovative, green industrial developments and decarbonisation in the north of Sweden, which require even greater electricity production. There are still several obstacles to expanding the countryside's renewable energy production capacity. This could result in Sweden not allowing its envisaged expansion of wind capacity by 13 GW and of solar power capacity by around 5 GW between 2021 and 2030. One such obstacle is permitting barriers for both offshore and onshore wind power. These barriers emanate from inefficient permitting procedures and veto rights of communes and defence authorities, among other things' (last visited 23 September 2024).

³⁰ Z. Jin et al, 'Towards a 100 % Renewable Energy Electricity Generation System in Sweden' 171 *Renewable Energy*, 812-824 (2021).

³¹ A. Szpak, 'Relocation of Kiruna and Construction of the Markbygden Wind Farm and the Saami Rights' 22 *Polar Science* (2019).

³² To understand what the European Union means by the concept of resilience, see 2020 Strategic Foresight Report – European Commission (available at [europa.eu](https://ec.europa.eu/economy_finance/)). The report analyses resilience along four interrelated outcomes – social and economic, geopolitical, green and digital – and explores its relevance for achieving long-term strategic goals in the context of the digital, green and fair transition. In particular, with regard to critical materials for the construction of technological devices used in the energy transition, the concept of resilience is directly linked to that of the value chain, with most of the supply required to take place in the European Union (last visited 23 September 2024).

Materials Act leads to an increase in mining activity on already fragile land, while tending to reduce the EU's reliance on third countries (namely, China).

In January 2023, the Swedish mining company LKBA announced the discovery of Europe's largest deposit of rare materials – key tools for the production of renewable energy technologies – in Kiruna. Kiruna is one of twelve mines in the Sami area of northern Sweden. The announcement could seem crucial for the Union's energy future. But the indigenous people who live there claim that these mines and the infrastructure that supports them have caused pollution, devastated ecosystems, poisoned the lichen that reindeer eat and removed them from grazing lands.³³

Reindeer husbandry is considered a common good. The protection of reindeer husbandry is expressed both in various national laws and in the international obligations to protect the rights and culture of the Sami people as an indigenous people and a national minority.³⁴

For these reasons, as early as February 2022, UN human rights experts urged Sweden not to approve an iron mine in the Gállok region, home of the indigenous Sami people, because the mine would generate large amounts of pollution and toxic waste and endanger the ecosystem, including reindeer migration.³⁵

Electrification has its drawbacks.³⁶

Of course, the electrification process that the European Union is striving for cannot override the protection of the rights of local communities. The just energy transition must not undermine the rights of people and local communities. Indigenous peoples and their knowledge are indispensable for the sustainable management of natural resources and the conservation of biodiversity, both of which are essential for fighting climate change and achieving the Sustainable Development Goals.

³³ See K.N. Pilflykt, 'Sámi rights must not be sacrificed for green energy goals of Europe (commentary)', available at mongabay.com (last visited 23 September 2024).

³⁴ The current Reindeer Herding Act (1971) states that people of Sámi ancestry can be members of a Sámi reindeer herding community and, as such, also having the right to herd reindeer and other rights, such as fishing, hunting, etc. On this point, see R. Nilsson, 'The Consequences of Swedish National Law on Sámi Self-Constitution: The Shift from a Relational Understanding of Who Is Sámi Toward a Rights-Based Understanding' 19(3) *Ethnopolitics*, 292-310 (2019).

³⁵ The full order is available at <https://www.ohchr.org/en/press-releases/2022/02/sweden-open-pit-mine-will-endanger-indigenous-lands-and-environment-un> (last visited 23 September 2024).

³⁶ Electrification is one of the fundamental objectives of the European Union, which aims to reduce dependency on fossil fuels from third countries. The drafting of an Electrification Action Plan is one of the main missions of the new Commission. More information can be found at https://commission.europa.eu/document/download/1c203799-0137-482e-bd18-4f6813535986_en?filename=Mission%20letter%20-%20JORGENSEN.pdf (last visited 23 September 2024).

