Renewable Energy Projects in Mexico

– A discussion of sustainability and impact on indigenous communities

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Abstract

Renewable energy is highlighted in the UN2030 Agenda for Sustainable Development because of the important role of renewable energy in climate change mitigation and to achieve SDG7. As SDG7 is linked to most of the other SDGs, renewable energy is seen as essential for sustainable development. Renewable energy projects, such as wind energy, are increasingly being promoted around the world, but the projects are met with growing opposition from local communities and especially indigenous communities. This points to a paradox, since renewable energy projects are usually seen as contributing to climate change mitigation, and indigenous communities are often among those first and worst affected by the consequences of climate change.

The thesis uses the framework of Energy Justice to examine the causes behind the increasing opposition among indigenous peoples to renewable energy projects, in the case of the Eólica del Sur wind farm located in the Isthmus of Tehuantepec region of Oaxaca in southern Mexico. The considerations of *distributional, procedural, and recognition justice* point to several injustices related to both the process and outcome of the project. The core tenet of Distributional Justice shows injustices in the location of the wind farm in a region that has the highest concentration of wind farms in Mexico, but where parts of the population still lack access to basic services such as electricity. There is furthermore an unequal distribution of the "goods" and "bads" of the project, as the Mexican government and multinational companies receive the majority of the benefits, whereas the local, indigenous population experience the negative implications. There is a procedural injustice, as the indigenous peoples' right to FPIC is violated due to irregularities in the consultation process. Furthermore, the knowledge and values of the indigenous peoples are not recognized and the place-based attachment and identity are therefore not considered in the distribution, nor in the procedures related to the project. The injustice in recognition therefore contributes to the distributional and procedural injustices taking place. The experiences of injustice thus lie behind the opposition to the wind farm, along with the perceived threat to the environment, the identity of the indigenous peoples, and their heritage.

The case shows how renewable energy projects are not always sustainable, but can in fact work against sustainable development because of the impact the projects can have on local level. Renewable energy projects can produce injustices and furthermore reproduce a systematic structure of exclusion, where indigenous peoples are discriminated.

The case furthermore shows the need for a more nuanced debate of sustainability in renewable energy projects. Renewable energy is essential to solving many of the global challenges the world is currently facing, but for the projects to be considered sustainable it requires the injustices to be identified and addressed.

Abbreviations

APIITDTT - Assembly in Defense of the Land and Territory of the Indigenous People in the Isthmus of Tehuantepec)

APPJ - Popular Assembly of the People of Juchiteco

COP – Conference of the Parties

FPIC – Free, Prior and Informed Consent

IEA – international Energy Agency

ILO – International Labour Organisation

IDB – Interamerican Development Bank

INDC – Intended Nationally Determined Contribution

IRENA – The International Renewable Energy Agency

MDGs – Millennium Development Goals

SEMARNAT – Mexican Ministry of Environment and Natural Rersources

SENER – Mexican Ministry of Energy

SDGs – Sustainable Development Goals

UN – United Nations

UNCED – United Nations Conference on Environment and Development

UN SDSN – United Nations Sustainable Solutions Network

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1.Introduction

When world leaders in 2015 agreed on the United Nations 2030 Agenda for Sustainable Development, the focus on increased use of renewable energy was emphasized in Sustainable Development Goal no. 7 (SDG7). (UN 2016). Renewable energy resources are considered to play an important role in climate change mitigation and SDG7 is furthermore seen as strongly related to most of the other SDGs. Renewable energy and SDG7 thereby represent essential factors in addressing many of the major global challenges the world is facing, as well as for global sustainable development. (IPMG 2018)

While renewable energy projects, such as wind farms, are increasingly being constructed worldwide, a lack of acceptance at local level is also increasing, challenging wind energy projects all over the world. (Shah & Bloomer 2018) This is especially relevant in indigenous communities where there is a growing opposition to large renewable energy projects being placed in their territory, despite the fact that indigenous communities are frequently among those first and worst affected by climate change given their relationship with and reliance on the environment and natural resources. (ibid).

Mexico has set ambitious goals for the transition to green energy and wind energy is expected to play an increasing role in renewable energy generation, because of the vast wind potential that remains untapped (Jung 2017:2). The increase in generation and use of wind energy in Mexico is perceived by most as a win-win situation for the environment and the economy (Friede 2016:5). However, renewable energy projects, are not always considered beneficial and sustainable by the actors involved. Wind farms in Mexico have triggered conflicts and projects are met with opposition from the indigenous people who claim to be defending their land and territory from the damage of the wind farms to their land. (IPGM 2018:5). This is also the current situation in the Isthmus of Tehuantepec region in the state of Oaxaca in the south of Mexico, where indigenous peoples continue to protest a wind farm of 132 turbines that entered into operation in May 2019, under the name Eólica del Sur, after years of delays due to the opposition. (Matías 2019)

Renewable energy is generally perceived as beneficial for the environment, given the lower levels of pollution and no exploitation of natural resources, compares to the use of fossil fuels, but when

indigenous peoples oppose renewable energy projects in defense of the land, it shows a different perception of renewable energy that can instead damage the environment. (IPGM 2018:4).

As renewable energy is given a significant role in sustainable development, it is important to understand why certain groups are opposing renewable energy projects and what is shaping the ambiguous perception of sustainability in relation to those projects. This leads to the following problem formulation:

What is causing the opposition to renewable energy projects among indigenous peoples in Mexico and how does this challenge the role of renewable energy in sustainable development?

Focusing on the specific case of the Eólica del Sur wind farm in Isthmus of Tehuantepec, the aim of the thesis is thus to understand the ongoing conflict involving a renewable energy project and indigenous peoples in Mexico, by identifying the underlying causes of the opposition to the project. This will be followed by a discussion of sustainability in renewable energy projects, and how the conflict and the reasons behind it, can affect the role of renewable energy in sustainable development.

The thesis will begin with a section to clarify the key concepts introduced above, as these concepts will be used throughout the thesis. Thereafter will follow a description of the methodology of the thesis, as well as the considerations and limitations in the choice of research methods, before turning to the theoretical framework, where the theoretical framework consisting of Energy Justice and Theories of Participation will be presented. Before turning to the analysis, the context and background of the case will be presented further. Finally, the case of Eólica del Sur will be analyzed using the theoretical framework. Following the analysis, I will turn to a discussion of the notion of sustainability in renewable energy projects, before reaching a conclusion.

2. Key Concepts

The following section will clarify the concepts of *renewable energy*, *sustainability*, and *indigenous peoples*, as the understanding of these key concepts will form part of the basis of the thesis. Besides the clarification of the concepts, the relevant context of which they form part will also be briefly elaborated.

The purpose of this thesis is to identify the causes of opposition to renewable energy projects in Mexico and in order to discuss the notion of sustainability in relation to renewable energy projects, it is necessary to first clarify the concepts of *renewable energy* and *sustainability* including the framework of the SDGs, as these will form the basis of the discussion along with the findings of the analysis.

2.1 Renewable Energy

Although there is a broad consensus on what constitutes renewable resources and renewable energy, there are slight differences in the formal definition formulated by various international organizations. (IEA & the World Bank 2014). The International Renewable Energy Agency (IRENA) includes the notion of sustainability in their definition, where "*renewable energy includes all forms of energy produced from renewable sources in a sustainable manner"* whereas The International Energy Agency (IEA) state that renewable energy resources are "*derived from natural processes*" and "*replenish at a faster rate than they are consumed.*" (ibid:164).

As it is exactly the notion of sustainability that will be discussed in relation to renewable energy projects, renewable energy will in this thesis be understood as energy produced from renewable resources, such as bioenergy, hydropower, geothermal, and wind and solar energy, that are non-depletable or naturally replenished. This definition does not in itself guarantee renewable energy to be sustainable, as the notion of sustainability requires more factors to be considered. The concept of sustainability and sustainable development will be elaborated in the following section.

2.2 Sustainability & Sustainable Development

The definition of sustainable development that will be used in this thesis, is the definition formulated in the Brundtland report, Our Common Future, stating that sustainable development "*meets the needs of the present without compromising the ability of future generations to meet their own needs*." (UN 1987). The report furthermore linked issues of economic development to environmental stability and thereby aims to maintain economic advancement and progress, while at the same time protecting the environment and its long-term value. (UN 1987).

The Brundtland Report and the concept of sustainable development formed the basis for the UN Conference on Environment and Development, also known as the Earth Summit, held in Rio de Janeiro in 1992. (UNCED, n.d.) The outcome was Agenda 21; an action plan for sustainable development adopted by more than 178 countries. (ibid). According to Kahn (1995 in Basiago

1999:149), the concept of sustainable development as described in Agenda 21, is built on the three pillars of *economic, environmental (or ecological),* and *social* sustainability.

Environmental or ecological Sustainability refers to the ecosystem, biodiversity, and the sustainable use of natural resources, where resources are consumed in a way and at a rate that allows regeneration. (Basiago 1999:150). It further requires waste emissions to be controlled and not exceed the environmental absorption capacity. (ibid:155)

Economic Sustainability refers to sustained growth and consumption, and sustainability in a system of production, where the consumption levels of today are satisfied but do not compromise future needs (Basiago 1999:150). It requires, for example, a country, business, or project to operate in a manner that will use resources efficiently and consistently deliver operational profit to sustain activities. (ibid)

Social Sustainability includes "*notions of equity, empowerment, accessibility, participation, sharing, cultural identity, and institutional stability*" (ibid) and refers to the social well-being of a country or community. Social sustainability ensures this well-being to be maintained in the long term. (ibid).

Kahn (1995 in Basiago 1999:150) argues that the three pillars of sustainability cannot be pursued independently, but must be integrated, interlinked and coordinated for real sustainable development. The term *sustainability* is thought of as the end goal, such as a sustainable world or society, or in characterizing any kind of process or activity, whereas sustainable *development* specifically rerefers to the processes and pathways to achieve it. (UNESCO n.d.)

The definition of sustainability is somewhat broad and vague in addressing the way to obtain sustainable development. The UN, however, in a call to action, formulated the Sustainable Development Goals as a framework to guide and stimulate global and local action and tackle the challenges of today. (UN SDSN 2015).

2.3 The 2030 Agenda for Sustainable Development

The 2030 Agenda, built upon previous works such as Agenda 21 and the Millennium Development Goals (MDGs), "*is a plan of action for people, planet and prosperity*" (UN 2015) and addresses the global challenges the world is facing, such as those related to poverty and inequality, climate change, peace, and injustice. The aim is to end poverty, protect the planet, and improve the lives and prospects of everyone. (UN, n.d.)

The 17 formulated global goals and 169 targets cover the three pillars necessary for sustainable development: economic growth, social inclusion, and environmental protection, and serve as a blueprint to achieve a more sustainable future. The goals are interconnected and are all meant to be achieved by 2030 (UN, n.d.)

Where the MDGs aimed at action in developing countries only, the SDGs are broader in scope, and universally apply to all countries. The SDGs include expectations to multiple stakeholders at all levels of society, such as governments, civil society, and the private sector, to contribute in order to achieve the goals.

The new goals furthermore recognize climate change mitigation as essential for poverty eradication and sustainable development in general. (UN, n.d.) and emphasize the use of renewable energy in SDG7 on Affordable and Clean Energy, with the goal being to "*Ensure access to affordable, reliable, sustainable and modern energy.*" (UN n.d - a).

The concept of sustainability and the SDGs are closely related to the theoretical framework of Energy Justice, as "*sustainable development is embedded in the notion of equity and justice*" (Jenkins 2016:381). The aim of Energy Justice is furthermore aligned with SDG7.

Central to the SDGs is also the pledge to ensure that "*no one will be left behind*" and to "*reach the furthest behind first*." This was formulated in response to the fact that certain people are currently being left behind and specific attention is needed to ensure the above statements. Indigenous peoples, among other groups, are among those who are disproportionately left behind. (UNDP 2018).

Indigenous peoples is another key concept, as this thesis will specifically focus on sustainability in renewable energy projects involving indigenous peoples. The meaning of the term indigenous peoples and the implications of this definition will be addressed below.

