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DOCTORAL THESIS

Towards a people-centred sustainable energy transition: Exploring energy justice in Yucatan, Mexico

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Abstract

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Towards a people-centred sustainable energy transition: Exploring energy justice in Yucatan, Mexico

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Energy transitions are shaped by different worldviews, interests, and values. Achieving more socially just sustainable energy transitions around the globe necessitates an evaluation of energy justice principles from a wide range of different perspectives. While existing literature provides rich conceptualisations and insights into energy justice debates, those theorisations remain dominated by conceptions of justice and theories of development from Western currents of thought. Applying these theorisations of energy justice to the formulation and implementation of energy policies in developing countries - where levels of complexity vary widely - have led to damaging outcomes. Insufficient attention has been paid to further developing and expanding empirical and theoretical approaches of energy justice based in the Global South.

Drawing upon a qualitative in-depth case study, this research addresses this gap, by investigating issues of justice in the implementation of two solar and two wind large-scale projects in rural and indigenous communities in Yucatan, Mexico. Utilising data from semi-structured interviews, participant observation and secondary data analysis, I explore how actors, policies and practices can intersect to form a more socially just and sustainable energy transition from a bottom-up perspective.

The findings of this study provide fresh insights into how energy justice concerns -such as the non-recognition of historically exploited contexts, the exclusion of affected groups in key decision-making, and the inequitable distribution of projects' outcomes- influence wind and solar energy implementations and policy. Findings also demonstrate a fundamental need to expand prominent energy justice frameworks, to include more pluralist ideas of justice. Incorporating concepts such as self-determination, energy democracy, and self-recognition in the energy justice framework is crucial if we aspire to form more socially just and sustainable energy transitions. Following the findings of this research, recommendations for policymakers and pathways for future research are proposed.

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Contents

List of Figures

Chapter 1

Introduction

The current energy system is not working. Rather than improving the quality of life for all people, it is mostly a perverse resource extraction machine. The social gaps generated by the unfair distribution of resources, the commodification of nature and the disparagement of the human and collective rights of the most vulnerable populations make it necessary to think of indispensable processes of revaluation, recognition and democratisation as key elements for the construction of another energy reality.

The current anthropocentric, capitalist, and fossil fuel reliant energy system has unleashed not only a global climate crisis, but also a civilisational one (Estermann, 2012; Kumar, Höffken, & Pols, 2021; Lander, 2015). As a result, a broad consensus has been reached around the importance of transitioning to low carbon energy systems (Nations, 2015). However, there is little agreement on how to do this in an equitable, sustainable and effective way.

In an attempt to face this crisis, the governments of countries in the Global North and south have opted for the deployment of large-scale "clean" energy projects as the main model for a renewable energy transition . This is the case for the Mexican government, who in 2016 set an ambitious commitment to increase clean energy generation from 21% to 35% by 2024 (EIA, 2016e). To meet these objectives, the government introduced a Long-Term Auction (SLP) system that offers stability and long-term contracts to investors interested in generating large-scale energy capacity (SENER, 2016)- with the only requirement to offer the lowest price in the market. Within this SLP system, the Yucatan peninsula in southern Mexico was selected to host more than 20 large-scale wind and photovoltaic projects. If approved, these projects would occupy almost 14,000 hectares of land, of which 30% are *ejido* (communal) land (Sanchez, Reyes, Patino, Munguia, & Deniau, 2019). So far, this deployment of mega-projects has favoured financial speculation, increasing land privatisation and illegal land-use changes, damaging the local environment and causing community opposition to this renewable infrastructures, paving the way for a socially unjust and ecologically unsustainable energy transition.

While is worth recognising that renewable energies produce less carbon that fossil fuels, they reproducing similar social and local ecological negative effects. This, due to its need to spread over new and extensive territories, but above all because it follows the same capitalist and extractivist logic of dirty energy models, generating conflict, affecting biodiversity, damaging the livelihoods of local peoples; and therefore, doing little to solve the unsustainability problem of the current energy systems.

Energy transitions and development projects have often been controversial and resisted by local communities, especially in the case of investments in non-renewable energy such as fracking or nuclear power. However, with renewable energy, there is a greater risk that voices of (the most vulnerable) key stakeholders go under-heard

since predominant discourses of "clean energy", "sustainability" and "progress" silence dissenting voices. These predominant discourses are reinforced by the pressing climate emergency -generating dangerous bias favouring renewable energy implementations over local opinions and impacts (Janeiro & Patel, 2015). If we accept that renewable energy transitions are important for the future of our planet, we have to put our efforts these transition models do not reproduce the same socio-environmental issues of the previous ones.

Various scholars agree that the solution is to opt for a just energy transition, however most of them advocate that these transition models must be imposed from the top down. That is to say that the authorities and the people in power and the experts are in charge of leading this transition.While it is pertinent that current governments direct their efforts and policies to facilitate a transition to the use of renewable energy, this thesis argues that top-down models are problematic and reproduce injustices. These models have been mainly problematic in rural areas and with indigenous populations, where conflicts due to renewable projects multiply exponentially.

A recent study that undertook a systematic mapping of 649 cases of resistance movements to both fossil fuel and low carbon energy projects demonstrated that low carbon projects are almost as conflicting as fossil fuels, disproportionately impacting vulnerable groups such as indigenous communities. While "Indigenous peoples constitute 3% of the global population, they are impacted in no less than 50% (n = 322) of cases examined" (Temper et al., 2020, p.14). A similar percentage is representative of both fossil fuels and renewable projects. This is a tremendously unfair situation and evaluations need to be made on how these models can be made less unfair, especially from the perspectives of rural and indigenous communities. Socio-environmental injustices derived from renewable energy projects and those impacted should be put at the forefront of energy justice and transitions discussions.

Paradoxically, indigenous people are increasingly being acknowledged for their contributions to the worldwide effort to protect ecosystems and slow the rate of climate change. Due to its rich biodiversity and indigenous cultures, Mexico has been an active participant in international agreements recognising these values. However, prejudice and violence against activist and indigenous groups prevail in energy governmental policies and practises (Sánchez Arceo, Reyes Maturano, Escalante Kantun, & Patiño Díaz, 2021).

Currently, more than 20 renewable energy megaprojects with potential to harm the local environment have been identified in Yucatan, of which five are already in operation (two photovoltaic parks and three wind farms) (Sanchez et al., 2019). The state of Yucatan is recognised as a biocultural region. It is distinguished by a high level of biodiversity in its ecosystems, which are inextricably linked to indigenous civilisations, most notably the Mayan, an ancient culture that survives to this day. The Mayan peoples preserves traditions and expertise that help protect the areas' ecology. such as the *milpa*, vernacular construction and respect for the "mountain". Although the INEGI indicates that 54% of the peninsular population self-identifies as indigenous, there are other population groups with significant roots that have also generated traditional knowledge and practices that have sustained the territory. However, all these local populations have been left out of decisions about their territories, violating their right to self-determination, which not only implies participating in decision-making, but also proposing and developing their own forms of organisation and visions of the future. This systematic violation and discrimination has been exacerbated in recent years in Yucatan, due to multiple megaprojects in the area, among which wind and solar projects stand out (Sánchez Arceo et al., 2021).

For this reason it is key to evaluate, from a bottom-up perspective, the injustices perceived and experienced in the implementation of this kind of projects, so that we can understand the issues top-down energy transitions provoke and identify innovative solutions for more just and sustainable energy transition (Sánchez Arceo et al., 2021).

Literature critiquing the ethics and sustainability of large-scale solar and wind projects has exponentially expanded in the past decade (Avila-Calero, 2017; Bickerstaff, Walker, & Bulkeley, 2013; Dunlap, 2017:a). The energy justice framework in particular has focused on evaluating the fairness in decision-making process and distribution of benefits and risks of energy systems (K. Jenkins, McCauley, Heffron, Stephan, & Rehner, 2016). However, the bulk of this literature has developed from the experience and concepts of Global North countries, utilising universal ideas of justice -i.e. concepts and precepts which pre-assume a common or unique conception of justice shared by everyone-. Assuming universal ideas of justice is mistaken given the wide range of socio-cultural diversity found in the real world. Ignoring that we live in a multicultural society coupled with the desire to concentrate power leads governments around the world to develop technocratic top-down approaches to energy transitions. These approaches are specially inappropriate and dangerous for policy application in Global South and rural indigenous contexts, where levels of social and economic marginalisation are acute(Bombaerts, Jenkins, Sanusi, & Guoyu, 2020; Kumar, Höffken, & Pols, 2021; Sovacool, Burke, Baker, Kotikalapudi, & Wlokas, 2017; Yenneti & Day, 2016). Consequently, current energy justice frameworks are insufficient to evaluate the wide range of energy injustices found in the Global South as well as coming up with normative ideas that tackle entrenched structural factors obstructing the path toward equitable and sustainable societies (Broto, Baptista, Kirshner, Smith, & Alves, 2018).

Pursuant to this, the present research seeks to contribute to expanding the current Global North-based conceptualisations of energy justice by exploring the renewable energy transition in rural and indigenous communities in Yucatan Mexico. The research also provides a context-specific understanding of the social implications of renewable energy transitions and identifies opportunities for addressing them.

Building from this starting point, this thesis addresses the two main following research questions:

1. From a bottom up perspective, what issues of justice arise in the implementation of renewable energy- particularly solar and wind projects in rural Mexico?
2. How can Global South theoretical ideas and experiences enhance energy justice frameworks for more socially just energy transitions?

To address the first main question, the thesis considers the following sub-questions.

1.1 What are the main policies influencing the Mexican Renewable Energy Transition and to what extent do they consider principles of justice?

1.2 How do issues of justice arise in how the risks and benefits of solar and wind projects have been distributed among key stakeholders in Mexico?

1.3 How effectively have procedural justice principles such as participation, inclusion, and information disclosure been applied in the implementation of projects in Mexico?

1.4 To what extent are recognition-based justice principles found in the sitting of renewable energy infrastructure in Mexico?

To address the second main question, the thesis considers the following sub-questions.

2.1 What can an examination of distributional, procedural and recognition justice principles (or lack thereof) in rural and indigenous contexts tell us about the energy justice framework and just energy transition overall?

2.2 What opportunities can be identified for making energy transitions more sustainable and socially just?

By answering these questions, this research will make a critical contribution to the field of energy justice and just energy transitions - partially filling the gap between Global North and Global South conceptualisation of justice and the best approaches for achieving a socially just and sustainable energy transition.

1.1 Thesis structure

Following this opening chapter, the remainder of the thesis is organised as follows.

Chapters 2: The Literature Review chapter critically evaluates energy justice and energy transition literature gaps, particularly in relation to its shortcomings in engaging the realities and theories of the Global South.

Chapters 3: The methodology chapter provides the rationale for choosing a qualitative and case-study approach. It then explains the geographical context highlighting some of the reasons and advantages for choosing the different case studies. The chapter then process to critically reflect on the research methods selected and the challenges found while doing research in rural Mexico. It finishes with some reflections on the positionality of the researcher

Chapters 4: As a policy review chapter, it makes a critical examination on the controversies found in the key policies influencing the renewable energy transition in Mexico. It highlight how current energy policy explicitly prioritises the development of projects over peoples concerns while also implementing legal instruments that seek to protect local peoples human rights

Chapters 5: The Distributional Justice explores the benefits and risks of renewable energy projects based on the perspectives and experiences of local communities and grassroots organisations. The chapter makes a critical examination of Benefit-Sharing schemes implemented in Mexico as a way to comply with principles of distributional and draw some reflections on what can these tell us about the energy justice framework and dominant models of renewable energy transition overall. The chapter closes with a brief section on opportunities identified for addressing distributional injustices found on the ground

Chapters 6: The Procedural Justice chapter generates new empirical insights of how procedural justice ideas are applied in a Global South context, and particularly, how rural indigenous context experiences and perceive this practices. It evaluates information exchange, participation and agency of local people to influence on key projects decisions. It then discusses how notions of autonomy and self-determination can contribute to achieve more socially just energy transition in rural communities in Mexico

Chapters 7: The Recognition-based justice chapter explore examines injustices related to non-recognition, misrecognition and disrespect of local indigenous indigenous communities rights, knowledge and values. It does this by presenting the voices of local community members and through analysing the different legal mechanisms and discourses used in the implementation of large-scale solar and wind farms in Yucatan Mexico

Chapters 8: Finally, the conclusion chapter, provides details on the theoretical and empirical key contributions of this research

Chapter 2

Literature Review

2.1 Introduction

The principal objective of this chapter is to critically review some of the theoretical constructions around energy justice and energy transitions theory and its shortcomings in engaging the realities of the Global South. This chapter will also present some key theories and concepts from Latin American scholars and philosophies, such as the Good Living (*Buen Vivir*) and Latin American "alternatives to development". This ideas and concepts will be key in complementing current eurocentric energy justice frameworks and theories.

Following this introduction, the remainder of the chapter is arranged as follows: First, it begins with a discussion on the Energy transitions literature and its shortcomings in engaging the realities of the Global South. Then, it provides a critical analysis of prominent theories of social, environmental and energy justice. Finally, it engages with some Latin American theories that could be helpful to improve current frameworks of energy justice.

2.2 Energy transitions literature and its shortcomings in engaging the realities of the Global South

Firstly, it is important to start by identifying what is an energy transition and what do we refer exactly when we talk about an energy transition in this thesis.

An energy transition (ET), in its broadest sense, refers to the process of shifting from one type of energy system, fuels and sources of primary energy supplies to another (Sovacool, Hess, & Cantoni, 2021) . Traditionally, ET used to be seen in terms of fuel sources. However, in recent times, there is a growing literature arguing for ET not to be seen as a process involving only technological leapfrogging, but also the broader social process that stimulates and shapes this transition (Miller, Iles, & Jones, 2013). In this sense, and specially in social sciences, ET came to be seen as "inherently sociotechnical in character" (Sareen & Haarstad, 2018, p. 625), which allowed for different conceptualisations of socio technical transitions to appear, including Multilevel perspective (MLP) on sustainability transitions, strategic niche management perspective (SNM) transition management (TM), and technological innovation systems (TIS) (see Markard, Raven, & Truffer, 2012)

While there have been numerous contributions from different fields, engaging with perspectives and realities of the Global South has been a frequent shortcoming in ET theory. Insights from political ecology, for example, have demonstrated the importance of acknowledging the relevance of concepts such as power relations, the use of knowledge, discourses, race, class and gender in different contexts (Adger,

Benjaminsen, Brown, & Svarstad, 2001; Lawhon & Murphy, 2012). Traditional studies in transitions, however, have fail to give the necessary importance to the analysis and inclusion of these concepts when analysing ET and which are of particular relevance for developing countries. Transition management theory, for instance, has made dangerous assumptions in theorising the dynamics of ET by assuming that making partnerships with the state will facilitate energy transitions for sustainable development (Lawhon & Murphy, 2012). However, this is not the case when issues of sustainability are not priority for the government (Rock, Murphy, Rasiah, van Seters, & Managi, 2009). What is more, assumptions like these can have opposite outcomes when conflict of interests between governments and big energy companies exist (as it is often the case in developing countries) for Economic Co-operation and Staff (2005). Likewise, factors such as the use of power relations and discourse for manipulation can greatly influence transitions processes in developing countries where levels of literacy, inequality and/or poverty can exceed more than 50% of their population (Bank, 2016).

Another assumption in MLP and SNM frameworks is that to understand the factors leading to transitions, there should be a relative stability of niches and regimes, and that a critical precondition for sustainability transitions is the existence of instability in the regime (Hansen et al., 2018). Based in this idea, the often less stable governance regimes in Global South countries should stimulate and benefit niche development and regime change. However, some studies in developing countries have shown the opposite, arguing that "unstable (and highly dynamic) regimes can also create barriers for niche development" (Verbong, Christiaens, Raven, & Balkema, 2010, p. 279), (see also van Welie & Romijn, 2018).

Transition theory has also been criticised for its implicit preference on including elite and experts' actors on the decision-making process of policy and technology innovations (Kemp & Loorbach, 2006; Voß, Smith, & Grin, 2009). Even though, theoretically, TM mention the importance of including diverse actors, in practice, TM studies "generally emphasise the voice and agency of individuals directly involved in technical or economic policy changes, eliding those individuals affected by or directly involved in the social or political changes that will accompany a transition toward sustainability" (Lawhon & Murphy, 2012, p. 361). Although this might be a problem in both developed and developing countries (Hansen et al., 2018; Wieczorek, 2018), the exclusion of key actors in Global South contexts (such as indigenous communities) might provoked violent conflict and opposition to the implementation of certain type of technologies, as it has been seen in several cases (see Brown, 2011; Dunlap, 2017:a; Edsand, 2017).

On the other hand, different studies have demonstrated that local people such as indigenous communities have deeper and more extensive knowledge of the local conditions, which can be very helpful in developing innovations as well as in establishing more bottom-up oriented approaches, as the emerging frugal innovation and inclusive innovation (Onsongo & Schost, 2017). Similarly, Seyfang and Smith (2007) emphasises the concept of community-led "grassroots innovations" and summaries how SNM theory could be applied in this context by using the example of Transition Towns (TT) movement in UK, a grass root innovation and a civil society movement that focus in addressing the challenges of climate change through local community-based action such as community-owned renewable energy companies, promoting locally grown food, among other activities that try to bring about "system transformation" and contribute to the process of sustainability transitions (Hopkins et al., 2008).

In a similar base, rural communities and grass root movements around the world

have rejected "the role of resource extraction periphery in a rationally-ordered economy" (Mihaylov & Perkins, 2015, p. 125) and they have engaged in challenging the myth of modernisation (Woods, 2003). This, by fighting for locally-controlled development and proposing initiatives such as community-based renewable energy projects, where they are no longer seen as recipients or affected but as active partaking in the decision-making process -from land use planning to the financial and contractual conditions of the project development. The above reveals the importance of engaging community perspectives and knowledge in transition literature. This research contributes by expanding the debates on the importance of community-based initiatives to achieve more socially just and sustainable energy transitions.

Overall, conceptual and definitions approaches dealing with energy transitions are vast. Scholar have made significant contributions to the ET by highlighting the importance of political and economic aspects L. Baker, Newell, and Phillips (2014); Geels (2014); Meadowcroft (2009), geographical aspects (Bridge, Bouzarovski, Bradshaw, & Eyre, 2013), as well as pointing out the ethical dilemmas (K. Jenkins, Sovacool, & McCauley, 2018). Sovacool and Hess (2017), for example, compiled a list of 96 theories related to studying energy transitions and sociotechnical change, many of which aimed to address concerns of justice, sustainability, and moral values.

The importance of justice in transition literature has been highlighted by a few scholars. Earlier interactions with justice in transition literature came from the notion of "just transition". Swilling and Annecke (2012) present a thorough review of global environmental and sustainability concerns "in an unfair world", calling for a balanced global approach to resource usage and management. More recently, Jasanoff (2018) reaffirms the necessity to include global, planetary-boundary justice in energy transitions. She proposes "humility" to address the uncertainty, misunderstanding, and unfairness in energy and ecological policy (Jasanoff, 2018).

An alternative way of incorporating justice is referred to as "justice in transitions", and it is characterised by the following characteristics: In their 2017 paper, Van Steenbergen and Schipper claim that "when dealing with transitions, one is inexorably drawn into moral and ethical concerns. They contend that justice should be viewed as a process, not an end result, arguing that justice is an essential and integral part of systemic change" (2017, p. 8). Another approach is advocated by Heffron and McCauley (2018), who propose combining multiple frameworks of justice, including climate justice, environmental justice, and energy justice, with transition theories and legal geography to form the "JUST" framework. The framework's objective is to "identify problems, and provide research and policy-led solutions" (Heffron & McCauley, 2018, p. 76).

Many important discussions on energy transitions revolved around "just energy transition" (D. McCauley & Heffron, 2018), "sustainable energy transition" (Solomon & Krishna, 2011), "sustainability transitions", "low-carbon energy transitions", and energy transitions analysed though energy justice (K. Jenkins et al., 2016; Sovacool & Dworkin, 2014), among others. Indeed as the topic is so extensive, some scholars have tried to create theoretical frameworks that interlink the various concepts, for example, Siciliano, Wallbott, Urban, Dang, and Lederer (2021) have established a conceptual linkage between "sustainable development", "low-carbon energy transitions" and "energy justice" in order to facilitate a better understanding of the multidimensional and complex aspects of low-carbon energy transitions for policy. Similarly, due to the "almost inexhaustible" number of conceptual frameworks that have emerged in an attempt to explain the interconnected phenomena of energy transitions, low-carbon transitions, or sociotechnical change, Sovacool et

al. (2021) created a meta-theoretical framework trying to integrate the three perspectives in an attempt to offer framework capable of "analysing transitions from their "cradle" of design to their "life" of use to their "grave" of after-effects".

Yet, despite of the vast universe of energy transition-related theories, these frameworks follow the same anthropocentric approach championed by western ideology and traditions, which may be inadequate for delivering a transition towards a more equitable and less environmentally destructive future energy system (Broto et al., 2018; Sovacool et al., 2017). In fact, actions to promote "sustainable", "renewable" and "modern" transitions have a high risk of provoking more negative socio-environmental impacts, reinforce established forms of inequality exacerbating existing inequalities or introducing new vulnerabilities if structural issues are not addressed first (Kumar, Höffken, & Pols, 2021). When renewable energy projects are deployed in a large- scale with mercantilist logistics this risk increases and have the potential to intensifying the ecological crisis, promoting what many call green washing Harlan (2021); Johnsson, Karlsson, Rootzén, Ahlbäck, and Gustavsson (2020), energy colonialism Batel and Devine-Wright (2017); Dunlap (2018:c), green (post) colonialism Huggan and Tiffin (2007); Willis (2019), among others. Against this backdrop, an energy transition that is non-western and non-human-centered and non-based on universalist ideas of justice and sustainability is required.

An important point to highlight when discussing energy transitions is that an "energy transition" looks very different depending on the geographical region, local geography and culture. Therefore the methods to make it more just will be very different according to space and context making it an appeal for engaging with more pluralistic theories.

