The Challenge of a Just Transition in northern Sweden

Uncovering Environmental Justice related frames of actors actively involved in wind energy development in northern Sweden

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Abstract

The Swedish government has set the goal of taking a pioneer role and targeting a transition towards 100% renewable energy use until 2040. To reach this goal, the focus in energy production is shifting towards solar, hydro as well as wind power. Since 2010, wind power in Sweden is a fast-growing industry, promoted as one solution to reach climate goals and ensure more sustainability. Nevertheless, wind power is also criticised and the cause of several land-use conflicts all over Sweden. When it comes to the northern Swedish counties, wind power plants are overlapping with traditional Sámi herding districts. Especially here critical questions regarding a misrecognition of indigenous rights as well as the meaning and implications of justice in the current transition are raised.

This Master thesis addresses the current development of wind farming on Sámi lands in northern Sweden within the energy transition and sheds light on wind-power related conflicts. Therefore, the analytical frameworks environmental justice (EJ) and frame theory (FA) are used, to identify and explain tensions and map possible leverage points. The thesis combines an empirically grounded approach to explore how actors actively involved in wind farming make meaning of environmental justice, and a theory-driven approach to identify leverage points and map injustices. For this reason, in total two methods are used to collect the empirical data material: semi-structured interviews (subjected to FA) as well as a literature review (subjected to the EJ framework).

The results of the frame analysis show that within the actors actively involved in wind farming four different frames can be uncovered, which lead to differing problem definitions as well as suggested solutions. The identified frames cover due to their agenda-setting character not all injustices that were derived from literature review. Furthermore, within the frames several normative dilemmas and tensions were observed, that raise the necessity to reflect on existing frames as well as on the implications of the EJ framework.

Keywords: Environmental Justice, wind farming, northern Sweden, reindeer herding, just transition

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Abbreviations

EJ	Environmental Justice
EPA	US Environmental Protection Agency
FA	Frame Analysis
UN CERD	United Nations International Convention on the Elimination of All Forms of Racial Discrimination

1. Introduction

1.1 Background: Wind power development in Sweden

A transition towards a sustainable energy system, while ensuring that developments are carried out in a just and fair way, that leaves no one behind: this is one of the big challenges of this century (UN 2015). The Swedish government has set the goal of taking a pioneer role in reducing fossil fuels by striving to reach a 100% fossil free energy production until 2040 (Swedish Energy Agency 2021, Ministry of the Environment and Energy 2019). To visualize the aimed transition, the governmental initiated initiative "Fossil Free Sweden" has set up roadmaps with milestones that visualize the steps that need to be taken. The roadmap shows the complex interplay of actors (within various sectors) that need to join forces for finding solutions and reach the set goal (Fossil Free Sweden, n.d.).

A change towards renewable energy resources implies that focus is shifting to hydro power, solar power as well as wind farming. According to statistics published by the Swedish Energy Agency (2021; 2022), wind power gains more and more importance and is rapidly growing since 2010: From 527 wind turbines in 2010, the number has grown to in total 4754 wind turbines all over Sweden in 2021. As described, wind power is seen and promoted as a renewable resource to solve climate issues and to ensure sustainability as well as the aimed transition (Fossil Free Sweden, n.d., Ministry of the Environment and Energy 2019).

Despite this narrative, Bjärstig et al. (2022) stress in their study that wind power is not always seen as the solution to global climate issues but also as a possible threat for local development. While analyzing how the topic around large-scale wind power plants in Sweden was framed in different newspapers from 1999 until 2019, Bjärstig et al. (2022) demonstrate a high degree of polarization. While wind power is framed rather positive by mostly politicians and entrepreneurs, individuals as well as governmental agencies would frame it as rather problematic. Bjärstig et al. (2022) also observe that there seems to be a tension between the perspective looking at global level of reaching climate goals and at local level of impacting nature and local development.

When it comes to the impact of windfarms, critique is raised e.g. regarding environmental disruption as well as the destruction of natural habitats and cultural

values (Anshelm & Simon 2016). The dilemma of striving for a sustainable transition through wind power, and at the same time a missing acceptance of concrete projects by the public, is in academia often classified as a "Not in my Backyard" (NIMBY)-debate (Wolsink 2000, Jenkins et al. 2016). Focusing on wind power critique in Sweden, Anselm and Simon observe the absence of general questions regarding economic growth vs. energy reduction: "There are no calls for an alternative society with decreased energy usage." (2016:1549). The contested kind of the current wind power development in Sweden and around the world is also illustrated by Avila (2018). Because of the variety of interests and expectations regarding wind power and land-use, conflicts would arise. Thereby, very frequent conflicts worldwide would be conflicts with indigenous territories and local communities (Avila 2018).

1.2 Problem formulation: The challenge and meaning of a just transition within the wind power sector

Focussing on wind farming conflicts with indigenous territories, the case of northern Sweden comes into focus. Of the 4754 wind turbines placed all over Sweden, approx. 41% (1951 wind turbines) are distributed over the four counties Norrbotten (483), Västerbotten (476), Jämtland (452) and Västernorrland (540) (Swedish Energy Agency 2022). This overlaps with and impacts the traditional reindeer herding area and where Sámi reindeer herding communities have established rights to use the land for grazing (SOU 2006:14, Skarin et al. 2018, Cambou 2020). This overlap poses critical questions concerning the meaning and implications of justice as well as the recognition of indigenous rights within the wind power development in northern Sweden (Cambou 2020).

In this context, scholars observe several wind power related injustices, e.g. wind power is described as negatively influencing reindeer herding and thereby putting pressure on Sámi people that are already historically highly impacted by other resource exploitation (Lawrence 2014, Cambou 2020, Österlin & Raitio 2020).

Furthermore, scholars highlight a strong connection between the current developments and the colonial past of Sapmí[1] (Lawrence 2014, Kårtveit 2021, Sköld 2015). In the context of Fennoscandia, Sarkki et al. stress there are "[...] continuing tensions between the economic interest of states and indigenous rights, cultures and livelihoods." (2021:275). Therefore, they propose to shift the status of reindeer herders as a stakeholder towards a "rights-holder": "We argue that this is one way of highlighting the particular status of indigenous people and local communities in the context of land use governance." (Sarkki et al. 2021:273).

[1] historically inhabited land area of the Sámi, that reaches from Russia over Finland and Sweden to Norway (Sametinget n.d.)

Also, in 2018 the UN CERD has criticised the Swedish government for "the insufficient legislation to protect the rights of the Sami people in their traditional lands" (2018:3). Included in this critique are also cases of resource exploitation in Sapmí (UN CERD 2018).

In difference to other industries (such as mining and forestry), wind power in northern Sweden, according to Lawrence (2014), adds a new discursive dimension: its contribution to a sustainable transition. This would, according to her lead actors (e.g. companies) justify their actions and impacts on reindeer herding with the aim to counteract climate change and thereby also support reindeer herding (Lawrence 2014). Further, in the justice context, Cambou stresses "[…] most of the policy and decision makers addressing the topic emphasise the question of providing sustainable energy but often overlook the social risks generated by the impact of renewable energy projects" (2020:311). Therefore, she highlights the importance to focus research more on "[…] the exact meaning of "justice" in the green transition." (Cambou 2020:310).

By asking what is and can be fair in the current energy transition, also questions about how the different involved actors (companies, organizations, state agencies, politicians, reindeer herders) make meaning of the terms "fairness" and "justice" arise. For analysing, categorizing and distinguishing existing injustices, the environmental justice (EJ) concept (focussing on the procedural, distributive and recognitional area) finds its application in research (Kårtveit 2021, Cambou 2020, Walker 2011). Nevertheless, the EJ framework leaves unclarities since it is (depending on the actor) used in very different ways (Čapek 1993). This need to focus research more on the EJ framework to create more clarity of the concept and understand meaning making processes, existing frames and current societal processes is also highlighted by Čapek (1993) and Schlosberg (2013).

1.3 Research Aim and Questions

In this Master thesis I address the current development of wind farming on Sámi lands in northern Sweden within the energy transition and shed light on wind-power related conflicts. Therefore, I make use of the analytical frameworks environmental justice (EJ) and frame theory, to identify and explain tensions and map possible leverage points. I combine an empirically grounded approach to explore how actors actively involved in wind farming make meaning of environmental justice, and a theory-driven approach to identify leverage points and map injustices. For this reason, in total two methods are used to collect the empirical data material: semi-structured interviews (subjected to frame analysis (FA)) as well as a literature review (subjected to the EJ framework). This research aim leads to the following three research questions:

Research Questions

RQ1: How do actors actively involved in wind farming construct meaning of environmental justice around the development in northern Sweden?

RQ2: What dimensions of environmental injustices in relation to reindeer herding and wind power development are reported in literature?

RQ3: What problems are made invisible through particular frames?

To answer the research questions, I will in a first step apply a frame analysis (FA) to understand how actors actively involved in wind farming sector in northern Sweden make sense of the current situation and what EJ means to them (Chapter 4.1). In a second step, I will focus on existing literature that is describing injustices in northern Sweden and relate it to the EJ framework (Chapter 4.2). This will serve as a basis for discussing if the observed frames leave out certain problems, where possible tensions arise and how the EJ framework can be applied to reflect on existing frames (Chapter 4.3 and 5).

2. Theoretical Background

In this Master thesis I follow the worldview of social constructivism, and thereby assume that individuals make meaning of their environment in various subjective ways and construct their own interpretations (Creswell & Creswell 2018). Furthermore, I assume that meanings are created and influenced by interactional processes, personal experiences and the social environment. This assumption applies also for me being in a researching role, who analyses and makes meaning of data (Creswell & Creswell 2018). For this reason, the chosen theoretical as well as methodological frameworks (EJ framework, frame theory and analysis) build on the assumptions and implications of social constructivism.

2.1 The Environmental Justice (EJ) framework

The topic of environmental justice (EJ) has gained more and more attention in recent years and is a discussed issue in many different academic and political fields as well as social movements (Svarstad and Benjaminsen 2020, Schlosberg 2013).
Walker (2011) sees the EJ movement rooted in the US, were several environmental issues and pollution led to a civil movement to claim rights to participate in decision making processes as well as to protest against inequalities and racism related to environmental pollution. In the US, through this EJ movement many different initiatives, conferences and networks (e.g. Indigenous Environmental Network (IEN)) evolved and also in academia the topic gained more and more attention (EPA 2022). In 1994, through Bill Clintons signature of the Executive Order 12898 (making EJ a topic in decision making as well setting up the "Interagency Working Group on Environmental Justice") EJ was officially embedded in the political context (EPA 2022, Walker 2011). The US Environmental Protection Agency (EPA) defines EJ as: "[...] the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." (EPA 2022)

Within time, the EJ perspective has extended geographically from the US to many other countries and its focus is now ranging from the local to the global scale (Svarstad and Benjaminsen 2020, Walker 2011). For instance, in the Swedish government in 2015 it was, inspired by the US developments, proposed to consider making EJ a topic in every political decision (Lillemets & Mutt 2015). Also, when it comes to the fairness of wind power developments in northern Sweden as well as other Nordic countries, researchers orientate on the EJ framework (Cambou 2020, Kårtveit 2021). Further, the claim of a just transition in the energy sector is studied

through the EJ lens within the emerging academic field of "energy justice" (Jenkins et al. 2016, Cambou & Poelzer 2022).

As the application of the EJ framework spread globally, also the meaning of the term EJ has extended, and definitions differ between sources, depending on time and author (Walker 2011, Schlosberg 2013). Also, the subject of focus of the EJ ranges from focusing on the individual as well as on the communities' level (e.g. including indigenous communities) (Schlosberg 2013). Despite the variety of definitions and applications of EJ, Walker (2011) and Svarstad and Benjaminsen (2020) describe EJ as being generally constituted by three main categories:

- *Procedural Justice:* Focusses on the fair and equal participation of individuals in decision making and power-imbalances
- *Recognitional Justice:* Describes the equal and fair recognition of all affected individuals and groups
- *Distributive Justice:* Focusses on the just distribution of environmental benefits and burdens in society

Those three interwoven categories are structuring justice discourses and take a major role in EJ research (Walker 2011, Svarstad and Benjaminsen 2020).