Development is sustainable when it promotes and protects the human person. Sustainability is indeed an expression of solidarity.³⁷

In order to protect local communities, some municipalities have started to express their ‘veto’ on the development of renewable energy projects.³⁸ As a result, on 9 September 2024, the Swedish government included a package of measures in the 2025 Budget Act that balances the development of energy transition with the rights of local communities. In particular, the government proposes to invest more than SEK 1 billion to ensure a higher and more secure energy supply and to promote the green transition. Part of these funds are earmarked for investments in electricity generation, energy storage, energy efficiency and flexibility services. On the other hand, municipalities will be compensated for the expansion of wind power by increasing the property tax on wind turbines. The support to municipalities will be equal to the full amount of property tax generated by wind energy. The income is estimated at SEK 340 million in 2025, SEK 370 million in 2026 and SEK 400 million in 2027. The government also wants to ensure that the local community shares in the income generated by the wind farm. It is assumed that citizens living near the new wind turbines will receive a share of the revenue in proportion to the value of their property if the wind farm had not been built.³⁹

³⁷ P. Perlingieri, ‘I diritti umani come base dello sviluppo sostenibile. Aspetti giuridici e sociologici’ *Rivista giuridica del Molise e del Sannio*, 1, 11 (2000), Lezione Inaugurale del IV Corso multidisciplinare universitario di educazione allo sviluppo ‘Vivere il duemila’, held at the University of Sannio on 10 January 2000. In the essay, the author explains how ‘human dignity and human rights become (...) the basis of sustainable development’. Thus, also, D. Cambou, ‘Uncovering Injustices in the Green Transition: Sámi Rights in the Development of Wind Energy in Sweden’ 11 *Arctic Review on Law and Politics*, 310-333 (2020), who calls for a ‘human rights-based approach to sustainable development that puts emphasis on the rights of Indigenous peoples and other marginalized communities as an avenue to promote social justice’.

³⁸ According to a new report from the Swedish Wind Energy Association, the so-called municipal veto and the armed forces stopped almost all ongoing wind energy projects in the first half of 2024. At the same time, the municipal veto was the main reason why none of the eleven applications for wind energy on land and in territorial waters that were finally decided on in the first half of the year were approved. The report is available at <https://svenskvindenergi.org/pressmeddelanden/nastan-alla-vindkraftsprojekt-stoppades-forsta-halvaret-2024> (last visited 23 September 2024).

³⁹ The press release announcing the new regulatory package and the mechanism by which it will be financed is available at <https://www.regeringen.se/pressmeddelanden/2024/09/satsningar-pa-elektrifiering-och-gron-omstallning/> (last visited 23 September 2024). On this point, see D. McCauley, T. Field, R. Heffron and I. Todd eds, *The Future of Just Transitions* (Cheltenham, UK: Edward Elgar Publishing, 2024), 11, according to which ‘Regulations are an important tool for ensuring that all communities have equal access to clean energy resources regardless of income or geography. For example, regulations could require utility companies to provide incentives for low-income households or rural areas who adopt solar panels or other renewable technologies’.

From a civil law perspective, there is a growing trend for agreements to be signed between local communities and project promoters concerning the use of land and natural resources. A recent study carried out by the Stockholm Environment Institute, the Sustainability Learning and Research Center, Department of Women's and Children's Health, the Eajran Sijte and Tuorpon Reindeer Herding Community, the Advokat Inger-Ann Omma AB, and the School of Government and International Relations of Griffith University (Brisbane, Australia), in cooperation with the Swedish Sámi Association, has analysed some of these agreements and the main contractual clauses.⁴⁰ More than half of the agreements contain clauses requiring the investor to develop measures to reduce reindeer damage, for example by using ecoducts or by designing safe crossings. However, the most common approach was to allow the developer to offer fixed financial compensation. In other cases, albeit a minority, developers agreed to inform or listen to the reindeer herders, although they did not commit to giving the Sami any real influence over decisions. As far as dispute resolution is concerned, mediation seems to be the preferred approach because it is cheaper.