Historically, energy transitions have often been controversial, and resisted by local communities. However, with renewable energy, there is, I argue, often a greater risk that voices of key stakeholders in the transition process go under-heard, because constants discourses of "sustainability" and "progress" might generate bias favouring the renewable energy projects over the impacts in local communities (Janeiro & Patel, 2015). If we accept that these transitions are important for the future of our planet, we have to find a way to ensure that the voices of all stakeholders are included in the debate, in order to minimise potential harm and potentially even help ensure that they all benefit. I believe that the concept of justice can help us to do this. However critical approaches to the conception of justice itself must be done.

2.3 Investigating Justice

Since this research aims to evaluate and deconstruct aspects of (in)justice in the implementation of renewable energy projects as well as suggest routes for a more just energy transition, it is critical to understand the theories of justice upon which these aspects are based on. "Justice" is a contentious concept that encompasses a range of definitions, theories, and principles. It also possesses numerous interpretations. Theoretical debates of this concept can be found since the time of Aristotle, who considered justice not only as a moral virtue of character in human beings but also as a desirable quality of political society that should be applied when considering social decision-making (Santas, 2001). Coming to more modern and contemporary times, Kant, Mill and Rawls have also done great contributions to justice debates (Kahn, 2012; Nagel, 1973; Rawls, 1971), seeking to define what it means and how it "should" be (D. A. McCauley, Heffron, Stephan, & Jenkins, 2013). For certain individuals in past and contemporary societies this concept is totally related to the legal

system imposed by the state, while others might simply see it as the freedom to pursue their own individual desires as citizens (Heffron & McCauley, 2018). A more modern notion of justice is focused on the concept of "fairness" and the idea of creating "conditions for fair social structures, which in turn produce a fair distribution of goods and services" (Sovacool & Dworkin, 2015, p. 2).

Although countless writers have tried to give a universal definition of justice, the reality is that the way "justice" is seen in the different scenarios varies widely according to people's own conceptions of life, well being, development and progress. In a western conception of justice, for example, the principle of utilitarianism is highly notable. Energy policy in most countries, for instance, (highly influenced by western institutions such as the World Bank and even the UN) has promoted the deployment of utility-scale energy projects (Lloyd & Subbarao, 2009), with often very limited consideration of the local socio-environmental impacts (Dunlap, 2018:a; Huesca-Perez, Sheinbaum-Pardo, & Koppel, 2018). This is usually based on the assumption that in this way most of society will benefit, or in Mill words "actions are right to the degree that they tend to promote the greatest good for the greatest number" (Kay, 1997). What constitutes the "greatest good", of course, is still unclear, and this ambiguity tends to be used at the convenience of individuals and institutions.

From a Latin-American perspective, these ideas have been increasingly challenged, especially in grass root indigenous movements, where justice conceptions often include not only respect for the autonomy and auto-determination of people but also the right of nature and non-humans living beings (Gudynas, 2011b). Similarly western visions of development -essentially associated with economic growth, appropriation of natural resources, and aimed at stimulating the western lifestyle- have been criticised by different Latin American scholars who have pointed them out as unsustainable and often socially unfair (see Bustelo, 1998; F. H. Cardoso & Faletto, 1996; Gudynas, 2011b). In response to this dominant idea of development, some Latin American authors and organisations took on the task of suggesting "alternatives to development", in which hegemonic ideas of development, modernisation and the human being as the centre of everything are highly contested (see Acosta, Martinez, & Martinez, 2009; Carrasco, 2006; Escobar, 2005; Esquivel, 2011). Although many have noted the lack of non-western theories and visions of justice for the improvement of the evaluation of energy transition and energy justice(D. McCauley et al., 2019; Sovacool et al., 2017; Wood & Roelich, 2020), little has been done to cover this gap (Broto et al., 2018; Lacey-Barnacle, Robison, & Foulds, 2020).

While justice is conceptualised in a variety of ways (e.g., legal justice, political justice, social justice, etc.), the relationship between energy transitions (including renewable energy projects) and society begins with a social justice lens. Then, it connects with scholarship in environmental justice and energy justice. While a few of these concepts are touched upon and reviewed throughout the different sections and chapters of this thesis, it is beneficial to review them briefly at this stage. I provide a bit more space to the part on social justice since it analyses and introduces some of the criticisms of Raw's theory of justice, which will be necessary to interpret the study findings in subsequent empirical chapters.

2.3.1 Social Justice

Social justice is a relatively recent concept. The term initially appeared in Western philosophy and political vocabulary following the industrial revolution and the concurrent rise of socialist theory. It developed as a form of protest against what was

believed to be capitalist exploitation of labour and as a central focus for the development of measures aimed at improving the social condition of people. Following the mid-nineteenth-century revolutions in Europe, progressive philosophers and political activists adopted social justice as an aim to be achieved by societies. Overtime, ideas of justice were increasingly associated to social justice, and social justice to concepts of fairness, equity and human dignity.

Most salient discussions on social justice utilise Rawl's theory of justice as a starting point. It is important to analyse (at least briefly) because his ideas are the base for most of the prominent theories and conceptual frameworks of energy justice (which this thesis seeks to expand on). Rawls (1971) work revolves around two main principles of justice "the equal liberty principle" and the "different principle".

Rawls' first principle of justice is called "the equal liberty principle". It states that "each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all" (Rawls, 1971, p.62). Scholar, however, have criticised his conceptualisation of liberty as inadequate, problematic and leading to significant distortions in his explanation of justice (Nielsen, 1980). Norman Daniels, for example, argued that we end up with a quite different definition of justice and theory -each with its own set of different political implications-, depending on the definition of liberty adopted (Daniels, 1975).

The second principle of justice suggests that any unequal distribution of fundamental goods in a society must be managed in such a way that the least advantaged individuals obtain the largest benefits (the "difference principle"). According to Rawls, "social and economic inequalities are to be arranged so that they are both: a) to the greatest benefit of the least advantaged, consistent with the just savings principle and b) attached to offices and positions open to all under conditions of fair equality of opportunity" (Rawls, 1971, p.62). This principle intends to show when economic inequalities are just or at the very least accepted. Once we have established a system of equal liberty, Rawls observes, in which any remaining disparities of liberty serve to improve the overall system of liberty, we must decide when economic inequalities are justifiable. For Nielsen (1980) this principle is a more precise statement of, and modification of, "the cruder and less adequate", "Justice is Fairness" statement, that "inequalities are arbitrary unless it is reasonable to expect they will work out for everyone's advantage, and provided the positions,and offices to which they attach, or from which they may be gained are open to all" (Rawls, 1958, p.164-6).

Rawls principles have been attacked from a number of directions, both from "the left" and for "the right" wings, including because its focus on primary commodities rather than a broader theory that include resources, welfare, and functional capabilities A. K. Sen (1992, 2009). or his theories that are only (or mostly) centre in humans excluding any other more than human living beings..., among others.. For the purpose of to this thesis, however, I will focus in some of the critics from "the left" since these will be useful to contextualise some of the findings from this research.

Most critics from "the Left" argue and coincide in the idea that Rawls' justice approach ignores questions of power and ideology. Scholars contend that his justice ideas are not only incorrect, but also inadvertently ideological. While Rawls' claim that his ideas of justice are apolitical between socialism and capitalism Wolff (1977), in contrast, believes his principles truly represent the foundations of a liberal capitalist state and society: "Principle I enunciates the essence of the system of legal and political equality that developed in the late eighteenth and nineteenth centuries as the framework for the unfettered operations of industrial capitalism, and Principle II defines the standards of social justice to be used in mitigating the inequalities and

hardships of those operations"(Wolff, 1977, p.86). In the next couple of paragraphs I will discuss some of the main criticisms of two of Rawls' principles of justice.

Regarding the equal liberty principle, Altham (1975), makes a valuable contrast between Rawls and Rousseau, arguing that Rawls' negative notion of liberty omits a crucial aspect of liberty that can be found in Rousseau, i.e., the idea of liberty as autonomy. Although Rawls makes no attempt to define or analyse the concept of "liberty", when he discusses fundamental liberties, it is quite apparent that he is referring to the protection of the so-called negative liberties (freedom from interference by other people) such as freedom of conscience, the right to vote, to express freely, to have personal property, freedom of assembly and thought, etc. (Rawls, 1971, p. 61). If these elements are protected, then, according to Rawls' the people who live under the rule of these type of societies are free. However, for Rousseau and a large number of Left-leaning theorists, this liberal negative definition of freedom is insufficient to provide moral autonomy.

Nielsen (1980) set a good example in this regards by highlighting that when living in a society with a rigid caste system or a elitist aristocratic class it is possible to have elites who are liberal in some ways and would impose few prohibitions, allowing non-elites to enjoy extensive negative liberties even in those societies. That is to say, they might be allowed to have freedom of expression, possess personal, enjoy the right to vote and even freedom of assembly. However, even if the subordinated class enjoys a high degree of liberal liberty (i.e. its behaviour is rarely interfered with), provided that there is a ruling elite or class, the subordinate class will lack moral autonomy (the liberty most prised not only by writers such as Rousseau and Marx but also by many indigenous peoples and grass root movements struggling with issues of social and environmental injustices nowadays). This, because the ruled class will not be able to decide what is free to do or not, they will lack the authority and power to do so.

If we agree that to achieve a just society people must be free, then we should be very concerned with the issues around power and authority, and consequently issues of autonomy. As Nielsen (1980) states: "If human beings are subjects but "not part of the supreme authority" which governs their lives, then they are not autonomous. Even if their masters are benevolent and farsighted, they, as subjects of these masters, are still not free moral agents or, if you wish to be more cautious, you will say their freedom is very severely circumscribed" (p. 8). Overall, this first critique is directed at the fact that, given Rawls's intimate connection between liberty and justice, the latest cannot be reached in a society absent of autonomy.

These contrasting ideas are very relevant in contextualising why frameworks mainly based in Rawls theory of justice, such as energy justice, should be challenged, examined and improved. This, while concepts such as autonomy (including self-determination of indigenous peoples) should be more seriously taken into account in the field of social justice.

Following these lines of thought but moving to the critics of Rawl's second principle of justice (the "difference principle"), one of the most relevant critics for this thesis comes from that idea that Rawls fails to appreciate, as previously discussed, that a sociey organised in a capitalist way that maximises the income of the poorest members (the worst off in terms of income) may not make them better off than they could be in certain critical respects, because, as Nielsen (1980)notices, in a society stratified and organised to maximise their incomes, they will still require, as does every society, healthy food, clean air, adequate housing, and decent transportation. However, goods may not be available at all or at costs that they can afford in such a cultural environment. Maximising the income of the poor achieves very little in

comparison to what may be accomplished by substantially transforming society in certain other ways. Thus, it is unclear if adhering to "the difference principle" can indeed be the fairer method to organise our society structures. That is to say, there is variable types of social poverty that the difference principle does not capture.

Lastly, Doppelt offers a remark about Rawls' difference principle. In a capitalist state "a culture of scarcity engenders a preoccupation with relative economic position and making one's way up or at least holding the line in the world of possessions" (Doppelt, 1981, p.21). In this environment, the definition of an appropriate standard of life becomes contextualised and require continuous updating. The market and industries will try to demonstrate that numerous limited commodities that are out of reach of the poor and disadvantaged (the worst-off) are in fact needed. That is to say, they will try to make people believe that the scarcity of these commodities results in a scarcity of self-worth (Nielsen, 1980). "Because capitalism requires the dynamic expansion of the market, the norms of consumption implicitly identified with these positive qualities are constantly raised and redefined, guaranteeing that, with or without "maximin", many must live with the awareness that "the good life" is always beyond their pocket book" (Doppelt, 1981, p.23). The point here is that even in societies of moderate scarcity or relative abundance, the difference principle can be satisfied while enormous social inequities persist.

These discussions and critics of the second principle of Rawls come very relevant when considering the importance of bringing alternatives visions of justice. Visions that are more critic of the anthropocentric, capitalist, liberalist, individualist and universalist ideas of justice presented in most western justice theories including the Energy Justice literature.

2.3.2 Environmental Justice

Although environmental justice draw in many ways from Rawls ideas of justice, it encompass a more practical and pluralist view of justice, since the concept emerge mainly from the struggles of communities, the non-human world, and ecosystems (Schlosberg, 2013). According to Williams and Doyon (2019), environmental justice is also presented on both horizontal and vertical scales. Horizontal injustice is sometimes used as a unifying discourse to bring disparate causes or organisations together to form a broader movement or to foster common understandings of an issue (B. Walker & Salt, 2012; Williams & Doyon, 2019). Vertical injustice is a worldwide phenomenon that is associated with human interactions with the non-human world and extend beyond national borders and into international relations, classifying them as really global challenges (Williams & Doyon, 2019). Examples of this type of injustice include gold meaning in several countries of Africa, land privatisation and water rights in indigenous communities and pesticide drift in California, among others (Schlosberg, 2013).

Environmental justice is founded on three fundamental conceptions of justice: distributive justice, procedural justice, and recognition-based justice. Distributive justice is concerned with the equitable allocation of environmental assets, costs, and benefits (B. Walker & Salt, 2012). Along with environmental costs and benefits, distributive justice tackles issues of access to resources and opportunities believed necessary for redressing social inequalities (Schlosberg, 2007). Regarding procedural justice, this dimension is concerned with inclusion and exclusion from decision-making processes. Procedural injustices arise when there is little transparency, lack of impartial information, little public participation in policymaking, and access to the formal judicial system is difficult or inequitable (B. Walker & Salt, 2012). Finally,

justice as recognition relates to prejudice and discrimination in all forms. Cultural and institutional processes and legacies that have given individuals, communities, or social groupings uneven respect are at the basis of these injustices (B. Walker & Salt, 2012). Recognition is believed to enable a more robust engagement with broader senses of justice. Environmental justice has grown from a narrow distributive justice perspective to encompass procedural and recognition components. A complete view of justice is provided for transitions study by acknowledging pluralist demands, concerns, and solutions (Cohen, 2017).

Drawing from social justice and environmental justice, there is a growing literature devoted to the study of the link between justice and energy, including renewable energy and the socio-cultural and environmental issues posed by these projects.

2.4 Energy Justice

Energy justice aims to apply justice ideals to energy policy, production, and distribution. It emphasises the importance of maintaining a consistent awareness of social justice applied to energy systems and when developing energy policy (K. Jenkins et al., 2016). Explicit early accounts on energy justice have focused on topics such as low carbon communities (Bulkeley & Fuller, 2012), energy consumption (O'Faircheallaigh & Corbett, 2005) and fuel poverty (B. Walker & Salt, 2012). More recent accounts of the term have expanded and linked to further fields such as low carbon innovations and energy services (Sovacool, Lipson, & Chard, 2019), energy vulnerabilities (Gillard, Snell, & Bevan, 2017), looking at gender-energy nexus (Feenstra & Özerol, 2021; Moniruzzaman & Day, 2020), energy democracy (K. E. Jenkins, 2019; Stephens, 2019), and capabilities and the Ethics of Care (Groves et al., 2021), among others. In the past decade, the field of energy justice has grown rapidly (Pellegrini-Masini, Pirni, & Maran, 2020), expanding from a theoretical concept to a decision-making framework for policy evaluation and delivery (K. E. Jenkins, Stephens, Reames, & Hernández, 2020). It is largely influenced by two prominent theoretical frameworks. First, the the three core tenets framework (D. A. McCauley et al., 2013) composed by -procedural, distributional and recognition justice- with a recently proposed fourth tenet of restorative justice (Heffron & McCauley, 2017; Siciliano, Urban, Tan-Mullins, & Mohan, 2018). And second, the eight-principle decision-making framework (Sovacool & Dworkin, 2015) which aims to influence a top-down energy policy by providing decision-makers with "clear" tools for their consideration: availability; affordability; due process; transparency and accountability; sustainability; intragenerational equity; inter-generational equity; and responsibility.

Energy justice borrows ideas from the environmental justice movement, advocating for the inclusion of social justice and environmental sustainability in the implementation of development infrastructure (Schlosberg, 2009). It adopts three main justice concepts from the environmental movement literature -procedural, recognition and distributional justice. The distributional dimension is concerned with the inequity in the allocation of environmental risks and benefits throughout the energy system. The procedural dimension calls "for equitable procedures that engage all stakeholders in a non-discriminatory way"(D. A. McCauley et al., 2013, p.2). Finally, recognition justice draws attention to the various forms of political and cultural domination that result in discrimination of minority groups. It is defined as "the process of disrespect, insult and degradation that devalue some people and some places identities in comparison to others" (G. Walker, 2009, p.615).

Although the energy justice approach replicates the three groundings of environmental justice -distributional, recognition and procedural-, they are rather different in their interpretation and understandings of justice. The most prominent energy justice framework (often associated with K. Jenkins et al., 2016; D. A. McCauley et al., 2013; Sovacool & Dworkin, 2015) advocates for top-down policy-making, which is almost contrary to Schlosberg (2009) account of environmental justice, which is especially sensitive to the grievances of indigenous communities. While the environmental justice agenda has been criticised for "its failure to have a pervasive impact beyond the grassroots level"(K. Jenkins, 2018, p.118), the energy justice framework has been accused of co-opting the word and meaning of "justice" from the grassroots environmental movements to be used as an "abstract imperative" by academic scholars (Galvin, 2020).

The idea that energy justice requires a more normative approach to make an impact beyond the grassroots level comes from the assumption that people have similar conceptions of justice and, therefore, a perfectly designed procedure would fit everyone. This way of thinking has led to the development of energy justice checklists and minimum standards for policymakers to consider when developing energy projects. However, as shown in the findings section, conceptions of justice are more pluralistic on the ground and vary widely according to the different socio-spatial and contextual conditions.

Although few political theorists support pluralistic notions of justice, Walzer (1983) initiated a shift away from a single universal theory of justice in favour of comprehending the idea in its historical and cultural context; this shift has special significance in dealing with environmental justice (Schlosberg, 2009). While remaining tied to the concept of distribution, Walzer (1983) strives to develop a discourse of difference. He argues

> that the principles of justice are themselves pluralistic in form; that different social goods ought to be distributed for different reasons, in accordance with different procedures, by different agents; and that all these differences derive from different understandings of the social goods themselves—the inevitable product of historical and cultural particularism (1983, p. 6).

In support of this pluralist view, Schlosberg (2009) calls to recognise the real-world diversity of opinions reflected in the different social and environmental justice claims and embrace them. He believes that a critical pluralism "offers us a possible framework for thinking about the validity of plurality in social justice generally, and environmental and ecological justice specifically; with it, we can generally theorise while remaining open to the genuine and practical differences that exist in practice" (2009, ch. 7, p. 4). Some recent works on energy justice have started to draw attention on the importance of using a wider range of moral theory to assess energy dilemmas (Wood & Roelich, 2020). However not enough empirical evidence has been shown in this respect Following this line of thought and based on grounded empirical evidence I argue that a pluralist approach to justice conceptions should also be embraced and promoted within the energy justice literature.

Energy justice approaches tend to show a strong focus on distributional justice theories, using Rawls's basic principles of justice, the principle of equal liberty and the difference principle as a starting point. Many papers emphasise the distribution of risks and supposed "benefits", focusing on the asymmetries related to compensations for the use of land and resources and making suggestions on how re-distribution of benefit would make an energy infrastructure implementation more

just (Cowell, Bristow, & Munday, 2011; Hopkins et al., 2008; Sovacool, Heffron, McCauley, & Goldthau, 2016; C. Warren, Cowell, Ellis, Strachan, & Szarka, 2012). However, focusing on claims such as "distribution of benefits" reinforces the assumption that people should, in the first place, accept a "development", i.e., it accepts and normalises the idea that there should be an appropriation of natural resources. Thus, centring the debates on how the benefits of this appropriation should be distributed rather than challenging the idea of whether it is just (in a socio-environmental context) to accept the development in the first place, who should take that decision, and under what conditions. Putting these fundamental questions at the forefront is key if we seek more impactful energy justice understandings.

2.4.1 Distributional Justice dimension

Rawls has arguably developed some of the most influential ideas regarding distributive justice. He proposed that the underlying principle of social justice should be fairness in the distribution of goods and bads in his groundbreaking work "A theory of justice" (1971). He suggested that a sense of justice may be derived from a "original position". That meant imagining an exercise in which a group of people know that they will be part of a society, but they do not know what will be their status in there, i.e. they could end up being a minority or a king. Then, from this original position, i.e. with the "veil of ignorance", they would be able to come up with the concepts of a fair distribution. According to Rawls, any disparity in the distribution of goods should, directly or indirectly, favour the least advantaged in society (Rawls, 1971).

Several scholars have criticise Rawls' ideas. For example, it has been pointed out that his ideas are difficult to apply in real life Walzer (1983). They also argued that people participating in the experiment might no value equally the goods to be distributed. Nussbaum (1992) and A. K. Sen (1992) approaches also criticise Rawls' main focus on the distribution of "goods". For Nussbaum and Sen what should be put into consideration is people "capabilities", that is to say, evaluate what people are capable of doing and being with the material and non-material things that they can access. Nonetheless, since then, Rawls' idea of distributive justice has acted as a reference point for justice work, strongly influencing subsequent justice theorists.

Distributional social justice formulations have also been used as a guide in areas other fields, such as geography (Harvey, 1973) and environmental justice (Schlosberg, 2003). In the last decade, there has been an increasing focus on energy distributional issues, with a particular increase in theories of "energy justice".

More explicitly, distributional justice in energy justice refers to the physically uneven allocation of energy infrastructure and the unequal distribution of their associated benefits and risks (K. Jenkins et al., 2016; D. A. McCauley et al., 2013). Therefore, it represents a call for an even distribution of goods and bads among members of society regardless race, income, color or any similar socio-economic condition (D. A. McCauley et al., 2013; G. Walker, 2009). Research in numerous countries has shown that is if often the more vulnerable social groups that are predominantly affected (Broto et al., 2018; Huesca-Perez, Sheinbaum-Pardo, & Koppel, 2016; Mundaca, Busch, & Schwer, 2018; Schlosberg, 2009; Todd & Zografos, 2005; Yenneti & Day, 2015). In several countries, renewable energy infrastructure have encountered opposition that evidence injustices regarding the allocations of energy infrastructure. These kinds of objections should not be considered as detrimental to the advancement of a transition process. Instead, these issues should be carefully

studied and examined, as the outcomes of this analysis could help to restore of a sense of equity within projects and, thus, within transitions (Owens & Driffill, 2008).