Since the EJ concept is leading political discourses, thinking patterns and social movements, Walker (2011) and Čapek (1993) describe it as a frame. In this context Čapek stresses that within the frame "Defining a situation as unjust is more than an act of categorization; it implies a strategy for action." (1993:7). When it comes to EJ discourses, making claims and demanding actions, Walker (2011:40) highlights that within the framework it is focused on a "normative", "descriptive" and "explanatory" level. This would help to clarify the questions "What is the anticipated goal of justice?", "What is the current state of injustice?", "What constitutes current injustices?". Furthermore Walker (2011) highlights that the goal of reaching justice as well as the EJ framework should be seen as a process, implying that EJ is no fixed construct that should be constantly challenged to develop. Also, he raises the question if society will ever reach a point, were overall and full justice would be ensured:

> "A process perspective fits with an understanding of justice which recognises that the resolution of the questions 'what is just?' and 'what is good?' will never, and should never, be finally resolved, but will be continually open to reasoning, revision and challenge. A more open and dynamic understanding of environmental justice does not imply that there cannot be agreements, progress and resolutions of problematic situations along the way. But these will never finally resolve inequality and injustice always and forever, and in any case the terms in which these situations are understood will be dynamic rather than static and frozen in time. (Walker 2011:221)

The citation implies that the EJ framework can help understand and analyze injustices in the broader context of an interrelated field of multiple actors and support the process of finding solutions to ensure more justice. On the other hand, the EJ framework must be seen as a part of a process that changes and develops over time.

2.2 Frame Theory

Frame Theory was firstly introduced by Goffmann in 1974 (van Hulst & Yanow 2016). Since then, frame theory has found its application in plenty different disciplines (van Hulst & Yanow 2016) e.g. ranging from social movement research (Simunovic et al. 2018), conflict studies (Dewulf et al. 2009, Kaufmann & Smith 1999, Gray 2003), to communication studies (Entman 1993), political sciences (van Hulst & Yanow 2016) as well as environmental justice (EJ) research (Walker 2011).

In frame theory focus is on the assumption that individuals experience their surrounding differently, have a variety of underlying presumptions and therefore make meaning of the same situation it in different ways (Van Hulst & Yanow 2016). Kaufmann and Smith describe that frames "[...] help make sense of complex information." (1999:166). Frames, and thereby making sense of situations can be influenced by e.g., education, previous experiences, and attitudes (Kaufmann & Smith 1999, Gray 2003).

Van Hulst and Yanow (2016) highlight the non-static character of frames, that would develop and change through interactional processes and suggest using the terminology of "framing" instead of "frames". Further they describe that frames could be subconsciously developed and depend on the situational context. In the context of land-use conflicts, Kaufmann and Smith also describe that frames could be used strategically, in order to create specific meaning making processes and "[...] control how a communication will be perceived by others [...]" (1999:167).

Also, in conflict studies frame analysis (FA) plays an important role, since according to Dewulf et al. "[…] conflicts are associated with differences in disputants´ frames about the issue, what is important and how to respond to problems" (2009:156). Likewise Gray (2003) stresses that frames would include both, problem defining elements as well as suggested solutions and ideas on how to deal with an issue.

According to Dewulf et al. (2009:156), studies would either follow the "cognitive paradigm" (seeing frames as existing knowledge) or the "interactional paradigm" (seeing frames as developing through interactive practices). Further Dewulf et al. (2009:158) describe that frames could be characterized in either focusing on the "issue" itself, on "identities and relationships" (e.g. of different conflict parties), as well as the "process".

Walker (2011) stresses that frames are also an important part of environmental justice (EJ) research. While e.g. certain actors (politicians, companies, social movements) would estimate a situation or an environmental issue as unjust, e.g. caused though the current economic system, other actors would not see an issue at all. Within EJ research Walker stresses "What is interesting about the frames that come to be is where they have come from, what they include and leave out, and what difference they make." (2011:5).

This agenda-setting character of frames, focusing on certain parts of reality and leaving others out is also described by Entman (1993). In conclusion, this would lead to problem definitions that only lay focus on a specific part of a problem, influencing solutions that do not reflect the whole reality. Furthermore, Entman stresses that frames "[...] diagnose, evaluate and prescribe [...]" (1993:52) specific situations. In this context, Van Hulst and Yanow (2016) describe that e.g. in policy making, differing frames leading to specific problem definitions can cause conflicts and misunderstandings. Therefore, they highlight the importance to reflect on existing frames, when it comes to decision making processes.

In the context of land-use conflicts, Kaufmann and Smith highlight that "[...] the mismatch between frame and reality is bound to affect the quality of decision outcomes" (1999:166). While according to Kaufmann and Smith (1999), land-use conflicts would include a variety of involved actors as well as a lot of uncertainties regarding a decision that affects a specific land area, and therefore can be partly intractable, it would be important to reflect on frames. For instance, they stress the importance to reflect on how certain frames influence specific outcomes that affect other involved actors and the necessity to come to joint decisions. Also, they highlight that "[...] practitioners need to ponder their roles and the ethical dilemmas they face when intervening in conflicts." (Kaufmann & Smith 1999:175).

To create awareness for differing persistent frames, that can lead to differing interpretations about reality as well as misunderstandings, Kaufmann & Smith (1999) as well as Van Hulst and Yanow (2016) describe the process of reframing as important. Reframing would help becoming aware of other individuals' frames and facilitating to find a common ground.

3. Research design and Method

In the following chapters I will elaborate on how I operationalized the key concepts EJ framework and frame theory/analysis (Chapter 3.1) and how I collected, analyzed, and anonymized the empirical data material (Chapter 3.2). Furthermore, I will reflect on limitations and research ethics (Chapter 3.3).

3.1 Operationalization of key concepts

3.1.1 Applying the Environmental Justice (EJ) framework

The EJ framework offers, together with frame theory, the theoretical background in this thesis. I follow the definition and categorization of Walker (2011) and Svarstad and Benjaminsen (2020) to structure my literature analysis to answer RQ2. Therefore, I will use the three categories "distributive justice", "procedural justice" and "recognitional justice" (Walker 2011, Svarstad & Benjaminsen 2020) described in Chapter 2.1 and structure my literature analysis according to the definition of these three elements.

3.1.2 Applying Frame Analysis

In this thesis I use FA as a methodology to uncover and make sense of the frames of different actors that are involved in wind power in northern Sweden. Based on the descriptions about frame theory and social constructivism in Chapter 2, I reason that different actors have varying frames regarding the topic of EJ. Those frames can influence how a certain reality is constructed. In my analysis I will follow the cognitive paradigm, described by Dewulf et al. (2009), that assumes frames can be found in existing knowledge – since my interview data will not provide me with information about interactional processes. Nevertheless, the assumption that frames change and develop through social interaction will be treated summarily.

Further, I will focus in my analysis on "Issues frames", described by Dewulf et al. (2009), since my analysis aims to uncover what the actors think about the issue of EJ in northern Sweden itself. Also, I will take the agenda-setting character of frames (Entman 1993) into the analysis, assuming, that persisting frames offer insights in how a problem is defined and how solutions are found. For this reason,

I will follow the assumptions presented by Dewulf et al. that stress frames would focus on "[...] what is important and how to respond to problems [...]" (2009:156) as well as Gray (2003) and Walker (2011) who stress that frames within conflict and EJ research would on the one hand focus on the issue itself, but also suggest and imply solutions. For this reason, I will provide my analysis with a "problem definition"-part (what is the Issue?) and a "suggested solution"-part (what are solutions?).

3.2 Empirical data material

3.2.1 Collection of empirical data material

Research Question 1

The first part of analysis is focusing on RQ1. In this part, interviews with five different companies/organizations/agencies actively involved in wind farming were conducted. The interviews were semi-structured with open-ended questions to gain in-depth insights as well to allow flexibility in rephrasing and adjusting questions depending on the course of the interview (Creswell & Creswell 2018, Robson & McCartan 2016). As suggested by Robson and McCartan (2016), I created an interview guide that served as a guiding basis to ensure that the content of the interviews is connected to the research questions.

Focus of the interviews was on the interviewees being representatives of organizations/companies/state agencies, rather than the individual level. Nevertheless, due to the interwovenness of individuals and their environment, the interview material can be seen as representing the companies´ perspective, constructed through and mixed with the interviewees perspective, values and interpretations. Crang and Cook stress: "[...] people can be seen to reproduce and to transform processes that extend far beyond the conscious spheres of their/our actions." (1995:10). For this reason, to validate the themes emerging from the interviews, the interview material was complemented with policy documents/ statements/ website information of the respective actors.

Due to the Covid-19 pandemic, all interviews were carried out online via Zoom between the 24th February and 22th March. In total, I contacted 22 organizations/state agencies/companies. They were selected based on their active involvement in wind farming in northern Sweden. I identified possible contact persons through the company´s website, phone calls to the customer service as well as snowball method. Of the 22 (multiple times) contacted possible interviewees only 13 responded, three of them said they weren´t the right contact person, but offered support on further research, and five agreed on participating in an (45 -70 min. long) interview. Of these five interviews, two were held with two company

representatives each (interviewees 2a/b and 5a/b), while the others were held with one representative (interviewees 1,3 and 4).

Table 1 Description of interviewees

Interviewees	Type of organization	Description
Interviewee 1	State Agency	Working for a State Agency and involved in the sector of wind farming for >15 years. Is not actively involved in decision making processes.
Interviewee 2a	Company	Working for a company and is involved in wind farming in northern Sweden for <5 years. Responsible for environmental topics.
Interviewee 2b	Company	Working for a company and is involved in wind farming in northern Sweden for the first time. Responsible for topics regarding land rights.
Interviewee 3	State Agency	Working for a State Agency and involved in the wind farming sector and is actively involved in planning processes.
Interviewee 4	Organization	Working for an organization that is actively involved in wind farming in northern Sweden. Has been involved in the wind farming sector for about >15 years, and in this time worked for different organizations.
Interviewee 5a	Company	Working for a company and is involved in wind farming for <10 years. Is responsible for the operating/planning processes.
Interviewee 5b	Company	Working for a company and is involved in wind farming for >10 years. Responsible for permitting processes.

Due to the difficulties to find interview partners, I complemented the FA with public available material (sustainability reports, code of conduct, websites, etc.) of other (not interviewed) actors (companies, state agencies, and other organizations). By this, the FA includes in total the material of 13 involved actors:

Table 2 Description of document material

Type of organization	Number of organizations	Description	Number of analysed documents
Company	7	All are involved in wind farming in northern Sweden but range in size and area of operation/responsibility.	13 documents reviewed, including the companies of interviewee 2 and 5
State Agency	4	Agencies involved in wind farming in northern Sweden, either on a local level or a national level.	4 documents reviewed, including the agencies of interviewee 1 and 3
Organization	2	Other organizations involved in wind farming in northern Sweden.	5 documents reviewed, including the organization of interviewee 4

Research Question 2

The second part of analysis aims answering RQ2 by an analysis of existing research literature regarding the relation of wind farming, reindeer herding and environmental justice with focus on northern Sweden. The analyzed literature was chosen by relevance, using keyword search in Google Scholar (Justice, wind power/ farming, northern Sweden, reindeer, Sámi). Literature published in a time frame of 2010-2022 was considered. A table with a list that describes the analyzed literature, including nine publications in total, the year of publication, title as well as research focus can be found in Appendix 1.