Although the study notes that in some cases local communities are still the weak party of the agreement, the development of agreements can be a method for indigenous groups to become 'proactively' involved in the governance of the resources.⁴¹

To this end, it should be noted that the Sami, by virtue of their status as indigenous peoples, have access to individual and collective rights under international human rights law, enshrined in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) of 2007, which are based on the principle of self-determination.⁴² The principle of self-determination recognizes the rights of indigenous peoples to their ancestral lands and the natural resources they contain. As a result, indigenous peoples must be involved in the decision-making process.

In 2015, the Swedish government adopted a National Action Plan (NAP) on business and human rights, which requires extractive companies to consult with stakeholders, including Sami communities, and to carry out environmental impact assessments (EIAs).⁴³ However, these are voluntary

⁴⁰ For full research results, see R. Kløcker Larsen et al, 'Negotiated Agreements and Sámi Reindeer Herding in Sweden: Evaluating Outcomes' 37(7) *Society & Natural Resources*, 981-999 (2024).

⁴¹ See J. Saloranta and A. Hurmerinta-Haanpää, 'Proactive Contract Theory in the Context of Corporate Sustainability Due Diligence' 6(3-4) *Journal of Strategic Contracting and Negotiation*, 221-236 (2022).

⁴² Available at <https://www.ohchr.org/en/indigenous-peoples/un-declaration-rights-indigenous-peoples> (last visited 23 September 2024).

⁴³ The National Action Plan on Business and Human Rights draws inspiration from the UN Guiding Principles on Business and Human Rights, according to which

practices that are wholly insufficient to ensure full compliance with the international human rights framework and to prevent business-related violations.

In this sense, Directive 2024/1760/EU on corporate sustainability due diligence is a turning point, as it is extremely useful for the protection of the Sami and the strengthening of their negotiating power.⁴⁴

The Directive requires companies to monitor, prevent, and mitigate adverse impacts of their production on human, social, and environmental rights throughout the whole value chain. The Directive identifies local communities among stakeholders,⁴⁵ ie those likely to be affected by the activities addressed by the Directive, and sets out for local communities, as stakeholders, a set of rights including the right to adequate access to information, the right to consultation, the right to participate in decision-making,⁴⁶ as well as the right to complain.⁴⁷

In addition, it must be read and interpreted in a systematic way in the context of Directive 2018/2001/EU (the Renewable Energy Directive), Art 15 of which explicitly states that Member States must ensure public participation to designate renewable acceleration areas and must promote public acceptance of renewable energy projects through the direct and indirect participation of local communities in such projects.

The European Union recognizes public participation as essential. As stated in the 2024 State of the Energy Union Report, the energy sector needs to accelerate to meet the EU's ambitious targets.⁴⁸ But working with local citizens is indispensable if the energy transition is not to be

'businesses' human rights efforts are expected to establish an integrated and ongoing process in the company to identify, prevent and manage human rights risks and opportunities, as appropriate to the size, nature and context of the operations, i.e. due diligence'. The plan is available at <https://globalnaps.org/country/sweden/> (last visited 23 September 2024).

⁴⁴ On this argument J. Blazej Zwierzchowsky and E. Rott-Pietrzyk, 'The Sustainability Obligation in Value Chain Contracts', in M. Santos Silva, A. Nicolussi, C. Wendehorst, P.S. Coderch, M. Clément and F. Zoll eds, *Handbook of Private Law and Sustainability* (New York: Routledge, 2024), 564. See also R. Cavalli, 'Contract Law and Sustainability of Global Value Chain: Assessing the Proposal for an EU Corporate Sustainability Due Diligence Directive from a Contract Law Perspective', in M. Santos Silva, A. Nicolussi, C. Wendehorst, P.S. Coderch, M. Clément and F. Zoll eds, *ibid*, 580; S. Ciacchi, 'The Newly-adopted Corporate Sustainability Due Diligence Directive: An Overview of the Lawmaking Process and Analysis of the Final Text' 25 *ERA Forum*, 29-48 (2024); V. Marano et al, 'Multinational Firms and Sustainability in Global Supply Chains: Scope and Boundaries of Responsibility' 55 *Journal of International Business Studies*, 413-428 (2024).