As a way of improving local acceptance of renewable energy projects and compensate for social and environmental impacts at a local level, the strategy of providing with 'some form of additional, positive provisions for the people affected' (Cowell et al., 2011, p.539) by developers has been increasingly used. However, while these "positive provisions" normally applied as "Benefit-Sharing schemes" have the chance to increasing local acceptance, these so-called benefits usually do little to really address inequality and improve local conditions as it is often presumed (Munday, Bristow, & Cowell, 2011; C. R. Warren & McFadyen, 2010).

In recent years, both public rhetoric and scholarly studies have seen an expansion of justice issues in the energy sector. This has included justice questions regarding access and usage (Day, Walker, & Simcock, 2016; Hall, 2013; B. Walker & Salt, 2012), as well as the distribution of energy developments outcomes (Gross, 2007). Several case studies have been analysed in terms of controversies about the equitable allocation of costs and profits from wind energy production, for example in the UK (Cowell et al., 2011; Simcock, 2016; Van der Horst & Toke, 2010). However there is still very little research on Global South contexts in relation to renewable energy and energy justice (Lacey-Barnacle et al., 2020; Yenneti & Day, 2015), especially utilising non-western theories and perspectives of justice . The question of justice and inequality in global energy production in the south is critical, not least because this industry is developing rapidly, but also because of the social and economic circumstances in which it takes place, which means there is a lack of transferability from case studies in the Global North.

The role of "benefit sharing" schemes and intermediaries in distributional justice

Literature in distributional justice within the energy justice framework highlights the normative idea of compensation through the distribution of renewable energy projects profits in order to make the transition to renewable energies more fair. Thus, the concept of distributional justice has been highly linked to co-benefits and benefits-sharing approaches mainly designed by private companies with some guidelines of the public sector, and with little involvement of communities affected.

There is no single definition of what "benefits-sharing" (BS) means or includes. However, in contexts where large infrastructure projects are to be implemented and affect local rural and indigenous communities, this term can be understood as any direct negotiation between indigenous communities and the government or extractive industry, by virtue of which they receive any benefit resulting from the exploration and exploitation of the natural resources existing in their territories or close to them. Benefit-sharing agreements are frequently utilised in a variety of natural resource management and extractive activities to mitigate negative consequences of projects, reduce opposition, and increase overall acceptance.

In Latin America, BS have been increasingly used in the implementation of fossil fuels and low carbon energy developments, acquiring greater importance for projects acceptability. Paradoxically, and despite its importance, there are not many studies on the real results of BS in the Latin American communities. This stands in contrast to the wealth of literature from the Anglo-Saxon globe, particularly from Canada and Australia, where BS are employed in mining, oil, and hydropower projects. Among the most critical is the work of O'Faircheallaigh and Corbett (2005) in which the authors analysed 45 agreements signed in different regions of Australia, concluding that they do not necessarily facilitate indigenous participation in

environmental management and sometimes even reduce their participation. Hitch and Fidler (2007) reach similar conclusions, who observe that "Impact and benefit agreements" in Canada do not benefit communities in the long term, and may even negatively impact the surrounding environment (Hitch, 2006). Similar claims are found in the findings of this research as it will be shown in the distributional justice empirical chapter later, where an emphasis on (re)distributing advantages in the siting of renewable infrastructure has seem to create greater division and disagreement among the many key stakeholders, posing increased hazards to local people.

When talking about "social benefits" and risks of energy projects, it is essential to highlight the role that different intermediaries or brokers can play in influencing projects' outcomes, particularly in terms of land dispossession and deprivation in rural and indigenous communities. As noted by Reyes Maturano (2021), the narrative of "social benefits" ignores or downplays the economic disparity between corporations and indigenous peoples.

There is a wide range of brokers and dimensions of brokerage in contexts of development (see James, 2011; Koster & van Leynseele, 2018; Lindquist, 2015). Put in simple terms, a broker can be "a human actor who gains something from the mediation of valued resources that he or she does not directly control" (Lindquist, 2015, p.2). This definition must certainly be extended from a "a human actor" to companies, institutions, and different political groups overall. Using their privileged knowledge, positions of power, authority, or skills, intermediaries "bridge gaps between populations, usually disadvantaged, and power-holders" (Koster & van Leynseele, 2018, 803). In transactionalist studies where processes of communication are emphasised, a broker has been defined as "a professional manipulator of people and information who brings about communication for profit" and who has "a strategic place in a network of social relations" (Boissevain, 1974). Such transactionalist studies, however, focus on brokers' individual strategies and entrepreneurialism while overlooking their social and cultural embeddedness in the local contexts (Koster & van Leynseele, 2018). The type of brokerage varies mainly according to the specific contexts in which brokerage takes place. Some studies have detected differences between Global South and Global North countries (see Galeana, 2020; Koster & van Leynseele, 2018).

In energy projects in Latin America, brokers and intermediary practices have been key in land dispossession strategies and project implementation (Bastos, 2021). Entrepreneurs, corporations, and governments require knowledge about the internal organisation of the local communities in which they aim to carry out investments. Hiring people and companies that extract this information has become a common practice as a first step in the process of ensuring the land needed for the project.

In several cases analysed in Mexico, for example, at least two different dispossession processes supported by different intermediaries were presented, "dispossession from above" and "dispossession from below" (Torres-Mazuera, Mendiburu, & Godoy, 2018). The "dispossession from above" process involves businessmen, companies, and intermediaries supported by the state to implement development projects. In the second process, "dispossession from below", local people, such as representatives of the communal *ejido* assemblies, are co-opted and corrupted by companies and government officials interested in the *ejido* and community resources. In numerous analysed cases, these two types of dispossession, "from above" and "from below," are mixed (Torres-Mazuera et al., 2018).

Similarly, in many countries of the Global South, there can be found formal and informal intermediaries. Formal intermediaries tend to be private consultants that

officially offer energy companies to do "social engineering" and carry out documents such as Social and Environmental Impact Assessments and, in some cases, "advice" regarding indigenous consultations. Informal intermediaries are those who work for developers, consultancy firms or the government in an informal or offhand way. In Mexico, for example, these are typically called "coyotes". Both cases normally involve people with authority positions and access to privileged information about potential project developments. "Coyotes" in Mexico have been found to take advantage of their local context knowledge by getting people to sign contracts of usufruct over *ejido* land under false pretences, exorbitant interest rates, and other shady terms (Reyes Maturano, 2021).

As can be seen, the relationship between project benefits and risks becomes even more complicated due to the large number of intermediaries that can influence their distribution. For these reasons, I argue that a narrow focus on distributive justice based on the institutionalised idea of shared benefits does not contribute to a fair project execution, much less a just energy transition. This is primarily because an emphasis on assertions such as "benefit distribution" promotes the notion that people must embrace the "development", i.e., it accepts and normalises the idea that natural resources should be appropriated. Thus, rather than debating whether it is right (in a socio-environmental context) to accept the development in the first place, the arguments focus on how the advantages of this appropriation should be dispersed.

Many studies on distributive justice coincide that large-scale renewable energy project are not fullfilling local communities expectations in terms of distributions of benefits and risks (Iychettira, 2021; Liljenfeldt & Pettersson, 2017; Mueller & Brooks, 2020; Yenneti & Day, 2016). This is because many of the polices involving benefits and risk distribution are developed in top-down manner. Therefore, assumptions of what is "just enough" to provide to people are done by biased actors such as the developers or governments, leaving the communities out of any key decision on what they consider valuable and why. Thus, a focus on distribution of benefits without contesting issues of power might result in exacerbating vulnerabilities and injustices in local communities (Yenneti & Day, 2016). In this sense, I argue that a power distribution rather than a top-down corporate "benefit" distribution is required. This power distribution can be achieve by realising the principle of energy democracy, a concept well develop in the social energy literature - where communities are expected to play a more active role in the energy transition and increase their decision-making power (Burke & Stephens, 2018).

2.4.2 Procedural Justice dimension

The previous section demonstrated that it is critical to evaluate the distributions of risks and benefits in the outcomes of renewable projects in order to achieve social justice. However, several distributive justice scholars contend that the techniques used to arrive at the outcomes are as critical as the outcomes themselves for realising justice. Rawls (1971), for example, suggest that 'there is a correct or fair procedure such that the outcome is likewise correct or fair, whatever it is, provided that the procedure has been properly followed' (p.74). According to Rawls, procedural justice is obtained "when there is not independent criterion for the right result" (Rawls, 1971, p.74). There are, however, some assumptions in this claim that we need to be careful about, like for example, to be able to ensure that the result of the decision is just, the method and the background conditions must be just. However, until the correct people choose a set of principles relevant and fair for them, we lack criteria for what

is just. This is very important to consider when dealing with decisions of what just procedure is in situations such as the implementation of any kind of developments on different communities around the world where ideas of what constitute justice might vary widely. Therefore an emphasis should be made on who are the correct people to decide the different set of justice principles.

Literature on procedural justice within the energy justice framework states that a just energy infrastructure implementation entails the inclusion of stakeholders in decision-making in a non-discriminatory way and that participation, impartiality and full information disclosure by government and industry is required (Sovacool & Dworkin, 2015). More specifically, procedural justice normative approaches suggest that communities must be involved in deciding about projects that will affect them; they must be given fair and informed consent; and the environmental and social impact assessments must involve genuine community consultation (Sovacool & Dworkin, 2015). While several scholars agree with this definition (K. Jenkins et al., 2016; Sovacool et al., 2016), disputes remain regarding what a "just" procedure entails and what its "ultimate purpose" is, i.e. whether their purpose is to guarantee a more just outcome or it extends far beyond the recognition of individuals' equities (Simcock, 2016; Watson & Bulkeley, 2005). Pointing out the different perceptions of what a "just" procedure entails becomes even more important with the mechanisms recently put into effect to diminish the socio-environmental impacts of development projects and improve participation at a local level, such as the Free, Prior and Informed Consultation (FPIC) and the Social and Environmental Impact Assessment (SEIA). According to some energy justice theories, applying these legal instruments improves justice on the procedural side, bringing forward a more "fair" implementation of energy projects. However, in contexts with high levels of inequality and marginalisation, these instruments have often proved unsuccessful and are often viewed by grassroots organisations as performative mechanisms intended to legitimise the implementation of development project (Muuch' Xiinbal, 2018)

Traditionally, procedural justice has been associated to participation. Participation has become a critical factor in development and environmental policymaking at all levels, from local to worldwide (Collins & Ison, 2006). Numerous international non-governmental organisations, international conventions and policy institutions recognise the need of participation (Havel, 1996; Nations, 2015; United Nations Conference on Environment and Development, 1992; WCED, 1987). As a result of this acknowledgment, participation has been elevated to a critical component of all policy decisions made by these organisations.

Participatory approaches have also been widely adopted in policy making venues (U. Kothari et al., 2001; Santos, Antunes, Baptista, Mateus, & Madruga, 2006) to increase public approval of policies. From the 1990s, a variety of instruments, strategies, and methodologies have been proposed and created for conducting participatory processes in developing nations. Including participatory action research (Fals-Borda, 1987; Whyte, Greenwood, & Lazes, 1989) and participatory rural appraisal (Chambers, 1994) . These techniques and critics are extensively discussed in various literatures (Brock & Pettit, 2007; Henkel, Stirrat, et al., 2001; Kindon, Pain, & Kesby, 2007; Whyte, Greenwood, & Lazes, 1991), and will not be discussesed in detail in here since this is not the objective of the section. However, what is worth mentioning here is that critics of participation coincide in at least two main things: First, that "participation managed to tyrannise development debates without sufficient evidence that participatory approaches were living up to the promise of empowerment and transformative development for marginal peoples" (Cooke & Kothari,

2001, p.3). And second, that participatory methods frequently exclude socioeconomically marginalised groups, including indigenous peoples, tribes, peasants, nomads, etc (Rahnema, 1990; Yenneti & Day, 2015). Several studies on procedural justice around the world demonstrate that protocols of participation that are implemented in a top-down basis are bound to fail (Ottinger, Hargrave, & Hopson, 2014; C. Walker & Baxter, 2017; Yenneti & Day, 2015; Zoellner, Schweizer-Ries, & Wemheuer, 2008) and will not contribute to attaining procedural and energy justice. In this sense I argue that procedural justice in the energy justice framework should move away from top down institutional participation and instruments are focus in first give power to the people to decide not over particular a particular project offered but also the kind of development and governance in relation to energy systems and beyond that they prefer. This is particularly relevant in indigenous context where ideal of autonomy and self determination tend to be rooted in many communities and grassroots movements .

Some scholars have already suggested concepts of energy sovereignty and decentralising energy governance for a more democratic and just energy infrastructure decision-making (see Broto et al., 2018; Cowell, 2017). Broto et al. (2018) argues for a focus on delivering energy as an emancipatory project and recommends self-determination to become a core concept in energy justice theories (Broto et al., 2018). Similarly, Cowell analyses how shifting territorialisation of government and control over energy infrastructure can disrupt energy systems and help us to extend our understandings of energy transitions (Cowell, 2017).

Sovereignty and self-determination ideas

Self-determination and sovereignty are not without their problems. As with modern societies, traditional societies have presented issues of hierarchy, power, discrimination, inequality and violence. Colonialism has in many cases increased these issues. For these reasons, the thesis makes an effort not to romanticise ideas of self-determination or sovereignty in indigenous peoples. Implemented uncritically, these ideas may exacerbate existing inequalities, injustices or human rights violations long-established as part of “culture” or “tradition” (Lemke & Delormier, 2017).

There are many definitions of what self-determination and sovereignty mean. Sovereignty has been widely discussed in international law, arriving to different meanings (Shrinkhal, 2021). However, in most cases, the concept refers to the sovereignty of the nation-state. In a democratic society, sovereignty entails power sharing in decision-making. Therefore it is important to make “a shift away of the idea of ‘sovereignty for the benefit of the nation-State’ towards the idea of ‘sovereignty of the people’, thereby giving way to the idea of ‘indigenous sovereignty’ ” (Shrinkhal, 2021, 72).

Different intellectuals have assigned various meanings to the term "indigenous sovereignty", ranging from reversing the effects of colonialism, supporting local efforts to get back ancestral lands and resources, self-governance, and keeping cultural knowledge and practises alive (J. Barker, 2005).

F. Brennan (1995), a social activist and lawyer, stated that indigenous sovereignty means recognising and respecting the fact that there are "sovereign people within the nation." (p. 127). And argues that the objective of indigenous struggle should be self-determination (F. Brennan, 1995).

Other academics argue that the entire concept of sovereignty is foreign to indigenous narratives and that the language of indigenous sovereignty embodies a colonial mentality serving the state to perpetuate dominance over tribal and indigenous

peoples (Alfred-Taiaiake, 1999; Tully, 2000). In exchange, they encourage indigenous intellectuals to struggle for "intellectual sovereignty", - meaning that they produce indigenous scholarly based on their own epistemologies (Fredericks, 2009). In Cobb (2005) words:

> "[t]he term is intended to empower Native Scholars to make us [indigenous scholars] consider the possibility that we spend too much time 'writing back' to coloniser rather than "writing forward," charting our own course and not looking from outside approval." (p. 128)

Such intellectuals' rejection of the "indigenous sovereignty" concept, however, has not resulted in denial of advocacy for indigenous peoples' independent authority and autonomy (Shrinkhal, 2021).

For other authors, "authentic indigenous sovereignty" means having the agency to create a "safe space" for tribal and indigenous peoples to live a life with the difference. This includes protecting and promoting their language and culture, ensuring a right to self-governance, as well as free, prior, informed consent for any development that may affect their territories (Wiessner, 2008).

Applied to the field of energy, a definition of energy sovereignty that stands out among some environmental movements is the following:

> "Energy sovereignty is the right of conscientious individuals, communities and peoples to make their own decisions regarding the generation, distribution and consumption of energy, so that these are appropriate to their ecological, social, economic and cultural circumstances, always and when they do not negatively affect third parties." (Cotarelo et al., 2014, p.1)

In Latin American literature, the term indigenous or energy sovereignty is rarely used. There are some articles that explore the tensions in indigenous rights between national sovereignty and territorial sovereignty (Alves, 2015). However, much more attention is given to the term self-determination and autonomy of indigenous communities (see Aparicio Wilhelmi, 2009a; Figuera Vargas & Ariza Lascarro, 2015; López & Guerreiro, 2018; Polanco, 1996, 1997; Toledo, Barbarán, et al., 2018; Villoro, 1998). These concepts also resonate more in practice among grassroots indigenous and non-indigenous movements.

Some authors have connected the idea of self-determination and "indigenous sovereignty" by stating that "indigenous sovereignty" is the main source to achieve indigenous people's right to self-determination (Shrinkhal, 2021).

The concept of self-determination -as with the "indigenous sovereignty" concept-, has never been easy to define neither in meaning nor in scope (Halperin, Scheffer, Small, Small, & Patricia, 1992). There are diverse proponents that define the term in relation to human rights (Chen, 1976); the right of people to break away from tyrannical governments (Manela, 2007); and the right of people "be dominated and governed by their own consent"(Shrinkhal, 2021, 75).

The idea of self-determination became more popular with The UN Declaration on the Rights of Indigenous People. In article 3, the Declaration states that:"Indigenous Peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development." There are several debates over the extent of this term. But overall, when struggling for the right to self-determination, indigenous grassroots organisations tend to refer back to the right established in the ILO Convention No. 169.

In literature published by social movements, self-determination is increasingly used as a form of defence against extractivism (Picq, 2014). In the website of the Assembly of Defenders of the Mayan Territory Múuch' Xíinbal, for example, the assembly states "Many companies promote territorial conquests for their capitalist megaprojects such as solar and wind farms... we feel fear for the loss of our culture, our language, our mountains, our animals, our *cenotes* and our spirituality by being expelled from our territory. We have created this space to share information, form thoughts and weave alliances with organisations or groups that respect and share our perspective, with them we promote social and legal forms of care that guarantee our right to autonomy and self-determination." (Muuch' Xiinbal, 2018)

Similarly, in a publication of his position against megaprojects, Múuch 'Xíinbal makes it clear that his people's search for "autonomy" is to defend themselves from companies that "in the classic conqueror way" come to snatch their lands to develop their business (Muuch' Xiinbal, 2018). In this vein, it can be argued that "claims against extractivism are ultimately claims to the right self-determination" (Picq, 2014, p.1). Overall, indigenous resistance to extractivism essentially advances self-determination rights, calling into question the power and authority of states over land by situating its sovereignty in historical context (Picq, 2014).

Following the above-mentioned, it is critical to analyse, from a local perspective, the conditions in which renewable energy infrastructure implementations are taking place in contexts where current transition models may be clashing with ideas of sovereignty and therefore face strong opposition. As it will be shown in the procedural justice empirical chapter later on, in the context of Mexico, and particularly in indigenous communities, top-down ideas of what a just procedure entails are conflicting with self-determination and local perceptions of injustices. In this sense, a switch from procedural justice focused on institutional participation to models and frameworks that allow self-determination might be a better alternative to achieve a more just energy transition.

2.4.3 Recognition-based justice dimension

Environmental and energy justice scholars have tried addressing some of the limitations on the distributional and procedural elements brought by the liberal justice notions by introducing the concept of recognition into their analytical frameworks. However, there is very little literature in this dimension compared to distribution and procedural (K. E. Jenkins et al., 2021).

The key notion of recognition in the energy and environmental justice frameworks can be traced back to philosophers such as Fraser (1995); Honneth (1992); I. M. Young (2011) who bring to the forefront the struggle of people for recognition in terms of difference, identity, disrepect, cultural recognition, misrecognition and cultural domination.

Fraser defines cultural domination as "being subjected to patterns of interpretation and communication that are associated with another culture and are alien and/or hostile to one's own" (1995, p. 71). Disrespect means being stereotyped, ridiculed or abused regarding public cultural representations or in everyday encounters. And "nonrecognition" occurs when people is "render invisible", that is to say, they are not acknowledged, or "taken into account" in the prevailing discourses and value systems of society at large (Fraser, 1995; Simcock, Frankowski, & Bouzarovski, 2021).

The recognition justice dimension- which claims for the acknowledgement of vulnerable people's particular rights as a result of their unique and historical conditions- adopted in the energy justice framework, seems to be more closely to some of the justice notions of what the grassroots and indigenous peoples claims as injustices. Therefore it is crucial to bring the recognition justices pillar to the forefront if we are to understand the underlining reasons for renewable energy development contestations. However, even the concept of recognition is still limited and bias to western views of justice and, in many cases, this recognition is limited to a institutional recognition.

Fraser, Honneth, and Golb (2003), argued for a a transition from a Hegelian conception of recognition -in relation to individual psychology or consciousness- to the notion that recognition must be obtained within the state, subject to institutional constraints. Decolonial theory, for example, present a few objects to Fraser concept of recognition. They argue that Fraser's theory lacks the tools necessary to critique the state's involvement in the (re)production of injustices and colonial subjectivities and that Fraser's negative view of identity-based recognition, which is based on psychological and cultural considerations, minimises the relevance of the subjective factor in resolving injustices (Álvarez & Coolsaet, 2020a). While it is crucial to "have a voice" within the governmental apparatus for addressing injustices, energy justice research has also demonstrated that it may also be counterproductive for tackling injustices (Agyeman, Cole, Haluza-DeLay, & O'Riley, 2010).

While Fraser (2001) accept that the creating of participation spaces wont necessarily solve the issue, the utilisation of her theories in the energy justice literature frequently fails to provide an adequate criticism of the suitability of a state-led solution to the problem of minority group participation. Fraser's critique of identity and cultural state recognition has prevented energy justice researchers from fully appreciating the critical role of key concepts such as local autonomy and self-recognition (the re-valorisation of one's mode of life (Coulthard, 2014)), in resolving injustices, dimensions currently under-addressed in the environmental and energy justice literature (Álvarez & Coolsaet, 2020a).

2.5 Energy justice in renewable energy and it shortcomings with the Global South

Overall social research on renewable energy could be classified in three types: social acceptability, spatial impacts and the ethics and justice on energy implementations. (Yenneti, 2014). Very briefly explained, research on social acceptability and public views, e.g. the *Not In My Back Yard* (NIMBY) (Devine-Wright, 2012; Roddis et al., 2020; Wüstenhagen, Wolsink, & Bürer, 2007) seeks to provide a critical assessment of peoples' opposition to renewable projects beyond NIMBYism. The second type of research deals with the landscape, visual, and spatial and environmental consequences of renewable infrastructure (Breukers & Wolsink, 2007; Pasqualetti, 2004). And, thirdly, the use of frameworks for justice, ethics and fairness, including interrogating who wins and who loses in the implementation of projects (Gross, 2007), analysing the distribution of benefits and risks (Brady & Monani, 2012; Cowell et al., 2011), and public involvement in the decision making of projects (Cass & Walker, 2009; Gross, 2007; Yenneti & Day, 2015).