3.2.2 Analysis of empirical data material

Research Question 1

The interview data material, collected for RQ1, was (with the interviewees consent) recorded and transcribed verbatim (leaving out doubled and filling words such as "uhm"). The data analysis took place through thematic coding, using the analytic software maxQDA. The coding process itself took place in three rounds: The first round of open coding served to thematically structure the broad content and categorize differences and similarities between the interviews and documents. The second round of coding used the observed categories as a basis and brought them on a more analytical level to identify frames. After the second round, according to the recommendations of Gibbs (2021), a codebook was created, to ensure consistency of the coding process. In the third and last round of coding, the set rules of the codebook were applied, and in total four frames were identified.

Research Question 2

The literature that was chosen to answer RQ2 was analysed by making use of the EJ framework presented in Chapter 2.1. The Environmental Justice framework divides environmental injustices in the three overlapping categories: "procedural justice", "recognitional justice" and "distributive justice" (Walker 2011). Those categories structured the coding process. In the first round of coding, the paper of Cambou (2020) that directly structured wind power related injustices within procedural, recognitional and distributive areas, was coded and key topics were defined. In a second round of coding, the other literature was compared to these key topics, and differences as well as similarities were highlighted. While Cambou (2020) is directly naming her findings as "procedural", "recognitional" as well as "distributive" injustices, the other authors did not always follow this differentiation. However, whenever authors problematized certain issues, I categorized them according to the definition of the EJ framework (Chapter 2.1) and the key topics derived of Cambou (2020). By this, in the end a list of 15 key topics was created, of which Cambou (2020) covered 14. The key topics were put together with the

authors covering the topic in a table (Chapter 4.2). A text under each table, was written in order to explain the key topics. As within the scope of this thesis it is not possible to cover the overall interrelated injustices at an in-depth level, still the literature analysis aims to give a broad overview over the main injustices presented by the authors.

Research Question 3

In order to answer RQ3, the tables presenting the 15 key topics (Chapter 4.2) derived from literature analysis were put in relation to the frames presented in Chapter 4.1. To compare both, the problem definition as well as suggested solution of the four identified frames were coded along the 15 key topics in the table. Whenever a frame covered or problematized a certain topic, it was highlighted in the table. In the discussion (Chapter 5), the implications of these findings were discussed, looking at possible tensions as well as dilemma within the frames.

3.2.3 Anonymization

In this thesis, the interviewees as well as the organizations of the interviewees are anonymized. The degree of anonymization was agreed on before each interview by a participant information sheet and written consent. To ensure a high degree of anonymization, it is only referred to the interviewees and their organizations through a category of actors: organization, state agency and company as well as by numbers (interviewee 1, 2a, 2b, 3, etc.).

According to Roads (2020), offering a high degree of anonymization by removing certain details and context could endanger the understandability of the study. Nevertheless, he highlights the importance of finding a balance of ethical sound handling of data anonymization and offering a "thick-description" (Rhoads 2020:404) for ensuring understandability. Therefore, in this thesis I renounce on using direct citations of any analysed publicly available document, statement, or website publication, since they could lead to the uncovering of interviewees. Additionally, any information about places, operations, and relationships, that could lead to reveal the interviewees/organizations' identity is removed or marked as [anonymized] in the text.

3.3 Reflection on limitations and research ethics

One limitation of this Master thesis is the working language. As I am not a Swedish native speaker, I conducted all the research in English. This leads to the limitation that I could only partly include Swedish reports, documents, and papers (translated by Deepl translator) in my literature research. Most of the reports conducted by Swedish ministries, and the research project Vindval are therefore excluded from

this thesis. Furthermore, the interviews were all conducted in English, which also can lead to the limitation that interviewees cannot express their thoughts and knowledge in the way they would have done in their native language. According to Ahmad (2018), existing language barriers would negatively impact the quality of information and knowledge shared. To avoid that the working language causes a loss of information, during the interviews conducted for this thesis, it was always given the possibility to ask for clarification and to express certain thoughts/words in Swedish. Also, whenever unclarities regarding translations occurred during literature/ document analysis, I discussed them with a Swedish fellow student.

Additionally, the current war situation between Russia and Ukraine (starting in February 2022) could have influenced the interviewees responses. During the time of the interviews (24. February – 22. March) the European dependency on Russian oil and gas exports was broadly discussed in media as well as politics (e.g. BBC 2022). This could have led the interviewees to see an increased importance and need in becoming independent from fossil fuels e.g. by the expansion of wind power.

Generally, during the gathering of data material, it became clear that the topic around EJ in northern Sweden is seen as a sensitive topic by the actors. This might be also a reason that a lot of contacted actors did not reply or denied an interview. For instance, in one interview the interviewee highlighted the "sensitivity" of the topic and therefore asked me to ensure a high degree of anonymity. In other two interviews (with the companies), the interviews were held with two company representatives each. Also, I was asked by the companies to send the interview guide beforehand. In interview 5, I was asked to offer the interviewees insights in the analysis part and give the opportunity to make changes. While I denied this due to reasons of research integrity, I offered the option to comment on the analysis part to ensure that a validation of the data material could take place. Whenever the interviewees suggested changes on my interpretations or wanted to clarify their direct quotations, I have reflected on this and made it visible in the analysis part.

The reduced number of interviews led me to rethink the use of my empirical data. While in the beginning I aimed to make distinctions between the actor groups (organization, state authority, company), I now decided to identify frames at the general level of actors involved in wind farming. Further (as described in Chapter 3.2.1) I decided to include document material of the respective organizations (policy documents, website material, statements) as well as other organizations/state agencies/ companies, to gain on the one hand deeper insights in the corporate level of the interviewees but also include more actors' perspectives to the analysis and gain a broader view.

Furthermore, the imprint that I as a researcher have on the research carried out needs to be considered. Following the social-constructivist worldview I am fully aware that my personal experiences, my educational and personal background can

influence my interpretations and the course the study takes (Creswell and Creswell 2018). To avoid biases of the research I created, as recommended by Creswell and Creswell (2018), reflective memos whenever I had certain expectations and ideas about the outcome and course of the study.

4. Analysis

4.1 (RQ 1) Applying frame analysis: Actors' perceptions of (in)justice in northern Sweden

Generally, all interviewees share a positive attitude regarding wind power but the strengths of the personal commitment differ. For instance, interviewee 5b highlights: "I am very proud to be able to work with something that helps in a big perspective [...]" and interviewee 4 explains:

> [...] It's quite a sort of a personal relation to wind power maybe in a way, but not in sort of this religious way that I think that sort of wind power is solving everything and it's always the best, but it's more like, now we finally have a renewable source that's competitive and efficient, and it's fantastic." (interviewee 4)

Interviewee 1 on the other hand does not want to be too involved in discussions about wind farming: "Well, my personal relation is that I work with it. I have no strong opinion about it in any way [...]. [...] if you don´t have any strong opinions about it, it´s easier to work that way." (interviewee 1)

Furthermore, all interviewees name the same advantages of wind power: countering climate change, contributing for a sustainable future, supporting the expansion of hydropower and being independent of fossil fuels and other countries. As challenges, interviewees see land use conflicts with other interest parties, as well as the current grid system. Other interest parties are named as industries (mining, hydropower, forestry), the military, protected species (Natura 2000 areas etc.), local citizens, densely populated areas, and reindeer herding.

When it comes to weighting different locations in Sweden against each other, the factors wind availability, an existing grid system, no-go zones (e.g. military areas) and the avoidance of densely populated areas are named. Interviewee 4 thinks that:

> [...] I think we see this that offshore is getting more and more interesting in the southern part of Sweden. And onshore is will still be dominating the northern part because I think [...] there are areas to use and I think it's low densely populated [...] it's very logical to, to use that part [...]. (interviewee 4)

The definition and perception of Environmental Justice in the interview material is differing between the actors but was mostly referred to as overall "Justice" and "Fairness". I will elaborate on what this means based on the frames identified and presented below. When it comes to the analysed documents, the term "Environmental Justice" or "Justice" itself did not appear. Only in one document, a company referred detailed to ensuring a "Just Transition", while in other documents it was rather talked about having "respect" and "responsibility", to ensure "human rights" or to contribute to a "sustainable future" and "ESG".

From the interview data, as well as organizational reports/websites, in total four different frames related to Environmental (in)Justice in northern Sweden could be identified. In the following the *Legal frame*, the *Coexistence frame*, the *Pluralistic frame*, and the *Historical frame* will be presented, divided in a "Problem definition"-part (What is the problem?) as well as "Suggested solution"-part (What are possible solutions?).

4.1.1 Legal frame

The *Legal frame* was coded, when the interviewee was talking about the interplay between laws, court decisions and environmental justice and fairness. In the *Legal frame* the law is seen as a guiding basis, constituting, and legitimizing all actions carried out, responsible for the existing preconditions and ensuring overall justice. Overall, this frame was mentioned in all five of the interviews, while it was more present in 1,4 and 5. Furthermore, this frame is found in the documents and websites analyzed, where generally "sticking to laws", "acting responsible", "ensuring human rights standards" as well the necessity to "change laws" was a topic.

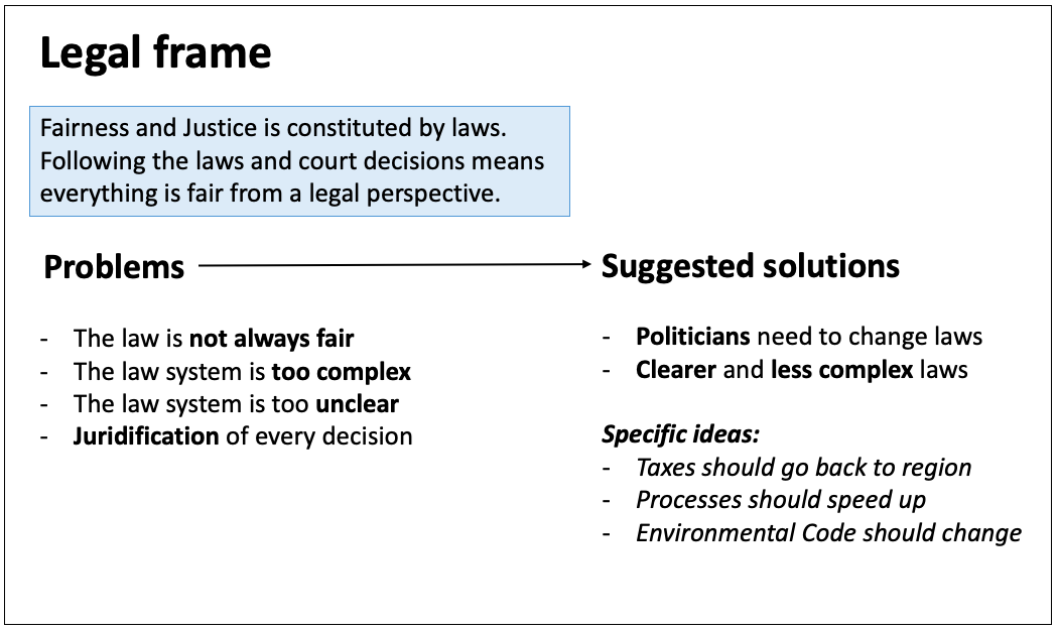

Figure 1: Summarizing visualisation of Legal frame

Problem definition

General assumption in the *Legal frame* is that the law should ensure justice. Therefore, the actors see it as highly important to have fixed and fair rules which also lead to a higher acceptance of decisions being made.