2.4 Indigenous Peoples

Historically, defining the term indigenous has caused debate and there is no universal conceptual definition, partly because "*no single definition could capture the diversity of indigenous peoples worldwide, and it was not desirable or possible to arrive at a universal definition*" (Daes in UN Economic and Social Council 1997:11) The UN-system body has thus not adopted a official definition but instead developed an understanding based on several factors meant to identify rather than define the indigenous. The understanding is based on the working definition formulated in the

Martinez Cobo Study of the Problem of Discrimination Against Indigenous Populations and includes the following factors:

- "*Self- identification as indigenous peoples at the individual level and accepted by the community as their member.*
- *Historical continuity with pre-colonial and/or pre-settler societies*
- *Strong link to territories and surrounding natural resources*
- *Distinct social, economic or political systems*
- *Distinct language, culture and beliefs*
- *Form non-dominant groups of society*
- *Resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities."*
  (UN Permanent Forum on Indigenous Issues, n.d.)

Although indigenous people around the world are diverse in their history, culture, and link to territory, Maivan Lam (2000 in McIntosh 2000) argue that all indigenous peoples claim to share characteristics of "*A contemporary condition of subjugation to the domination, exploitation, and territorial appropriation that states controlled by culturally alien peoples either inflict or allow.*"

The concept of *indigenous peoples* will in this thesis be understood by the factors above, and *peoples* will refer to an ethnic group or cultural community with a shared identity.

How indigenous communities are identified becomes particularly relevant in legislation or declarations determining indigenous peoples' rights, such as national legislation or the International Labour Organisation (ILO)'s Indigenous and Tribal Peoples Convention, (no. 169), 1987, which is an international treaty on the rights of indigenous peoples and the responsibility of governments to protest these rights (ILO 2013:1)

Other central concepts that are related to the theories, such as justice and participation, will be introduced in the theoretical framework, as the definition and use of those concepts should be seen in relation to the theory.

3. Methodology

The following section will cover the methodology and research design of this thesis, including the considerations and limitations behind the chosen research methods to answer the problem formulation. First, I will address the ontological and epistemological considerations, before accounting for the choice of a case study, the use of qualitative methods and the limitations in the data collection process.

3.1 Ontological and Epistemological Considerations

This thesis takes a social constructivist approach, which holds that there is no objective reality or absolute truth. Constructivist research thus focuses on the construction of meaning. People's perception of reality is socially constrcted through experiences and interactions with the world which is based on an interpretation that is culturally defined and historically situated. (Sarantakos 2013:38). The processes of construction through interpretation falls under the framework of interpretivism as epistemology and focuses on people's views, perception, and opinions. (Ibid:40).

In relation to the case, the approach based on constructivism and interpretivism implies that the actors involved can have different perceptions of social phenomena, as it will be socially constructed through experience and interaction, and shaped by cultural and historical context. The purpose of the research is thus not to determine an absolute reality, such as whether or not the wind farms, in fact, cause environmental damage. Instead, the aim is to understand the conflict based on how it is perceived, and thereby constructed, by the actors who are involved. This approach furthermore has implications for the research design, in determining "*what questions to study, what data are relevant, what data to collect, and how to analyze the results*" (Philliber et al in Yin 2009: 26)

3.2 Research Design

The following section will elaborate on the research design as a framework for the collection and analysis of data. The overall topic of the thesis is the opposition to renewable energy projects and the notion of sustainability in these projects and the impact these projects can have on indigenous communities. In order to get a deeper understanding of the topic, the research design includes a case study of the Eólica del Sur wind farm in the Isthmus of Tehuantepec region of Oaxaca, Mexico.

3.2.1 Case study

A case study involves a detailed and intensive analysis focusing on a single case (Bryman 2012: 66). As a research method, a case study can be used for example "*to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena*" and should focus on a real-life phenomenon (Yin 2009:4). A case study is particularly relevant to perform an in-depth and extensive analysis of a social phenomenon (ibid), which is the purpose of this thesis and the attempt to understand the conflict caused by the renewable energy project. To obtain an in-depth understanding of a case, it is necessary to not only examine the case, but also the interaction between case and context (Yin 2013:321).

According to Robert Yin (2009), a case study begins with a thorough literature review before formulating the problem formulation. This has also been the point of the departure for this case study, where the case was selected and further defined through an initial literature review in order to for example identify the conflict, the actors involved, and the temporal boundaries.

3.2.2 Limitations of a Case Study

Case studies can be limited in their validity and generalizability, meaning the ability to apply the findings to other cases. However, some researchers argue that the purpose of the case study as research design is not to generalize to other cases but instead to extensively examine a single case. (Bryman 2012:71) Robert Yin calls this *analytical generalization* and proposes this approach as an alternative to the sample-to-population logic. Analytical generalization, in other words, is "*the extraction of a more abstract level of ideas from a set of case study findings – ideas that nevertheless can pertain to newer situations other than the case(s) in the original case study*" (Yin 2013:325). Yin argues that this way of generalizing should aim to be applicable to other concrete situations and, ideally, extends to different types of cases, as the theoretical framework can be used to establish a logic that can possibly be applied to other situations. (Yin 2013:325-326).

This is also the approach to case study taken in this thesis, where the understanding of the opposition among the indigenous peoples to the Eólica del Sur project can, in comparison with the findings from other studies or similar cases elsewhere, point to certain patterns that can be applied or used to understand similar cases of local opposition to renewable energy projects. In this thesis, the findings from the case study of Tehuantepec will be used in a broader discussion of sustainability in renewable energy projects and the findings will therefore be used in a broader context.

3.3 Qualitative research methods

As the focus of this study is in part to understand the roots of the conflict in Isthmus of Tehuantepec, and thereby how the conflict is experienced and perceived by the main actors involved, qualitative methods have been used as qualitative methods place greater emphasis on words than on numbers (Bryman 2012:380), and therefore focus on *how* something is said, done, or experienced (Brinkmann & Tanggard 2010:13). Qualitative research can be applied when attempting to describe, understand, and deconstruct the qualities of human experience (ibid), which is the case when attempting to understand the causes of the opposition from the perspective of the actors involved.

3.4 Data Collection

A literature review helped form an overview and identify the main actors involved in the conflict, which is important in order to collect data that represents the various actors in attempting to create a nuanced picture of the conflict. As the purpose of the thesis is to understand the causes that led to the indigenous opposition to the wind farms, it is necessary to collect data to reflect the viewpoint of the actors involved. Documents were furthermore collected over a period of time to account for the development over time.

In order to understand the conflict revolving around the wind farms in Tehuantepec, it is necessary to understand how the actors involved perceive the project. Data collection should therefore reflect the viewpoint of the various actors, such as the indigenous peoples in the region, the Mexican government, and the private companies involved in the project.

3.4.1 Documents as Source of Data

Documents as source of data can be used to obtain substantial knowledge on a topic and are useful to obtain a nuanced image, as documents can be from a variety of sources and from different points in time. However, the vast amount of material available can thereby also involve an overwhelming number of documents.

Brinkmann & Tanggaard (2010:138) define a document as language written down and maintained at a given time. Documents can, for example, include reports, policy documents, newspaper articles, blogs, transcribed interviews, academic journals and articles, which is also the type of documents that have been used in this thesis.

The distinction between primary, secondary, and tertiary documents is typically based on the actors a specific document is circulated to and at what point in time (Brinkmann & Tanggaard 2010:138).

The documents used in the analysis of this thesis have been of secondary character, which entails documents published in proximity to the event or situation in question and, in principle, available to the public even though the public might not be the target group (Ibid:139). Tertiary documents, that are, similarly to secondary documents, widely available to the public but furthermore characterized by being of more analytical character and produced significantly later than the event or situation it is referring to Ibid), have also been used in the analysis.

Although the distinction between these types of documents is not always clear-cut, it is important to consider the timely context in which the document was produced, as well as the intended target group (Ibid). Although primary documents, such as internal meeting minutes of a government or company could have been relevant in the analysis, it has not been able to gain access to this type of documents, which can be considered a limitation of document analysis as method.

Using a combination of document types, both in terms of secondary and tertiary, but also documents from a variety of sources to reflect the viewpoint of different actors, increases the validity of the analysis. Furthermore, document analysis is beneficial when analysis a case that has a span over a longer period of time (ibid:140), which is the case of the conflict in Tehuantepec as the project originally began in 2004.

As Bryman (2012:558) expresses, "*people who write documents are likely to have a particular point of view that they want to get across*." Documents as source of data can thus be biased and reflect the agenda of the actor and should not be considered objective accounts. However, since the thesis takes a social constructivist point of departure, the purpose is not to determine if the information in the documents is factual or to determine the absolute truth. Instead, the documents are intended to reflect the standpoint of the various actors and how they perceive the renewable energy project. Documents are thus a suitable source of data in this case because it is not the aim of the research to determine an ultimate truth, but taking a social constructivist point of departure to investigate how the actors perceive the project, how their view vary and why this has led to conflict.

Just as the documents can be biased, different actors can have different reasons for and interest in producing and publishing documents. There can be an 'unequal' amount of data available to represent the viewpoint of the various actors involved, as different actors can have different means of communication or it might not be in their interest to produce documents. Indigenous peoples will not necessarily produce the same type of reports and documentation as a government institution and do not have the same means of communication, but can instead communicate their message through

other channels. Besides documents such as reports produced by government entities, private companies, and human rights organizations, the analysis has included use of news articles, social media posts and videos.

Qualitative content analysis entails a search for underlying themes in the materials being analyzed and illustrated with quotations. (Bryman 2012:557). The qualitative content analysis of documents conducted as part of this thesis was done considering the hermeneutic approach, where "*the analyst of a text must seek to bring out the meaning of a text from the perspective of its author*" and considering the social and historical context in which the document was produced. (Bryman 2012:560).

The quality of the documents used as sources has been assessed by considering the quality control criteria of Scott (1990:6); *authenticity*, *credibility*, *representativeness*, and *meaning*. When considering authenticity, focus has been on the sender/source of the documents and whether the sender and source of the document could be clearly identified. Credibility refers to the sincerity and accuracy of the document and the value of the author's statement. If the documents are not considered representative of the totality, it is then important to then consider how/in what respect the documents are unrepresentative. Finally, when considering meaning, if the intent and content is clear and comprehensible.

Besides the limitations of access and availability of documents, document analysis has the disadvantage that the selection and interpretation of the documents to a certain extent depend on the researcher, which should be acknowledged. Data will be analyzed and interpreted from the position of the researcher, meaning from a specific cultural and timewise context.

The selection of documents considered relevant to the analysis is to a certain extent also related to the selected theories, as the case will be analyzed through the lens of the theoretical framework. The theoretical framework is likewise developed based on the initial literature review which helps determine what theories are suited to analyze the case. The theoretical framework, which includes Energy Justice and Theories of participation, will be addressed in the following section.

4. Theoretical Framework

This section will introduce the theoretical framework used to analyze and discuss the problem formulation. The framework is based on theories of Energy Justice and Participation. As mentioned

above, theories were selected based on the initial literature review that suggested the actors had different perceptions on the wind farm and its environmental and social implications. Energy Justice accounts for these different perceptions and allows for both environmental, social and economic considerations. It was furthermore seen as relevant as the focus of the thesis is specifically on energy.

4.1 Energy Justice

The theoretical framework created to be used in the analysis and discussion to answer the problem formulation is based on the concept of Energy Justice. Energy Justice is related to the concept of Environmental Justice, as it is based on the same basic principles and philosophy. In order to understand the application and impact of Energy Justice, it is thus necessary to understand its emergence from Environmental Justice and the shared basic principles.

Environmental Justice emerged as a movement in the 1970s as a reaction to what was considered an unequal distribution of environmental advantages and disadvantages, where certain social groups tended to feel the environmental hazards and risks more than others. (Jenkins 2018:117). The idea of Environmental Justice came to have two main uses. Initially, it was mainly used as the discourse in local, grassroot level activism to ensure a just distribution of environmental ills such as toxic waste, but also came to be considered at government level, seen as a policy principle (Jenkins 2018:118).

The notion of justice in relation to the environment, however, should go beyond the issue of distribution, according to Schlosberg (2004), who also emphasizes participation and recognition as elements of environmental justice. In other words, Schlosberg (2004:517) argues that Environmental Justice includes a threefold notion of justice,

"[*1] equity in the distribution of environmental risk, [2] recognition of the diversity of the participants and experiences in affected communities, and [3] participation in the political processes which create and manage environmental policy*"

Energy Justice emerged as an attempt to create more focused justice models. Based on the same basic principles and framework of Environmental Justice, Energy Justice "*aims to provide all individuals, across all areas, with safe, affordable and sustainable energy"* (McCauley et al 2013:1), which is directly aligned with the aim of SDG7, thus linking the theoretical framework for the concept of sustainability.