While studies of renewable energy and justice have grown exponentially (2021), particularly in the Global North due to the rapid expansion in the deployment of renewable energy projects.

However, one major constraint on energy justice is that it remains primarily rooted in certain regions of the Global North. The foundational literature originated with "western" academics and institutions mainly in the UK, United States, and Europe. The International Energy Agency predicts that in the future decades, emerging nations will account for nearly two-thirds of global energy consumption (IEA, 2017). In Global South countries, however, the area of energy justice is still relatively new and has not yet been widely applied (Lacey-Barnacle et al., 2020). For instance, 2018 special issue on "low carbon energy systems and energy justice", which covers some of the most recent energy justice included only 2 (out of 19) papers which mentioned countries in the Global South Broto et al. (2018); A. Cardoso and Turhan (2018).

In Mexico, for example, wind power literature has recently started to grow in an attempt to understand the unacceptability and local conflicts derived of the expansion of large-scale wind parks in the region. This literature has been approached from different perspectives. The first critical engagement started questioning the free concession of natural resources "which would have to be owned by everyone, to individuals who profit from it, without giving anything back in return" (Apodaca, 2011, p. 1), as well as arguing that there remained a lack of information and knowledge to clearly determine the advantages and disadvantages in different spatial and temporal scales of the implementation of large scale wind energy projects (Jara, 2011). Some emergent papers also started pointing out the social impacts that these projects were bringing to the local regions, including conflict over the ownership of the land where the wind resource is located, the degradation of the quality of the landscape, the loss of biodiversity, the generation of mechanical and aerodynamic noise, among others (Jara, 2011), and the main actors participating in the process, including government, companies, local communities and financial institutions (Huesca-Perez et al., 2016; Juárez-Hernández & León, 2014).

More recently, Avila-Calero (2017) explores the importance of a political ecology and spatial perspective and the role of power relations embedded in the unequal development patterns of the Mexican economy and related to the expansion of conflicts contesting large scale wind energy project expansions. By detailing specific case studies in Oaxaca, Mexico, Alexander Dunlap (2017:b) has also offered a spatial and anthropological perspective arguing how international climate change mitigation policies have spawned a wave of violence, insurrection and affectations to cultural and socio-economic local factors. By putting pressure on land deals and "new valuations of wind resources based on market mechanisms", he argues that wind energy development intensifies the destructive trajectory of the industrial economy (Dunlap, 2017:b, 2018:a, 2019)

Despite a grown in literature evaluating renewable energy in Mexico, the notions of energy justice in this country and in Global South overall are still in construction and in need of further development (Bombaerts et al., 2020; Lacey-Barnacle et al., 2020).

In a recent publication on "Energy justice in the developing world" the authors demonstrated that there is still a lack of energy justice research in this region. In their systematic review they identified "18 primary papers of systematic review: case studies from "developing economies" (16) and "economies in transition" (2) with the whole phrase "energy justice" in the title, abstract or keywords & keywords plus of the paper" (Lacey-Barnacle et al., 2020, p. 26) . And,in a second revision with the words "energy" and "justice" (separately) they found 43 secondary papers. These number are reduced almost to half if we contemplate only those who focus in renewable energies (including solar, wind, Hydropower and bioenergy). Among

these papers, Yenneti and Day (2015) case study shows how procedural justice failures may have unduly severe repercussions on rural communities' livelihoods and further marginalise the most vulnerable. Similarly, but concentrating on distributional justice, Yenneti and Day (2016) illustrated how uneven distribution of benefits arising from a large-scale solar park development reinforced existing inequalities. Elsewhere, Damgaard, McCauley, and Long (2017) assess the energy justice implications of bioenergy development in Nepal using the three tenets conceptualisation -with a particular focus on distributive and post-distributive issues- and consider its applicability beyond conventional energy systems. Villavicencio Calzadilla and Mauger (2018) explored injustices linked to wind and solar projects in Chile, India, Kenya and Mexico and explored "ways to combat them", using an energy justice lens. S. H. Baker (2016), presents a framework to explore the Mexican energy reform and argues that energy justice should be integrated by three main fields: climate justice, environmental justice and energy democracy. Mejía-Montero, Lane, van Der Horst, and Jenkins (2021), through an exploration of utility-scale wind power in Oaxaca, Mexico, tried to ground a energy justice lifecycle framework and shows how pre-existing cultural and environmental links shape how energy justice is viewed and constructed. Other recent work in Mexico, not included in that report but also touching in energy justice aspects in Mexico includes: Velasco-Herrejon and Bauwens (2020) and Ramirez and Böhm (2021).

What most of these papers have in common, however, is that they draw on liberal and Western political philosophy (Lacey-Barnacle et al., 2020). Only a few studies have begun to draw on justice academics outside the western Rawlsian philosophical thought. Some examples are Damgaard et al. (2017) and Velasco-Herrejon and Bauwens (2020)'s references to A. Sen (2001) capabilities-based approach to energy justice. Work by Malakar, Herington, and Sharma (2019) which uses Amartya Sen's interpretation of the Hindu Bhagavad Gita to conceptualise a temporal energy justice decision-making framework. Broto et al. (2018) make significant advances in the energy justice debate by "opening up a dialogue with postcolonial critiques of development" and arguing for integrating concepts such as energy sovereignty and self-determination as key aspects to complement energy justice theories. And Bombaerts et al. (2020) which book demonstrates and highlight the importance and the "need for comparative approaches to energy justice, and for those that consider non-Western ethical traditions" (p.84) through different case studies, including: A Hindu Philosophy Perspective on the Temporal Nature of Energy Justice in Odisha, India; The African Ubuntu Philosophy on Energy Justice and Construction; and the traditional Chinese philosophy on Confucian thoughts on "Hexie" (harmony), "Yi" (just) and the "Tianxia" (world) view (Bombaerts et al., 2020).

2.6 Latin-American and other alternative philosophies as a guide for energy justice

2.6.1 Villoro's negative route towards justice

Mexican philosopher Luis Villoro's negative theory of justice is a reflection of the preoccupation with establishing a theory that considers the justice challenges of colonised and exploited countries in Latin America. In his extensive work on indigenism, and particularly in his book: "Tres retos de la sociedad por venir: justicia, democracia, pluralidad" ("Three challenges of society to come: justice, democracy,

plurality"), Volloro makes critical contributions to the justice field in historically oppressed contexts.

While some Western philosophers like Rawl's theory of justice made an important contribution to the moral theory field by arguing how a well-organised society necessarily requires establishing a moral compass based on reason and deciding "what is right", it is important to recognise that his ideas respond to the socioeconomic and political conditions of his time and place. For Rawls, a key feature of justice as fairness is to think that the members of the group in the initial situation are rational and mutually disinterested (Rawls, 1971).

While it is possible to establish that the theories of justice in societies with high levels of economic and democratic development operate with a model of justice in which there is or can be a rational consensus between free, equal and interacting subjects -which allows these societies make sense of moral propositions ideal for the construction of a well-ordered and liberal society-; Villoro recalls that there are philosophers, like him, who are forced to reflect on justice in very different conditions. i.e., countries whose democracies are not yet consolidated and whose levels of poverty and inequality are scandalous, where exclusion, corruption, violence and a state of systematic violation of human rights reign. Mexico is only one example among many Global South countries with these conditions.

In this context, it is unfeasible to establish deliberative and procedural spaces whose purpose is consensus or principles of rationality and inclusive rights of justice -not because there is a natural irrationality or inability to do so on the part of those who live in these countries. But because marginality and injustice are an omnipresent reality here. For these reasons, all authentic ethical reflection must start from the "experiential" knowledge of the context. This is one of the nuclear elements that justifies Luis Villoro's theory of justice. In his view, the conclusion is clear: a different way of reflecting should be tried with the same validity claims. This conclusion requires starting not from consensus as a methodological device to base justice, but from the immediate reality with which we associate justice in poor countries, that is, with its absence, with injustice (Villoro, 2009):

> Instead of starting from consensus to found justice, starting from its absence; Instead of passing from the determination of universal principles of justice to its realisation in a specific society, starting from the perception of real injustice to project what could remedy it (Villoro, 2009, p.10).

Such an approach supposes a more appropriate path for societies where injustice is a permanent condition and a rational consensus do not yet exist. Thinking of injustices rather than justice open a helpful way to approach energy justice issues in Mexico and particularly indigenous contexts. As we will see in the empirical chapter, communities that have been marginalised and discriminated against for centuries, sometimes find hard to describe or agree on what is "just". However, it is easier to spot common cries for injustices, including exploitation of land, local labour and the environment.

In his "negative path to justice", Villoro, therefore, recognises a concrete reality: the outrageous and oppressive everyday experience of injustice in Global South countries. He starts from the experience of reality: "the experience of suffering caused by injustice". This experience of justice comes from an unjustified wrong or harm and considers that unjustified evil can come from a situation of power. Does justice imply, Villoro wonders, escaping from power?

Several philosophers have explored how the pursuit of power leads to injustice. Villoro is not an exception. But he makes an interesting analysis of power, justice

and freedom. He questions the models (including Rawls') that establish individual freedom as an inviolable principle. With the risk of limiting personal freedoms for the sake of the common good, the liberal model establishes individual freedom as an immovable principle. It is considered that a well-ordered society must be built by autonomous subjects. "But can the principle of freedom be the only ethical basis of a well-ordered society?" (Villoro, 2009, p.59). In terms of power, he concludes by understanding power as domination over the world around, natural and social, to achieve what is desired. Therefore he argues that in the face of the universal desire for power, there is only one alternative: "the search for non-power". That is, the person who is freed from the search for power would be precisely that person who tries not to achieve power but to escape from it.

This proposal is very interesting and links to many Zapatistas' grassroots movement ideals of "good governance from below" as a more just approach. These ideals also match with many of the "more just transitions" ideas I found on the ground and will explore in the following empirical chapters. Overall, Villoro's "negative path to justice" proposal makes possible a critical and radical reconsideration of models of justice from the politics of emancipation. Drawing from examples of indigenous movements in Latin America, including Ecuador, Bolivia and Mexico, he demonstrates the importance of understanding (in)justice from the vivid experiences of historically marginalised communities and grassroots movements. He shows why the materiality of Latin American society must be taken into account as a formal principle for the construction of justice. Learning from injustice is the epistemological path to justice (Ordóñez, 2013).

Following a critique of liberal theories of justice, and with some overlaps with Villoro's arguments, the work of Velicu and Kaika (2017), Yaka (2019) and Baptista (2018) are highly relevant here. By looking at community struggles against extractive projects, including hydropower, mining and low-carbon energy projects, they demonstrate the importance of experientially informed theoretical research for the creation of justice theories. Velicu and Kaika, for example, explore the tension between "seeking 'traditional' forms of justice (i.e. dialogic consensual politics)" (Velicu & Kaika, 2017, p.1) and advancing more radical demands for socio-ecological change. Focusing on the ongoing struggles against mining at Rosia Montana, Romania, they showed how representation and recognition are seen as insufficient practices for distributing justice and demonstrated that the liberal foundational principles upon which the environmental justice framework is grounded do not correspond with the local demand for egalitarian politics. Similarly, Yaka's work argues that the idea of justice is "multi-dimensional and intersectional" (Yaka, 2019, 366). By looking at issues around land grabbing, forced privatisations, local environmental commons, and climate change, the author demonstrates the evolving and contextually changing injustices claims in environmental justice movements. Overall, a key point from the authors above is the importance of revisiting widely reproduced liberal (environmental) justice frameworks by transforming them based on actual praxis and demands of social and grassroots movements.

In connection to energy transitions and coinciding with Volloro's work, Baptista (2018) makes an emphasis on historical connections. In the context of sub-Saharan Africa, Baptista emphasises the need to add a historical component to the study of energy systems if we are to understand future energy transitions (Baptista, 2018). This historical analysis must include the various modes that colonial state and private companies have harnessed energy power across different places. But also how different cultural practices and forms of organisation of social life are embedded and influence different (energy) practices.

For Villoro, cultural differences, which are historical and therefore variable, do not imply moral relativism but rather the permanent challenge of seeking consensus with others through dialogue. For example, unlike Western culture, Indo-American cultures are typically distinguished by the importance they place on communal values above individual ones and by their appreciation for ideals that represent oneness with nature and its dynamic cycles (Villoro, 2009). Some characteristics of these cultures are that they are being urged to dominate nature and organise it in a "rational way", but rather they try to harmonise with it. Yaka (2019) also makes an important contribution in this sense by challenging the divide between the human and non-human worlds and reframing them as a matter of justice. Other Latin American theories, such as "alternatives to development" including The Good Living philosophy, have also made significant contributions to the continuous struggles to dismantle the "society/nature binary" embedded in modern societies.

2.6.2 The Good Living philosophy and alternatives to development

Good Living (*Buen Vivir* in spanish; *Sumak Kawsay* in Quechua from Ecuador; and *Suma Qamaña* in Aymara from Bolivia) can be understood as a dynamic and balanced relationship between the state, civil society and the market, forming a harmonious relationship with nature, which will result in the "common good", that is, the good that benefits society as a whole and all members of society (García, 2002). The Good Living is often positioned as an alternative to dominant conceptions of development and modernisation; and it enriches theories of justice by making broad claims about who are subject to justice. The Good Living is also a process of cultural reinvention based on a community matrix of life and a history of continued resistance to Western colonialism, which aims to build locally and be part of an initiative for change civilisation on a global scale (Acosta, 2013).

It is increasingly accepted that the profound global challenges brought by the era of the Anthropocene, the ideas and lifestyles of the Global North, and the alleged infinite economic growth - accompanied by ecocides and epistemicides - poses a global crisis (Lander, 2013; Quintero, 2014). In this sense, it raises the revaluation of modern values and a revision to dominant conceptions of justice and development (Nova Laverde, 2018).

Viewing the energy system from a point of crisis, both as unfair and unsustainable, makes it necessary to analyse in a more profound way what are the structural causes of this crisis, instead of just thinking about instrumental solutions that seek to put Band -Aid on a bullet wound, proposing ideas to compensate or repair the negative effects. That is why it is important that ideas of justice question and relate to conceptions of development, not only to propose more just development alternatives but also focus on "alternatives to development" .

Derived from the continuous struggles and failure of classical development strategies in Latin America, the idea of "alternatives TO development" rather than "development alternatives" emerged. "Alternatives to development" are suggestions that seek to deviate from widely held notions of development as expansion of progress and growth. Some alternatives included in these category are: conviviality, strong sustainability, biocentric approaches, dematerialisation of the economy or degrowth, interculturalism, pluralism, *Buen Vivir*, among others (Gudynas, 2011a). Ideas from these concepts and theories will be useful when discussing the findings in the research empirical chapters and to find suggestions for more just and sustainable energy transitions.

2.7 Conclusion

While reviewing a large amount of multidisciplinary literature on energy justice and energy transitions (including the dimensions of distributional justice, procedural and recognition justice), this chapter uncovered fresh directions for this research and several conclusions can be made from this review:

First, through the revision of the section on energy transition literature, the chapter unpacked the literature's limitations in engaging with justice and its shortcoming in engaging with the realities of the Global South. Transitions literature still needs more broad account of justice in its analysis. Within this framework, an examination of the different understandings of justice is essential. These examinations must involve non-Western scholars generally excluded from the transitional discourse (as reflected by the overwhelming majority of references in my own work). Several prominent energy justice and transition literature scholars have pointed out the gaps and lack of Global South and indigenous perspectives in these fields (Bombaerts et al., 2020; D. McCauley et al., 2019; Sovacool et al., 2017; Williams & Doyon, 2019), some of which the present study seeks to fill.

Second, "justice" in social, environmental and especially energy justice is frequently characterised in Rawls and Western terms. Since empirical justice research is increasingly being conducted in the Global South, there is a greater risk that these Western ideals and frameworks are applied to the Global South, risking effectiveness and contributing to new injustices (Álvarez & Coolsaet, 2020b). Several complications might occur when Western notions are utilised as the guiding strategy for non-Western environmental and energy justice movements (Broto, 2017). Some examples of these injustices include undermining non-modern ways of life (Kumar, Höffken, & Pols, 2021) render vulnerable groups invisible by creating spaces of misrecognition in multiples scales (Bouzarovski & Simcock, 2017; Simcock et al., 2021); reinforcing racist and discriminating ideas that people from the South, especially indigenous communities do not produce valid knowledge or are inferior (De Sousa Santos, 2011); and deliberately ignoring the fact that "participation" in its different modes can contribute to the reproduction of social and environmental injustices -sometimes even with the consent of people that might be potentially affected (Cooke & Kothari, 2001). While Western science can provide useful underlying theoretical frameworks, extra care has to be taken to not apply Western ideas and frameworks to the Global South uncritically (Álvarez & Coolsaet, 2020b). The same applies to promoting top-down institutional suggestions for better procedural, distributional and recognition justice, which may undermine local context complexities.

Third, although renewable energy perceptions in the Global North have been widely researched, very little has been published on Global South contexts. Where this exists, they normally follow western-based justice ideas and frameworks without criticism. Studies bringing non-western ideas of justice are still rare. As well as bringing grounded empirical data from indigenous contexts, the present study gives an opportunity to compare justice perceptions in four different projects with two different technologies (solar and wind) and two different types of land (private and *ejido*).

Based on the literature review carried out within this chapter, it can be argued that a southern perspective on energy justice must be composed of the injustices claims of local community members and grass-root organisations affected by the implementation of renewable energy projects. It includes considering the role of

non-human actors and alternative views of a good life in harmony with nature. Notions of reciprocity, plurality and community are also ingrained in southern perspectives of justice. This in-construction Southern perspective of energy justice is further developed in the conclusion section 8.3.

Overall, a pluralist and bottom-up approach to justice is key to developing more impactful and inclusive energy justice frameworks. It is critical to analyse, from a local perspective, the conditions in which renewable energy infrastructure implementations are taking place in contexts where current transition models may clash with ideas of sovereignty, modernisation, and well-being and, therefore, face strong opposition.

Examining energy justice challenges in Yucatan, Mexico -a region with a huge potential for renewable energy implementations but also strong opposition to currently proposed wind and photovoltaic parks- will provide key insights into the challenges of achieving procedural, distributional and recognition justice on the ground but also will shed some light on alternative routes for a more sustainable energy transition and future.

Chapter 3

Methodology

3.1 Introduction

This chapter describes the methods and the tools used for data collection, analysis and interpretation of the data. The chapter is broken into five main sections: First, the research design section explains why the approaches and methods selected are best suited to address the research questions in section 1. Second, the chapter describes the geographical context of the research including the study sites. Third, I present the methods used for data collection. Four I explain how I analysed the data. And fifth, I reflect on my positionality and some of the challenges, power relation and limitations encountered during field work.

3.2 Research Design

Having reviewed several research methodologies, I decided that the most suitable research design to answering the aim and research questions of this thesis was to follow a qualitative research, using a case study approach. The three main methods utilised were interviews, participant observation and secondary data analyses. For the data analyses I used a thematic and deductive approach.

Qualitative research has long demonstrated its ability to elicit detailed views, negotiations, impressions, and shared meaning about respondents' daily lives and social environments (Limb & Dwyer, 2001). Since my research sought to uncover justice issues related to people experiences and stakeholders perceptions in solar and wind implementations, this was found to be the best suited approach. Among the several strategies to developing qualitative research (see, for example Flick, 2018), this thesis selected a "case study" approach. In the social sciences, case study methodologies aid in the comprehension of complex social phenomena by elucidating the holistic and meaningful qualities of human behaviours in the actual real-life world (Bingham, Nabatchi, & O'Leary, 2005; Yin et al., 2003). This technique is appropriate for this research since it aims to shed light on the solar and wind park's (intended) implementation within its actual geographical context: exploring how they have been implemented, as well as the sociocultural, environmental and political implications. While case studies are frequently classified as single-case or multiple-case studies (Yin, 2009), this research used a multiple-cases study approach as it examine two solar and two wind projects.

To address the research questions and explore key actors' perceptions, experiences and responses to the implementation process, a qualitative and ethnographically inspired research design was developed. This includes in depth semi-structured interviews and participant observation. According to Brewer, ethnography is "the study of people in naturally occurring settings or "fields" by the means of methods

which capture social meaning and ordinary activities" (Brewer, 2000, p. 10), involving the researcher participating directly in that setting, if not also the activities is key in order to collect relevant and critical data. In this vein, this research took an ethnographically informed approach due to the following reasons: First, there is a growing recognition by scholars on the importance of understanding the cultures, politics and socio environmental implications of energy transitions and infrastructure, in addition to its common study from a technological lens (Larkin, 2013; D. A. McCauley et al., 2013).

Second, within the complexities of transitions and development implementations processes, there is knowledge, practices and stakeholders roles that needs to be carefully examined from situated perspectives and spaces. In these sense, ethnographic inspired methods such as participant observation and interviews were essential for understanding the interactions, roles and dynamics among these actors and help me understand the operationalisation of energy transitions policies and practices on the ground and their implications for the local context. The used of in-desk methods were also critical in complementing and addressing the research aim and questions. In section 3.4 below, I outline and justify the methods in more detail.

3.3 Geographical context and case studies

Before discussing in more detail the four study sites, it is important to provide a brief context about Yucatan. Yucatán is a state of the Mexican Republic, located in the northern section of the Yucatán peninsula. It is bounded on three sides, by the Gulf of Mexico, the state of Quintana Roo on the southeast, and the state of Campeche on the southwest. The majority of its area is covered by a plain composed primarily of limestone rock. It covers an area of 39,524 kilometres square (GEY, 2022). It is comprised of 106 municipalities, with Mérida as its capital. Yucatan is recognised as one the most culturally and environmentally diverse states nationally and globally.