> [...] it's like playing a game without the referee, in the end you will end up in a complete mess [...] I think it's a good parallel you need to have rules to, to relate to. (interviewee 5a)

> So I think the law is, it must start there I think because I think the country is built on the laws that we're having. (interviewee 4)

As the law is seen as a basis that is looked up to and oriented on, in the legal frame, the law is also used to legitimize actions being made. In this context, during the interview, the interviewees 5a and b expressed that from the legal perspective the wind farming situation in northern Sweden is handled "very fair". However, during the process of validating, when the interviewees requested to comment on the draft, they wanted to nuance their statement, e.g. toned down "very fair" to "fair" and highlighted this would only apply "if all needs, and environmental goals are equally considered during the process." (interviewee 5b).

Also, interviewee 2a thinks that "[...] the legal practice ensures that we [anonymized] in a fair way [...]". Since in the *Legal frame*, fairness and justice is constituted by existing laws, it is reasoned that if actors follow the law, there is legally no existing injustice:

> But to be fair, and just think that the trials need to comply with, like the existing legal practice, that there is a permit process allows all interested parties to speak and to influence the decisions. (interviewee 2a)

Nevertheless, the legal frame also questions the fairness of current laws. While interviewee 2a thinks "I think in my mind, I feel like we have a good system in Sweden like generally.", interviewee 1 mentions "I would say that it´s the law, but it´s not fair always the law.". Also, interviewee 4 mentions that certain parts of the law system seem to be unjust because of its complexity and interrelatedness that sometimes would lead to unforeseen and unjust consequences:

> Sounds really strange. But that´s the law we have and I, can't we? Yeah, I'm sorry to say that's, that's the way it is. But so that was really like, when you have a situation that regulates from different laws, that totally different levels of environmental, you have to consider the effects. It felt really unjust somehow. (interviewee 4)

Critique on the current system is also raised by interviewee 3, questioning the general constructivity of court decisions: "And this also has become a sort of juridification of things. You just let the court decide what's the best instead of coming up with a good solution?". Interviewee 5a on the other hand describes the

necessity of court decisions and a law system regulating the conflicts and ensuring fairness. After validation with the interviewee, it was highlighted by 5a here that this only applies in cases when parties can´t come to an agreement.

> But that's also the way of democracy. So I think this is the only way it makes sense to relate to this, otherwise there will be various interpretations and your kind of your you will always push in the direction that is in your personal favor. (interviewee 5a)

Suggested solution

Within the *Legal frame,* ideas on what should be done to ensure environmental justice are focusing on the law system. Therefore, the responsibility to ensure fairness of the current system and make changes to the better is seen on the politicians: "[...] it´s at the politicians to create fair laws." (interviewee 1). As described above, in the *Legal frame,* injustices within the current system are pointed out at several levels, the actors see themselves as part of the system but also see themselves as working in a legally fair and just way (according to the law system).

For this reason, proposed solutions for making the system fairer are external and outside the interviewees scope of action. Interviewees 5a and b describe that the taxes should go back to the specific affected municipalities, processes should generally speed up (without losing quality and dialogue/consultation) to ensure that the wind power systems are up to date when installed. Furthermore interviewees 1, 3 and 4 mention the importance that the law could be clearer when it comes to land-use-rights of specific areas:

> [...] maybe it would be easier if it was more like less area and more strict areas for and then it's sort of more like no go area for like forestry and so on, or you would need like really showing that its zero effect if you go to that kind of areas [...] (interviewee 4).

Furthermore, interviewee 5b describes that the focus of the Environmental Code should be adapted to face current issues of climate change:

> I think the environmental code has a little bit too much focus to, to keep what you have. And if you like to do something about climate change, you have to do there have to be some changes or impact on the on the what you have. So if you'd like to reach to see less CO2, then then you have to accept that it will be some impact on the existing environment. (interviewee 5b)

In my analysis I interpreted this statement as a suggestion that the Environmental Code should be changed. Nevertheless, after validation with the interviewee 5b, it was highlighted that not the environmental code itself, but the "interpretations of the environmental code has a little bit too much focus to, to keep existing nature values." (interviewee 5b). However, the proposal to change and adjust the Environmental Code, e.g. to prioritize climate issues, can be found in policy proposals in one of the organizations documents.

4.1.2 Coexistence frame

The *Coexistence frame* appeared in all the five interviews. Underlying assumption of the frame is, that wind power is needed for a sustainable transition and that therefore land areas are needed, which raises different questions about if and how a coexistence of different actors is possible. Furthermore, the *Coexistence frame* had a major role in the analyzed documents.

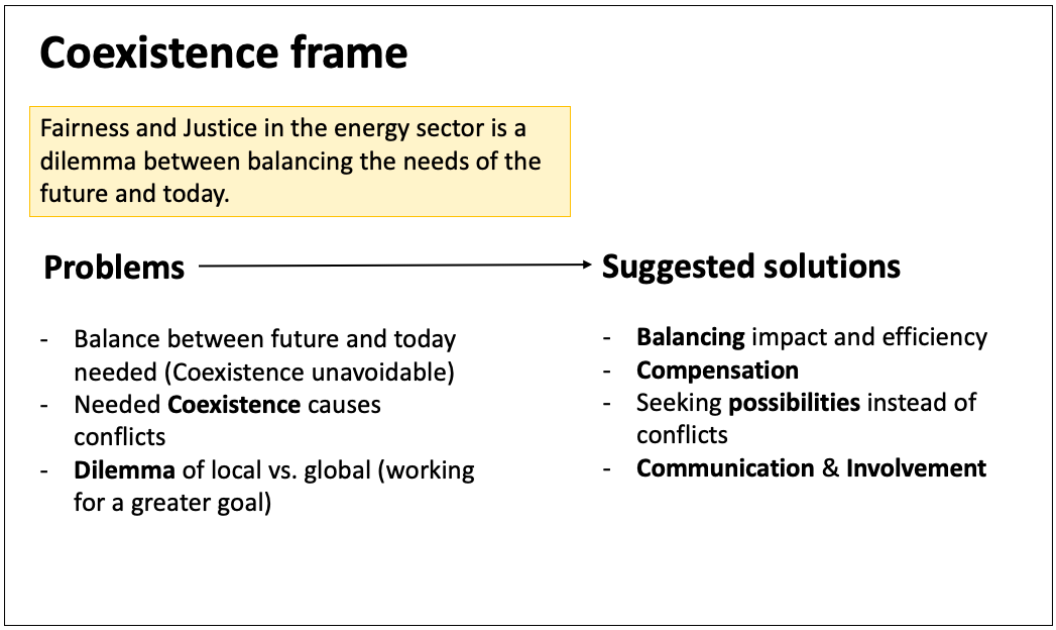

Figure 2: Summarizing visualisation of Coexistence frame

Problem definition

Generally, within the *Coexistence frame* all actors (in the interviews as well as documents) agree that wind power is one solution to counter climate change and ensure independency from fossil fuels. Also, all the actors are aware that land spaces are needed to build windfarms and therefore windfarms are competing with other land use interests, causing conflicts. The expectation that there will be conflicts everywhere is persistent in all interviews. For instance, interviewee 1 describes in this context: "That´s the problem, so it´s very hard to find an area where you have no conflicts." In the *Coexistence frame* there is a general awareness of the dilemma of needing to have renewable energy sources for a sustainable future and at the same time having an unavoidable influence on other actors – a situation that can, according to the interviewees, be perceived as unfair.

> If you talk to the Sámi people I guess they don´t think it is fair. If you talk to other people, they mean that this is a possibility to have green energy, maybe we can create new industries which are more green [...]. (interviewee 1).

> So I mean, of course, we know that when we plan for a windfarm, there will be impact and it will affect others. But our goal is not to mess up other parties' worlds so to say. It's to reach also our renewable targets. (interviewee 5a)

During the validation process with interviewee 5a, the citation was supplemented with another clarification: "It´s to reach also our renewable targets and at the same time find solutions to co-existence with other interests in the area.".
In the *Coexistence frame* the dilemma described above is leading the interviewees to the general assumption that a fair coexistence of different actors and interests is needed: "[...] it has to be possible to coexist in the source as fairly as possible." (interviewee 4). While southern Sweden (densely populated areas) as well as military areas are rather seen as impossible to coexist with by the interviewees, northern Sweden and reindeer herding is described as having a better potential for coexistence.

Nevertheless, there are differing opinions in how and if this coexistence with reindeer herding is possible:

> [...] they want to use the land and it´s maybe not possible to coexist. That´s the basis. (interviewee 1)

> I think there are, there are areas that you shouldn't that reindeering and wind farms can't coexist, but there are areas that they can and I think it's important to try to find those areas by dialogue. (interviewee 3).

> [...] I'm not really convinced sort of in my sort of heart and soul that it's so impossible to have them in the same area. (interviewee 4).

In this context, interviewee 4 also describes he would see the problem of coexistence due to conflicts with the industry of reindeer herding, but not with reindeers themselves: "So I think it's from my perspective, it's sort of a conflict with the industry not with the animals [...]".

In the *Coexistence frame* conflicts that arise are seen on a rather local level, while the positive impact is seen on the global level.

> So, in a global way it´s good to have wind power but on the other hand you have to build those wind power plants somewhere. And the benefits for the locals are not as big as the system works. So that's my opinion. It´s good global but you can´t see the benefits on the local scale or on the local communities. (interviewee 1)

Main conflict parties that are named are residents (the NIMBY is talked about in this context), the military, different protected species and reindeer herding. Despite all conflicts, the *Coexistence frame* is (in interviews as well as documents) justifying the impact of wind farming on local actors by working for a bigger goal globally:

> And I believe that this is a big part of the challenge. How to weight the local impact against the global benefits. This is not an easy because the benefit is also local regarding climate change. For example, reindeer husbandry is facing big challenges connected to climate change. (interviewee 2a).

Suggested solution

To avoid conflicts and to support that people might perceive the situation as fairer, one suggested solution by interviewee 5a is to balance out the relation of impact and efficiency:

> It's if you have a relevant size of a wind farm, then you get also an amount of energy that makes a difference. You could also have ten smaller wind farms with five to ten turbines. And they would mess up a larger area than one big area that makes a difference also. (interviewee 5a)

After validation with interviewee 5a, the wording "mess up" was changed to "affect". If it was done to tone down the wording or if "mess up" did, due to language barriers during the interview (Chapter 3.3), not cover the actual intentioned expression can only be speculated on here. Furthermore, in the validation process it was highlighted that the impacted area "makes a difference for society". In difference to this assumption, interviewee 1 thinks that increasing strengths and power of wind farms would also increase conflicts.

Another option to make the outcome fairer is described as compensation. Interviewee 1 highlights that the fairest compensation would be to produce more land areas, but since this would be impossible, economic compensation could at least make the situation fairer.

While in the problem definition of the frame the dilemma between the need of sustainable energy sources (the greater goal) is used as a justification to make use of land areas and coexist with other actors, interviewee 3 suggests: "Try to seek solutions instead of conflicts."; "[...] just look on conflict instance instead of looking on the possibilities. So, I think there are more possibilities than you think.". Also, interviewee 3 highlights the need to develop a shared understanding of the dilemma: "And they have to understand that, that some things need to coexist with energy. Because otherwise it wouldn't work."

Respectful communication as well as involvement of influenced actors in all process stages to ensure a mutual understanding (e.g. of the needed coexistence) is also perceived as an important contribution for finding solutions (in interviews as well as in the documents):

> I believe that one of the super important keys is the communication, that it's open and transparent. And that both parties are active, to find solutions that work for both parties. (interviewee 3)

4.1.3 Pluralistic frame

In the *Pluralistic frame* conflicts are seen as unavoidable, because of the high number of complex different interrelated perspectives and interests. A big focus in the *Pluralistic frame* is on respect, communication, and transparency. The *Pluralistic frame* was coded in all interviews and could also be found in the analyzed documents (mainly in the "suggested solution" part of describing the need of transparency and involvement).