Where Environmental Justice encompasses the environment in a broader sense, Energy Justice is focused on energy systems, but can still capture social and environmental issues stemming from an energy injustice (Jenkins 2018:119). Energy Justice can be applied at all stages of the energy system, from resource extraction and use, production, distribution, and consumption, to waste. and thereby provide a lens through which energy infrastructure and projects can be assessed. (ibid)

Both Environmental and Energy Justice rely on the fundamental concept of *justice*, which does not have one simple definition and therefore needs to be clarified. Justice as a moral concept has long been source of philosophical debate, but in a modern context, justice tends to be related to the concept of "*fairness",* as well as creating "*the conditions for fair social structures, which in turn produce a fair distribution of goods and services*" (Sovacool & Dworkin 2015:436). Justice, in this sense, involves an impartial and objective weighing of costs and benefits for decision-makers, but justice is also concerned with the structures that can, for example, influence how decisions are made, who is involved in or has influence on the decision making process.

In other words, justice "*boils down to who gets what, and the processes and procedures that govern how we decide the principles of that distribution*" (Sovacool & Dworkin 2015:437). Besides the commitment to distribution of good and bad, justice is also about the equal worth of all humans as well as ensuring and recognizing this worth.

In this thesis, justice will be used in relation to the concept of Energy Justice, where the emphasis is on distribution of environmental and social hazards and risk of energy production without discrimination, where access to energy services is equitable, and where procedures involve access to information and involvement of stakeholders in the decision making. (Sovacool & Dworkin 2015:437). Focus will therefore be on the three core tenets of *Distributional Justice*, *Procedural Justice*, and *Recognition Justice*.

4.1.1 Distributional Justice

The core tenet of *Distributional Justice* refers to the distribution or physical allocation of environmental 'goods and bads', and the exposure to risk (McCauley et al 2013:2). Distribution includes, for example, the physical location of a wind farm, the "goods" and "bads" this allocation entails, and how they are dealt with. Environment in this context is understood in a broad sense as what surrounds people and thereby extends beyond the 'natural' environment to also encompass social and cultural environment. Environmental goods and bads, in this sense, can thereby refer to

issues such as creation of jobs and access to cheaper energy but also implications for ecosystems and economic activities. (Nardi & Ramirez 2017:13).

One of the main arguments of Energy Justice is the need to go beyond distribution when considering justice, and incorporate other dimensions, namely Procedural Justice and Recognition Justice.

4.1.2 Procedural Justice

Procedural Justice refers to the procedures concerning an energy project, if the procedures are equitable and whether stakeholders are engaged in a non-discriminatory way (McCauley et al 2013:2). A just procedure allows the participation of all groups in the decision-making process and furthermore requires impartiality, transparency in the process, and access to information by government and industry (ibid). Procedural Justice thereby includes considerations of the political process, who makes the decisions and who has influence on the process, but it also emphasizes the concept of participation and mechanisms that allow participation and engagement of stakeholders as elements of justice (ibid). However, Energy Justice does not elaborate on the concept of participation, which is why the theoretical framework will be complemented by theories of participation and engagement to form the theoretical framework. This will be further elaborated in section 4.2.

Procedural Justice in the case of Tehuantepec will have to be seen in the context of the procedures that apply in the specific case, because Procedural Justice, per the above definition, is dependent on what procedure an energy project is subject to and if there are specific procedures for a project involving indigenous communities. Process and procedure can for example be regulated by international, national, or regional guidelines and legislation.

4.1.3 Recognition Justice

The third and final tenet, *Recognition Justice,* concerns the people involved and whether they are fairly represented. Injustice in recognition is manifested in a "*process of disrespect, insult and degradation that devalue some people and some places identities in comparison to others*" (Walker 2009:615 in McCauley et al 2013:2). A lack of recognition can therefore occur as part of a cultural or political dominance, where people do not have equal rights, and where the viewpoints of certain groups are not acknowledged or recognized as equal. (ibid)

Justice in recognition is about recognizing differences in values, understandings, and knowledge, and whose knowledge is considered legitimate. Recognition is related to power and respect, and

recognition or lack of recognition can be deeply rooted in the social, cultural, and historical context. (Nardi & Ramirez 2017:6).

According to Schlosberg (2004:19), a "*lack of recognition, demonstrated by various forms of insults, degradation, and devaluation at both the individual and cultural level, inflicts damage to both oppressed communities and the image of those communities in the larger cultural and political realms."* Injustice in recognition, in this sense, can form a foundation for distributive injustice.

The three core tenets are therefore interrelated. Part of the underlying reason for an unjust distribution can be the lack of recognition of different groups. This difference can be attached to, for example, privilege and oppression. Which groups of people are typically represented in the decision-making processes, whose viewpoints and knowledge are recognized, can in turn lead to procedural injustice. As Schlosberg describes it, "*if you are not recognized, you do not participate"* Schlosberg (2004:519).

From a social constructivist perspective, justice and what is considered a just and fair treatment, however, will also depend on the actors and their perception. Whether the distribution of environmental "goods" and "bads" is perceived as just will also depend on how these goods and bad are perceived and valued by the actors.

How a situation or phenomenon will be interpreted by the actors will, from a social constructivist perspective, be constructed through experience and interaction, as well as being situated in a cultural and historical context. In this sense, what is considered justice by some, might be considered injustice by others. Energy Justice can furthermore be used to focus on these different perceptions, and if these viewpoints are equally recognized and accepted in society.

Sovacool & Dworkin (2015) argue that the theoretical framework of Energy Justice can be used as a conceptual, analytical, and decision-making tool. It can be applied to local, regional, national, and international scale. Energy Justice includes considerations of government and the public, as well as the private sector and its social responsibility and thus promotes a holistic approach (McCauley et al 2013:3).

Energy Justice will here primarily be used as an analytical tool in the analysis section to investigate the underlying causes of the conflict in Isthmus of Tehuantepec and understand the reasons behind the opposition the the wind farm. The analysis will attempt to identify if the Eolica del Sur wind

farm produces energy injustice, which type of injustices, and how this impact can explain the opposition to the project among the indigenous peoples.

Energy Justice points to several factors of importance, such as distribution to consider the impact of the wind farm on the local, indigenous population, the processes, and procedures related to the project, and the recognition of the indigenous people. Focusing on these aspects, however, has the risk of not uncovering other factors that could be relevant in explaining the causes of the opposition. Some of the concepts in the theory are futhemore vaguely defined. Participation is emphasized as an important part of procedural justice, and Schlosberg (2004:526) furthermore emphasizes the participatory dimension as being particularly relevant in cases involving the environment and indigenous peoples. The various types of participation and how the type, or extent, of participation can influence the outcome is not described in the theory of Energy Justice. A theory of participation will therefore be included in the theoretical framework to complement Energy Justice.

4.2 A Theory of Participation and Stakeholder Engagement

The concept of participation is mentioned as an important part of the core tenet of Procedural Justice, but it is not specifically elaborated in terms of the various degrees of participation, and the outcomes it can have. Several researchers, furthermore, emphasize the importance of participation in renewable energy projects, as participation promotes acceptance, (Baxter 2017) and participation can thereby be used to obtain community support and reduce objections, but also to understand the needs and interests of a community (Villavicencio Calzadilla & Mauger 2018:252).

Haggett (2009) furthermore argues that people have an ethical right to be involved in decisions that affect them and establishing a fair process including engagement can help restore trust in authorities and institutions. In renewable energy projects, the perception of fairness in both outcome and process is seen as crucial for acceptance, according to Gross (2007:2734). Participation and engagement in renewable energy projects are thus closely related to the concepts of Energy Justice.

The theory of participation that will be used in this thesis, is based on the typology and theory developed by Reed et al (2018) and focuses on how variation in participatory approaches can lead to variations in outcomes.

Participatory approaches, when it comes to dealing with environmental challenges, are argued to "*have the capacity to reduce conflict, build trust and facilitate learning among stakeholders and*

publics, who are then more likely to support project goals" (Reed et al 2018:2), but there are also examples of attempted participatory approaches not reaching the desired social and environmental outcomes, but instead to escalation of a potential conflict or increase in mistrust (ibid). The theory is thus an attempt to explore the participatory approaches and explain why participation and engagement sometimes work, but other times fail to reach the desired outcome.

The framework includes a typology to describe the different types of engagement, and a theory of the factors that explain the variation in outcome depending on the type of engagement as well as variation in context (ibid:2-3). Participation in this context is defined,

"*as a process where public or stakeholder individuals, groups and/or organisations are involved in making decisions that affect them, whether passively via consultation or actively via two-way engagement*" (Reed et al 2018:3).

Publics and stakeholders are here differentiated in that stakeholders are those who have a stake or an interest in the decision, and where they can affect the decision or be affected by it. Publics are not affected, nor can they affect a decision, but they can engage with the issues the decisions are related to. (ibid)

According to Reed et al (2018:4), there is not necessarily a correlation between the level of engagement and the desired outcome. Less engagement can in certain situations be the more appropriate, depending on the purpose of engagement and the context.

The types of stakeholder and public engagement are broadly defined based on *agency*, meaning who initiates and leads the engagement and whether this is done top-down or bottom up, and *mode* of engagements, ranging from communication to co-coproduction.

The different modes of engagement can be seen as being placed on a continuum. This continuum ranges from approaches on one end being based on one-way information and knowledge to public and stakeholders, called the *communication mode,* to the *consultation mode*, where feedback from public and stakeholders is sought. The other end of the continuum is characterized as the *deliberate and co-productive modes,* where a two-way exchange of knowledge exchange takes place, and goals and intended outcomes are jointly formulated.

More engagement and participation does not necessarily lead to a better outcome, meaning that the outcome cannot be predicted by the mode of engagement. Instead, Reed et al (2018) propose a

theory to "*explain much of the variation in outcomes between different types of engagement in different contexts*" (Reed et al 2018:3).

The theory is built on four groups of factors that can explain what makes it more likely for the types of engagement to have beneficial social and environmental outcomes. The four factors of *context*, *design*, *power*, and *scalar fit*, will be addressed individually.

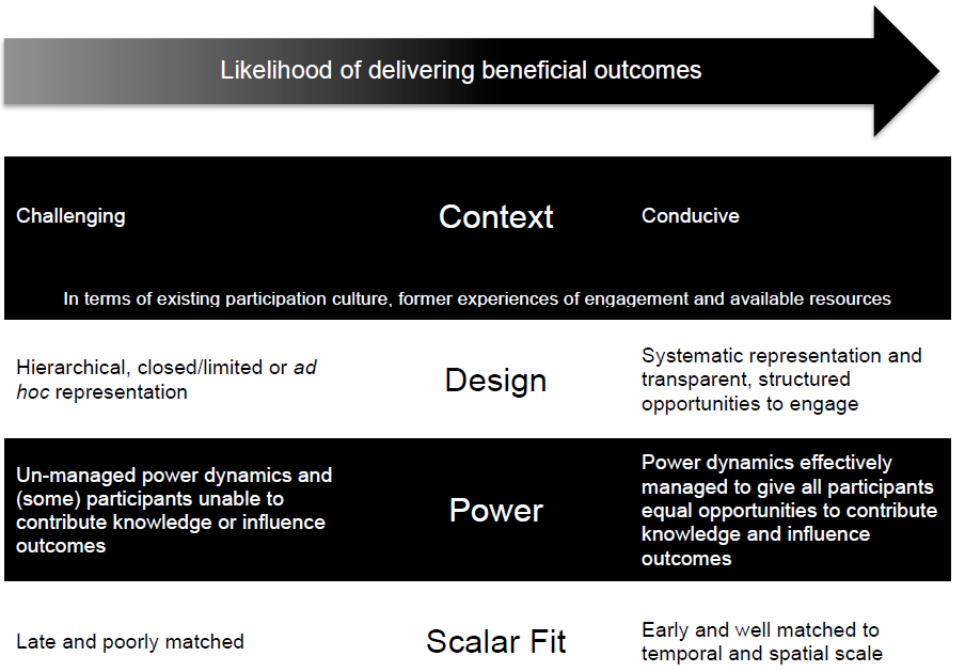
Contextual factors such as socio-economic factors, cultural norms, and institutional contexts, can play an important role in the outcome of an engagement process and this process cannot be replicated independently of context. Awareness and understanding of the local context are therefore important to determine what type of engagement is appropriate and how to effectively adapt the process design to the context. (ibid:12)

Process *design factors* can also influence outcome, as a process that systematically represents stakeholder and public interest and gives them the opportunity to influence outcomes is more likely to achieve beneficial outcomes. If the process design does not include a strategic representation of stakeholders and publics, the outcome can be influenced by overrepresented or dominant participants. Engaging them can also lead to more knowledge input and perspectives that could be important to consider in the decision-making. (ibid)

Related to the factor of context, *power* and power dynamics can significantly influence the effectiveness of engagement. It is furthermore related to the values of the actors, their knowledge, how they construct it and what knowledge they consider valid, as this can influence the power dynamics between participants. (ibid:13). The power factor is thereby related to the core tenet of *Recognition Justice*, as it considers the viewpoints of the involved actors and whether their contribution is valued and recognized.