Regarding its flora, the dry and sub-humid forests that are located in the centre and northwest of the state predominate; aquatic vegetation such as mangroves develop in coastal areas (GEY, 2022). Its fauna is very diverse and includes outstanding endangered species such as the jaguar. It presents two variants of climate: warm semi-dry along the coast and warm subhumid, with rains in summer in the rest of the state (GEY, 2022). It has an average temperature between 25 and 35 $^{\circ}C$. In 2020, there were 2.321 million people living in Yucatan, from which 62.7% defined themselves as indigenous in 2010 and about 30% speaks an indigenous language (INEGI, 2020). Its main economic activities are tourism, certain agricultural activities, fishing and commerce. Forestry, livestock, poultry also play an important role. Finally, beekeeping is one of the most traditional and highly important activities in the region, based on the natural and widespread production of various families of honey plants (GEY, 2022).

Recently a "new economic model" in Yucatan, commonly called the "reindustrialisation" process has been put forward. This process has included displacement of indigenous communities due to real estate development, planting of transgenic monocultures, mega pig farms and others large-scale development projects. As part of this re-industrialisation model, an energy transition to renewable energies through large-scale solar and wind energy projects has been promoted. This according to the government, in order to increase international investment and improve the economy and inequalities in the state. Contrary to this discourse, however, Mayan communities denounce the dispossession of their territories among other various

socio-environmental impacts due to land speculation and deforestation in the implementation of these renewable energy projects. I give myself the task to investigate four of the more than 20 projects that were planned to be implemented by 2020, in order to examine the issues, implications and reactions to this projects and try to find ways to make a more socially just and sustainable energy transition.

To get a better representation of my case studies and its impacts, I selected four renewable projects with different type of technology and type of land on which to be implemented. First, I will describe the 'Yucatan Solar photo-voltaic project', with the intention to be implemented on land that has already been privatised, but where most of the surrounding land is communal and still inhabited by indigenous populations. Then I will talk about the Ticul A and B photo-voltaic project, the biggest in size and to be sited in *ejidal* (communal) land. Thirdly, I will describe the "Tizimin Wind Project". From the three projects, this is the only one in operations. This one was implemented in privatised land. Finally, I present the "Chicxulub Wind Farm project", which was planned to be implemented in *ejidal* (communal) land, but suffer an attempt of land privatisation (which is indeed the reason why it is now halted) I will provide more detail about the four of them below.

This varied selection of projects and its different characteristics was very useful to observe and try to draw comparisons, including differences in its power-dynamics, perceptions and implications to the local communities.

FIGURE 3.1: Map situating Yucatan in Mexico

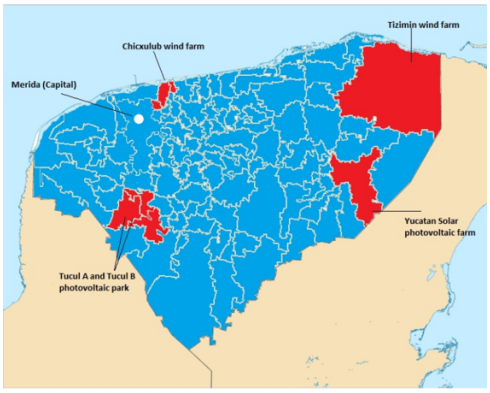

FIGURE 3.2: Study sites (wind and solar projects) in Yucatan

3.3.1 Yucatan Solar Photovoltaic Project

The Yucatán Solar photovoltaic project is a large-scale development proposed in the municipality of Valladolid, Yucatan, Mexico. The project was promoted by Lightening PV Park, a subsidiary of the Chinese Jinko Solar, to place approximately 313,140 photovoltaic modules in an area with forest cover. For the execution of the project, it was required to clear 206.51 ha, which represents 80.85% of the total surface of the project area, the impact was deemed adverse due to the area been considered a jungle that has been maintained for the last 50 years (EIA, 2016e). At present, the land clearing has already been carried out. In figure 3.3, it can be seen a satellite view of the before and after of the intervention of the company.

Despite being a project with a strong environmental negative impact, the project obtained authorisation from the Ministry of the Environment and Natural Resources

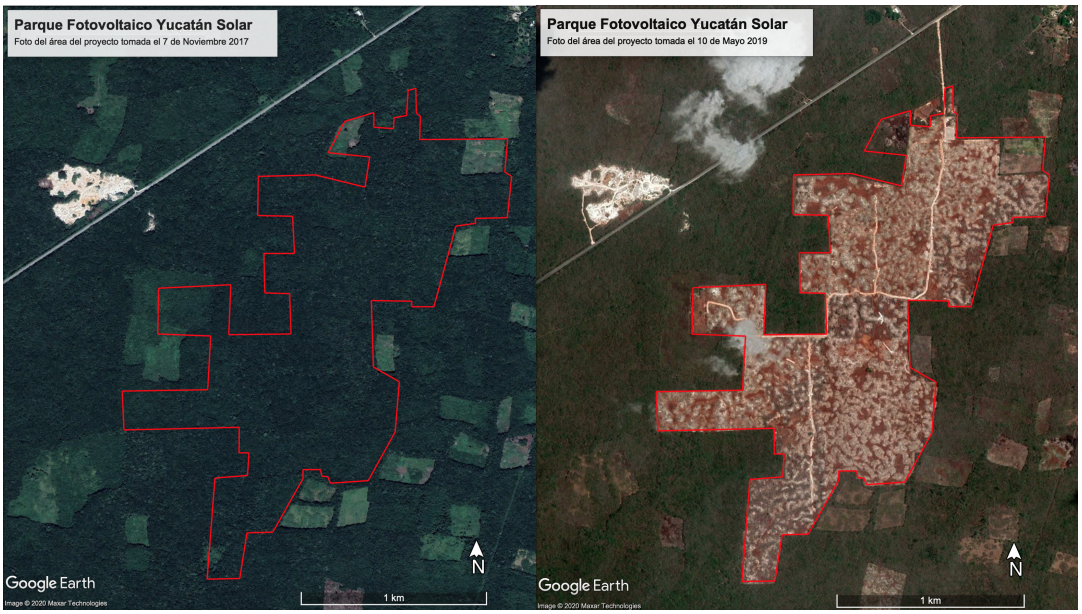

FIGURE 3.3: Satellite view of the before and after of the intervention of the Jinko Solar company for the implementation of the Yucatán Solar photovoltaic project. Source. Images taken from Google Earth and edited by the author.

(SEMARNAT), an institution in charge of evaluating the project's feasibility. This approval raised indignation among several actors and organisations who join together to file a legal demand to stop the project. At the moment of writing this thesis, the project still holds a suspension order. However, I have been informed of increasing pressure from developers to go ahead with the project. The empirical chapters of this thesis examine the complexities of the this and the next three projects in further detail.

3.3.2 Ticul A and B photovoltaic project

Ticul A and B project is a photovoltaic park venture promoted by Vega Solar 1 and 2 of SunPower Corp. It is anticipated to have an installed capacity of 310.5 MW - 207 MW for Ticul A and 103.5 MW for Ticul B - with 1,228,000 solar panels installed on approximately 738 hectares (EIA, 2016b, 2016c), making it the largest photovoltaic park in Latin America (EJA, 2019). For the establishment of the solar park, around 538 hectares (538 ha) of medium deciduous forest must be deforested. It also contains a substation and an 8 km, 230 KV transmission line, with an estimated cost of USD 464,673,361 (EIA, 2016b, 2016c). The polygon is primarily located in the municipality of Muna, Yucatan, but it also includes the municipalities of Sacalum and Ticul. It is only about 10 kilometres from the Puuc Biocultural State Reserve, 1 kilometre from the municipal seat of Muna, and a few metres from the Mayan community of San Jose Tipceh (see figure 3.4). Approximately 440 hectares of the entire area of both projects belong to a private owner who signed a lease with the corporation. The remainder of the land is owned by the San Jose Tipceh *ejido*.

The project was auctioned in March 2016 and was expected to start producing power in 2018. But its construction was stopped due to several potential socio-environmental impacts on the local context and issues around consultation and land ownership. According to the Mexican energy policy framework, indigenous peoples

have the right to FPIC. San Jose Tipche has 513 persons, of whom 65.59 percent are indigenous. Despite the fact that the project is expected to be implemented around 100 metres from the nearest residence in San Jose, the project proposal was not previously discussed with the impacted populations. What is more, according to San Jose community members, intermediaries pressured the ejidatarios to usufruct 300 ha. of common land through deceit regarding the use that would be given to the land, as they were told it would be used to plant stevia and lemons. One of the meeting minutes where the usufruct was authorised to the intermediary stated that the land will be destined to the agricultural activities (EJA, 2019).

After a lawsuit filed by the community, the consultation with the San José community began in April 2017. So far, the project has been on hold. Due to the multitude of anomalies discovered throughout the process and the resistance of several *ejidatarios*, community members estimate that the project will not be carried out. The most recent update about this (from August 2022) confirms that the definitive suspension of the project requested by community members was granted.

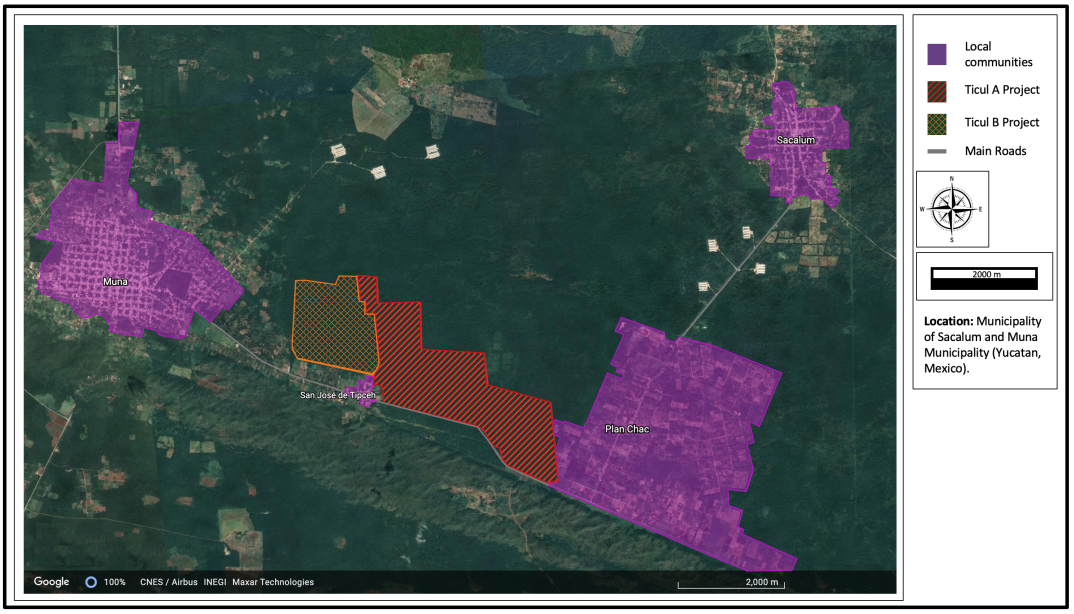

FIGURE 3.4: Distance between the four communities surrounding the project -Muna, San Jose de Tipceh, Plan Chac and Sacalum - (shown in yellow)- and the project area (in red). Approximately 1.5 km from the center of the project to the three communities.

3.3.3 Tizimin Wind Project

The Tizimin Wind Project is currently in operation. It is located approximately 34 km northeast of the town of Tizimín; 12 km northwest of the town of Dzonot and approximately 14 km from the coast. It has an installed power of 86.1 MW, and consist of forty-one wind turbines of 2.1 MW of nominal power. The 41 wind turbines that will make up the Wind Farm will be distributed over a total area of 1,725 hectares distributed on privately owned land, in the municipality of Tizimín (EIA, 2016d).

Some of the issues with this project that have been pointed out are that Environmental Impact Assessment of the project is highly problematic because the methodological criteria used to determine the project's areas of influence and the communities susceptible to impact are arbitrary and do not have a direct correlation with

the project's environmental impacts (EJA, 2020). Although the Ministry of Energy (SENER) determined the presence of Mayan communities and ratified the need to develop an indigenous consultation, only four small communities were considered in the "Area of Indirect Influence": Yohactún de Hidalgo, San Francisco Yohactún, Xkalak de Dzibalkú y Santa Clara Dzibalkú (see 3.5. Other communities were excluded on the grounds that either their populations did not have a significant population or were not going to be significantly impacted. The city of Tizimin, for example, with a population of approximately 46,971, located in the Area of Indirect Influence (AII), was similarly omitted from the indigenous consultation, despite its proximity to the transmission line and substation of the project and its large proportion of indigenous residents. Similarly, Dzonot Carretero and other coastal communities, such as El Cuyo, claimed that they would also suffer a direct impact from the project as their economies rely primarily on ecotourism activities such as bird watching. This communities, however, were also excluded from any consultation process (EJA, 2020).

The developer's intention to expand the scope of the project is also a source of concern among community members. During my fieldwork period (2019), the developer and government held "information meetings" to inform communities about the project expansion. However, as will be discussed in the empirical chapters, numerous questions about who and how people are invited to these spaces have been raised.

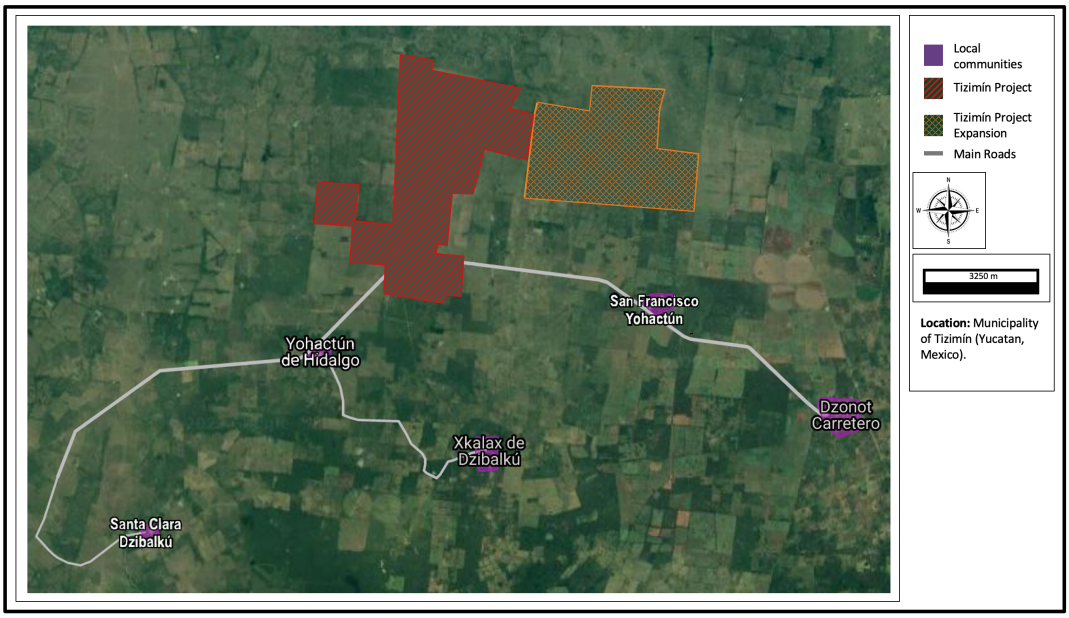

FIGURE 3.5: Distance between the five communities surrounding the project -Santa Clara, Yuhacatun de Hidalgo, Xkalax de Dziblaku, San Francisco Yohactun and Dzonot Carretero- (shown in yellow)- and the project area (in red). Approximately 1.5 km from the center of the project to the three communities.

3.3.4 Chicxulub Wind Farm project

The Chicxulub Wind Farm and its associated works such as its transmission line are expected to be located within the municipalities of Motul, Ixil and Progreso, in an area very close to the coast, with a surface area of 1,156.68 hectares. Additionally, the

transmission line will occupy an area of 57.16 hectares (EIA, 2016a). According to the Environmental Impact Statement (EIS), the Chicxulub Wind Farm project expects to install 20 wind turbines. However, the Social Impact Assessment mentions 32 turbines with a power of 3.57 MW each (71.40 MW of total power). The useful life of the wind project intends to be at least 30 years, but it contemplates the renewal of its infrastructure as a permanent project.

Some of the main issues detected with this project are that it has fostered processes of land grabbing on socially and nationally owned land. It would also destroy collective tenure and its local agrarian organisation. There is a strong process of contestation surrounding this project, particularly in the Ixil community, located about 20 kilometres northeast of the city of Mérida. In November 2019, Ixil community members started a formal judicial process intended to annul the project's permission due to irregular land ownership issues where the company intends to install the project. This has the potential to affect other permits that the company has obtained (EJA, 2019). Ixil *ejidatarios* and community members have managed to organise themselves and filled a lawsuit to nullify the irregular process on which the irregular grabbing of their lands was based. At the moment of writing this thesis there is still no ruling in this regard. However, as will be shown in the third empirical chapter, this project represents a clear case of energy injustice from a community perspective. The case of the Ixil community also illustrates the pattern of action under which many private developers are trying to implement wind and solar projects in Mexico i.e. with non-existent or inadequate informative and consultative process, biased social and environmental impact studies, and serious irregularities in land usufruct contracts (EJA, 2019).

It is important to mention that the final selection of these study sites was made only after a first trip I made to the Yucatan State. Although secondary data can provide information to find out potential relevant places to investigate, I believe it is key to personally visit the area and find out more about what is going on the ground. For this reason, I decided to divide my data collection in three different stages, as will be further explained in the next section.

3.4 Data collection Methods

The research data collection took place in three stages: First, secondary data was collected prior to the fieldwork from Sheffield. Then, primary data was collected during a first phase and a second phase of fieldwork in Mexico. The fieldwork was developed in two phases. The first phase was undertaken from January to March 2019, followed by a 4-month second phase from September to December 2019. The first phase was planned as a manner of preliminary fieldwork to try and make some initial contacts, allow for exploration of the study sites and adjust my research scope and aims accordingly. In the second phase -having met more people in the field and with greater confidence of my research focus- I undertook in depth interviews with different key actors and got much more involved in events and communities' activities which allow me have great insights as an active participant and observer in these events. In the next figure, a summary of the data collected is presented.

3.4.1 Desk-based methods and Documents Review

The use of desk-based methods in this study were key in addressing the research aim, identifying key participants and complementing the primary data collection.

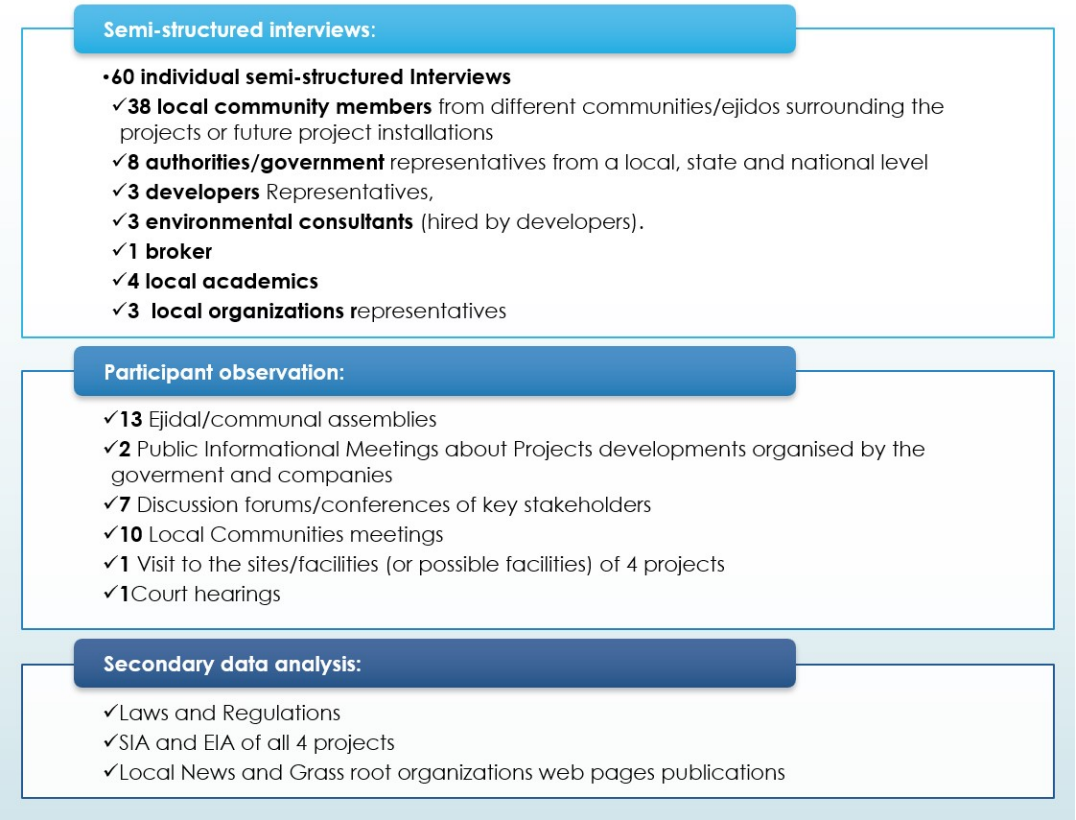

FIGURE 3.6: Data Collection Summary

Since the aim of this research was to examine how actors, policies and practices can intersect to form more socially just sustainable energy transitions, the study firstly proceed to use research desk methods in order to evaluate the current landscape and actors influencing the energy transitions in Mexico.

The document review included the Social and Environmental Impact Assessments of the four projects examined; key laws and regulations detected to be influencing the implementation of solar and wind projects in Mexico; local news; local organisations web pages and publications from local scholars. Finally a key part of the documents review during my fieldwork were the unpublished drafts of communities' press releases, brochures distributed to community members during community meetings and drafts of the legal demands made from the communities against these projects. Overall, the analyst of these secondary data was key in identifying the main stakeholders, regulations, and policies influencing the renewable energy transition in Mexico. It was also very useful in finding potential candidates and places to visit and collect my primary data once in the field.

3.4.2 In depth interviews

Semi-structured interviews are a frequently employed method for qualitative research. It allows exploring the perspective of interviewees in depth and clarifying any misunderstanding that might emerge during the questions asked (Bryman & Cramer, 2012). Sixty in-depth semi-structured interviews in the study site and other multi-actor meeting spaces were carried out. 38 local community members from the different communities neighboring projects including several Mayan activists; 8 government representatives from the local, regional and national level; 4

local academics; 3 developer representative, 3 environmental consultants hired by the developers, 1 broker and 3 representatives of local organisations. A combination of purposive sampling (particularly with government representatives and local organisations) and snowballing was used to select and recruit the interviewees.