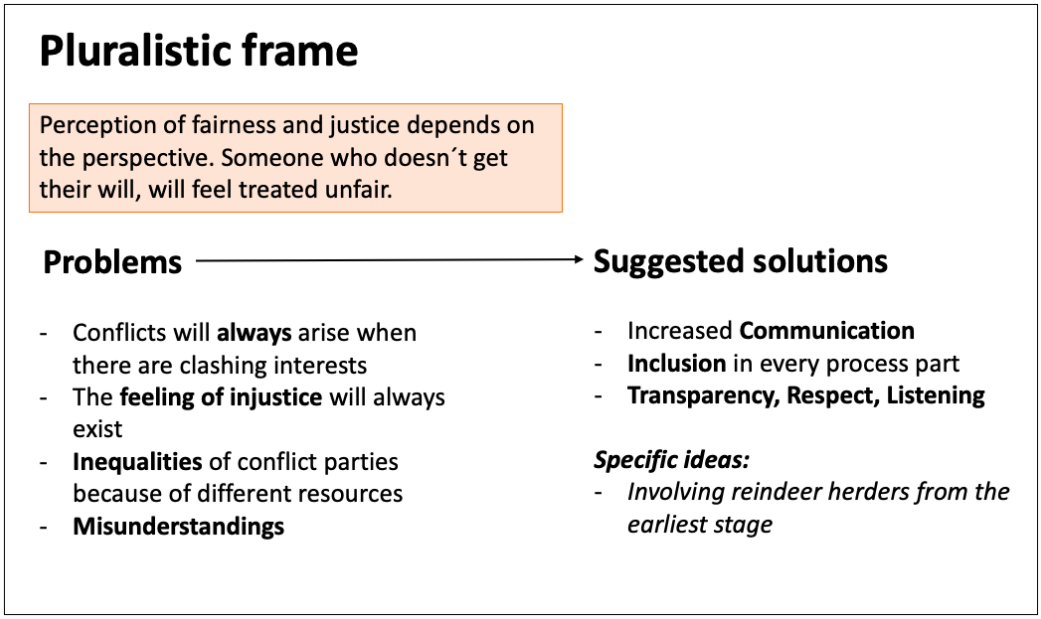

Figure 3: Summarizing visualisation of Puralistic frame

Problem definition

Basic presumption of the *Pluralistic frame* is that a conflict is a clash of different interests and ideas, accompanied by misunderstandings. If in this conflict a decision is made, it would result in the feeling of dissatisfaction and injustice of those conflict parties that did not get their will.

Based on these assumptions, the terms justice and fairness are depending on the perspective: *"*And you have many other perspectives too. So it´s, it´s not so easy to say what´s fair." (interviewee 1), "[...] if you have 20 people and ask what's fair, then you have 20 different answers." (interviewee 5a). Furthermore, there is the assumption that in every decision-making process there will be someone who feels to be unfairly treated: „I know it's a tough situation that there's always going to be someone that feels like they're pushed aside." (interviewee 2a). Based on that, it is reasoned that the perception of fairness is influenced by the impact of a decision being made: "[...] anyone who is affected by a decision in some circumstances is will most likely not think that the decision is fair." (interviewee 2a). This multitude

of perspectives would lead to a lack of understanding and a missing willingness during processes to find a solution that is acceptable for all parties:

> "Many times it´s meetings where people, they are arguing and it´s varying in fact and the mood is not good at the meeting. I mean it´s starting that way that they start to they agree that we don´t agree about this [...]" (interviewee 1).

Another part of the *Pluralistic frame* are uneven power structures of the different perspectives (e.g. because of different monetary resources), which can lead to even more misunderstandings, conflicts and inequality:

> But you should also remember that this environmental justice is a lot about how much power you have. Sometimes it's it can be a bit unequal, yes in that way (interviewee 3).

> [...] they don´t have the same possibilities as the company who starts and initiates the process.; So they mean of course it´s not fair. They don´t have any help. They have the right to say what they think of course, but that's very common that I hear it. (interviewee 1).

Also, in the *Pluralistic frame* the unequal power structures are combined with general misunderstandings "I think that companies that want to exploit areas [...] they don't really realize what they are jeopardizing for. They are seeing a piece of woodland, but for the people living there, they, it has a lot of soft values [...]." (interviewee 3). The misunderstandings are seen on the site of all involved parties: "[...] maybe sometimes you're a bit if you think that something new is, is a catastrophe. But maybe it's not [...]"(interviewee 3).

Suggested solution

Since according to the *Pluralistic frame* injustice is depending on the perspective, also suggested solutions are focusing on overcoming misunderstandings. All the interviewees agree that generally all conflict parties get the right to speak during the processes, which would be also according to the law: "I think it's I haven't really heard about any projects where the reindeer farming or the Sámi people has sort of been, like neglected or not being heard" (interviewee 4).

While in the *Pluralistic frame* monetary compensation is also seen as part of a solution, having communication is the main goal*:*

> I think that's important. I think that personally, I think that's more important than monetary, if you get some sort of pay them for being quiet. (interviewee 3).

According to the *Pluralistic frame*, having a regular dialogue, involving reindeer herders from the earliest stage on is pointed out as an important solution for misunderstandings. Respect, transparency as well as open-mindedness are preconditions that are highlighted for having a good dialogue:

> I believe that one of the super important keys is the communication, let it's open and transparent. And that both parties are active, to find solutions that work for both parties. (interviewee 2a).

The presented problem diagnosis within the *Pluralistic frame* implies that the actors themselves have the possibility to contribute to the problem solving by being transparent, offering communication, listening, and showing respect.

4.1.4 Historical frame

This frame was mostly coded in interview 4, while it also appeared in interview 3. General assumption within the *Historical frame* is that past decisions, events, and actors, have had fundamental effects on the area, leading to unjust preconditions that need to be dealt with. The *Historical frame* was not coded in the analyzed documents.

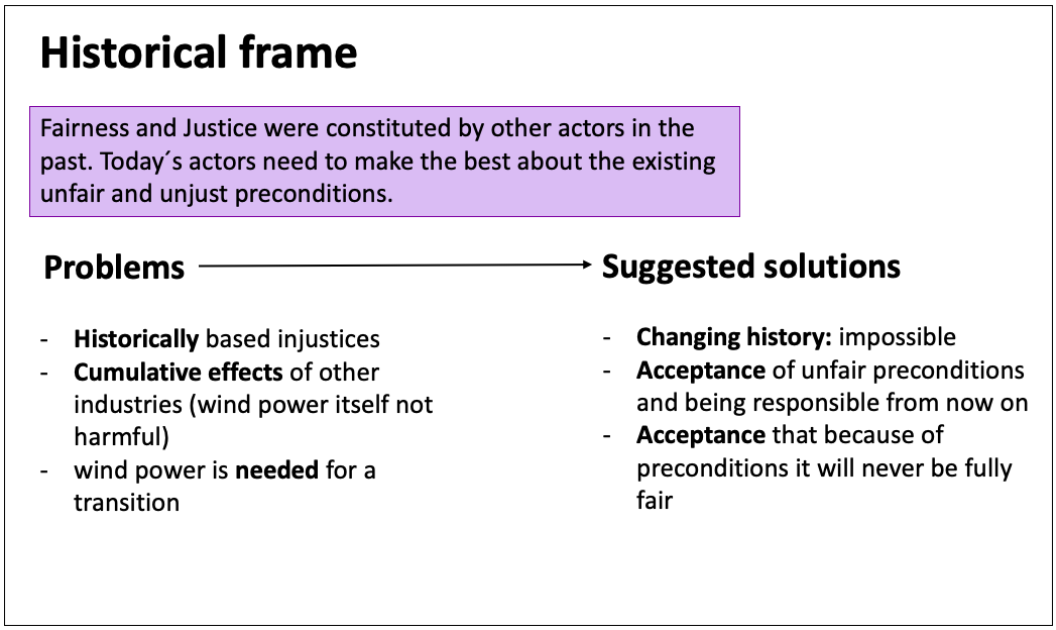

Figure 4: Summarizing visualisation of Historical frame

Problem definition

Especially interviewee 4 reasoned a lot of his thoughts around the historical frame. Generally, he sees taking a historical perspective as necessary to understand environmental justice: "[...]I think it´s, it´s difficult to talk about environmental justice in northern part of Sweden without taking a historical perspective." (interviewee 4).

In the *Historical frame* the past developments and decisions made e.g. by the Swedish government and companies are described as unfair, which set the basis for an unjust system that would be hard to overcome:

> I wouldn't say the situation was really fair when it started so I think it's but that makes it difficult to add wind power and make up for all the bad things happening during 150 years since like, we can do what we can do and do it sort of as good as possible, but it won't be on the total level I wouldn't say it would be fair anyway even how good we were doing the wind power projects. (interviewee 4).

Also, the *Historical frame* sees past exploitations of the area in Northern Sweden as the cause of cumulative effects that put pressure on the region while the region itself did not benefit from it.

> There, there is also a tradition which is, which is not ungrounded it has a certain truth in it that this part of Sweden has exported its nature resources to the south and not gotten anything back. So, so that's understandable. (interviewee 3).

Forestry is (as verbalized as a personal opinion of interviewee 4) described as one major factor, changing the region, and affecting reindeer herding. Interviewee 4 stresses that the current wind power development would just add up on other industries exploiting natural resources on Northern Sweden since a long time:

> And we have had the expansion of course, hydropower, and we have the expansion of transmission lines, and we have the mines and very intensive forestry and all the roads [...]. So we can see this is really changed the area. And I think it's in that situation, we're starting to build wind power in this area as well. And it's sort of on top of the rest of things. Maybe the other things was worse than wind power. And now is wind power, sort of on the marginal, adding some more. (interviewee 4)

This past exploitation of natural resources, which created injustice is at the same time seen as clashing with the need of wind as a natural and sustainable resource.

Suggested solution

As the *Historical frame* implies that historical events caused the current unjust situation, the solution thinking implies the impossible: To change historical events. Some suggested changes of the past are named as a clearer decision regarding land use rights (clearer areas only for reindeer herding and others for industrial usage):

> So now it's sort of like a floating like, is always some you need to sort of take some regard the reindeer farming some way, but it's really like very light way and then it's all over and then it's maybe it's get sort of a little bit unclear, so maybe it would be easier if it was more like less area and more strict areas for and then it's sort of more like no go area for like forestry and so on.; So I think that maybe has been a mistake historically to have this huge areas [...]. (interviewee 4).

The reduction of pressure through e.g. forestry and other industries, the avoidance of pollution of rivers and also, the domestication of reindeers as a business (that would be hard to combine with modern society) is seen as something that could

have been done differently in history. While in the *Historical frame* there is the awareness that the past cannot be changed, interviewee 4 suggests:

> So there are a lot of things that if you could change everything [...] it's also like, it's been like this for a long time. And you're just you do the best this, this system is like, but of course there could be. There are other ways it could have been done, of course. I don't know if its possible now. (interviewee 4)

The acceptance and admittance that there have been several injustices in the past, that lead to a general unjust situation nowadays is one main solution implication of the *historical frame*. Furthermore, building on the fact that the situation has been unjust for a long time and therefore doing it the best and fairest way that can be done now is another implication. Nevertheless, as already indicated in the problem definition, interviewee 4 is not convinced the situation "[...] would be fair anyway even how good we were doing [...]". This implies that the suggested solution of the *Historical fram*e resigns that reaching full fairness and making up for historical mistakes is impossible but still sees the responsibility to at least work fairer nowadays.