Factors of *scalar fit* suggest that length and frequency of engagement should match the goals of the process to recognize that "*changes in deeply help values (that may be at the root of the conflict) are likely to take longer than changes in preference*" (ibid) and match engagement to the spatial scales where decisions are made. Spatial scales should be relevant to the issue and consider for example involvement of national and local interest in national and local decisions (ibid).

The figure below summarizes the factors and how they can influence the outcomes of stakeholder and public engagement.



Firgure 1: *Developed by Reed et al (2018:13)*

The typology and theory of participation and engagement were developed in the context of environmental management, considering social and environmental outcomes. Several of the factors are closely related to the concepts of Energy Justice. It will supplement the theoretical framework of Energy Justice, as participation is emphasized as an important dimension of justice, but the types of engagement and outcomes are not specifically dealt with. Including theory of participation in the theoretical framework will serve to analyze participation and engagement in the case of the Eólica del Sur wind far and the related procedures to determine how indigenous peoples were engaged in the project process, and how the type of engagement affected the outcome. The aim of the thesis is, as previously mentioned, not to determine whether the renewable energy project itself and the process surrounding it are just or fair, but to analyze if the outcome and process are perceived as fair by the actors involved, why and how this could be the reason behind the conflict. The theoretical framework can be used to analyze both the process and the outcome, as well as taking into account the different actors that are involved in the case. In order to apply the theoretical framework to the case, it is necessary to first understand the background and context of the Eólica del Sur wind farm, which will be presented below.

5. Case Context

Before conducting the analysis, the context and background of the case will be elaborated. This section will begin with a brief background outlining the framework for renewable energy in Mexico, before zooming in on the Isthmus of Tehuantepec region of Oaxaca which is the location of the specific case study. The background of the case will include a timeline of the project from its beginning in 2004 until its inauguration in 2019, and the scope and focus of the case will be further delimited.

5.1 Renewable Energy Framework in Mexico

Focus on and use of renewable energy has grown significantly in Mexico since an energy reform was approved in 2013, which allowed for the participation of private firms in the energy sector. The energy sector became an increasingly attractive market for foreign investment and thereby created competition among energy producers. The framework of the reform furthermore provided incentives to promote the transition to clean energies. (Viscidi 2018:2).

In 2012, Mexico passed a comprehensive climate change legislation. The objectives, among others, were to guarantee the right to a healthy environment, regulate greenhouse gas emissions, reduce the vulnerability of the country's population and ecosystems to the adverse effects of climate change, and promote the transition to a competitive, sustainable economy with low carbon emissions (SENER 2016:19).

In 2018, clean energy in Mexico amounted to approximately 24% of the energy generated in Mexico. (SENER 2018:5). The goal is for Mexico to generate 35% of its power from renewable sources by 2024, 40% by 2035, and 50% by 2050. Mexico has furthermore committed to reducing greenhouse gas emissions 30% by 2020 and 50% by 2050, compared to 2000 level. (SENER 2016:19). A substantial part of Mexico's strategy for achieving its goals relies on the transition from gas, coal, and oil, to renewables such as wind, solar, and geothermal sources of energy. (Jung 2017:2).

Mexico has a great untapped potential for renewable energy, and it is believed that renewable sources could meet the existing and growing demand for electricity. (Viscidi 2018:1) Wind power has experienced rapid growth in Mexico, with the installed capacity expanding 104.7% annually during 2005 and 2015 (SENER 20016:15). By 2040, wind energy is estimated to comprise 40% of the total installed capacity in Mexico. (Jung 2017:3).

Wind energy in Mexican was developed under the legal framework of the self-supply model, *autoabastecimiento,* which allows private power producers to partner with industrial users who become the end-consumers of the generated power. CFE, the state utility company, remains the only provider of electricity to the public. (Friede 2016:4).

According to the Mexican Association for Wind Energy (AMDEE) there were 54 wind farms in operation in 2018, in 14 different Mexican states, and 10 more under construction in 2019. 28 of the wind farms, accounting for 55.8% of the total capacity, are located in the state of Oaxaca in southern Mexico in the region known as Isthmus of Tehuantepec. (AMDEE 2019).

5.2 Isthmus of Tehuantepec

The Isthmus of Tehuantepec region of Oaxaca has some of the highest wind power potential in the world based on studies from both the U.S Department of Energy and AMDEE, which conclude that wind resource conditions in the Isthmus of Tehuantepec are "good-to-excellent" in several areas. These areas are especially concentrated in the southern part of the Isthmus of Tehuantepec, around the Laguna Superior lake (Elliott et al 2003:vi).

The state of Oaxaca is among the poorest and most marginalized in Mexico, with 67% of Oaxaca's population living in poverty and 28% in extreme poverty. (Huesca Perez et al. 2016:957). Parts of the population lacks access to basic services, such as water, sanitation, and electricity, and over half the population lives in rural, isolated areas in communities with less than 2500 inhabitants. (ibid). The state has the highest percentage of indigenous people in Mexico, and it is furthermore one of the most indigenous diverse states with 13 groups of indigenous peoples officially recognized. (ibid:959)

The state of Oaxaca is divided into 570 municipalities, out of which 418 have adopted *usos y costumbres* as a governance form where candidates endorsed by political parties. (Magaloni et al 2019:1846). The term usos y costumbres roughly translates into "customs and traditions" and it is recognized by the Mexican constitution as a legitimate governance structure on municipality level. Usos y costumbres is based on traditional indigenous practices and does not have regular multiparty elections on municipal level, but citizens remain in right to vote in state and federal elections. (Magaloni et al 2019:1847). Under usos y costumbres, municipal leaders are selected in community assemblies. Leaders actively consult with the assembly in making important decisions, such as the allocation of public goods and services with funds granted to the municipal government from federal level, through a process of deliberation and direct democracy where information is shared.

(ibid:1849). 91% of the territory in Oaxaca is communal land, called *ejidos*, modeled after pre-colonial social structures, where community members have individual parcels typically used for agricultural purposes. Decisions concerning land use have to be approved in an assembly consisting of ejido members. (Huesca Perez et al. 2016:959).

The population in the municipality of Juchitán, where the majority of the wind farms in the state are located, is 86% indigenous, making it the highest indigenous presence in Mexico. (Huesca Perez et al. 2016:959). The first wind farm in the area, La Venta I, was constructed in 1994 and many more have since followed and led to increasing opposition from indigenous peoples. (Jung 2017:1).

In order to analyze the causes of the opposition to renewable energy projects among indigenous people more in depth, focus will be on a specific project. The case will consider the wind farm project of Eólica del Sur. Focusing on one specific project will allow the analysis to consider the process and procedure of the project more in depth, and focus on the impact on specific indigenous peoples, as analyzing the development of all wind farms in Oaxaca, including all indigenous peoples in the region, would not be feasible given the scope of the thesis.

5.3 Eólica del Sur Project Timeline

The plans to construct Eólica del Sur began in 2004, under the name Mareña Renovables, when land in Oaxaca was reserved to be the location of the wind farm. The project design included 132 wind turbine which would make it the biggest wind farm in Latin America. Power produced by the wind farm would be purchased by Cuauhtémoc Moctezuma and a subsidiary of FEMSA, under a 20-year contract. (Jung 2017:3).

Since the beginning in 2004, the project endured several delays caused by the opposition of the indigenous peoples in the area, before finally entering into operation in May 2019. Considered the long period of time from the project's beginning to finalization, an overview of the events will be provided in a timeline.

2004 Spanish renewable energy developer, Preneal, gains authorization from SEMARNAT (Ministry of Environment and Natural Resources). Land is reserved for 132 turbines to be located in the municipalities San Dionisio del Mar and Santa Maria del Mar in the district of Juchitán in Oaxaca. (Jung 2017:3)

2006 San Dionisio del Mar and Santa Maria del Mar sign 30-year leasing agreements with Preneal (ibid)

2007	The Assembly of Indigenous Peoples of the Isthmus of Tehuantepec in Defense of Land and Territory (APIITDTT) was formed by Zapotecas and Huaves indigenous peoples in resistance to the planned wind farms
2009	Environmental Impact Assessment studies completed (EJ Atlas 2017)
2011	Community oppositions grows with street protests and blockades delaying the construction March: Preneal sell contract rights to consortium Mareña Renovables (consisting of Mitsubishi, Dutch pension fund PGGM, and Australian investment group Macquarie Capital) Interamerican Development Bank (IDB) approve loan of US$ 74.99 million to Mareña Renovables. Consultations with local communities carried out between August 2011 and August 2012. (EJ Atlas 2017).
2012	Opposition grows and mobilization spreads to other municipalities December: Court rules to suspend project pending community consultations. (Jung 2017:5)
2013	Mexican media reports Mareña Renovables project cancelled (ibid:14)
2014	January: Consortium announces that project will change name to Eólica del Sur and plans to move the construction of the wind farms to Juchitán and Espinal, 50km away. October: Consultations with local populations organized by SENER begin. (ibid)
2015	July: consultations end August: project is approved by local population in Juchitán and El Espinal National and international organizations criticize consultation for not complying with international law. (Jung 2017:14) Protest continue. Amparo lawsuit[1] filed on behalf of Zapoteca community, against the permits granted to Eólica del Sur, claiming their right to free, prior and informed consent were violated.(Chaca 2019)

[1] "*Amparo*, is an extraordinary constitutional appeal, which may be filed in federal court, by Mexicans and by foreigners. It is often referred to as a 'constitutional protection lawsuit,' which is basically governed by articles 103 and 107 of the Federal Constitution." The term *amparo* means "shelter" or "protection" https://www.loc.gov/law/foreign-news/article/mexico-new-amparo-law-is-enacted/

2016 June 9th: Court in Salina Cruz, Oaxaca rules that local population has been consulted sufficiently and in accordance with international standards regarding indigenous peoples. Case is appealed. (Vanguardia 2018)

2018 January: Supreme Court in Mexico halts project to review consultation process.
November: Supreme Court denies injunction against Eólica del Sur and holds that consultations were legitimate. (Espino 2018)

2019 May: Eólica del Sur wind farm inaugurated
Protests continue. (Matías 2019)

5.4 Case Delimitations

The case will be delimited to mainly focus on the land and indigenous peoples affected by the project. As the original location of the project was in the municipalities of San Dionisio del Mar and Santa Maria del Mar, and the current location in Juchitán de Zaragoza and El Espinal, the indigenous people affected by the project are identified as Huave and Zapoteca. (Jung 2017:12).

However, since the Eólica del Sur project is one out of many wind projects in the area, and considering that the indigenous peoples in these and nearby communities have organized themselves in joint resistance networks (for example the Assembly in Defense of the Land and Territory of the Indigenous People in the Isthmus of Tehuantepec) in opposition to the projects (EJ Atlas 2017), it is not possible to look at the Eólica del Sur project in isolation. The opposition of the indigenous peoples should be seen in the context of the wind energy and other projects that have increasingly been taking place in the Isthmus of Tehuantepec region since the first wind project in 1994. (EJ Atlas 2017).