Purposive sampling technique (Tashakkori & Teddlie, 2003) implies that the sample was selected by using a sound judgment of the researcher, which, in turn, was be based on the nature of their research objectives and context (Palys, 2008). Potential participants were initially identified by using relevant secondary data available such as governments, companies, NGOs and academic publications, as well as local and national newspapers. Once I identified and met my first "gatekeeper", identification of other participants was undertaken with their help. Within the local communities, the recruiting of research participants was mainly done through snowballing. I would ask respondents if they knew someone else that would be happy to answer some questions and people would normally take me to the house of their neighbours or pointed me to the directions where people with contrasting opinions lived.

Initial contact has also been made with locally active organisations. These initial contacts acted as an entry point for further data collection. Collaboration and contact with three main organisations contesting the current large-scale solar and wind implementation model was particularly useful: 1) the Assembly of Defenders of the Mayan Territory "Muuch Xiinbal", composed by people from different communities of the Yucatan Peninsula, mostly *ejidatarios* and peasants who are affected by the wind and photovoltaic megaprojects implemented by companies "that in the classic conqueror way come to seisetheir lands to develop their business"(Muuch' Xiinbal, 2018). 2) The "Articulacion Yucatan Collective", a network of mainly local academics working in publishing relevant information about the projects and getting involved in the Public project Consultations and informational meetings trying to bring a more critical view to the projects. They define the collective as "a space for interdisciplinary collaboration in favour of an energy transition oriented to sustainable regional development"(Yucatan, 2018). And 3) I also interviewed people from the "Yansa" Group, a locally and regionally active organisation working as an ally with indigenous communities in the defense of their communal territory and that also aims to provide opportunities to facilitate indigenous communities a direct participation in the energy transition through offering opportunities for community managed renewable energy projects. Apart from proving me with interviews, people from this organisations were very helpful as an entry point for further connections with people in the community and therefore further data collection.

Interviews with key actors such as community leaders; local government, civil societies organisations and companies representatives; local academics; and facilitators of community relations allowed me to understand the role that the different stakeholders play in influencing the energy transition landscape and explore the way in which these actors engage with local communities affected. In-depth semi-structure interviews with members of local communities were key in capturing local people's perceptions of the policies and injustices in the practices used in renewable energy implementations.

3.4.3 Active Participant observation

Participant observation is a fundamental method of ethnographic fieldwork and across the whole of the social sciences research. More than just "seeing", observation is subject to social relations, it "involves strategically placing oneself in situations in which systematic understandings of place (and people) are most likely to arise"

(Kearns 2010: 246). Approaches based on participant observation have been integral to ethnography. Often, however, observation has been prioritised over participation Johnson, Avenarius, and Weatherford (2006). In some contexts, nevertheless, active participation by the ethnographer is beneficial, if not crucial, for the collecting of high-quality data. I believe in the context of this research this was the case. Although observation was certainly employed during the whole fieldwork, having an active participation was key to significantly comprehending the dynamics associated with the perspectives and reactions to development of solar and wind implementations.

Observations, for example, were not planned in a systematic way. They were more "on the go", while I was visiting the different projects areas and while I was on my way to visit people on the communities that I was going to interview. As my research aim included to research four different projects, I was not able to stay in one community for a long period of time. For this reason, it may have seemed unusual and potentially for some community members to have a stranger walking around their communities. So I tried to avoid doing that as much as possible, unless I knew someone from the community. Once I had built good relations with some members of the community, some of them would often invited me to eat or in some cases to stay a couple of days at their house. In those cases, with appropriate consent where needed, observations on their livelihoods and life styles were documented through field notes, which contributed significantly to gain a better understanding of the communities' lives, their socio-cultural contexts.

Observation on the 4 projects' sites were limited to once visit to each site, since from the 4 projects only one was in operation, another under construction and the other two in consultation. Therefore, there were limited roads and means of transportation to get there. It is worth mention that even in Tizimin Wind park (the one in operation) I was not able to do an official (led by the company) visit to the park. Although I contacted representatives of the company and they seemed to be happy for me to know more about the project, once they saw me hanging around with some of the people contesting this type of projects, the company representative kept postponing our meeting until I had to leave the community. Despite not having an "official" visit to the project area, being a project with 200 meters wind turbines, it was relatively easy to observe the project area and the environment around. For the other three projects, community members living in the surrounding areas were very kind enough to take me to the construction and the planned installations. These visits were very useful to observe the different kinds of flora and fauna surrounding the projects, as well as notice the approximate distance from there to the communities.

Although these observations were certainly useful for exploring the environmental context. Having an active participation in different activities, events and meetings organised by communities and grass root organisations was even more useful. Every time I met someone during my fieldwork -from the local communities or activist/grasrrots organisations- I explained that I was a PhD student and was there to make research but I offered to help with whatever was needed. This offer was often quite well received and since I met my first contact, I was actually sent to deliver some letters from the communities to the Ministry of Energy and other governmental agencies where communities would explain their nonconformities about a given project and requested to either stop a project or talk to the person responsible for the authorisation of it.

Overall, making myself useful with the people and organisations around opened opportunities to be more in touch and create better relationships with community members and activist organisations. This also allowed me to be invited to about 13 communal assemblies of the different communities surrounding the four projects, to

two public informational meetings about the project developments, to seven multi-actor discussion forums and 10 informal local communities meetings and even a visit to a court hearing to find out the updates about the agrarian lawsuit against the Chicxulub Wind Farm project. In all these meetings, I would either participate by helping organise them, doing some logistic stuff that people would ask me to do or just as an observer.

Overall, in this study, participant observation was employed in order to observe the interactions and practices among key stakeholders in the energy transition process as well as observe the local community responses to it. The utilisation of this method was key in capturing unique local context insights for the understanding and analysis of energy transitions process in the ground.

3.5 Data Analysis

While interviews were carried out in a Mayan indigenous region, most participants were bilingual and had a good level of Spanish. All interviews, apart from one, were carried out in Spanish. The interview in Mayan was with a participant who wished to have her son translate the questions and answers into Spanish and Mayan for us. Interviews were transcribed, coded, and analysed in Spanish. Then I translated the relevant quotes into English. To ensure the highest accuracy possible in quote translation, I double-checked with participants the meaning of local words or jargon that I was not completely familiar with.

After translating and transcribing data from interviews and research diary, the data was thematically analysed using NViVo software and a deductive approach by one coder. The energy justice framework's three main concepts -procedural, distributional and recognition- served as a basis for guiding initial data structuring, leaving the door open for inductive coding to identify other types of injustices, themes and alternatives for more just energy transitions. For each of the three initially suggested justice dimensions, I identified sub themes and their socio-environmental, cultural or political implications. For example, claims on participation, inclusion, decision-making power, agency and information disclosure and exchange were highlighted and sub-categorised under the procedural justice dimension. As the concepts above are closely related and found significant parallels, the coding was done through an iterative process where emerging themes and consulting literature to refine the relationship among them was followed. Analysing people's concerns about the project siting, plus their suggestions on more just procedures, ways of recognising and alternatives views, helped me better understand what drives the opposition to the projects and what people identified as unjust.

3.6 Positionality, access, ethics and limitations

It is important to mention that the views presented in this study are not representative of the whole community. Many of the people who were introduced to the researcher through snowballing were critical of the project, which gave me access to networks of opponents, with limited access to supporters. However, the data collected evidenced the procedural, distributional, and recognition injustices perceived and experienced in the project implementation process.

When it comes to social research, it is important to acknowledge that the researcher cannot be fully neutral (Rose, 1997). Therefore, it is important to reflect on how my positionality might have affected the outcomes of the research.

I was born in Mexico City and have lived there for most of my life. Despite positioning myself in a lower economic class for most of my life, being from Mexico City frequently carries a connotation of privilege. This coupled with the fact that during my fieldwork I was registered with an English university and had lived in the UK for two years, reinforced the possible perception as a privileged person. My skin color (white) also seemed to reinforce this perception as outsider and privileged. Being a foreigner of the region initially interfered with building relationships and trust from participants. However, being also an insider, because of my Mexican nationality, served as an advantage in other cases to better understand and get along with the local people.

The combinations of these factors made me nervous about my fildwork. Specially as I knew I wanted to talk to local grassroots organisation and activists that tend to be very critical of "privilege outsiders just coming to extract knowledge". Although what bring me to my research topic was the genuine idea to find the issues and injustices occurring in indigenous communities derived of the implementation of large-scale renewable energy projects and find ways to "make it more just", I knew it was not going to be easy to gain peoples trust and I needed to take more than a passive research approach. Inspired by activist geographies and a human geography with an "action oriented research" agenda (Pain & Francis, 2003) and ethnographic anthropology, I decided to take a more activist research, to gain and deserve people's trust and time on the field. As Pain and Francis (2003) argues, if researchers aspire to "relevant" and "critical" research, this entails being willing to make political commitments or commit to specific types of action.

Getting immersed in the local context and specially in their local activities played a key part in gaining access and trust from participants. However, this also brought issues of positionality and ethics.

As some participants were reached by using previously contacted local organisation, I was likely associated with them, which had the potential to influence participant's responses. To minimisethis risk, and, drawing from the trust formed with participants, I made sure of informing respondents that their answers will be completely anonymous and confidential in the publication of the results. To protect respondents' anonymity, the names of the interviewees cited in this study have been changed. For accurate rendition, most of the interviews were audio-recorded with prior consent from participants.

This plan was reviewed and approved by University of Sheffield's Ethics committee approval under the application form number 023852.

Chapter 4

Key policies influencing the energy transition in Mexico

4.1 Introduction

The objective of this chapter is to review the general landscape regulating and influencing the implementation of renewable energy and the energy transition in Mexico. This will offer an essential background for the three empirical chapters presented below. While describing some key factors of the Mexican energy policies, I will also draw some conclusions on the extent to which the law observes the principles of the energy justice framework. Before going into detail about the energy policy framework, it is important to mention the type of land ownership existing in Mexico, as land ownership is key to understanding both the spirit and implementation of the law.

Current legislation establishes that land ownership can be of three types: national, private and social. In the case of indigenous peoples, however, three forms of tenure can be appreciated: private, communal, and *ejidal* (the latter two are forms of social property). While private land is self-explanatory, I will spend a couple of lines explaining the difference between communal and *ejidal* as these often get confused, and it is important to note their differences due to the implications in terms of rights for indigenous peoples and development project.

Communal ownership (also known as "communal goods" or "agrarian communities") are agrarian groups that have conserved their lands since colonial times and whose lands were restored, recognised or confirmed by the Mexican agrarian legislation. *ejidos*, on the other hand, "are government-sponsored lands owned by groups of individuals, either collectively or, more commonly, as a combination of individually worked usufruct parcels and common lands owned and used by all" (Yetman & Burquez, 1998, p. 73). In other words, as stated by the indigenous researcher expert in social land ownership Bárcenas (2017)

> "the *ejido* and the agrarian community (...) have some differences that distinguish them. One of them is its origin: while the *ejido* is the product of the state's endowment of land to a group of peasants who lacked them and were necessary for their subsistence, the agrarian community has its origin in the recognition by the same Status of lands that belonged to a group of peasants "from time immemorial" or of their restitution if they had been dispossessed of them." (Bárcenas, 2017, p. 25)

For this reason, agrarian communities have the highest degree of protection granted in the law against the dispossession of indigenous and peasant's land (Bárcenas, 2017). Noting this difference is important since this also influences the injustices and reactions found in energy policies and development implementations.

The following section presents laws and policy analyses based on secondary data collected, including legal texts and grey literature such as several documents developed by the Centro Mexicano de Derecho Ambiental (CEMDA) (in English, the Mexican Centre for Environmental Law), which has published significant work on energy policy analysis. These sections also contain ideas and data from printed handouts collected during fieldwork in different multi-actor forums.

4.2 Key policies and laws influencing the energy transition

The key policies influencing the renewable energy transition in Mexico derive from the so-called "Energy Reform" approved in 2013. Articles 25, 27 and 20 of the Mexican constitution were modified in this reform. The reform package also included eight new laws and twelve modifications to previously existing laws, among the most important, The Electricity Industry Law. The main objective of this reform was to allow the entry of private capital, both national and foreign, in the areas of hydrocarbons and energy, areas that until then were a state monopoly for more than 80 years. The purpose of these changes, according to the president in turn, Enrique Peña Nieto, was "reducing electricity tariffs for the benefit of the population and industry" and using the energy sector as an engine for investment and development.

Contrary to this purpose, however, just a couple of months after the reform was published, around 40 civil society organisations asked the Ombudsman in a written letter, Ral Plascencia Villanueva, to have the National Human Rights Commission (CNDH), file an unconstitutionality action against various secondary laws of the energy reform for negatively affecting human rights and putting the country's sustainable development at risk (CEMDA, 2014). Among the possible impacts and damages were the violation of the right to free, prior and informed consent an consultation, self-determination of indigenous peoples, right to territory and a healthy environment.

One of the most concerning issues of the Reform is that, according to the Electricity Industry Law, the "activities of exploration and extraction of oil and other hydrocarbons, as well as the public service of transmission and distribution of electricity, are considered to be of "social interest" and public order" (LIE, 2014, Art.1). This means that they would have preference over any other use of land including environmental protection, sustainable forest management, conservation of water sources, agriculture and livestock, among others.

As Fernando Ríos, Executive Secretary of the Network "Red de Organizaciones Civiles de Derechos Humanos Todos los Derechos para Todos y Todas (REDTDT)" stated, this prioritisation of land does not reflect a principle of proportionality which should be decided on a case-by-case basis. "The establishment of the superiority of the energy sector over any other will affect human rights, Mexico's competitiveness and the primary and secondary sectors of the economy" (CEMDA, 2014, p.1).

The organisations and actors participating in these demands also refuted the continued dependence on Hydrocarbons despite the great potential that Mexico has for a transition to renewable energy. In response to this latest demand to promote an energy transition and reduce greenhouse gases, the Energy Transition Law (LTE, 2015) was published; and two others main laws were modified: The General Law on Climate Change (LGCC, 2012), and The General Law of Ecological Balance and Environmental Protection (LGEEPA, 1988).

The Energy Transition Law (LTE) aims to regulate the sustainable use of energy as well as the obligations regarding clean energy and the reduction of polluting emissions from the electricity industry, while maintaining the competitiveness of the productive sectors. (LTE, 2015, Article 1). It determines that clean energies used in the generation of electricity should account for 25% for the year 2018, 30% for 2021 and 35% for 2024 LTE (2015, Article 8). In the medium-term, the LTE states that renewable energies and energy efficiency are expected to contribute 79% of the total abatement of the country's emissions by 2050. However, this will depend on how quickly the technologies are incorporated into energy systems. To fulfil its aim, the LTE establishes some provisions that aim to encourage investment for the generation of electricity with clean energy, including (1) the gradual increase in the participation of clean energies in the electricity industry in order to meet the goals established in terms of generation of clean energies and reduction of emissions, (2) the incorporation of externalities in the evaluation of costs associated with the operation and expansion of the electricity industry, including those on health and the environment, (3) establish mechanisms to promote clean energy and reduce polluting emissions (4) promote the sustainable use of energy in final consumption and energy transformation processes, (5) promote the energy use of renewable resources and (6) support the objective of the General Law on Climate Change, related to reduction goals GHG emissions and electricity generation from clean energy sources (LTE, 2015, Article 2).

The General Law on Climate Change is regulatory of the Mexican Constitution in terms of environmental protection, sustainable development, preservation and restoration of ecological balance. Among its most important objectives are (LGCC, 2012, Article 2) a. Guarantee the right to a healthy environment; b. Regulate actions for mitigation and adaptation to climate change; and c. Promote the transition towards a competitive, sustainable and low-carbon economy. Within this law, we find the National Climate Change Strategy (ENACC), a planning instrument that sets the objective of accelerating the energy transition towards clean energy sources, reaching, in addition to the goal of 2024, generating 40% of electricity with clean energy by 2035 and 50% by 2050. These goals also represent the contribution that the country will make to collective global efforts in the fight against climate change and to comply with the 2015 Paris Agreement. In this sense, the LGCC recognizes the potential of the energy sector to contribute to the mitigation of climate change. It promotes the use of renewable energy sources for the generation of electricity and points out the importance of developing incentives for both public and private investment in the generation of electricity from renewable sources and the inclusion of the costs of social and environmental externalities.

Another important law that influences renewable energies implementation is the General Law of Ecological Balance and Environmental Protection (1988). Its objective is the preservation and restoration of the ecological balance, and the protection of the the Mexican territory environment in areas over which the Nation exercises its sovereignty and jurisdiction. While promoting sustainable development and establishing the bases for principles of environmental policy, it tries to ensure that obtaining economic benefits in the Mexican society are compatible with the preservation of ecosystems. This law contemplates environmental policy instruments that must complied with in the implementation of energy projects such as the environmental impact assessment (EIA).

While the above mentioned laws explicitly states that part of their aims is to promote the sustainable development of the electricity industry and country, there remains very limited protection of human and environmental rights in energy development in practice. It appears as though the inclusion of these new regulations and

legislation is only a proclamation of the Mexican government's good intentions and does not address or condone the numerous inconsistencies in the implementation of energy developments. This arguments will be further evidenced in the following sections.

In the next section I will explore with more details the inconsistencies and contradictions found in the Electricity Industry Law (derived of the 2013 Constitutional Reform) -which is arguably the most relevant to this thesis due to its impact and implications on the solar and wind projects explored.

4.2.1 The Electricity Industry Law (LIE)

The Electricity Industry Law (LIE) regulates the planning and control of the National Electric System, the Public Service of Transmission and Distribution of Electric Power and the other activities of the electric industry (LIE, 2014, Article 1). Its purpose is to "promote the sustainable development of the electricity industry and guarantee its continuous, efficient and safe operation for the benefit of users, as well as compliance with public and universal service obligations, clean energy and the reduction of polluting emissions" (LIE, 2014, Article 1).

Contradictorily, the Electricity Industry Law has both aspects that seek a socio-environmentally sustainable transition to renewable energies and principles that endanger the sustainability of nature and human rights, particularly for the indigenous peoples and peasants of the nation. The following subsections provide a concise assessment of its contradictions as a guarantee for a transition to a sustainable energy sources. This section's ideas and critiques are derived from several multi-actor meetings and printed handouts, with the "Energy policy framework analysis" grassroots workshop in Ticul 2019 being among the most enlightening.

Compliance with human rights obligations

The LIE establishes that infrastructure projects in the public and private sectors in the electricity industry will "meet the principles of sustainability and respect for the human rights of the communities and peoples of the regions in which they intend to develop" (LIE, 2014, Article 117).

For this, the Secretary of Energy (SENER) must inform those interested in the execution of infrastructure projects in the electricity industry about the presence of social groups in vulnerable situations in the areas in which the activities for the execution of the projects will be carried out in order to implement the necessary actions to safeguard their rights LIE (2014, Article 118). These actions are specifically implemented through two mechanisms: the Social Impact Assessment (SIA) and the the Free, Prior and Informed Consultation (FPIC). It is worth mentioning that these instruments are complementary to other processes that seek to comply with human and environemntal rights such as the Environmental Impact Assessment (EIA) established in the General Law of Ecological Balance and Environmental Protection (LGEEPA).

Regarding the Social Impact Assessment (SIA), the LIE establishes that those interested in obtaining permits or authorisations to develop projects in the electricity industry must submit to the Mexican Ministry of Energy (SENER) a social impact assessment that contain the identification, characterisation, prediction and assessment of the social impacts which could derive from its activities, as well as the corresponding mitigation measures (LIE, 2014, Article 120).

Similarly, in terms of the Free, Prior and Informed Consultation (FPIC), the LIE indicates that SENER is the institution in charge of carrying out the necessary consultation procedures. These has, however, raised several conflict of interest claims, since one of SENER serves as judge and party at the same time. It seeks to promote the implementations of the large-scale wind and solar projects while judging their SIA and managing the FPIC. For many people on the ground, these double role of the SENER can and put indigenous and peasant communities in risks to bias projects authorisations.

Power auctions and Declaration of Public Utility

The LIE allows the sale of energy under two modalities: First, direct dealings between authorised persons. And, second, auctions organised by the government through the National Center for Energy Control (CENACE). In these auctions, contracts are awarded to the projects that offer the lowest price for energy. Being the price one of the most valuable factors, there is not a rigourous virification process in terms of potential socio-environmental impacts. Consent from the affected communities is also not required at this time. Once the project has a contract derived from the auction, it has a strong support from the government to be implemented. In this case, Article 71 of the LIE, which obliges all government orders to expedite and guarantee the granting of permits and authorisations applies. The LIE states that "Occupation or superficial affectation or the constitution of necessary easements will proceed" for energy projects. It also establishes that "The federation, the governments of the states and the Federal District, the municipalities and the delegations, contribute to the development of projects for the generation, transmission and distribution of electric energy, through procedures and coordination bases that expedite and guarantee the granting of permits and authorisations within the scope of its competence."(LIE, 2014, Article 71) This order to guarantee permits and authorisations to carry out projects is therefore highly contentiousdue to the potential bias on projects authorisation even if they do not comply with basic environmental protection protocols.

Similarly, the LIE establishes that the activities of the energy sector are of "public utility" and that due to their strategic nature they are considered to be of "public order" and "social interest", for which they will have preference over any other activity that implies the use of the surface and subsoil of the potential land to be occupied. Therefore, the foregoing implies a lack of proportionality, since no or little rules are established so that the authorities can impartially determine the viability of the energy projects. These provisions violates the right of indigenous communities including the right to use and enjoy our lands and resources protected by International Labor Convention (ILO) Convention 169; and their right to a healthy environment, and their right to information, participation and access to justice (CEMDA, 2016).

Although renewable energy is key to a successful sustainable energy transition of the country, it is contradictory that the law places energy projects above the human and territorial rights of the rural and indigenous peoples that are protected by the Mexican constitution and international treaties.

Forced servitude to the land. Legalising land dispossession?

The LIE also has several questionable clauses on forced land servitude that could be comparable to a legalisation of land dispossession. That is to say, it can be argued that this law legalises land dispossession through the electrical industry. According

to this law, if a company wants to lease or buy land for a project, but after 180 days it has not obtained the agreement of the peasants, the company has two options: go to court to establish a forced easement on the land in favour of the company, or request the mediation of the Secretary of Agrarian, Territorial and Urban Development. If a mediation is opted for, but there is no agreement after 30 days, the government will order a forced easement, i.e., in any case, the company takes over the land.