4.2 (RQ2) Applying literature analysis: Wind power related environmental (in)justice in northern Sweden

When it comes to Environmental (in)Justice in northern Sweden, generally, literature is focusing on injustices and problems caused by the several different industries operating in northern Sweden (e.g. mining, hydropower, forestry and wind power). Focus of literature is ranging between looking at one specific area/conflict, one specific industry or the broader picture. Since an analysis of the overall interrelated situation (including mining, forestry, the Swedish law system etc.), would exceed the scope of this thesis, in the following mostly literature directly focusing on wind power related environmental (in)justices/problems in northern Sweden will be shortly summarized. This summary is structured in accordance with the EJ framework: "recognitional (in)justice", "distributive (in)justice" and "procedural (in)justice" (described in Chapter 2.1). As described in Chapter 3.2.2, the injustices that were identified in literature during the coding process were categorized to in total 15 key themes. Those key themes, as well as the authors covering the topic are summarized in tables below. In a text after each table, the key themes are explained more detailed, e.g., with quotes of the respective authors.

Recognitional (in)justices

Recognitional injustices raised in literature	Authors covering the topic
Misrecognition/ missing understanding by actors	Cambou (2020), Lawrence (2014), Szpak (2019), Cambou et al. (2021)
Misrecognition within law system/ unjust laws	Cambou (2020), Lawrence (2014), Szpak (2019), Österlin & Raition (2020), Arora Jonsson (2019), Cambou et al. (2021)
Historically shaped thinking patterns	Lawrence (2014)
Past colonialism, that partly reaches until today	Cambou (2020), Lawrence (2014), Arora-Jonsson (2019), Cambou et al. (2021)
Greater goal of transition vs. reindeer herding/Sámi rights	Cambou (2020), Lawrence (2014), Szpak (2019), Cambou & Poelzer (2022), Arora-Jonsson (2019), Cambou et al. (2021)

Table 3: Recognitional injustices identified in literature analysis

Österlin and Raitio stress that in the current wind power development in northern Sweden there is an "[...] inadequate recognition of both indigenous knowledge and Sámi reindeer herding rights [...]" (2020:2). Also, Cambou states "[...] that the legal and policy system still fails to accommodate the rights of the Sámi in accordance with international legal standards." (2020:314). Generally, in literature, there is seen a misrecognition of Sámi rights by the state as well as by different other actors, including companies (Lawrence 2014, Szpak 2019, Arora-Jonsson 2019).

In this context, Lawrence brings up the historical perspective of "internal colonization" (2014:1039) in Sweden, which would, in difference to external colonization, describe the situation of two societies (the colonizing and the colonized) inhabiting the same land area. According to Lawrence (2014), the past decision-making and historically based thinking patterns would constitute today's injustices regarding Sámi rights. For instance, she explains: "While wind power developers have recognized landowners as a necessary negotiating party, the same recognition has not been historically extended to Saami communities." (Lawrence 2014:1041). While the colonizing past in Sweden has been reappraised and reflected on, and there were juristically adjustments and improvements, still the "internal colonization" (2014:1039) on Sapmí would continue (Lawrence 2014).

When it comes to wind power in northern Sweden (as a renewable resource), one existing thinking pattern would be the assumption that reindeer herding would as well benefit of a sustainable transition and therefore actors would call for more understanding and less resistance of reindeer herders (Lawrence 2014). According to Cambou (2020) and Lawrence (2014), when it comes to court decisions, it would be often decided that a co-existence of wind farms and reindeer herding would be

possible, also justifying the impact on reindeer herding by the greater goal of needing renewable energy.

Distributive (in)justices

Distributive injustices raised in literature	Authors covering the topic
Negative impact of wind turbines on reindeer herding	Cambou (2020), Szpak (2019), Lawrence (2014), Österlin & Raitio (2020), Cambou & Poelzer (2022), Skarin et al. (2021), Skarin et al. (2018), Cambou et al. (2021)
Cumulative effects (of other industries)	Cambou (2020), Österlin & Raitio (2020), Cambou & Poelzer (2022), Skarin et al. (2018), Cambou et al. (2021)
Concentrated resource exploitation in northern Sweden	Cambou (2020), Österlin & Raitio (2020), Skarin et al. (2018), Cambou et al. (2021)
Low population density as a justification	Cambou (2020), Arora-Jonsson (2019)
Possible correlation of lower income/education and number of wind farms/ resource exploitation	Cambou 2020

Table 4: Distributive injustices identified in literature analysis

A variety of studies have proven an effect of wind power projects (construction and operation stage) on reindeer herding (Skarin et al. 2018, Cambou 2020, Skarin et al. 2021). The influence on reindeer herding is differing from case to case, leading reindeers to avoidance of certain areas and preference of others and by this changing reindeer routes (Skarin et al 2018, Skarin et al. 2021). In a report published by the governmental research project "Vindval", Skarin et al. (2021) stress there would be generally a negative impact on reindeer herding by the enlargement of wind power plants. According, to Cambou (2020), Österlin and Raitio (2020) and Cambou and Poelzer (2022), these effects on reindeer herding would be reinforced by cumulative effects of other industries exploiting natural resources in northern Sweden.

This tradition of a focused resource exploitation in northern Sweden is explained by Cambou (2020) in reasons of resource availability, a lower population density and land-use rights/policies. Also, Lawrence stresses that "[...] Saami land uses have been commonly rendered invisible [...]" (2014:1041) with the actors' argumentation that northern Sweden would have less densely populated areas and therefore more free spaces. In this context, Cambou (2020) raises the question of distributional injustice, because recent studies would see a relationship between a higher intensity of resource exploitation and unemployment/educational rates. Also, according to Cambou (2020) recognitional injustices (described above) would lead to a reinforcement of the described distributive injustices.

Procedural (in)justices

Procedural injustices raised in literature	Authors covering the topic
Complex/ unclear juridical system	Cambou (2020), Österlin & Raitio (2020), Cambou et al (2021)
Power-imbalances (e.g. during consultations)	Cambou (2020), Lawrence (2014), Österlin & Raitio (2020), Arora-Jonsson (2019)
Shared land-rights (status as stakeholder instead of rightsholder)	Cambou (2020), Lawrence (2014), Österlin & Raitio (2020), Cambou et al. (2021)
Required "consent" is not always fulfilled	Cambou (2020), Szpak (2019), Österlin & Raitio (2020), Cambou et al. (2021)
Process of (monetary) compensation	Cambou 2020, Lawrence (2014)

Table 5: Procedural injustices identified in literature analysis

When it comes to procedural injustices, Cambou highlights the complexity of the current juridical system, that would leave various unclarities about how to deal with the need of a sustainable transition as well as the necessity to protect Sámi rights and reindeer herding: "As a result, wind energy occupies an ambivalent position; it is both acknowledged as a contributor to sustainable development and as a potential threat to the environment which requires regulation in accordance with the Swedish legal framework." (2020:318). The complexity of the current law system is also seen as problematic when looking at conflicts arising through actors sharing rights for the same land (Cambou et al. 2021). In this context, Österlin and Raitio (2020) stress that reindeer herders would according to the law be treated as "stakeholders" (like other industries) instead of "rights holders".

Scholars also highlight existing power imbalances during decision-making processes as problematic (Cambou 2020, Lawrence 2014). Lawrence (2014) describes in this context that while Sámi people would have in most cases only low power to influence the decision-making process, most wind power companies on the other hand would only attend negotiations because of extrinsic pressures acting on them. Also, Szpak describes that even though having "[...] prior free and informed consent [...]" (2019:5) of indigenous groups, before starting any project would be a general requirement (e.g. in the UN Declaration), it would often not be carried out in practice.

When it comes to finding solutions within processes, it would be often referred to compensation. According to Cambou compensation agreements would be often signed by reindeer herders "[...] not because they support the project, but because they have little choice, knowing that the project is likely to go ahead regardless." (2020:320).

4.3 (RQ3) Comparing injustices uncovered through literature and frame analysis

When looking at the injustices described in Chapter 4.2, literature covers the recognitional, procedural and distributive parts of the EJ framework. In the following, the identified key topics derived from literature are presented in a table and put in relation with the injustices uncovered through the FA. The "X" is put whenever a topic appeared in a specific frame. For the frames, the following abbreviations are applied: *Legal frame* (Le), *Coexistence frame* (Co), *Pluralistic frame* (Pl), *Historical frame* (Hi).

Table 6: Recognitional injustices (comparing literature with identified frames)

Recognitional problems raised in literature	**Frames covering the topic**			
	Le	**Co**	**Pl**	**Hi**
Misrecognition/ missing understanding by actors **Cambou (2020), Lawrence (2014), Szpak (2019), Cambou et al. (2021)*			X	
Misrecognition within law system/ unjust laws **Cambou (2020), Lawrence (2014), Szpak (2019), Österlin & Raition (2020), Arora-Jonsson (2019), Cambou et al. (2021)*	X			
Historically shaped thinking patterns **Lawrence (2014)*				X
Past colonialism, that partly reaches until today **Lawrence (2014), Arora-Jonsson (2019), Cambou et al. (2021)*				X
Greater goal of transition vs. reindeer herding/Sámi rights **Cambou (2020), Lawrence (2014), Szpak (2019), Cambou & Poelzer (2022), Arora-Jonsson (2019), Cambou et al. (2021)*	X	X	X	

Table 7: Distributive injustices (comparing literature with identified frames)

Distributive problems raised in literature	**Frames covering the topic**			
	Le	**Co**	**Pl**	**Hi**
Negative impacts of wind turbines on reindeer herding **Cambou (2020), Szpak (2019), Lawrence (2014), Österlin and Raitio (2020), Cambou & Poelzer (2022), Skarin et al. (2021), Skarin et al. (2018), Cambou et al. (2021)*		X		
Cumulative effects (of other industries) **Cabou (2020), Österlin & Raitio (2020), Cambou & Poelzer (2022), Skarin et al. (2018), Cambou et al. (2021)*		X		X
Concentrated resource exploitation in northern Sweden **Cambou (2020), Österlin & Raitio (2020), Skarin (2018, Cambou et al. (2021))*		X		X
Lower population density as a justification **Cambou (2020), Arora-Jonsson (2019)*		X		
Possible correlation of lower income/education and number of wind farms/ resource exploitation **Cambou (2020)*				

Table 8: Procedural injustices (comparing literature with identified frames)

Procedural problems raised in literature	**Frames covering the topic**			
	Le	**Co**	**Pl**	**Hi**
Complex/unclear juridical system **Cambou (2020), Österlin & Raitio (2020), Cambou et al. (2021)*	X			
Power-imbalances (e.g. during consultations) **Cambou (2020), Lawrence (2014), Österlin & Raitio (2020), Arora-Jonsson (2019)*		X	X	
Shared land-rights (status as stakeholder instead of rightsholder) **Cambou (2020), Lawrence (2014), Österlin & Raitio (2020), Cambou et al. (2021)*		X		
Required "consent" not always fulfilled **Cambou (2020), Szpak (2019), Österlin & Raitio (2020), Cambou et al. (2021)*				
Process of (monetary) compensation **Cambou (2020), Lawrence (2014)*			X	

When looking at the tables, it becomes clear that most topics derived from literature are covered through the identified frames. Nevertheless, it depends on the frame which topics are problematized and seen as leading to and constituting injustices. In the following Chapter, it will be discussed why certain frames do not cover the overall situation and how this can cause tensions.

5. Discussion

The literature analysis shows that injustices regarding the current wind power development in northern Sweden are broad and interrelated. Further, the injustices can be located in every part of the EJ framework (Chapter 4.2: RQ2). In the FA the different existing understandings of wind power related (in)justices in northern Sweden were uncovered and frames were identified. Depending on the frame, the problem understandings as well as solution suggestions differ fundamentally (Chapter 4.1: RQ1). When it comes to comparing the injustices derived from literature with the problems described in the FA, it becomes clear, that some frames focus on specific areas of (in)justice and leave others out (Chapter 4.3: RQ3). To the areas that are not encompassed (left out) through the frames, I will refer to as "blind spots".

In the following, I will discuss how the agenda-setting character of frames shapes problem definitions and suggested solutions, which dilemmas arise and in what way reframing and a shared understanding of the EJ framework can provide opportunities.