It is furthermore acknowledged that not all indigenous peoples in the region necessarily oppose the projects, but since the aim of the thesis is to analyze the causes of the opposition, the focus will be delimited to those who are against.

The case is thus delimited in several way. Geographically, the focus will be on the two locations of the wind farm constructed by Eólica del Sur (Juchitán de Zaragoza and El Espinal) and the indigenous people affected by this project (Huave and Zapoteca), but also acknowledging that the networks of resistance represent indigenous peoples in other areas. Timewise, the analysis will mainly focus on the period since 2014, when the project became Eólica del Sur, and the actors

involved in this project, although also considering the context in which the project was developed, which among other things include the attempted constructions of Mareña Renovables, as well as several other projects in the region.

6. Analysis: Indigenous Peoples' Opposition to Renewable Energy Projects

The analysis will use the theoretical framework of Energy Justice and Participation to identify the causes of the opposition to the Eólica del Sur wind farm by considering the notions of justice and sustainability in the project. The analysis will focus on the core tenets of distribution, procedural, and recognition justice, where the tenet of procedural justice will also include considerations of the participation of indigenous peoples in the process.

6.1 Distributional Justice

As described in the theoretical framework, distributional justice refers to the distribution of "goods" and "bads." Here distribution justice will be analyzed in relation to the Eólica del Sur wind farm, its location and the positive and negative implications it entails for the actors.

The location of the wind farms in the Isthmus of Tehuantepec region is primarily based on the excellent wind conditions found in the area as determined in several studies and wind atlases. The location of Eólica del Sur has a number of implications for the indigenous peoples in the area and whether these implications are perceived and good or bad, and the extent to which, depends on the perceptions of the actors. Distribution justice will focus on these implications, and if they are perceived to be distributed equally. In identifying the "goods" and "bads" focus will be on environmental, economic, social and cultural impacts, and the classification as a "good" or a "bad" will be discussed from the perspective of various actors, such as the indigenous peoples, the company behind Eólica del Sur, and the Mexican government.

According to Eólica del Sur (2014:II-13), several factors were considered in the site selection within the Isthmus of Tehuantepec area, such as the economic region, the demographic and economic profile, and possession of land and socio-cultural factors. In a report created prior to construction, Eólica del Sur states that the development, construction and operation of the project will not affect the cultural, economic and religious heritage of the area. They furthermore

emphasize that the project is primarily located in rural areas with low population density, with clearly defined properties, whose owners will benefit from payments, and that the project involves a very low socio-economic risk for the population. (Eolica del Sur 2014: II-14).

Eólica del Sur concludes that the project is environmentally viable, as they do not consider to project to cause serious environmental deterioration that could jeopardize the functionality of the regional environmental system. (Eólica del Sur 2014:VII-18) The indigenous peoples, however, particularly express negative environmental impact as one of the main reasons for opposing the project. Bettina Cruz, Zapoteca activist from Juchitán, says about the wind farm, "*It is destroying the environment, it is polluting, it is drying the mantles, it is causing noise, it is killing the birds, it is deforesting"* (Bettina Cruz in DW Español 2018). Indigenous peoples furthermore claim that the noise of the turbines is affecting and hurting the people, as well as the fish, as they claim the noise is scaring away the fish and shrimps. (DW Español 2018).

These environmental implications on the natural environments also have implications economically for the populations, as the primary livelihoods include agriculture, livestock, and fishing (Nardi & Ramirez 2017:12). The use of land for wind farms, which besides the turbines also includes infrastructure such as roads necessary to access the windfarms, substations, and transmission lines, reduces the land available for agriculture and livestock, which can decrease local food production. (ibid:13).

According to the company behind Eólica del Sur, however, the wind turbines use less than 2% of the land occupied by the wind farm. The remaining land can therefore continue to be used for agriculture and livestock activities during construction and operation of the project and they therefore state that the project will not significantly diminish the agricultural and livestock activities in the area. (Eolica del Sur 2014: II-14).

Eólica del Sur furthermore states that income per capita is expected to increase due to the economic benefits the project will bring. Besides the payments to use the land, the creation of jobs is also seen as one of the main benefits for the indigenous peoples, and an estimated 300-500 workers would be hired during the preparation and construction of the wind farm, and 22 people hired for operation and maintenance.(ibid). The project is furthermore expected to drive and promote economic development in the area by creating economic flow through the increase in demand for goods and services that would benefit suppliers in the local area and thereby create further benefits for the population. (ibid).

The indigenous people, however, see these economic impacts as less beneficial, since they only benefit parts of the population. (Burnett 2016). Those who lease the land will receive the payments, although more people feel the negative implications. Furthermore, the payments are generally perceived as being much to low (Friede 2016:20). The majority of the jobs created are only temporary and many of the permanent jobs require more specialized labor. (Ibid:6). As the population is predominantly indigenous, and 25% of the indigenous population is illiterate, and 16% are monolingual, speaking only an indigenous language and thereby no Spanish, the job opportunities for these parts of the population are further limited. (Huesca Perez et al. 2016:959).

The economic benefits will in this sense only benefit part of the population and can thus contribute to an increase in inequality between part of the indigenous population. It furthermore clashes with the notion of equity established in the usos y costumbres governance structure, where distribution typically follows egalitarian rules and benefits, over time, are distributed in a more equal manner (Magaloni et al 2019) and as there was an expectation that everyone would benefit, whether or not they owned land, the situation contributes to a sense of injustice (Burnett 2016).

The company behind Eólica del Sur, as well as the Mexican government, emphasize the benefits this project will bring in terms of renewable energy leading to lower emissions of greenhouse gases and the transition away from the use of fossils fuels. (Eólica del Sur 2014: II-1), (DW Español 2018). This is a notable benefit for the Mexican government in reaching their goals and global commitments, it is a benefit for the private companies in terms of carbon credits and promoting themselves as being "green." These benefits are perceived somewhat differently by the indigenous people: "*They say renewable energy is beneficial for the whole world. But it is not beneficial for us. First of all, because we don't even use it.*" (Bettina Cruz in UN 2017). Furthermore, the priority of renewable energy is less in indigenous communities where some household still do not have access to basic services, such as electricity, and where less pollution is a benefit on a global scale, the air quality in the local communities is negatively affected by the emissions of particles in the preparation phase of the project that requires the movement of soil. (Eólica del Sur 2014:V-49).

In other words, one of the main benefits of the wind energy is considered less valuable on local scale for the indigenous peoples. Most of the negative implications of the project, however, are felt on local scale and are directly tangible.

The indigenous peoples perceive it as an injustice that wind turbines are placed on their land but there are still households without access to electricity. The issue of who benefits from the wind

farms is an important component in the grievance they experience. The fact that some households in the communities lack access to electricity and that the power produced by the wind farms is sold to multinational corporations like Coca Cola and Heineken, violates their sense of justice (Jung 2017:14) as indigenous peoples tend to consider wind a local resource, that should be used for local benefit (Huesca Perez et al. 2016:961). Since the majority of the wind farms in the Isthmus of Tehuantepec region are developed under the self-supply model, however, they are developed with the intention of delivering power to the private companies. (Friede 2016:5). CFE maintains the monopoly in providing the public service of transmission and distribution of energy. Eólica del Sur can thus not provide energy to the public, and the Mexican state therefore also plays a role in the injustice in distribution, as they promote the wind energy projects in the Isthmus of Tehuantepec region for the benefit of multinational companies, but do not ensure access to energy among the local population. This perceived injustice in distribution thus also points to a systematic exclusion and raises the questions of whether the project excludes Huave and Zapoteca communities for ethnic reasons (Jung 2017:13). This is related to the concept of Recognition Justice, which will be further analyzed in the section on Recognition Justice below.

Another important implication of the wind farm, from the perspective of the indigenous people, is the threat it poses to their culture and way of life. According to Bettina Cruz, they are defending their land, but also their culture and way of life.

"*I love being Zapoteca, the traditions, how we used to live, that is what I love. I have two daughters and I want that my daughters and maybe my grandchildren will be able to see it […] They won't let us be who we are, live the way we want to live, respecting the environment. They are destroying nature, for money*." (Bettina Cruz in UN 2017)

Bettina Cruz is thereby expressing concern for losing cultural heritage and the way of life of the indigenous peoples. Cruz further states that they do not oppose wind energy projects per se (Rodríguez 2019), but they see the protests as a defense of the land they inherited from their ancestors, and perceive the wind farms as a threat to their cultural heritage. (Huesca Perez et al. 2016:960). In their assessment of possible implications and risks of the project, Eólica del Sur states that the project will have no cultural or religious implications, as they mainly focus on avoiding construction in sites that are of particular cultural or religious importance. (Eólica del Sur 2014:II-13). They thus fail to consider the special place-based attachment of the indigenous peoples to the land.

In summation, the perception of what are the goods and bads of the wind farm, and the value of it, vary depending on the perspective of the actor. The benefits of the wind farm, as described by the project planners (Eólica del Sur 2014) as well as federal and state governments (SEGOB 2015), mainly focus on the economic benefits in terms of creation of jobs, direct payments for the lease of land, the economic development the project will, directly and indirectly, bring to the region, as well as the positive impact renewable energy has in combatting climate change. However, the indigenous peoples frequently have different perspectives, where the intended benefits are perceived as less beneficial or only temporary, and the negative implications of the project that are not considered as significant by the government and Eólica del Sur, has more value for the indigenous peoples and thereby represent a more significant environmental bad. The indigenous peoples seem to believe that the wind farm can bring prosperity and there are benefits, but not for them or their community, as the project is perceived to mainly benefit the multinational companies and the government. (Burnett 2016).

There is an uneven distribution of the benefits this project brings, but the negative implications are to a large extent affecting the same people. This forms the basis of their perception of distributional injustice which is furthermore amplified by the difference in perception of the environmental goods and bads. The wind farm is perceived as a threat to their way of life and culture, their livelihood, the environment, and the natural resources they depend on.

6.2 Procedural Justice

As mentioned in the theoretical framework section, in relation to an energy project, Procedural Justice refers to the processes and procedures of the project in question, and whether these procedures are transparent, allows for the participation of all stakeholders, and grants access to information related to the project. In the case of Eólica del Sur focus will especially be on the consultations processes carried out with the indigenous peoples, if the given consent can be considered free, prior, and informed, and to what extent indigenous people were allowed to participate in the process.

Consultations, and the right for indigenous peoples to participate in decisions related to issues that will affect them or their communities, are recognized both within Mexico, in articles 2 and 26 of Mexican Constitution , and article 119 of the Electric Industry Law (Friede 2016:28), as well as internationally, in the ILO convention 169, which Mexico has ratified and is thus legally binding.

Convention 169 requires consent to be Free, Prior, and Informed, and furthermore states the rights of indigenous peoples to be consulted and to participate in decision-making. (ibid).

As mentioned in the case background, consultations with local communities for the Eólica del Sur wind farm were carried out between October 2014 and July 2015. According to SENER, 40 public meetings were held during those eight months, the consultation process was based on the legislation above and consent was free, prior and informed. (Jung 2014:14). The indigenous people, however, do not consider the consultations to meet the principles stated in the ILO convention 169. This claim is supported by several organizations and other observers of the consultation process.

6.2.1 Free, Prior, and Informed Consent

Free Consent

For a consent to be considered *Free,* it must be given voluntarily, without the presence of coercion, intimidation or manipulation. Affected Communities are thus entitled to be consulted and participate freely. (FOA 2016:15)

The indigenous peoples, represented by the APPJ and APIIDTT, however, maintain that the consultations conducted by SENER were a farce and manipulated by state and federal authorities. Several ejido members opposing the project claim to have received threatening phone calls, pressuring them into giving consent to the wind farm being placed on their land. (Posada García 2015).

APPJ and APIIDTT do not perceive the consultations as free, nor as actual consultations:

"*Between 2014 and 2015 a consultation was supposedly made in Juchitán, but for us that was not a consultation, but a series of meetings where paid people threatened us*" (Bettina Cruz in Vanguardia 2018).

The organization ProDesc, in observation of the consultations, support the claim that the process was in violation of the FPIC principles and resulted in intimidation. (Vanuardia 2018). Human rights lawyer, Alba Cruz, from the Committee for the Defence of Human Rights Gobixha (Código DH) state that during the consultation process 30 incidents were registered, in addition to incidents occurring before the consultation process began. The incidents include attacks, threats, harassment, persecution, and attempts of kidnapping. (Sanchez 2015).