In this point, CEMDA also highlights that the energy reform ignores the fact that in the establishment of legal easements a balance must be struck between private interest and public utility (CEMDA, 2016). This is due to the fact that the supposed "public utility" of the projects prevails over private property (whether individual, collective or *ejido*). In this sense, the scope of the legal servitude provided for in the energy reform is comparable to that of an expropriation, since the property rights of possessors and owners are restricted and there is no option to refuse to cede their land (CEMDA, 2016).

If a forced servitude is established, the price to pay is decided by an appraisal, using "market" criteria. That is to say, only private banks, public brokers or professionals with a postgraduate degree in valuation are authorised to do so. Peasants cannot decide the value of their land.

The legal dispossession applies to all power line projects, and also "to power generation plants in those cases in which, due to the characteristics of the project, a specific location is required" (LIE, 2014). Until now, this mechanism has not been used within wind and solar projects, but there is a potential to be extended to these, since in other types of renewable energy projects - such as private hydroelectric and geothermal projects - this type of "legal dispossession" is contemplated.

Summary of relevant regulations for Indigenous Peoples and Communities

Article 2 of the Mexican Constitution establishes the rights of indigenous peoples, such as the right to autonomy and self-determination, as well as the use and application of their customary law and access to land ownership and the use and enjoyment of the natural resources. Article 27 section VII of the CPEUM also establishes that the law will protect the integrity of the lands of indigenous groups. As mentioned before, these rights are also recognised international treaties such as the ILO Convention 169 on Indigenous and Tribal Peoples in Independent Countries, which was indeed ratified by Mexico in 1990, stating that: "Measures must be adopted to safeguard the persons, institutions, assets, jobs, cultures and the environment of the peoples concerned" (CPEUM, 1917, Article 4).

Similarly, the LIE establishes was observed that the State "must consult the interested peoples, through appropriate procedures and in particular through their representative institutions, whenever legislative or administrative measures are envisaged that are likely to affect them directly" (LIE, 2014, Art. 5) .

Despite the fact that the energy polices and it secondary laws have the potential to affect indigenous and peasant communities resources, territories and rights, they were not consulted during the design and approval of the energy reform. This despite of the fact that indigenous population in Mexico represents close to 15% of the country's total population and that they own -in the form of social land property (*ejido* or community) about 54.1% of the surface of the country. It is therefore paramount to properly include these groups in key policy decision-making (CEMDA, 2017).

Overall, it can be argued that while some notions of justice have attempted to be included in the Mexican energy policy framework, these policies have been insufficient, bias and show strong contradictions with each other.

A final point that is worthwhile mentioning here is that current public policies did not allow agrarian or indigenous communities to become producers or sellers of renewable energy. This exclusion operates in a subtle way. The law does not prohibit communities from producing energy, but the institutions (CENACE, CRE, CFE) put up barriers that are practically impossible for the communities to overcome. Policies are designed so that only large companies have access to contracts and can feed the electricity grid. As a handout from the grassroots Ticul workshop states: "They exclude us [indigenous and agrarian peoples] so that our only option is to hand over our lands to private companies and they are the ones who exploit and benefit from our energy resources" (Ticul community member, 2019).

4.2.2 Conclusion

Derived from this brief analysis of key energy policies, it can be concluded that while the legal framework states that their main aim is to promote the sustainable development of the energy industry and country, there remains very limited protection of human and environmental rights in energy implementations on the ground. Specific policies and mechanisms that support the development of wind and solar projects have been promoted. However, priorities have been put on the economic and financial incentives to attract developers while Social and environmental impacts and rigorous processes have been disregarded. Although the new legal framework created some social and environmental protection mechanisms, such as the SIA and FPIC, these instruments are overwhelmed by the poor and unfair practices that the law allows from private and public developers, leaving indigenous peoples at a serious disadvantage when resisting energy projects that affect their territories.

Overall, some public policies influencing the renewable energy transition include certain elements of procedural, distributional and recognition justice. Nevertheless, these mechanisms are not enough to successfully protect the rights of rural indigenous and peasant peoples. It is essential that the Mexican State act to safeguard them by properly following and respecting ratified international human rights agreements.

This chapter was offered as a brief policy background. Further analysis of policy implications and relevant historical contextualisation will be provided in the empirical chapters below. The evidence and arguments presented will significantly enhance the understanding of the reactions, experiences and perceptions of energy (in)justice found on the ground.

Chapter 5

From Distributional Justice to Redistribution of Power

5.1 Introduction

This chapter argues that normative ideas on the distributional justice dimension within the energy justice framework are insufficient and, in some cases, inappropriate when applied to Global South countries, particularly rural and indigenous contexts. Currently, distributional justice ideas and practices mainly focus on the asymmetries related to compensations for the use of land and resources in local communities, making suggestions on how a better distribution of risk and benefits (usually through corporate benefit-sharing schemes) could make energy implementations more just (Cowell et al., 2011; Hopkins et al., 2008; Sovacool et al., 2016; C. Warren et al., 2012). Focusing on "better distribution of benefits", however, diverts people's attention to whether the project implementation is necessary in the first place and normalises the idea that there should be an appropriation of natural resources, ruling out any conception of justice that challenges nature marketisation.

I argue that the distributional justice dimension must be challenged and complemented with non-western ideas and theories of justice such as the Good Living (Gudynas, 2011a), as well as other Western concepts that advocate for a redistribution of power (e.g. energy democracy (Stephens, 2019)) rather than limiting it to the distribution of corporate benefits. Essentially, ideas of justice that question dominant approaches to development, the commodification of nature, the concentration of power, and what a good life means are necessary for more inclusive and impactful energy justice frameworks.

Overall, this chapter examines how distributional justice principles have been applied to the implementation of wind and solar projects in Yucatan, Mexico. It also explores how the distribution of projects' risks and benefits has contributed (or not) to forming a more just energy transition in Mexico.

After this introduction, the following section makes the case that distributional justice practices have been mostly applied through the approach of corporate benefits-sharing schemes in Mexico. Then, I categorise and explore the risks and benefits of the two solar and two wind energy projects, including employment and local economic opportunities; infrastructure development; land rent revenues; illegal contracts and land dispossession; and damage to the local environment, livelihoods, and culture. Finally, the third section questions the current top-down private large-scale renewable energy model potential in addressing local injustices and suggests a bottom-up perspective to be taken into account. In this perspective, redistribution of power -applied through energy democracy and alternative models of/to development are seen as potential solutions to achieve more just energy transitions.

5.2 Distribution of risk and benefits in energy projects

5.2.1 "Benefits-Sharing" schemes, a just distribution of benefits?

In Mexico, the idea of distributional justice has been mostly applied through the approach of Corporate Benefits Sharing Schemes. In the context of indigenous peoples and energy projects, Corporate Benefits Sharing Schemes (CBSS) -also called benefits-sharing (BS), co-benefits or Shared Social Benefits (SSB), can be understood as any direct negotiation between indigenous communities and the government or extractive industries, by virtue of which extractive industries share directly with the affected communities a part of the benefits obtained from the exploration and exploitation of the natural resources existing in indigenous territories or close to them (Bustamante-Rivera & Martin, 2018). Benefit-sharing agreements are widely used in different natural resource management and extractive operations, and they are used to minimise the negative effects of projects, lessen resistance, and enhance general acceptability (Morgera, 2016; Wilson, 2019).

Some literature has demonstrated that corporate benefits sharing approaches in renewable energy infrastructure help with local acceptance of project (Cass, Walker, & Devine-Wright, 2010). A key thing I would like to highlight here, however, is that the mere concept of local acceptance implicitly assumes that the problem lies with the people - who do not accept the projects-. Therefore, the shared benefits are used as an incentive to convince people to accept them. This approach is flawed, since in many contexts, the problem is not the people, but the projects themselves which cause serious socio-environmental impacts in the local context, as will be shown throughout this chapter.

Local public opposition and protests has been the biggest driver to enforce a benefits sharing approach in renewable energy development in Mexico. Although the country ratified the International Labor Organisation agreement 169 since 1991 -where it is recognised the indigenous peoples' entitlement to acceptable benefit-sharing for extractive activities and developments taking place on their territory- (Reference), the Mexican government did not make any significant attempt to encourage the sharing of project benefits in energy developments until 2012- when indigenous communities managed to stop one of the largest wind farms tried to be intended in the area, as an activist working in Yucatan and Oaxaca explains:

> "The resistance in Oaxaca and especially the success against Mareña Renovables [eolic project] forced the Government to adapt its regulatory framework. All these mechanisms of consultation [FPIC], social impact assessment and everything else that say to benefit communities were introduced into the LIE [electric industry law in 2013], before they did not exist. Well it existed in the sense that it was an obligation of the Mexican State [according to international agreements] but they did not comply with it." (Gabriel, activist and representative of a non-profit organisation)

After that extensive opposition and with the Constitutional Energy Reform of 2013, the Electric Industry Law forces developers to conduct negotiations and agreements with the communities based on the identification of positive and negative impacts of projects, and offer compensation for the potential negative impacts. This seemed as a good sign to improve justice in the implementation of renewable energy

in Mexico. However, since there was no regulation on the kind or amount of compensation that should be offered, compensation was minimal and started to be used as a means of bribery to try to buy peoples wills (see Dunlap, 2018:a, 2018:c)

> "Now, all this [resistance and new regulations] has made companies think more about how to convince people [to accept renewable energy projects], but instead of facing it honestly, they are simply doing social engineering to buy consent." (Gabriel, activist and representative of a non-profit organisation)

Aware of this issues, in 2017, the Mexican Ministry of Energy- with funds from the Inter-American Development Bank- developed an Action Protocol on Shared Social Benefits of Energy Projects (PROBESCO, acronym in Spanish).PREBESCO presents itself as "a proposal of minimum rules of the game for the determination, allocation, distribution, generation, administration, documentation, systematisation, monitoring, follow-up, evaluation and feedback of shared social benefits" (Reference). The document encouraged good practices in energy projects implementations, placing emphasis on the importance of respecting fundamental human rights and even recognising the potential of these benefits schemes to become a tool of coercion and imposition:

> "If the national and international legal framework on human rights is not complied with, the shared social benefits of energy projects become irrelevant or counterproductive because they become a tool for simulation, co-optation, manipulation, intimidation, coercion or imposition of energy projects. Without rights, there are no benefits. Therefore, the exercise of the former is a condition sine qua non for the distribution of the latter." (PROBESCO, 2017)

According to PREBESCO guidelines, the social benefits-sharing must comply with the following characteristics:

1. Social benefits must be allocated and distributed in a manner fair and equitable between individuals and groups of interest.

2. They must be determined in a participatory manner by the people, groups, populations, peoples and communities that inhabit, occupy or use lands or territories located in the area of influence of the energy project and that are potentially affected by negative impacts and/or positive impacts thereof, based on their needs, expectations, aspirations, motivations and interests and on their own conceptions, priorities and world-views.

3. Social benefits-sharing must be public, free, without conditions and without exclusivity clauses.

4. They must be documented, systematised, monitored, followed up, evaluated and provided feedback continuously and permanently.

While compliance with these guidelines has the potential to achieve some degree of justice in the distribution of benefits of projects, this is a non-binding instrument. It was only designed to be used as a reference for developers and other stakeholders as a minimum standard of the application of benefit-sharing approaches. This freedom has opened the door for developers to ignore the practices suggested in the

protocol or adapted them at their convenience -provoking an inequitable distribution of risks and benefits of the projects-.

The next table present a summary of the (potential and actual) risks and benefits of the four renewable projects as collected from fieldwork interviews in the communities surrounding the projects. This information was triangulated and complemented with additional viewpoints gathered from government and local organisations interviews and information from the Social and Environmental Impact Assessments, including the Social Management Plans. The benefits are explored in terms of: land rent revenues, employment, local economic opportunities, and infrastructure development. The risk are categorised in: land dispossession, damage to the environment and livelihoods, damage to social fabric, and potential cultural loss.

TABLE 5.1: My caption

Project Name	Identified benefits	Identified risks
Tizimin eolic/ Tizimin	• Local contracting and employment • Benefits in kind: the developer directly provides or pays for local community facility improvements, school and educational support. • Local employment. According to EVIS: promotion of human development, the generation of productive capacities, attention to social backwardness and support for sustainable community projects. • Decrease in the percentage of the population living in poverty and in extreme poverty	• Impacts to birds. • Impact to tourism by natural landscape change. • Cumulative impacts from expansion of the project

(continue on next page)

(Table 5.1, continuation)

Project Name	Identified benefits	Identified risks
Yucatán Solar/ Valladolid	• comunity fund	• Deforestation of endemic and other flora species • Damage to the local environment of endanger and other animal species. • Risk to local livelihoods (bees). • Health risks due to increase in the local temperature. • Contamination from the waste of panels at the end of their life cycle. • Land use change of 210 ha
Chicxulub eolic/ Ixil	• 200 direct jobs, albeit temporary, and approximately 300 indirect jobs. • Improve and create new interconnection paths for the movement of cattle or for service. • Economic spill for rent to owners. • Local economic opportunities due to covering employments needs of food, accommodation, or other services - resulting in job offers, economic spill and social welfare	• Land use change of 79 ha according to SIA, 600 ha according to the community. • Privatization of land • Water quality due to karstic soil or spills • removal of vegetation cover, secondary shrubby and tree vegetation of low thorny deciduous forest in an area of 72.34 ha
Ticul A & B / Ticul	• During the stages of site preparation, construction and dismantling, 30 jobs will be generated within the project's area of influence, • During the operation, 20 jobs will be generated. • Creation of specialized jobs (hiring outside the community)	• Loss of communal land use change of 384 ha for A and 199 ha for B • Deforestation Land use change • Health impacts due to deforestation and increase in temperature.

While in this table there seems to be a wide range of benefits offered by companies, many of them have not been fulfilled, either because projects have not been able

to go ahead yet due to community opposition or because companies have not kept their implementation promises. In the following section I present a critical analysis of the benefits and risks, highlighting their inequities, limitations and implications for local communities.

5.2.2 Employment and local economic opportunities

The employment opportunities created during the construction of the wind and solar projects was one of the main benefits mentioned by interviewees from both local communities and the government.

> "Well, in terms of benefits, there are many, but the main one is that [the projects] bring a lot of employment to people." (Government representative in Yucatan)

Among project supporters in the communities, people highlighted the few work opportunities existing in the communities and saw the projects as a hope for a new and close to home job. A lady of the Cuncunul community, neighboring the Yucatan Solar project, for instance, commented:

> "The solar park construction is generating jobs here for the people, now they [the workers] do not have to go to Valladolid [the closest city to Cuncunul town] to work and [therefore] don't have to pay 100 pesos for a ticket [to get there]." (Juana, Cuncunul community member).

Although some people appreciated that the projects generated jobs opportunities. Most people were discouraged and disappointed of the job conditions offered, as these would commonly be short-term, low-paying and with poor working conditions.

> "It is true that [work] is needed, because many people from here [from the community] worked there, but it is only for a short time [...] In reality, they have already started firing them [people] from here and bringing in people from outside." (Bertha, Ebtun community member)

Employees working from the Ebtun community working for the the Yucatan Solar project, for example, told me in an interview with a low voice and expecting a response from my part:

> "They offered us to employ people, but there is no commitment, it is only temporary. Besides, I don't know how you see it, and I don't know if it is right or wrong, but they are giving us 1,200 pesos [60 USD] a week, working from sunrise to sunset, there is not even shade or anything [to take cover from the sun] from 7 in the morning to 5 in the afternoon." (Beto, worker in Yucatan Solar project)

He also highlighted being deceived with the money he would get paid and the conditions of the work offered at the beginning:

> "When we started [working] they told us it [the payment] was going to be 1500, but then they lowered it to us. I collect wood. The problem is that they make us carry very heavy lumber and do not let us rest. In the work areas there is a lot of dust, they don't give us protection or

> anything. Supposedly, they were going to give us work boots, but look, I had to wear my own shoes and they already ran out." (Beto, worker in Yucatan Solar project)

Despite the fact that the Social Impact Assessment of the same project recognises that the "local population indicates lack of employment or poorly paid employment as the main problem in their communities" (EIA, 2016e, p. 136) -and use this reason to justify the arrival of the project-, the company continues to reproduce the same patterns of labor exploitation with deplorable salaries. Similarly, other Impact Assessments, such as the one for the Tizimin Wind project, also promote that "the project will offer jobs to people in the area which will improve their quality of life" (EIA, 2016e, Chapter III P. 25). However, the local population around that project reported similar poor working conditions and termination of contract without prior notice.

As evidenced in the quotes above, one of the greatest promises of benefits of development projects of this type -employment to the local populations- normally does not meet the expectations of benefits promoted and expected by the population. On the contrary, these projects take advantage of the economic need of local peoples, and use it as a key element to justify their development interventions.

Companies normally recognise the temporality of the jobs in the Social and Environmental Impact Assessment (SEIAs), for example, the EIA of the Tizimin Wind Project states that: 'An economic impact that is glimpsed has to do with the hiring of local labor [...], especially in the construction stage, since during the operation stage it is only expected to employ, maximum , 10 people (SIA Tizimin p.191, 2016). Although there is a written recognition of this short-term temporality, in the FPIC public meetings, where the final decision to approve or reject the project is taken, the company and government representatives continuously send the message to the population that there will be permanent jobs, so that they give their consent the project. On the slides of a public presentation in the consultative phase of the same project, the following was written:

> "Although in smaller numbers, there will continue to be sources of work for people from nearby towns, since the work of cleaning roads and gutters will be permanent, and people who have the profile required to access more specialised jobs will be able to receive training." (Slides from a public presentation in the consultative phase of the Tizimin Project, 2017)

Interviewees frequently highlighted the embellished and sometimes false government discourses about local economic opportunities and employment, as Alonso community member of the Ticul Project complained:

> "He [the government representative] spoke sweetly to people. He told them "ladies, there is going to be an economy, you are going to sell food, imagine how many thousands of employees are going to come [to the community]". [...] When in reality it is not going to be that, they are lies. [...] The commissioner (a local authority) also visited people [in their homes] and told them the same... but that is not true because there are only some small roads that will be built, they showed us." (Alonso, San Jose Tipceh community)

> "They promised a lot of jobs but in the end when they (the community) checked they realised that I was going to do 11 jobs in the community, only 11 temporary jobs and they [the company] are going to stay for 30 years." (Manuel, San Jose Tipceh community)

Many members of the community compare the temporality of the jobs (often a few months), against the time the project pretends to stay in the local area -at least 25 years with the possibility to be extended "indefinitely". The Tizimin EIA, for example, states: "The developer's objective is to extend said useful life of the wind farm indefinitely, which is normal in this type of facilities" (**?**, p. 60). For many, these difference in time constituted a clear injustice. Especially for those people who did not posses a right to the land and did not receive any rent revenue from the project, but still felt affected by its proximities or other impacts, such as the deforestation derived from it.

Authorising a project with a duration of at least 25 years and the aim to be extended "indefinitely" also meant the loss of land control for that amount of time, which sometimes meant missing the opportunity of better livelihoods opportunities in the future, as Camilo reflected:

> "People really accepted it [the project] because there was nothing else, and because of the jobs. They [the government] said there were going to be a lot of jobs for people ... Like 40 people for 3 or 4 months. But when the government program of *Sembrando Vida* [Sowing Life] arrived, a lot of people regretted it." (Camilo, peasant from Cuncunul community)

Sembrando Vida (Sowing Life), it is a social program of the current left-wing government -which started in 2018, after the solar and wind projects in Yucatan have already been approved by the previous government-. The social program *Sembrando Vida* seeks to address rural poverty and environmental degradation by proving a monthly salary and other in-kind supports to peasant who have 2.5 hectares available to work in agroforestal projects -including the reforestation of degraded areas. For the people who accepted this kind of renewable energy developments in their land, that meant a missed livelihood opportunity to use their land for these program. For some peasant families, *Sembrando Vida* would have provided them with a more long term job (at least 6 years -the term of this government in power-); higher salary (MX$ 5,000 , equivalent to$250 dollars a month) and arguably better working conditions (since the peasants work at their own time and for as long as they want, as long as they show they are planting and taking care of the trees).

Camilo also mentioned that now that people have a more or less stable source of income from *Sembrando Vida*, the people consider more seriously the potential harms of the projects:

> "Now that we have a strong income, we think more about the consequences that the project is going to bring us. At the beginning you don't think about it much because the work is needed, but now we prefer that it [the project] is not implemented." (Camilo, peasant from Cuncunul community)

The preceding quotes demonstrates how recipient communities are frequently compelled to accept these kind of developments due to economic need, even if it means jeopardising their health or environmental circumstances. Renewable energy initiatives continue to replicate the logic of economic neoliberalism of the last 40

years, which encourages existing trends of labour exploitation and privatisation of the means of production without adequate compensation. This is not a new finding; nonetheless, it is critical to highlight that if we wish to accomplish an equitable and just energy transition to renewable energies, it is extremely improbable that we would succeed under profit-driven neoliberalist transition models.

5.2.3 Infrastructure development

Another benefit that was frequently highlighted in interviews was the construction of public works to improve local infrastructure and public services in the communities. In all four renewable projects some sort of infrastructure development was proposed, either for the purposes of the project itself or as a side benefits for the community. A supporter of the Yucatan Solar Project, for example, mentioned that the community did not receive enough support from the government, and that the company had promised the help instead:

> "Several benefits were offered: Helping the health unit, improving the lightening, and several things. That's why people agree to support the project. If it is for the benefit of the community, why not [approve it]. "

> "One of the benefits that they promised here for the community has already begun to be fulfilled, the people were asked to say [the benefit] they wanted, and the first thing that was requested was the lighting for the community, some lamps, they are thrifty and light up a lot. "

Although the community started to receive some of the benefits offered, most of them were not fulfilled due to a legal demand that suspended the ongoing construction of the project.