5.1 Frames and the agenda-setting character

According to Kaufmann and Smith (1999) frames would help to understand and make meaning of complex situations and evaluate them. In the case of wind power in northern Sweden, the FA in Chapter 4.1 uncovered that the actors make meaning of the interrelated situation and overall justice in varying ways: While the *Legal frame* sees the law as in charge to ensure justice and therefore puts the responsibility on politicians, the *Historical frame* sees injustice as historically constituted and therefore puts the responsibility on other (past) actors. Nevertheless, the *Historical frame* implies that in the historically constituted unjust system, it should from now on be acted in a responsible way. The *Pluralistic frame* sees justice as subjective and socially constructed and by this sees reaching overall justice as impossible e.g. „I know it's a tough situation that there's always going to be someone that feels like they're pushed aside." (interviewee 2a). Nonetheless, the *Pluralistic frame* suggests communication as a solution to understand each other more and reduce the perceived injustice. The *Coexistence frame* sees justice at a broader picture and

weights global benefits with local sacrifices with the goal to find ways for a coexistence.

As described by Entman (1993) frames have an agenda-setting character that highlights certain topics and thereby leaves others out. This agenda-setting character can also be seen when looking at the four identified frames. For instance, as described in Chapter 4.3, when looking at the *Legal frame*, only injustices related to the legal system ("misrecognition in law system" (Cambou 2020, Lawrence 2014), "complex/unclear juridical system" (Österlin & Raitio 2020) and "Greater goal of transition vs. reindeer herding" (Lawrence 2014)) uncovered through literature analysis are focused on. The *Pluralistic frame* problematizes other injustices ("misrecognition through actors" (Cambou 2020), "power imbalances" (Lawrence 2014), "Greater goal of transition vs. reindeer herding" (Lawrence 2014) and "process of (monetary) compensation" (Cambou 2020), and again leaves others out. Furthermore, two injustices raised in literature are made completely invisible through the four frames: The "possible correlation between resource exploitation and low income/ education" (Cambou 2020) as well as the critique that "the required "consent" is not always fulfilled" (Cambou 2020, Szpak 2019, Österlin & Raitio 2020, Cambou et al. 2021).

As Walker (2011) highlights, in EJ research, uncovering frames, analyzing how they are constructed and what their characterization implies (e.g. which blind spots are left) is often discussed. Especially in the context of wind farming in northern Sweden, as part of the in Sweden aimed transition (Swedish Energy Agency 2021), gaining an understanding of the meaning of "justice" becomes important (Cambou 2020). Here, the FA has uncovered how the problem definitions and proposed solutions vary and how thereby differing understandings of the meaning of "justice" are created.

5.2 Dilemmas within the frames

As already reflected on before, the frames observed in Chapter 4.1 differ in problems defined and solutions diagnosed and therefore leave some blind spots. Additionally, within the frames several normative dilemmas, tensions and open questions arise that will be discussed in the following.

5.2.1 The dilemma of acting responsible

The *Legal frame* sees justice as being constituted through the current legal system. While some actors mention that the current legal system does not seem to be always fair "[...] it´s not fair always the law." (interviewee 1), within the *Legal frame* it is still argued that as long as decisions are being made according to the law, everything would be legally fair. When it comes to the solution, it is therefore suggested that

politicians should change laws to ensure justice. This problem definition puts politicians in the role to make changes, while the actors do not see themselves having the possibility to make changes towards more justice. This frame brings up the following question: When actors (e.g. in documents) highlight the importance to act "responsible" and the necessity to act "according to laws", while laws are at the same time seen as unjust – what does this imply then for the meaning of responsibility within a justice context?
Gunder and Hillier (2007) describe this dilemma in the context of sustainability and spatial planning processes. While practitioners would aim to be responsible through acting upon the legal system that sets rules, seen as a guiding basis, they support and reinforce unsustainable or unjust circumstances (that are based in law). The question on how to overcome this dilemma remains open, nevertheless Gunder and Hillier (2007) stress that critical reflection on the interwovenness of the current system, as well as how one's own decision-making affects others would be a starting point.

5.2.2 The dilemma of growth

The *Coexistence frame* brings up another dilemma from the ecological modernization discourse: The *Coexistence frame* sees a coexistence of reindeer herding and wind power as necessary to make sure that the current energy demand is covered through renewable resources: "If you talk to the Sámi people I guess they don´t think it is fair. If you talk to other people, they mean that this is a possibility to have green energy, maybe we can create new industries which are more green [...]" (interviewee 1). This absence of questioning current societal patterns (of growth) was also (as described in Chapter 1.1) observed by Anshelm & Simon (2016) who looked at arguments of wind power opponents in Sweden.

Not questioning the current energy use within the *Coexistence frame* brings up the dilemma of aiming to sustain the current energy demand and economy with more sustainable technology instead of changing consumption patterns and reducing energy use. The dilemma is also described by Paech who stresses "This is based on the hope that technological progress can solve the sustainability problem without having to go through difficult changes in lifestyle and a moderation of consumption habits." (2017:477). In this context he sees the concept of a "Post-Growth-Economy" as necessary, which implies changing and adjusting today's economy towards seeing growth as limited. Since the *Coexistence frame* does not include the option of reducing energy use in its problem definition, this might enforce the actors perceived need of wind power and pressure in finding land-areas.

In this context also the question arises; how many losses do we expect others to make (e.g. Sámi reindeer herding) when we are not inclined to other forms of losses ourselves (e.g. reduction of energy use/ less growth)? This question also comes up when looking at the distributive justice element of the EJ framework. Here it is

aimed that environmental benefits and burdens are shared equally between citizens (Walker 2011). In the case of wind power, where approximately 41% of the current wind turbines are placed in reindeer herding areas (Swedish Energy Agency 2022) e.g. explained due to a low population density (Cambou 2020), it can be questioned if the demanded coexistence for a greater goal is an equal share of burdens and benefits. As interviewee 2a sais, the dilemma arises here on the question "How to weight the local impact against the global benefits [...]"? Also, interviewee 4 stresses that because of the needed transition "[...] it has to be possible to coexist in the source as fairly as possible".

This citation brings up another dilemma: Who decides if coexistence is possible, in a certain area? Who decides what coexistence is and when boundaries are transgressed? Taking into consideration that literature showed that when it comes to procedural justice, reindeer herders (due to pressure and misrecognition) do not have the possibility to have a high degree of influence in decision making processes (Sarkki et al. 2021, Cambou 2020, Lawrence 2014). But who does then ensure that reindeer herding rights are met and weighted in an equal and fair way?

5.2.3 Limits within communication

Generally, when looking at the solutions suggested within the *Pluralistic* as well as *Coexistence frame*, transparent and respectful communication is seen as an important tool to solve disputes. This can be explained by the problem definitions that see injustices being constituted and constructed by the perspective (*Pluralistic frame*) and by the dilemma/ conflicting interests of ensuring global vs. local sustainability (*Coexistence frame*). Within both frames, the actors see their own responsibility in ensuring transparency, respect, and openness during processes e.g. in order to find solutions. "I believe that one of the super important keys is the communication, let it's open and transparent. And that both parties are active, to find solutions that work for both parties." (interviewee 2a).

Furthermore, the actors agree, that during processes every actor gets the right to raise their voice "[...] I haven't really heard about any projects where the reindeer farming or the Sámi people has sort of been, like neglected or not being heard" (interviewee 4). In opposition to this, within the frames actors are also aware that "[...] they don´t have the same possibilities as the company who starts and initiates the process." (interviewee 1). Also, in the literature analyzed in Chapter 4.2 power-imbalances and misrecognition of Sámi rights are identified as injustices (Sarkki et al. 2021, Cambou 2020, Lawrence 2014).

When looking at this, there seems to be a dissonance between the believe that communication is needed to find solutions and ensure fairness, while at the same time being aware of existing power-imbalances. This dissonance leads to the question: Is communication a sufficient tool to come to a fair decision, if there is no equal power and recognition? These limits of communication and dialogue are

also critically discussed by Löf et al. (2022) in the broader context of land-use management in northern Sweden. They stress that "[...] while such tools are potentially useful in particular interactions, they function poorly under unclear and asymmetrical conditions that characterize much of the land use interaction in Sápmi." (Löf et al. 2022:160).

While within the *Coexistence frame*, it is suggested: "Try to seek solutions instead of conflicts." (interviewee 3), "And they have to understand that, that some things need to coexist with energy. Because otherwise it wouldn't work." (interviewee 3), it is also seen as problematic that "[...] I mean it´s starting that way that they start to they agree that we don´t agree about this [...]" (interviewee 1). This brings up another dilemma of a possible intractability in the conflicts. In the case of land-use conflicts in northern Sweden, Larsen and Raitio (2019:18) describe that actors would face "intractable policy issues". Also, Kaufmann and Smith (1999) describe that due to a high degree of tensions, complexity, uncertainty as well as plurality of frames within land-use conflicts, intractability can occur. They highlight that a reflection on existing perspectives and frames would become essential in such situations (Kaufmann & Smith 1999). Despite the importance of reflection, the questions arise: Is it possible at all to find a common ground? What are the limits of communication when it comes to inevitable and possibly intractable goal conflicts?

5.3 Reframing: Towards a shared Environmental Justice understanding

The analysis in Chapter 4.3 as well as the discussion in Chapter 5.1 showed that the identified frames lead to a different meaning-making of the current wind power development. Further, they include several dilemmas, and leave through the agenda-setting character (Entman 1993) some blind spots. This implies the following problematic, that is also focused on in EJ research and FA: As problem definitions are varying, also suggested solutions vary and might cover the overall situation (Walker 2011, van Hulst & Yanow 2016). I think that this can be seen as potentially problematic, when trying to solve complex, interrelated problems (such as establishing a just transition in Sweden). Not only can this lead to misunderstandings and disagreements in decision-making processes – it can also cause decisions that do not cover the overall complex problematic (and thereby do not contribute to justice).

To overcome the issues of misunderstandings and understand existing values and frames, van Hulst and Yanow (2016) and Kaufmann and Smith (1999) describe the process of reflection and reframing as valuable. According to Kaufmann and Smith "Frames can be counteracted with information" (1999:176). This would for

instance help broadening one's own view and helping to reconsider problem and solution formulations.

I think in this context the application of the EJ framework can offer valuable opportunities. On the one hand, the EJ framework displays the interrelated areas of procedural, distributive and recognitional justice (Walker 2011), and thereby uncovers and displays the interwovenness of injustices. On the other hand, the EJ framework, through its "normative", "descriptive" and "explanatory" levels (Walker 2011), helps to identify the current state of injustices, what constitutes those injustices as well as what is aimed for to reach justice. As it was observed in Chapter 4.1, 4.3 and 5.1, through the agenda-setting character, the identified frames do only focus on certain injustices (along the distributive, procedural as well as recognitional level). Further, the frames are provided with a "problem definition" as "suggested solution", that are again filled with blind spots due to the agenda-setting character. Structuring information about the broad range of injustices, (on a "normative", "descriptive" and "explanatory" level) through the EJ framework, could provide actors with the information that is needed to reconsider current thinking patterns and existing frames in order to reach a shared understanding on "What is and can be fair in the current energy transition?".

When it comes to the goal of reaching justice in the current transition, it must be considered that Walker (2011) stresses that EJ as well the EJ framework is rather a constant process of improvement than a fixed state that can be reached. However, a critical reflection on existing perspectives on injustices through structured information and knowledge sharing, can contribute to develop a shared understanding on what is unjust and what needs to be done for improvement (Walker 2011).