Prior Consent

For consent to be *prior*, it should be sought in advance of the beginning of activities, before any authorizations are given. (FOA 2016:15) The indigenous people therefore dispute than the consultations where *Prior* as the consultation process took place after the project was already defined and SEMARNAT had already approved the Environmental Impact Statement of Eólica del Sur. (Vanguardia 2018).

Former United Nations rapporteur, James Anaya, was among the invited observers in the initial phase of the consultation, and his observations confirm the claim that the characteristics of the project had already been determined before the consultation took place and the indigenous peoples were therefore not given the right to actively participate in the decision making on issues that significantly impact their lives, directly or indirectly. (Anaya 2015:2). Anaya further argues that the right to participation includes all phases, and not only in terms of implementation of a project already accepted and preferred by the state or company. (ibid). The local population was given the option to accept or reject a project, where the terms and conditions had already been determined. He thereby questions if the consultations can be characterized as prior.(ibid).

Informed Consent

In order to give *Informed consent,* stakeholders must have access to relevant information and the affected communities are entitled to clear, complete and accessible, accurate and transparent information on the possible risks of a project that could impact them. (FOA 2016:15)

The APPJ and APIIDTT claim their right to have access to relevant information was violated, as some of the information presented was only in Spanish and not in indigenous languages, and the conditions and potential risks were not clearly presented. (Vanguardia 2018). Anaya agrees that the information presented in the first phase of the consultation could be improved and presented in a more pedagogical manner, with less technical terms with experts to consider the complexity of intercultural communication. (Anaya 2015:4)

A representative from the APPJ furthermore stated that their requests for information, where 60 requests were expressed during the consultation sessions, and 15 in writing, were all ignored. Among the requests, were the request of a study about the impacts of other wind energy projects in the Isthmus of Tehuantepec region, but they were instead presented impact studies from other countries. (Sanchez 2015).

6.3 Participation

Based on the observations of the consultations, the mode of participation can be characterized as very top-down. The consultation process was led by the SENER and the mode of engagement was primarily communication as the project was presented to the local populations, who then had to approve or reject the project, without a two-way discussion or possibility to influence the project or its process.

Although the consultations end with consent, the outcome can not be seen as entirely positive, as the protests against the project continued and were brought to court. The level of participation and engagement of the indigenous peoples did not live up to the standards of ILO convention 169, according to the claims brought in the lawsuit by the indigenous communities. The consultation process, furthermore, does not reflect several of the factors that, according to Reed et al (2018), contribute to successful engagement outcomes.

First of all, the process design does not seem to consider the specific context of the state of Oaxaca and the indigenous peoples. The usos y costumbres structure, which is common in Oaxaca, suggest that the indigenous people who have his form of governance on municipal level, are accustomed to high levels of participation and deliberation in decision making. A well-designed engagement process should seek and value the different perspectives (Reed et al 2018:9), but this is not the case in the top-down, communicative approach, where the local population were presented a project with the characteristics already determined. The perspectives and values of the indigenous peoples were not significantly included in the Environmental Impact Statement conducted by Eólica del Sur. The lack of inclusion in the decision-making also makes the process less transparent which can furthermore lead to mistrust and alienation (Reed et al 2018:2). Transparency in the decision-making process is also a variable in the process design that can influence the attitude of the stakeholders and their perception of justice. In the case of Isthmus of Tehuantepec, there have been accusations of corruption related to the project, which increases the mistrust of and suspicion of government authorities and company representatives, who are perceived not to have the best interest of the indigenous peoples in mind. (Friede 2016:13).

Anaya furthermore points out that the Eólica del Sur company did not participate in the consultations. (Anaya 2015:4) Although it is the responsibility of the Mexican state to conduct the consultations, the lack of direct participation by the company means that the company only

indirectly interacts with the indigenous peoples, which does not contribute to reaching a consensus, but instead makes the process less transparent. (ibid).

The lack of understanding of the context can also mean that the scalar fit of the engagement did not contribute to a positive outcome. The consultation process focused on obtaining the consent for the Eólica del Sur project, but as previously mentioned, in the context of the Isthmus of Tehuantepec, the concerns and opposition among the indigenous peoples go far beyond one single project and is based on the general perception of injustice considering the concentration of wind energy projects in the area. Furthermore, the lack of awareness and understanding of the local context can mean that project planners underestimate the risk and implications associated with the project, as the implications can have different meaning or value in the local context of indigenous communities with a different belief system, as seen in the section on distributional justice. This view is supported by Anaya, who after his observations of the consultation process, stated that the operational personnel did not seem to understand the political context and the risks of investing in a historically oppressed population who is still waiting for the benefits of the over 15 years of wind farms in the area. (Anaya 2015:5). ProDesc further adds that consultations were not developed in consideration of the indigenous traditions, as planned sessions coincided with local, traditional festivities and celebrations, and attendance was therefore minimal. (Sanchez 2015).

In other words, the Eólica del Sur project fails to take into account the complexity of the context in which they operate in the design and execution of the project. The context, as mentioned above, is complicated by the political, social, and cultural factors of the indigenous communities, their belief system, and traditional practices. The situation is further complicated by the context of population group that has historically faced exclusion and oppression, and the regional context of the Isthmus of Tehuantepec with the highest concentration of wind farms in the country, and an indigenous population that do still not see the benefits of the projects, they believe they are entitled to and which were promised to them. The lack of perceived benefits from the wind energy projects in the region and the history of a government and multinational companies that prioritize their own agenda over the interest and concerns of the indigenous communities further contributes to the already existing mistrust of government authorities and multinational companies.

The consultation processes could have been a way for government and company representatives to gain support for the project, counter the perceived corruption, and improve the relations to the local populations, but this has not been the case with the process design of the consultations concerning

Eólica del Sur. The consultations ended with consent to the project. However, the claims above show that the consent might not have been free, prior, nor informed, which suggests a procedural injustice, as indigenous peoples did not have the option to participate in the decision-making process but were merely presented an option to approve or reject the project. Civil society organizations (Fundar, ProDesc and Código DH) that formed part of the Observation Mission of the consultations claim that less than 1% of the population in Juchitán actually consented the construction of the wind farm (Sanchez 2015).

The consultation was the first of the sort conducted in an indigenous community in relation to the development of a megaproject, as derived from the energy reform of 2013. (Sanchez 2015). It is therefore seen as a pilot process, and the indigenous peoples fear the lacking consultation will be replicated in future projects and thereby affect more communities. (ibid). According to Juan Antonio López, lawyer of ProDesc, the consultations appear to be conducted in order to comply with the requirements, but without realizing an actual, *real* consultation, in accordance with human rights standards. (ibid). The Supreme Court decision, in their ruling stating the consultations as valid and in accordance with national and international requirements, despite the claims of the indigenous peoples and several human rights organizations, thereby sets a precedent for future consultations that allow for a systematic and repetitive violation of the indigenous rights.

The procedural injustice linked to the Eólica del Sur project is therefore not only reflected directly in the consultation process, but also in the bigger procedural system where indigenous peoples' rights are not respected or protected. Legislation has been formulated to protect the rights of the indigenous peoples, and they have been allowed a governance structure on municipal level based on indigenous practice, and thereby have a certain level of autonomy and control over how decisions are made. But on state or federal level, when legitimate concerns and demand of the indigenous, in this case related to the cultural and environmental impacts of wind projects, clash with the goals and strategy of the government and international investors, the procedural system tends to favor the interest of the government and international investors over local concerns. (Jung 2017:7), (Howe & Boyer 2016:215). This can also suggest that indigenous people and their knowledge and values are not being equally recognized. The core tenets of recognition justice in relation to the indigenous peoples in the Isthmus of Tehuantepec will be analyzed next.

6.4 Recognition Justice

The findings that point to injustices in both distribution and procedures, furthermore, suggest that there is an injustice in recognition of the indigenous peoples, their knowledge and values.

Recognition justice or injustice is closely related to the distributional injustices as perceived by the indigenous peoples. As the analysis of the tenet of distribution justice shows, the perception of something as an environmental "good" or "bad" is significantly influenced by the perspective of the actors. When the Eólica del Sur company conclude that the project will not affect the cultural, economic, and religious heritage of the area (Eólica del Sur 2014:II-14), and that it is environmentally viable (ibid:VII-18), they fail to consider and recognize the perspective of the indigenous peoples, who do not share the same view on the project. The assessment of Eólica del Sur is based on an understanding and knowledge, these terms are not universal but vary significantly between the Eólica del Sur company and the Mexican government, and the indigenous peoples in Isthmus of Tehuantepec.

The location of the wind farm in the Isthmus of Tehuantepec region was to a large extent based on scientific studies such as the Wind Atlas (Elliott et al 2003), and the assessment that the project is environmentally viable is based on scientific studies; a type of knowledge that is considered valid, and objective, by Eólica del Sur and the Mexican government. But many indigenous cultures have a different worldview, where knowledge is not necessarily based on scientific studies. The Huaves and Zapotecas instead base their knowledge of the environment on knowledge obtained from living in, and from, the environment and the resources, knowledge that has been passed down through generations. (Somos Viento 2013).

As one local Huaves fisherman says in relation to the impact of the wind turbines on the environment and more specifically the damage to the sea, "*We know more than they do without ever having gone to university*" (Somos Viento 2013: 00:17:26) and another continues, "*We were born from the sea and that is how we know*" (Somos Viento 2013: 00:17:31).

When local indigenous peoples claim that the wind farm damage the environment, scare away the fish and thereby have negative implications on their livelihood, it is based on this knowledge. This knowledge, however, is not recognized and valued by the government and Eólica del Sur as legitimate.

Similarly, when the assessment of Eólica del Sur concludes that the project will not harm cultural and religious heritage, they are primarily considering avoiding archeological sites, or other areas

that are of particular cultural or religious significance to the indigenous peoples. This emphasis on specific sites, however, disregards the special relation many indigenous peoples have with the environment, where collective identity is derived from the surrounding environment. (Whiteman 2009:103). For the Huaves and Zapotecas in the Isthmus of Tehuantepec region, the sea and is considered sacred. "*The sea is the only thing that gives life to the people […] the sea is our mother*" (Somos Viento 2013: 00:21:28) and the land is considered a heritage left to them by their ancestors. (ibid: 00:08:58). A perceived threat to the environment and the sea is therefore also a threat to their identity and the opposition to the wind farm is thus a defense of their land and territory, but also their identity which is to a large extent place-based. A Zapoteca expresses the following, "*We are defending our life because, for us, our territory is our life. Without the territory, we are nothing*" (Fundar Mexico 2018: 00:03:30) which shows the importance of the environment for the indigenous peoples.

The indigenous peoples have no scientific backing for their claims of environmental damage and their claims are therefore not being heard and recognized. Furthermore, Anaya claims the personal of Eólica del Sur view the indigenous populations as inferior, their traditions and cultural practices being 'backward' and that the right to communal property has no place in a modern world. (Anaya 2015:5). Besides the lack of recognition of the knowledge of the indigenous people, there is thus also discrimination against them and their rights. Additionally, this transcends into the notion of procedural justice, because if their knowledge is not being recognized or seen as valid, project planners will not seek the input of the indigenous peoples in the consultation process and their inclusion and engagement will thereby not be sought.

The lack of recognition of the indigenous peoples and their rights is reflected as procedural injustices, as described above, in the consultation process of the specific energy project, where they are not included, but also in the supreme court ruling and a system that facilitates the interests of the government and foreign investors, but does not protect the rights of the indigenous peoples. The Eólica del Sur project produces injustices and further reproduces an existing structure where indigenous people are excluded from civil rights, have limited access to social services, and where their cultural practices are demeaned and perceived as inferior. (Jung 2017:15),

In summation, the analysis points to several injustices related to the Eólica del Sur wind farm. In terms of distribution, the indigenous population perceive the wind farm to impose a number of negative socio-environmental implications that will harm and pose a threat to their land, territory

and resources, and thereby harm their way of life, economic livelihood, and cultural integrity and heritage. Oppositely, they do not perceive any real benefits from the Eólica del Sur wind farm, nor from the other wind energy projects that have been taking place in the region since 1994 with the promise of bringing development to the region. There is a perception that the wind farms are being imposed on them as their claims are not being recognized or valued, and they are not included in the decision-making context, which furthermore clashes with their perception of justice and fairness, given their traditional practices in the usos y costrumbres. The main causes of the opposition are thus identified to be the socio-environmental implications posing a threat to their way of life, the lack of inclusion and participation, and the continued discrimination and disrespect of their indigenous rights.