⁴⁵ Art 2, para 1, letter (n) of Directive 2024/1760/EU.

⁴⁶ Art 13 of Directive 2024/1760/EU.

⁴⁷ Art 14 of Directive 2024/1760/EU.

⁴⁸ Art 3, para 1 of Directive 2018/2001/EU imposes on Member States the obligation to collectively achieve a 42.5% share of renewable energy production by 2030, with an aspiration of up to 45%.

compromised by concerns about landscape, biodiversity, cultural heritage and lifestyles, particularly in rural areas.⁴⁹

In this perspective, Sweden should strive for a complete transposition of the European legal framework on Renewable Energy Communities (RECs).⁵⁰ In fact, the European Directive has not yet been transposed, on the grounds that the Swedish legal framework enables the establishment of energy communities irrespective of the timely transposition of the European regulation.⁵¹ On the contrary, it would be preferable to implement the Directive and, in particular, the provision that sets out the purpose of an energy community, which is to generate environmental, economic and social benefits rather than financial profit. Explicit implementation could build trust and contribute to the effective acceptance of renewable energy projects by local communities, making them real actors of the energy market.

In essence, the need to integrate human rights into renewable energy policies is at the heart of the energy transition. This need could be fulfilled by ensuring that indigenous communities are consulted and give their consent before any energy project affects their land, by conducting assessments to understand the cultural significance of the land to indigenous peoples, by providing training and education, or by developing models where indigenous communities receive a fair share of the benefits of energy projects, such as revenue sharing, job creation and infrastructure development.⁵² In this sense, the energy transition is approached from a human rights perspective, with the aim of redressing existing inequalities and enabling social inclusion.⁵³ Hence, the involvement of local

⁴⁹ State of the Energy Union Report 2024, 7, available at https://energy.ec.europa.eu/publications/state-energy-union-report-2024_en (last visited 23 September 2024).

⁵⁰ Art 22 of Directive 2018/2001/EU.

⁵¹ P. Holmberg and T.P. Tangerås, 'The Swedish Electricity Market – Today and in the Future' 1 *Sveriges Riksbank Economic Review* (2023). Sweden states that the legal framework is to be considered implemented through Act SFS 2018:672 on economic associations, but in fact SFS 2018:672 is not sufficient. Firstly, because the Directive opts for freedom of contract for the establishment of energy communities. Secondly, in the case of economic association, the interests of the members of the community could override social and environmental interests if the statutes do not provide otherwise. More information on the Sweden legal models is available at https://social-economy-gateway.ec.europa.eu/my-country/sweden_en (last visited 23 September 2024). See, also, J. Palm, 'The Transposition of Energy Communities into Swedish Regulations: Overview and Critique of Emerging Regulations' 14 *Energies*, 4982 (2021).

⁵² J. Carling, 'Human Rights and Indigenous Peoples in Just Energy Transitions', in *Development Co-operation Report 2024: Tackling Poverty and Inequalities through the Green Transition* (Paris: OECD Publishing, 2024).

⁵³ See on this point D. McCauley, T. Field, R. Heffron and I. Todd eds, *The Future of Just Transitions*, n 35 above, 11, 14, according to which 'just transition aims to ensure that the shift towards a more sustainable energy system considers the needs and concerns of all affected communities, including workers in industries that may be impacted by this

communities in transition projects and processes serves to ensure energy justice,⁵⁴ to guarantee the acceptance of energy policies, to reduce the risk of conflict and, ultimately, to avoid delays in achieving energy goals while ensuring that no one is left behind.

IV. Conclusion

Electricity, whether generated from non-renewable or renewable sources, produces negative externalities. These are likely to have a negative impact on local communities and on the common goods, of which local communities are custodians.

There is growing debate within the scientific community about common goods, and there are still uncertainties about legal protection.