6. Conclusion and Outlook

To sum up, through this thesis it was observed that actors actively involved in wind farming in northern Sweden make meaning of the current developments and justice related topics in various ways. The FA uncovered four different frames: *Legal frame*, *Coexistence frame*, *Pluralistic frame*, and *Historical frame*. Those frames lead to differing interpretations of the situation and provide due to the agenda-setting character (Entman 1993) different problem definitions as well as suggested solutions. Through a comparison of the injustices problematized within the frames with injustices retrieved from literature analysis, it was observed that the frames leave several blind spots. In EJ research and frame theory, these blind spots, caused by different problem definitions, can be seen as possibly problematic, since they can lead to decisions that do not address the complex situation (Walker 2011, van Hulst & Yanow 2016). Furthermore, in this thesis, it was observed that the frames include tensions and several normative dilemmas such as the "limits of growth", "responsibility" and "limits of communication". In this context it was reflected how reframing as well as the EJ framework can contribute to a shared EJ understanding.

This thesis offered insights in actors' perspectives regarding (in)justice in northern Sweden and thereby contributes to existing research that calls to focus research more on "[…] the exact meaning of "justice" in the green transition." (Cambou 2020:310)", as well as in the context of EJ research (Čapek 1993, Schlosberg 2013). Despite these contributions, this thesis also has certain limitations (e.g. due to the number of interviews). Therefore, I think that in further research it would be valuable to conduct more interviews with companies, organizations, and state agencies – to be able to uncover differences between the actor groups. Furthermore, it would be valuable to broaden the scope of analysis and also include other involved actors (e.g. politicians, reindeer herders, the public). This could help to uncover mismatches between existing justice related frames of the different actor groups. Further I think that the application of the "What´s the problem represented to be approach" (WPR) by Bacchi (2012) could offer valuable contributions to the FA and e.g. help uncovering gaps in existing laws and policy documents.

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Popular science summary

What means fairness in the context of wind power development in northern Sweden?

Renewable resources, such as wind power, are one of many solutions to counter climate change. In Sweden, wind power is promoted as sustainable and reducing the CO2 footprint. Furthermore, it enables countries to be independent of oil and gas exports. By this, it also helps to ensure sustainability for future generations. For those reasons, wind power is a fast-growing industry since 2010, all over Sweden – growing from 527 wind turbines in 2010 to 4754 wind turbines in 2021. Despite these described benefits, the down side of the current development becomes clear when looking at northern Sweden: 41% of all wind turbines in Sweden are placed in areas that overlap with traditional Samí reindeer herding areas. This means that reindeer herding routes are impacted. A traditional business that is already put under high pressure due to the past colonialism as well as other industries such as mining, hydro power, and forestry. In this context voices are getting louder that the wind power in northern Sweden leads to several injustices.

But what means fair or just? How can one estimate if something is or is not fair? And how would one weight the aim of a sustainable future against local impacts in northern Sweden? While answers to these questions are complex and contested, current research is stressing the need to focus more on questions like these.

In my Master thesis I aim to contribute to current research by observing how actors actively involved in wind farming in northern Sweden understand "fairness" and "Justice" and if those definitions make certain injustices (described in literature) invisible. For this reason, I conducted interviews with five different companies/organizations/state agencies that are actively involved in wind power in northern Sweden. I asked them what they think about the current situation and what according to them would be fair. To get more information, I also looked into policy documents of those and other organizations. In a second step I looked into injustices described in academic literature and mapped them in tables. As a last step I compared the findings of the interviews with the findings derived from literature.

This Master thesis shows that the actors have different perspectives and ideas on what is and can be fair in the wind power development. Depending on the perspective, the actors see certain injustices (that I derived from literature and

mapped in tables), while other injustices are left out and made invisible. Here the following problem arises: Where no problem is seen, no solution is found. When it comes to addressing injustices in northern Sweden, it becomes important to reflect and think about existing perspectives, what they focus on and what they leave out. Also, I found out that the actors perspectives entail several dilemmas and dissonances that, again, show the need to reflect about current perspectives.

In a nutshell, this Master thesis sheds light on how different actors understand injustices in northern Sweden, how literature describes injustices and which injustices identified in literature are covered by the actors understanding. Nevertheless, this Master thesis does have several limitations (such as the number of interviews) and therefore I see the need to focus further research on gaining further in-depth insights in the actors perspectives, also including other actor groups (such as politicians and reindeer herders).

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Appendix 1

Analysed literature for RQ2

Author(s)	Year	Title	Research focus
Lawrence	2014	Internal colonization and Indigenous resource sovereignty: wind power developments on traditional Saami lands	Historical developments in northern Sweden related to wind power
Skarin et al.	2018	Out of sight of wind turbines – Reindeer response to wind farms in operation. Ecology and Evolution	Effects of wind farms on reindeer herding
Szpak	2019	Relocation of Kiruna and construction of the Markbygden wind farm and the Saami rights	Case: Margbygden wind farm and Sámi rights
Arora-Jonsson *pp. 86 & 87 are excluded from analysis due to inaccessibility	2019	Indigeneity and climate justice in northern Sweden	Climate Justice in northern Sweden
Österlin & Raitio	2020	Fragmented Landscapes and Planscapes – The Double Pressure of Increasing Natural Resource Exploitation on Indigenous Sámi Lands in Northern Sweden.	Cumulative effects and pressure in northern Sweden (wind power and mining related)
Cambou	2020	Uncovering Injustice in the Green Transition: Sámi Rights in the Development of Wind Energyin Sweden	Wind power in northern Sweden and the EJ framework
Cambou et al.	2021	Reindeer husbandry vs. wind energy. Analysis of the Pauträsk and Norrbäck court decisions in Sweden	Wind power development in northern Sweden, the legal system, case study of two court decisions
Skarin et al.	2021	Renar, renkötsel och vindkraft. Vinter- och barmarksbete.	Impacts of wind farms on reindeer herding in northern Sweden
Cambou & Poelzer	2022	Enhancing energy justice in the Arctic: An appraisal of the participation of Arctic indigenous peoples in the transition to renewable energy	Energy Justice in the Arctic, focus among others on Markbgden wind farm

Appendix 2

Interview guide

First of all, thanks a lot for taking time to participate in my study. My name is Rebecca and I am currently writing my Master thesis in the Program "Environmental Communication and Management" at SLU. In short – the purpose of the study is to investigate and understand the perspectives of actors actively involved in windfarming in terms of what they think is a fair and just way to carry out wind energy in northern Sweden. For example, in relation to reindeer herding and Sámi rights.

I have contacted you because you are engaged/involved/employed by an organisation/ authority/ company that play an important role in this issue and I am interested in learning about your **personal** and **professional** experiences and insights in this matter. I will also interview others who represent other actors such as companies, authorities and interest organizations in order to develop a rich understanding of different perspectives.

Before we start, do you have any questions?

Part I – Questions about interviewees work

1. So, you work for XXX. Can you tell me a little about XXX and its role in the development of wind power in Northern Sweden?

- *What is your role in XXX?*
- *How long have you been involved/employed?*
- *Do you have other relevant professional experiences from organizations/companies/ authorities in wind power development?*

Part II – Reflectional questions about wind power in Sweden

2. What is your personal relation to windpower development?

- *Why do you think windpower is important?*

- *What are the values you associate with windpower?*
- *(When I talk about "energy transition/ sustainability transition" what comes to your mind?)*

3. Where in Sweden do you see potential for windfarming?
- *Can you elaborate on this a bit more and explain why?*
- *Furthermore, which of the factors you named before is the one you would rate as most important?*

4. Are you aware of any conflicts concerning wind power development in (northern) Sweden?
- *What is your understanding of those conflicts?*
- *Why do you think these conflicts occur?*
- *Where do they occur geographically?*
- *At which levels do they occur (e.g. on local level or on national level)?*
- *Who are the important actors involved in the conflict?*
- *Do you or your organization have any tools or influence to address and/or mitigate these experienced conflicts? If not – can you identify any actors who do?*

Part III – Focusing on Environmental Justice

5. As you recall, my Master thesis focusses on Environmental Justice. So, let´s start with a more general question: what does Environmental Justice generally mean to you?
- *What do you associate with it and what comes up to your mind first?*
- *How would you relate the Environmental Justice Perspective to windfarming in Northern Sweden?*
- *Do you have a policy or other tools to deal with Environmental Justice and are you discussing this in your organization?*
- *(- What comes up to your mind when hearing "leaving no one behind"?)*

(If interviewee has no idea about EJ – give very short (not in-depth) background "Justice", "Just Transition", "Leave no one behind")

6. Do you think the current situation in northern Sweden is fair/just? for all involved actors?
- *If you think about all involved actors, do you think it is just for all of them?*
- *Why do you think it is fair/ unfair?*
- *(If unfair; who do you think benefits from it and who is disadvantaged?)*

- *Have you experienced or are you aware of any situations characterized by injustice?*
- *In what way? Can you provide examples?*
- *What do you think are ways to ensure fairness?*

(7. Current processes are criticized. What do you think about that?
- *Are there any specific parts or phases of planning, decision-making or implementation that are more problematic than others?*
- *In what way and why?*
- *Do you think that all voices are getting heard?)*

8. How do you/your organization interact with or come into contact with reindeer herding?

- How do you consider the needs of reindeer herding in your daily work?

- Do you have a policy or other tools to deal with reindeer herding?

- Are you discussing the topic in your organization?

9. If you would be able to change whatever you wanted to – what would be your ideal solution/ policy recommendation to ensure "Environmental Justice" in Northern Sweden?

10. Have you heard about the Supreme Court decision of October 2021 in Norway regarding the wind power plants in reindeer herding districts?

If yes,

- What do you think about it?

- How do you think this could have an influence on your work?

- How do you think this could have an influence on wind farming in northern Sweden?

If no,

- *The Norwegian Supreme Court decided in October 11, 2021 that the building of the wind park in the Fosen area in Norway is a violation against the rights of Sámi reindeer herders. Therefore, the license of this park has been explained to be invalid.*

- What do you think about it?

- How do you think this could have an influence on your work?

- How do you think this could have an influence on wind farming in Northern Sweden?

<u>Part IV - End of interview</u>

11. Could you send or name me 2 or 3 documents or company statement, were you think they reflect your companies position regarding the topic the best?

This were all my questions. Is there anything you would like to add or clarify?

Appendix 3

Codebook

Category	Definitions	Example
Windpower location	Is coded whenever the material suggests specific locations for wind power development and related benefits and disadvantages.	*"They are looking at two aspects. They have to find a place were the wind energies are high enough. They need to transport the electricity."* (interviewee 1)
Windpower relation	Is coded whenever the material is stating an own relation to wind power (including attitudes)	*"Yeah, I think it's really important because I think it's a natural resource and it's sort of free in a way it doesn't need any fuel."* (interviewee 4)
Legal frame	Will be coded whenever in the material it is referred to laws, the juridical system and its relation to justice and fairness (either as part of a problem or as a suggested solution)	*"Well, Justice and law is not the same thing I can say. It´s two different things and it depends who you talk to."* (interviewee 1)
Coexistence frame	Will be coded whenever the material refers to land-use conflicts, the necessity to coexist, the dilemma of local vs. global (either as part of a problem or as a suggested solution)	*"So in a global way it´s good to have wind power but on the other hand you have to build those wind power plants somewhere. And the benefits for the locals are not as big as the system works."* (interviewee 1)
Pluralistic frame	Will be coded always when the material refers to	*"Yeah, I think, I mean, if you have 20 people and*

	misunderstandings and the variety of perspectives – indicating that justice and fairness depends on the perspective (in connection of a problem definition or as a suggested solution)	*asked what's fair, then you have 20 different answers."* (interviewee 5a)
Historical frame	Is coded whenever the material takes a historical perspective and its connection with justice (leading to a certain problem definition and a suggested sulotion)	*"And I think it's, I think it's, it's difficult to talk about environmental justice in northern part of Sweden without taking a historical perspective"* (interviewee 4)

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