The construction of the Eólica del Sur wind farm was delayed for several years due to the opposition from indigenous peoples in the local communities of the Isthmus of Tehuantepec region. The identified causes of the opposition point out aspects of the renewable energy project that are not considered sustainable, especially by indigenous peoples, and thus challenges the general perception of renewable energy as being aligned with sustainable development. The case thereby shows the need for a more nuanced discussion of the notion of sustainability in renewable energy projects, and how these projects can both contribute to or impede sustainable development.

7. Discussion: Sustainability and Renewable Energy Projects

"*Energy lies at the heart of the Sustainable Development Goals*" (SEforALL, n.d.)

The way in which we produce and consume energy is considered of crucial importance to reduce carbon pollution and to limit the rise in temperature to well below 2 degrees Celsius, as agreed upon in the Paris Agreement on climate change. (ibid). A transition away from fossil fuels to renewable energy is essential.

As previously mentioned in the section on Key Concepts, SDG7 calls for "*affordable, reliable, sustainable and modern energy for all*". Renewable energy is highlighted in one of the three core targets, which states that by 2030, the share of renewable energy in the global energy mix should be increased significantly. (ibid). Energy, and especially renewable energy, is thus seen as central in

combating climate change, and additionally considered central in working towards solving most of the major challenges the world is facing today, including social, political, and economic concerns. *"Be it for jobs, security, climate change, food production or increasing incomes, access to energy for all is essential.*" (UN n.d. – a). SDG7 is thereby linked to the majority of the other SDGs and the achievement of SDG7 and its three targets plays an important part in achieving other SDGs. (ibid) Former UN Secretary General, Ban Ki-Moon, furthermore expressed that "*sustainable development is not possible without sustainable energy"* (UN News Center 2014).

Because of the important role renewable energy plays for sustainable development, renewable energy projects are often perceived as being aligned with sustainable development in value-laden debates on energy where renewable energy, such as wind, is emphasized for its environmental benefits (Friede 2016:3). In Mexico, the boom in wind energy is also generally perceived as a win-win situation for the environment and economy of Mexico (ibid:5). However, renewable energy is not by definition sustainable, and as the case of the Eólica del Sur wind farm shows the notion of sustainability in a project can be complex to determine, as opinions on the environmental, social and economic implications and their extent vary significantly.

As mentioned in the section on key concepts, for sustainable development to happen the three pillars of environmental, economic, and social sustainability should be integrated, linked and coordinates, to ultimately meet "*the needs present without compromising the ability of future generations to meet their own needs*." (UN 1987).

In terms of environmental sustainability, the indigenous peoples do not consider the project to be sustainable, because they perceive the wind farms to be damaging the environment and they are concerned for future generations who will live in the region. Eólica del Sur, in contrast, consider the project environmentally viable. As mentioned, it is not the aim of this thesis to determine the degree of environmental damage, but the different perspectives on the environmental sustainability of the project highlight the complexity of the sustainability concept.

The indigenous communities in Isthmus of Tehuantepec do not perceive the project and its practices to be socially sustainable or to promote social development because of the negative implications the wind farm has on general wellbeing, cultural identities, and the injustices the project is producing by not considering the interest of the indigenous peoples.

Economic considerations were an important part of the site selection for the wind farm, as the excellent wind conditions allows the generation of power which is to be purchased by the private companies as end consumers. The ability to generate power from the wind is crucial for the economic viability of the project. The project was also expected to have a trickle-down effect and bring economic benefits to the local communities, but as the analysis shows, these benefits are being disputed. From the perspective of the indigenous peoples, the economic considerations in the project far outweigh the social and environmental considerations. They see the damage done to the environment as a damage in the heritage they will live future generations, for which reason they do not perceive the project as being sustainable nor as promoting sustainable development in the community.

Renewable energy can, in this sense, contribute to sustainable development as the transition away from fossil fuels is important part of the action against climate change which is further linked to other global challenges the SDGs seek to address. All energy sources will have some impact, and when sustainable development requires balance between environmental protection, economic growth, and social welfare, it also implies trade-offs where the beneficial contributions of renewable energy to the global challenges, outweigh the negative implications a renewable energy project has locally where it is implemented. But the assessment of sustainability in renewable energy projects is complicated by the various view and opinions on what is considered sustainable practice, as the concept of sustainability is "*intimately wrapped up with human values and institutions*" (Toman 1994:409) and the dominant view can lead to exclusion and oppression, as the case of the Eólica del Sur wind farms shows.

The ambiguity in the concept of sustainability thus limits the use of the concept in the ability to determine if the process and outcome of a renewable energy project is considered sustainable and how it contributes to sustainable development. Instead, the 2030 Agenda for Sustainable Development and the SDGs are presented as a *plan of action*.

The Eólica del Sur wind farm contributes to SDG7 and the target of increasing the share of renewable energy in the global energy mix, but it does not significantly contribute to universal access to energy, nor the principle of leaving no one behind, as people are considered to be left behind "*when they lack the choices and opportunities to participate in and benefit from development progress*" (UNDP 2018:3). The people that are left behind are overwhelmingly poor and marginalized, and experience disadvantage as they face inequality, exclusion, and

discrimination, with less ability to gain influence. (ibid:7). The wind farm can thereby impede sustainable development, as the process and outcome of the project contribute to the disadvantage the indigenous communities experience and reproduce a systematic structure where indigenous' rights are not recognized and respected.

Renewable energy projects can in this sense both contribute to and obstruct sustainable development. For renewable energy projects to also be considered sustainable, the environmental, economic, and social impacts of the project should be determined in a way that includes the perception of all stakeholders. Sustainability is closely related to notion of justice, and sustainability in renewable energy project therefore to energy justice. The core tenets of distributional, procedural and recognition justice can be used to identify the justice concerns associated with the project and to explore where the injustices occur. Revealing the injustices is necessary to reduce them. Incorporating considerations of energy justice into all stages of renewable energy projects will promote energy justice, which is closely related to sustainability and SDG7 and will therefore increase the notion of sustainability in renewable energy projects and their contribution to sustainable development.

The case of Eólica del Sur in the Isthmus of Tehuantepec region is far from the only example of local opposition to renewable energy projects (Cass & Walker 2009), or socio-environmental conflicts involving clashes between indigenous communities and governments (Raftopoulos 2017). Although each case is different, understanding the causes behind the opposition is important in order to address them appropriately so the renewable energy projects can reach the full potential in contributing to sustainable development. When the causes point to energy injustices related to the renewable energy project it furthermore challenges to sustainability

8. Conclusion

Examining the case of Eólica del sur wind farm in the Itshmus of Tehuantepec region of Oaxaca, Mexico through the lens of energy justice points to a number of injustices in both the process and outcome of the project, that can explain the causes of the opposition to renewable energy projects.

The indigenous peoples perceive a number of distributional injustices related to the location of the wind farm, as they directly experience all the negative implications of the project, but few of the benefits. The project is perceived to benefit few in the local communities, but mainly the Mexican government and multinational companies. The fact that the region has the highest concentration of

wind farms in the country, but still have households without access to electricity further contributes to the feeling of injustice. The environmental benefits of the project in terms of climate change mitigation, however, have both a temporal and spatial distance and are therefore not perceived or valued highly by the indigenous people.

The Mexican government and Eólica del Sur fail to consider the place-based attachment the indigenous people have to the environment, which explains why environmental impacts that are not considered significant by the company, are very significant to the indigenous peoples. The lack of recognition justice further contributes to the distributional and procedural injustices, where indigenous people are systematically being excluded.

The causes of the opposition to the renewable energy project thus lie in the injustices perceived in the process and outcome of the project and the wind farm being perceived as a threat to their way of life and the heritage they will pass on to future generations.

The case shows how renewable energy projects are not always sustainable for all actors involved, as the projects can produce energy injustices and thereby reproduce a structure where the rights of indigenous peoples are not respected or recognized, and where indigenous people face discrimination and exclusion. This challenges the notion of sustainability in renewable energy projects, as they can contribute positively to a sustainable development and to achieving the SDGs, but renewable energy projects can also work against sustainable development.

Indigenous peoples are typically not against renewable energy per se, but they are against the way the projects are being implemented without respect for indigenous and human rights. Renewable energy plays an important role in sustainable development and in achieving the SDGs and it is therefore essential that renewable energy projects become sustainable renewable energy projects, by identifying and addressing the injustices.

9. Bibliography

AMDEE (2019). *El Viento en Numeros.* Asociacion Mexicana de Energía Eolica [online] Available at: http://www.amdee.org/el-viento-en-numeros.html [Accessed 26 Dec. 2019].

Anaya, J. (2015): *Observaciones del profesor S. James Anaya sobre la consulta en el contexto del proyecto Energía Eólica del Sur en Juchitán de Zaragoza*. February 23. Consulta Indígena en Juchitán. [online] Available at: https://consultaindigenajuchitan.wordpress.com/documentos-2/documentos/.

Basiago, A.D. (1999) Economic, social, and environmental sustainability in development theory and urban planning practice. *The Environmentalist* **19,** 145–161. Boston: Kluwer Academic Publishers.

Baxter, J. (2017). Energy justice: Participation promotes acceptance. *Nat Energy* **2,** 17128 doi:10.1038/nenergy.2017.128

Brinkmann, S. & Tanggaard, L. (2010): Kvalitative metoder - En grundbog. København: Hans Reitzels Forlag.

Bryman, A. (2008). *Social research methods*. Oxford: Oxford University Press.

Burnett, V. (2016). *Los parques eólicos generan prosperidad en Oaxaca, pero no para todos*. [online] Nytimes.com. Available at: https://www.nytimes.com/es/2016/08/01/los-parques-eolicos-generan-prosperidad-en-oaxaca-pero-no-para-todos/ [Accessed 31 Dec. 2019].

Cass, N. and Walker, G. (2009). Emotion and rationality: The characterisation and evaluation of opposition to renewable energy projects. Emotion, Space and Society, 2(1), pp.62–69.

Chaca, R. (2019). *Un proyecto envuelto en conflictos y pugna indígena*. [online] El Universal. Available at: https://www.eluniversal.com.mx/estados/un-proyecto-envuelto-en-conflictos-y-pugna-indigena [Accessed 28 Dec. 2019].

DW Español (2018). *México y las energías renovables: impacto en los pueblos indigenas.* [video] Available at: https://www.youtube.com/watch?v=LSTiDVWAKZY [Accessed 31 Dec. 2019].

EJ Atlas. (2017). *Mareña Renovables in San Dionisio del Mar, Oaxaca, Mexico*. Environmental Justice Atlas. [online] Available at: https://ejatlas.org/conflict/marena-renovables-in-san-dionisio-del-mar-oaxaca [Accessed 28 Dec. 2019].

Elliott, D., Schwartz, M., Scott, G., Haymes, S., Heimiller, D. and George, R. (2003). *Wind Energy Resource Atlas of Oaxaca*. [online] U.S Department of Energy. Available at: http://pdf.usaid.gov/pdf_docs/PNADE741.pdf [Accessed 27 Dec. 2019].
Eólica del Sur (2014) Manifestación de Impacto Ambiental Modalidad Regional. Energía Eólica del Sur, S.A.P.I de C.V.

Espino, M. (2018). *SCJN niega amparo a pueblo indígena contra parque eólico en Oaxaca*. [online] El Universal. Available at: https://www.eluniversal.com.mx/nacion/politica/scjn-niega-amparo-pueblo-indigena-contra-parque-eolico-en-oaxaca [Accessed 28 Dec. 2019].

FOA (2016): *Free Prior and Informed Consent. An Indigenous peoples' right and a good practice for local communities.* Manual for project practitioners. Food and Agriculture Organization of the United Nations. [online] Available at: http://www.fao.org/3/a-i6190e.pdf [Accessed 15 Dec. 2019]

Friede, S. (2016) *Enticed by the wind. A Case Study in the Social and Historical Context of Wind Energy Development in Southern Mexico*. Wilson Center.