The analysis in this paper has highlighted the diversity of remedies adopted by the United States and the European Union.

transition. This means considering issues such as job creation, retraining programs, and support for communities that rely on industries like coal mining or oil extraction'. Indeed, 'the concept of a "just transition" recognizes the potential social and economic impacts of this shift and seeks to ensure that the benefits and burdens are equitably distributed. One major challenge in achieving a just transition is the siting of new renewable infrastructure. While renewable energy sources such as solar and wind power may seem like cleaner alternatives to fossil fuels, they can still be controversial if not planned and executed properly. (...) To balance the need for rapid decarbonization with concerns about social justice and economic stability, it is important to consider these potential impacts from the outset of planning for new renewable infrastructure. This includes engaging with affected communities early on, ensuring that they have a voice in decision-making processes, and providing adequate compensation or support for any displacement or loss of livelihoods.

⁵⁴ On this point, see K. Jenkins, D. McCauley, R. Heffron, H. Stephan and R. Rehner, 'Energy Justice: A Conceptual Review' 11 *Energy Research & Social Science*, 174-182 (2016), according to which 'local communities, such as the indigenous Sami people, are scattered across mostly the northern parts of Norway, Sweden, Finland and Russia (all Arctic states) and are living off fishing and reindeer herding. Thus, such communities are heavily dependent on the local ecosystems. Early intervention is paramount to an effective consultation process, and thus the engagement of local communities is an imperative with regards to procedural justice aspects'. To better understand what energy justice means, see R.J. Heffron, *The Challenge for Energy Justice* (Switzerland: Springer, 2021), 3, where he explains that 'energy justice is centred on: the normative aim of contributing to make the world a better place, i.e., a more just and sustainable world; it is based on five core justice philosophies which are procedural, distributive, restorative, recognition and cosmopolitan justice; and its definition is that it is about applying human rights across the energy life cycle'. On this point, see also L. Casalini, 'Legal Profile of First Renewable Energy Communities in Rome, "Le Vele": Rethinking Energy for a Social and Urban Regeneration', in L. Ruggeri and K. Zabrodina eds, *Making Production and Consumption Sustainable: A Global Challenge for Legislative Policies, Case Law and Contractual Practices. Guidelines for changing Market* (Wien: SGEM, 2023), 430, where the authors discuss energy as 'an intangible common good, capable of sparkling solidarity, inclusion and social relations'.

In the case of Alaska, the community has been granted judicial protection and compensation for damages, including punitive damages. One of the most important results was also the rapid response of the US Congress, which amended the Clean Water Act of 1972 under the Oil Pollution Act of 1990 (33.U.S.C. 2701-2761), forcing the oil industry itself to fund the Prince William Sound Regional Citizens' Advisory Council as the first federally mandated watchdog group. It has been successful in working within the local community to negotiate with the oil industry for the implementation of more protective technologies and practices. However, it has been pointed out that compensation is limited by the practical incommensurability of the damaged interests. In the case of a spill of oil, used as a fossil fuel for energy, it is not easy to determine who should pay and how much should be paid to internalize the costs of restoring destroyed ecosystems, oil on beaches and health problems caused by carcinogens and volatile organic compounds used in the clean-up process. Moreover, in the case of fossil fuels, whose negative externalities may be of global relevance, in terms of compensation, it may be very difficult to identify both those responsible and the victims.

Regarding Sweden, the analysis of the negative externalities generated by the production of renewable energy leads to the adoption of legislation that seeks to strike a fair balance between the general interest of the energy transition and the interests of those who might be affected by it. In addition, negotiated solutions with the direct involvement of the local community are pursued.

The European approach seems more in line with the theory of the commons. The institutions of common goods function by directly empowering their users to seek a system of rules inspired by the effective and preventive protection of the common goods.

Common goods are also better protected in the case of negative externalities generated by renewable energy. The transition from fossil fuels to renewables allows for a preventive and precautionary balance of interests that maximizes the benefits of energy and climate action while minimizing the negative impacts on people and their communities. Indeed, phasing out fossil fuels and expanding renewable energy solutions can have a significant impact on local economies and cultures. Early engagement with local communities must therefore be not only a priority, but also a shared value on the road to a clean energy transition.