Fundar Mexico (2018) *Comunidad de Oaxaca lucha contra eólica* [video] Available at: https://www.youtube.com/watch?v=MPEHDeJPJHk

Gross, C. (2007). Community perspectives of wind energy in Australia: The application of a justice and community fairness framework to increase social acceptance. Energy Policy. 35. 2727-2736. 10.1016/j.enpol.2006.12.013.

Haggett, C. (2009). 'Planning and persuasion': public engagement in renewable energy decision-making. Renewable Energy and the Public: From NIMBY to Participation. 15-28.

Heffron, R. and McCauley, D. (2017). The concept of energy justice across the disciplines. *Energy Policy*, 105, pp.658-667.

Howe, C and Boyer, D. (2016); *Aeolian Extractivism and Community Wind in Southern Mexico*. *Public Culture* 1 May 2016; 28 (2 (79)): 215–235.

ILO (2013) Understanding the Indigenous and Tribal Peoples Convention, 1989 (No.169). Handbook for ILO Tripartite Constituents. Geneva. International Labour Organization.

International Energy Agency (IEA) and the World Bank (2014). *Sustainable Energy for All 2013-2014: Global Tracking Framework Report*.. Washington D.C.: The World Bank.

IPMG (2018) *Doing it Right! Sustainable Energy and Indigenous People.* A briefing paper by the Indigenous Peoples Major Group, with contributions from the Danish Institute for Human Rights. [online] Available at: https://www.indigenouspeoples-sdg.org/index.php/english/all-resources/ipmg-position-papers-and-publications/ipmg-submission-interventions/83-doing-it-right-sustainable-energy-and-indigenous-peoples/file

Jenkins K (2016) 'Sustainable Development and Energy Justice: Two Agendas Combined', in *Delivering Energy Law and Policy in the EU and US: A Reader*, Heffron R.J., and Little G. (Eds). Edinburgh University Press: UK: 381-384.

Jenkins, K. (2018). Setting energy justice apart from the crowd: Lessons from environmental and climate justice. *Energy Research & Social Science*, 39, pp.117-121.

Jung, C. (2017). The politics of horizontal inequality. Indigenous opposition to wind farm development in Mexico. Wider Working Paper 2017/146. UNU-Wider.

Lynggaard, K. (2015). Dokumentanalyse. In S. Brinkmann, & L. Tanggaard, *Kvalitative metoder* (Chapter 7), pp. 153-167. København K: Hans Reitzels Forlag

Magaloni, B., Díaz-Cayeros, A. and Ruiz Euler, A. (2019). Public Good Provision and Traditional Governance in Indigenous Communities in Oaxaca, Mexico. *Comparative Political Studies*, 52(12), pp.1841-1880.

Matías, P. (2019). *Inauguran en Oaxaca parque eólico de Mitsubishi; protestan frente a Rocío Nahle - Proceso*. [online] Proceso. Available at: https://www.proceso.com.mx/585990/inauguran-en-oaxaca-parque-eolico-de-mitsubishi-protestan-frente-a-rocio-nahle [Accessed 28 Dec. 2019].

McCauley, D., Heffron, R., Stephan, H., Jenkins, K., (2013) *Advancing energy justice: the triumvirate of tenets*, Int. Energy Law Rev. 32 (3) (2013) 107–110.

McIntosh, I. (2000). Are there indigenous peoples in Asia? Cultural Survival Quarterly Magazine. [online] Available at: https://www.culturalsurvival.org/publications/cultural-survival-quarterly/are-there-indigenous-peoples-asia [Accessed 04 Dec. 2019]

Nardi, A., & Ramirez, J. (2017). *Eco-friendly business or environmental injustices? International energy investments and indigenous struggles in Oaxaca, Mexico*. Paper presented at Congress of the Nordic Latin American Research Network (NOLAN), Gothemburg, Sweden.

Posada Garcia (2015). *Sener: oaxaqueños aprobaron parque eólico; se viola amparo: pueblos indios.* La Jornada. [online] Available at: https://www.jornada.com.mx/2015/08/05/economia/027n1eco?partner=rss [Accessed 12 Dec. 2019].

ProDesc. (2019). *Organización civil presenta folletos en zapoteco para explicar en qué consiste una consulta indígena*. [online] Available at: https://prodesc.org.mx/organizacion-civil-presenta-folletos-en-zapoteco-para-explicar-en-que-consiste-una-consulta-indigena/ [Accessed 19 Dec. 2019].

Raftopoulos, M. (2017) Contemporary debates on social-environmental conflicts, extractivism and human rights in Latin America, The International Journal of Human Rights, 21:4, 387-404

Rasborg, K. (2014). *Socialkonstruktivismer i klassisk og moderne sociologi*. In L. Fuglsang, P. B. Olsen, & K. Rasborg, *Videnskabsteori i samfundsvidenskaberne* (Chapter 13), Pp. 403-438. Frederiksberg C: Samfundslitteratur.

Rodríguez, Ó. (2019). *El Istmo de Tehuantepec, 'cementerio' de proyectos*. [online] Milenio.com. Available at: https://www.milenio.com/estados/el-istmo-de-tehuantepec-cementerio-de-proyectos [Accessed 31 Dec. 2019].

Sánchez, M. (2015). *La Sener amañó la consulta, dicen indígenas de Juchitán: se amparan contra parque eólico*. [online] sinembargo.mx. Available at: https://www.sinembargo.mx/20-08-2015/1457712 [Accessed 14 Dec. 2019].

Sarantakos, S. (2013). Social research. 4th ed. London: Red Globe Press.

Schlosberg, D. (2004) "Reconceiving Environmental Justice: Global Movements and Political Theories", in *Environmental Politics* 13 (3): 517-540.

Scott, J (1990). A Matter of Record – Documentary Sources in Social Research. Cambridge: Polity Press in association with Basil Blackwell

SEforALL (n.d) *Understanding SDG7*. Sustainable Development for all. [online] Available at: https://www.seforall.org/understanding-sdg7. [Accessed 15 Dec. 2019].

SEGOB (2015) *La Energía Eólica en Mexico – Una perspectiva social sobre el valor de la tierra*. Secretaría de Gobernación. [online] Available at: https://www.gob.mx/cms/uploads/attachment/file/31621/eolico.pdf [Accessed 15 Dec. 2019].

SENER (2016): Prospectiva de Energías Renovables 2016-2030. Government of Mexico. [online] Available at https://www.gob.mx/cms/uploads/attachment/file/177622/Prospectiva_de_Energ_as_Renovables_2016-2030.pdf [Accessed 02 Dec. 2019].

SENER (2018) Reporte de Avance de Energías Limpias. Primer Semestre 2018. Government of Mexico. [online] Available at https://www.gob.mx/cms/uploads/attachment/file/418391/RAEL_Primer_Semestre_2018.pdf

Shah, R. & Bloomer, P. (2018). *Respecting the Rights of Indigenous Peoples as Renewable Energy Grows*. Standford Social Innovation Review. [online] Available at: https://ssir.org/articles/entry/respecting_the_rights_of_indigenous_peoples_as_renewable_energy_grows. [Accessed 20 Nov. 2019].

Somos Viento (2013) *Somos viento - resistencia en el Istmo contra el proyecto eólico de Mareña Renovables.* [video] Available at: https://www.youtube.com/watch?v=9R3FFxlALUI [Accessed 20 Nov. 2019].

Sovacool, B. and Dworkin, M. (2015). Energy justice: Conceptual insights and practical applications. *Applied Energy*, 142, pp.435-444.

Sovacool, B., Heffron, R.J., McCauley, D., Goldthau, A., (2016). Energy decisions reframed as justice and ethical concerns. Nat. Energy 1. http://dx.doi.org/10.1038/ nenergy.2016.24.

Toman, M. (1994). Economics and "Sustainability": Balancing Trade-Offs and Imperatives. *Land Economics*, *70*(4), 399-413. doi:10.2307/3146637

UN (n.d.). *Sustainable Development Goals - The Sustainable Development Agenda*. [online] Available at: https://www.un.org/sustainabledevelopment/development-agenda/ [Accessed 23 Dec. 2019].

(UN n.d. – a). Ensure access to affordable, reliable, sustainable and modern energy – 7 Affordable and Clean Energy. United Nations Sustainable Development Goal. [online] Available at: https://www.un.org/sustainabledevelopment/energy/ [Accessed 23 Dec. 2019].

UN (2017). *Vientos de Discordia*. Objetivos de Desarrollo Sostenible. United Nations. [video] Available at: https://www.un.org/sustainabledevelopment/es/2017/04/vientos-de-discordia/ [Accessed 31 Dec. 2019].

UN, (1987) Our Common Future - Brundtland Report. Oxford University Press, p. 204.

UN (2016). *Affordable and Clean Energy – Why it matters.* [online] Available at: https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/7.pdf [Accessed 23 Dec. 2019]

UN Commission on Human Rights, *Report of the Sub-Commission on Prevention of Discrimination and Protection of Minorities on its 34th session : study of the problem of discrimination against indigenous populations.*, 10 March 1982,

UN Economic and Social Council (1997). *HUMAN RIGHTS OF INDIGENOUS PEOPLES Report of the Working Group on Indigenous Populations on its fifteenth session*. Geneva: COMMISSION ON HUMAN RIGHTS Sub-Commission on Prevention of Discrimination and Protection of Minorities, p.11. [online] Available at https://undocs.org/E/CN.4/Sub.2/1997/14 [Accessed 25 Nov. 2019].

UN General Assembly. (2015) *Transforming our world: the 2030 Agenda for Sustainable Development*, 21 October 2015, A/RES/70/1

UN News Center (2014). *UN Launches Decade-long Sustainable Energy for All Initiative*. Our World. United Nations University. [online] Available at https://ourworld.unu.edu/en/un-launches-decade-long-sustainable-energy-for-all-initiative. [Accessed 09 Dec. 2019].

UN SDSN (2015) SDG Guide. *Chapter 1: Getting to know the Sustainable Development Goals - An Introduction to the SDGs*. [online] Available at: https://sdg.guide/chapter-1-getting-to-know-the-sustainable-development-goals-e05b9d17801 [Accessed 23 Dec. 2019].

UN Permanent Forum on Indigenous Issues, (n.d.). *Who are indigenous peoples?* United National Permanent Forum on Indigenous Issues. [online]. Available at https://www.un.org/esa/socdev/unpfii/documents/5session_factsheet1.pdf. [Accessed 10 Dec. 2019].

UNCED (n.d.). *Agenda 21*. [online] Sustainabledevelopment.un.org. Available at: https://sustainabledevelopment.un.org/milestones/unced/agenda21 [Accessed 23 Dec. 2019].

UNESCO (n.d) Sustainable Development. [online] Available at: https://en.unesco.org/themes/education-sustainable-development/what-is-esd/sd [Accessed 23 Dec. 2019].

UNDP (2018). What does it mean to leave no one behind? A UNDP discussion paper and framework for implementation. [online] Available at: https://www.undp.org/content/dam/undp/library/Sustainable%20Development/2030%20Agenda/Discussion_Paper_LNOB_EN_lres.pdf

Villavicencio Calzadilla, P. and Mauger, R. (2017). The UN's new sustainable development agenda and renewable energy: the challenge to reach SDG7 while achieving energy justice. *Journal of Energy & Natural Resources Law*, 36(2), pp.233-254.

Vangardia (2018). *SCJN falla a favor de los indígenas de Juchitán y en contra de parque eólico español*. [online] Available at: https://vanguardia.com.mx/articulo/scjn-falla-favor-de-los-indigenas-de-juchitan-y-en-contra-de-parque-eolico-espanol [Accessed 14 Dec. 2019].

Viscidi, L. (2018). *Mexico's Renewable Energy Future – A Working Paper*. Wilson Center. Mexico Institute. [online] available at: https://www.wilsoncenter.org/sites/default/files/mexico_renewable_energy_future_0.pdf

Yin, R. (2009). *Case Study Research: Design and Methods*. 4th ed. Applied Social Research Methods Series. Volume 5.

Whiteman, G. (2009). *All My Relations: Understanding Perceptions of Justice and Conflict between Companies and Indigenous Peoples.* Organization Studies, 30(1), pp.101-120.

Yin, R. (2013). Validity and generalization in future case study evaluations. *Evaluation*, 19(3), pp.321-332.