In the case of the Tizimin Wind Park, as part of the benefit-sharing scheme, the four communities considered as potentially affected (within the Social Impact Assessment), were provided with an annual fund of MX$ 150,000 pesos (about $ 7,500 USD) to be spent in what the community wished. In the four communities these money was used for the installation of new water tanks for each house (see Figure ??). However, the money was not enough for all families (approximately 250 houses in total) and some had to wait until the following years to receive the benefit, which brought some conflict among who should receive the benefit first. In various of the interviews made, people highlighted the high level of conflict due to having to agree on shared benefits with the limited budget offered by the company. What was also interesting is that when I asked local people if they believe the compensation was fair, they would frequently replied with an "I do not know", and "it depends on what the company makes". But people said they were not told that information. In fact, interviewees said that community representatives would often ask for more compensation but the company simply replied that this was not possible, without further explanation. So the margin of negotiation was always imposed by the company without any particular basis. That is to say, the money allocated to the fund was always decided by the company without any room for negotiation left to the community.

Among other benefits offered by the company, I found a playground (see figure 5.1), the paving of a road within the community and a venue called *Casa abierta* (open-house) - a branch of the company that offers services to the the community installed in Yohactún de Hidalgo community (see figure 5.2). This open house served

FIGURE 5.1: Playground build by project developer as compensation or "social benefit" of the Tizimin Wind Project

as a local office for the company but also offered varied services to the local people. It functioned as a "point of contact" between the developer and the community, "resolving worries" of the residents regarding the project and its repercussions. The open-house also offered to lend computers or internet. And -at that moment- also provided legal assistance to the people on numerous topics. A duty manager in the open-house that hardly talked to me after asking me a few times what was I doing there, suggested that these activities are offered to meet local needs. However within these spaces, there is also a conflict of interest, because the open-house becomes a major source of information for the public regarding the project development. There is a high chance that people attending to that venue receive bias information, since "peoples worries" will be certainly "resolved" from the narrative of the company.

FIGURE 5.2: *Casa abierta* (open-house) - a branch of the company that offers "legal" and other services to the community

Although with less services offered to the communities, other renewable energy projects in Yucatan also have established a local office in the communities affected to either "help the community" or "solve people's doubts". These spaces, however, besides from contributing to the company's "benevolent" image, they also allow the company to occupy a strategically important political position. As Reyes Maturano argues, it is important to question the "benevolent" character of development companies which "seem to occupy sensitive spaces of power in territories undergoing turbulent change processes precisely because of their interests. Contrary to the "benefactor" discourse that obscures these geopolitical reconfigurations, it is necessary to review the conflicts of interest of companies and their social role in specific localities" (2021, p. 7).

Finally, among other complains from local people regarding infrastructure benefits were that once the companies install or develop a public service, there is no follow-up to maintain that infrastructure. Thus, in the long run, this infrastructure ends up being useless. Others criticised the fact that this type of infrastructure works, such as the paving of roads, or improving health clinics are responsibility of the government in the first place, and should not be used as a condition to accept a development project .

5.2.4 Land rent revenues, illegal contracts and land dispossession

Apart from employment and public infrastructure developments, another type of benefit mentioned by the *ejidatarios* interviewed was the monetary payment that they receive from renting the land to the developer. This benefit was, of course, only in the cases where projects were implemented in *ejido* land -as otherwise the land rent revenue was only for the private property owner.

To exemplify the complexities of the land rent revenue as a benefit, as well as its relationship to processes of privatisation and dispossession of land as a risk, I will focus on the Ticul solar case study.

Overall, most *ejidatarios* interviewed mentioned that they believe the amount receive for the land rent was not a fair, as "companies would always make more money from the project that what they offer to the community". Some of them suggested that companies should be more transparent in relation to their profits so that communities could have greater bargaining power.

> "Sometime we [*ejidatarios*] ask for more [money for the land], but they [the company] simply say "we cannot offer more". Then there's no way we can know whether this is true. But we believe it is not"

Much of this mistrust of what the company could offer stemmed from the fact that, in some projects, such as the Ticul solar, the amount of money offered for land rent by the company raised as community opposition to the project increased:

> "Initially we [*ejidatarios*] were offered MX$ 20,000 pesos each [about $ 1,000 USD] to received every 6 months. But when they saw that we began to oppose, they increased the offer. In the end we were offered about MX$ 50 thousand pesos (about $ 2500 USD) biannual"

While this was a significant amount of income for the *ejidatarios*, the process to reach the signing of that agrarian contract between the *ejido* of San Jose Tipceh and the SunPower company was long, complex and full of irregularities.

Misinformation and even deception has been the main techniques used by the renewable energy companies to be able to install their projects. It is common for *ejidos* and individuals to sign usufruct contracts without even knowing what the projects are about, much less about their consequences, since the contracts are even signed many years in advance, according to the convenience of the developers, to prove "rights" over the land (Sanchez et al., 2019). This was the case of the SunPower company, which turned to Ignacio Salomón, a local wealthy cacique, as an intermediary to deceive and obtain the signing of lease contracts for hundreds of hectares of the San José Tibceh *ejido*, as stated in the *ejidal* assembly minutes.

Manuel, an *ejidatario* from the community, recounted during the interview how he and other *ejidatarios* were tricked and threatened into giving up their lands to the intermediary:

> "First he [the intermediary] began to ask us to borrow 30 hectares of land, then 70, then 100. So, I asked him, what do you want the land for? Why do you want more land if you already have 500 hectares? And he told me: "I have a project in sight". But what are you going to do? I replied. And he said: "I will plant lemons and stevia, if it [the project] hits, I pay you for the land, otherwise I give it back to you, just as it is now, with the woods and everything (Manuel, San Jose Tipceh *ejidatario*)."

> "Then, since he [the intermediary] did not convince us, he got angry and said: "you know what? if you don't accept, these houses where you are, they are mine, so if I want to, I take you all out of here, but I don't want that, just lend me 300 hectares and I leave you all where you are". (Manuel, San Jose Tipceh *ejidatario*)"

Manuel continued narrating the maneuvers the intermediary had to made to illegally register the lands in his name, as some *ejidatarios* still refuse to accept his deal.

> "Through false signatures they put the land in his name and began to introduce machinery to prepare the land for the project. But, when we realised this, we threatened to stop the machines by force. It was then that the intermediaries decided to hold an official assembly to pay for the land taken." (Manuel, San Jose Tipceh *ejidatario*)

In that official assembly, the community found out about the real type of project that was planned to be implemented: 'They were not going to plant lemons and stevia, as we [the ejidarios] were told, but to implement more than 700 hectares of solar panels' (Manuel, San Jose Tipceh *ejidatario*). At that point, local people become more worried about the project and disagreed with the rent of the land for this purpose. However, over time, the local commissioner started intimidating people into accepting it.

> "At the beginning, we were seven *ejidatarios* that we did not want to sell the land. But then the commissioner started talking to the *ejidatarios* individually: "if you don't accept [the offer], you will be left with nothing." And, since we did not know our rights, the others began to sign, and then I was left alone. Then the commissioner told me, if you don't accept, you will be left without rights, you will be left without land and

> even without money. And well with the pressure I had to sign... Fortunately, a few weeks later we find some advisors that helped us to find out more about the contracts and fight back to try and change them."

This information was also confirmed in another interview by a lawyer who was involved in the case. He also mentioned that the contracts were very unfair, particularly at the beginning of the negotiations on the project. When I ask him about the benefits and the risk of the project, we answered:

> "I think the project can help the economy of communities there. However, the truth is that they also deceive people because the first contract I saw was very absurd, the intermediary wanted to buy the usufruct of the lands from the *ejidatarios* for little money and then sublet or sub-use it to the company. It was written in the contracts that he [the intermediary] could sub-usufruct a third party with or without the authorisation of the people. And he was deceiving the people saying that the land was going to be used for planting something (Public lawyer involved in Ticul project)."

Deceiving and threatening rural indigenous and peasant communities to sell their land to intermediaries is not a new practice. However, with the arrival of renewable energy projects in Yucatan, these practices of attempted land dispossession have intensified significantly.

In the Chicxulub wind project, for example, a similar attempt of privatisation and land dispossession occurred. People with privileged information tried to privatisethe Ixil *ejido* and keep the land where the project was planned to be implemented. During my interviews and visits to the *ejido* assemblies of the community, the *ejidatarios* denounced intermediary practices by a lawyer named Alejandro Escoffié. This lawyer tried to illegitimately convert social property of the *ejido* into private property, with the aim of signing contracts with the company GestampWind. Currently, the Ixil community is still in a legal process trying to recover their *ejido* lands, which is why the wind project has been stopped and construction has not begun.

Many of the Environmental and Social Impact Assessments of the projects studied state that the projects "will help improve inequality in indigenous communities" (EIA, 2016e). For example, through the money that the *ejidatarios* will receive for the rent of the land. However, as could be seen in the previous examples, the risk of the *ejidatarios* being dispossessed of their land before reaching a direct contract between the community and the company is very high. Taking this into account, and contrary to what the social impact evaluations suggest, this situation increases inequalities, making the wealthy -such as caciques and intermediaries- richer and placing greater risks and burdens on the most vulnerable.

This argument of "improving social inequality" is one of the elements used to measure the "positive impacts" of the projects and justify their authorisation. However, as observed in the evidence, in reality the positive impacts are insignificant compared to the risks faced by the community, including threats, manipulation and intimidation by these caciques and intermediaries.

Although intermediaries are a key actor in the processes of privatisation and land dispossession, it is not only individuals who facilitate this dispossession, but there are also intermediary companies. Many of these intermediary companies are the consultants that carry out the Environmental and Social Impact Assessments 9and which are paid by the developers), evidencing a strong conflict of interest.

Finally, it is important to emphasise here that the dispossession of lands and territories not only means deprivation or permanent loss of the possession and use of the land, but is considered as a "process of privatisation and individualisation of a community patrimony of the *ejido* and the community, that becomes the "property" of some" (Torres-Mazuera et al., 2018, p.3).

As a result of the arrival of renewable energy projects to the Yucatan peninsula, there is a big risk that the area of territory that was already authorised for these project -approximately 14 thousand hectares of which 30 % is located on *ejido* lands (4,192 ha)- became privatise jeopardising the economic and cultural heritage of dozens of Mayan indigenous communities living in there (Sanchez et al., 2019).

Benefits or bribes?

The fact that there was no land contract with the community from the beginning and that the benefits and compensation for land rent were always at the discretion of the company -and that these benefits were changing over time at the will of the company as well- made many people inside and outside local communities perceive these compensations more as bribes than as benefits:

> " I believe that [the benefits offered] are more like bites [bites means bribes in Mexico], because they [developers] do not offer the same benefits to everyone. To those whom the company seeks to convince, they offer them more money."

Various research looking at perceptions of energy projects have found that locals are frequently sceptical of the motivations underlying the provision of social and economic benefits (Aitken, 2010; Cowell et al., 2011; G. Walker, Devine-Wright, Barnett, et al., 2014). And that they are also likely to be perceived as akin to "bribery" B. J. Walker, Russel, and Kurz (2017).

In the case of Mexico, however, these claims did not remain as a simple perception. A lawyer from the Agrarian Procuraduria (government agency in charge of land issues in rural property) who took the Ticul solar project case for a while, confirmed that money was also offered to the community illegally. In response to my question about whether the money offered by the company was legal, he answered:

> "Not everything. Something belongs to the compensation program for the energy secretary but a lot of that money is to calm them down and shut up the mouths of people who disagree"

An *ejidatario* from the community of San Jose Tipche - who frequently stood up to raise his voice and oppose the project during the meetings of the indigenous consultations of the Ticul solar project - mentioned how there were attempts to bribe him by both the government and the company, offering him a large amount of money to stop publicly opposing the project:

> "He took me there and asked me to please work with the company, they promised to give me 5,000 pesos for each meeting that I did not attend. They told me "grab it, we'll send it to you at night, we'll see who it's sent to you with. You grab your Sunday, don't show up, spend your money where the hell you want, but we don't want to see you there... Then the company came to talk to me and also offered me money, but I never accepted it. But it was tentative because they supposedly showed

> me 100 thousand pesos in front of me. The company, twice they came to my house and told me, take them, but I did not want to, I thought of my family who did not agree."

As can be seen, the large-scale model of renewable energy in Mexico has opened the door to a series of corrupt practices, intermediaries and attempts to co-opt wills that have had serious consequences for the local population receiving the projects.

5.2.5 Damage to the local environment, livelihoods and culture

One of the greatest risks derived from the current large-scale renewable energy model implemented in Mexico is, ironically, their negative impact on the environment. In the Yucatán Solar photovoltaic park, for example, the location of the project meant the devastation of approximately 1260 arboreal specimens and 5786 shrubs per hectare (SEMARNAT, 2017), causing a severe impact on the native flora and fauna. Similarly in the case of Ticul project, if the project is implemented, it would require over 700 hectares of jungle deforested. Some of the landscape in risk of this deforestation can be observed in figure 5.3

FIGURE 5.3: Landscape on risk of being deforested by "Ticul A and B" project

Pablo, a Mayan activist who opposes this project, highlights the contradictions of this model from his particular perspective.

> "Right now, what they [developers and governments] are concerned about is generating electricity. But they are doing it by deforesting and throwing away the jungle. [So] Between now and 2030, 2050, it is very likely that there will be electrical energy. What we are not sure of is whether there will be oxygen left because they have already screwed all the trees. Do they have any idea how this is going to play out? Damn good, there is [electric] current, but what do we breathe? That is the question (Pablo, Mayan activist)."

This statement gives a vivid impression of the paradox of what is promoted as an environmental "externality" or a "trade-off" in the race to move away from fossil

fuels. However, it goes beyond that. Grassroots and Mayan activist make a call to go to the roots of the problem. Is tearing down the jungle worth it in the name of mitigating climate change? And if so, at the expense of what and whom? Tearing down trees and filling the planet earth with turbines and solar panels might not get us anywhere near a sustainable society if we do not question the use of the energy generated and its infinite demand. Not being critical of infinite growth ideals promoted by capitalist-liberalist logics at the expense of the environment might not save human beings from the climate change crisis. When approaching renewable energies, it is many times ignored the part of them that is not renewable at all(Dunlap, 2019). The high amount of minerals extracted for the creation of solar and wind infrastructure is hardly recognised. There is also no clear say of what will happen with the amount of non-recyclable waste generated at the end of their life span. Should the renewable energy transition follows the same extractivist private-led model seen in fossil fuels, it will not only reproduce the socio-environmental injustices of the high carbon industry but also will create new and worsen existing ones(Dunlap, 2019; Shapiro & McNeish, 2021; Temper et al., 2020).

Shamelessly enough, one of the benefits offered in compensation to communities for the deforestation of the Yucatan Solar project was to give the community part of the wood collected from the more than 200 hectares of deforested jungle. In figure (5.4), it can be seen some of the tree trunks left by the side of the "Jinko Solar" company office in the community. Some of the peasant interviewed noted the irony of this "benefit" by highlighting the threats and discrimination under which local people are subjected by the government so that they do not deforest anything, even if they want to collect firewood for their own use.

FIGURE 5.4: Remains of tree trunks from "Yucatan Solar" project deforestation

"What happens here is that there are 200 hectares that are being destroyed. We, as peasants, if the federal police see us in a firewood truck, they give us an infraction of 20 thousand pesos. Imagine 200 hectares that are thrown away, is not that an environmental damage? So where do we stand as peasants?"

Apart from the environmental damage, the polygons where the projects are to be installed possess great cultural and spiritual importance. In the Yucatan Solar project, for example, members of the local communities mentioned that within the perimeter to be deforested, there was a sacred site -a cenote (natural pond of fresh water fed by a subterranean river that forms in several locations around the Yucatan peninsula as a result of soil erosion and to which the Mayans ascribed a sacred usage)- that was going to be affected by the construction of the solar project:

> "I do believe that this project may affect the cenote ... Since we are close to the cenote it normally rains more, but for us this season did not rain, the planting was delayed, it was very complicated, I attribute it to the fact that the cenote was desecrated. And now it is very hot, the owners [refers to guardians or owners to the "aluxes", who in the mayan cosmology are believe to be the protectors of the Mayan natural environment] no longer want to provide us with water and we feel a lot of horrible heat ... My father used to go to the cenote because from there people draw virgin water to make the Cha'a Chaak -a rain request ceremony-."

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This means that the cenote still fulfills the primary function of providing the Mayan priests with "virgin" water (Sujuy Ja) for the performance of ritual ceremonies. Additionally, the cenote is located in an area covered with very well preserved high jungle and species of great ritual and economic importance for the Mayan people, such as the jaguar, the white-tailed deer, the peccary, the spider monkey, the howler monkey, among other species. These animals are considered as guardians or owners (aluxes) connected with the natural environment, which reinforce the sacred character of the ritual site for the Mayan people. In this sense, the context of the jungle is fundamental.

Although there are many people who accept projects out of economic need, the reality is that there are many people who value the environment and nature in diverse ways. Several interviewees asserted that the loss of biodiversity due to these megaprojects not only threatens the environment, but also the survival of ancient traditions and their culture. For example, traditional Mayan medicine is still practised in the region. It is based on species that are mainly found in the jungle in a good state of conservation -such as that dismantled by the project- according to Yatziri, a Mayan woman from Ebtún community. Similarly, a signature of the Yucatan Solar project' lawsuit affirmed during interviews that the Xok K'iin (also known as Mayan cabañuelas) -a traditional method of observing the jungle ecosystem through which they predict the climate and meteorological phenomena that will occur during the year- is still a method of "utmost importance" for some Mayan farmers since it determines the Mayan agricultural calendar and, therefore, it becomes a way to guarantee the obtaining of food. In the words of Bernardo Caamal Itzá, 'the Xox K'iin –cabañuelas in the Mayan language– is a permanent reading of the life and a reunion with our roots' (Caamal 2018, -active member of the "Xok k'iin" collective). For these people, the fact that the developer will pay a sum for the deforested area, either to the government or to the community, will not compensate for the threat to their traditional practices and cultural survival. As Alfredo and Maria, who became members of the grassroots Mayan organisation "Múuch' Xíinbal" in defence of the territory, explain:

> "I am not defending our territory on a whim, I am defending a way of life, and I believe that all human beings and all cultures have the right

> to defend a way of life' (Alfredo, member of a Mayan grassroots organisation). 'If we don't defend this territory, they [energy companies] will end our culture'." (Maria, Dzitnup local resident)

This echoes Schlosberg and Carruthers (2010, p. 13) arguments in regards to 'how indigenous environmental justice claims are embedded in broader struggles to preserve identity, community, and traditional ways of life'. As seen in the quotes above, for Mayan people, opposing the projects is not just a matter of not allowing energy infrastructure to be built near them. What these communities have at stake is something more important than just some parcels of land; they are fighting for the survival of their identity as a community. The environmental conceptions of justice for indigenous people are beyond individual and distributional concerns. In Schlosberg and Carruthers's words,

> "The environmental justice struggles of indigenous peoples reveal a broad, integrated, and pluralistic discourse of justice—one that can incorporate a range of demands for equity, recognition, participation, and other capabilities into a concern for the basic functioning of nature, culture, and communities." 2010, p. 12

Overall, as it can be seen by the evidence above, notions of distributional justice that focus on economic compensation are not enough to improve justice in the implementation of projects. Ideas of justice in many rural communities go beyond material things. Distributional justice, within the energy justice framework should be complemented with pluralistic and bottom up perspectives of justice, including Indigenous perspectives of the Americas, such as the *Buen Vivir*, where deep respect for nature and value for spiritual elements of life are essential.

As D. McCauley et al. (2019) accept, "the dominant view of the community in the energy sector revolves around how best to achieve a sufficient level of acceptability for energy infrastructure projects to take place. The justice question is often reduced to the extent to which developers have successfully imposed or convinced a local community to accept both the positives and negatives of a given project" (p. 919). If we hope for any chance to achieve a just energy transition, this dominant views of thinking of the community as an obstacle for development must be rejected.

Local communities must be seen as key actors in the transition process, and therefore their own visions of life, development and justice must be recognised, respected and promoted.

5.3 Redistribution of power as a route for energy justice

Community members lacked confidence in project implementation becoming more just and sustainable under the current private large-scale renewable energy model, and suggested a bottom-up perspective to be taken into account:

> "I think it [renewable energy] is not worth it from the perspective that is being handled, perhaps if it were done from the perspective of the indigenous communities, it would change, and it would really be environmentally friendly. You may ask, How? Well, with small projects or on the roof of the houses that do not harm me, where it is already an urbanised area and it is already deforested (Felipe, Mayan local resident)."

> "By changing the vision of the capitalist businessman that to exist it needs to destroy, to a vision focus on a distributed energy, or on a community generation, in which the community is the one that has the control of that form of renewable energy (Ian, Mayan local resident)."

Renewable energy has the potential to deliver more than just clean electricity and help with climate mitigation. It could help transform society by redistributing employment, money, health, and political power more equitably (Stephens, 2019). In the previous section, it has been shown that the idea of redistribution of benefits as currently applied in most large scale energy infrastructure fails to achieve distributional justice, as it does not contemplate issues of power. In this vein I argue that in order to achieve distributional justice we need first and foremost a redistribution of power.

Controlling the energy sector and its sources is critical to controlling a country and its territory, as the energy system drives all production and consumption systems. In this sense, a country or territory's energy relies on who governs it. Every time an energy shift or a technological breakthrough occurs, it is critical to select who will manage such technologies. This is especially significant with renewable energy sources like solar and wind, which are spread across vast geographic areas. This adds an intriguing layer since the future energy system will be governed by those who can control these energy sources and hence those regions. This opens up at least two scenarios. First, a scenario in which the people who live in those regions drive the change using decentralised, distributed, and democratic energy. Second, a model where conventional multinational companies continue to dominate the energy infrastructure and the regions. Between these two extremes, a vast range of options and combinations exist. But the important point here is that when seeking to achieve distributive justice, first it is important to decide who will have the power to control those resources and energy.

Recently introduced concepts in the renewable energy transition and energy justice literature such energy democracy -which seeks to provide affected communities with the role and power to decide not only the types of "benefits" but also the type of energy distributed they want for themselves can be very useful in helping us navigate this question and for broadening the impacts and insights of energy justice theories (Avila-Calero, 2017; Broto et al., 2018; Muuch' Xiinbal, 2018).

The concept of energy democracy as the concept energy justice has been recently used to push for more equitable energy transitions. Generally speaking, energy democracy is a burgeoning social movement that place an emphasis on the possibility of redistributing power to the people via renewable transformation (Stein, 2018; Stephens, 2019). Energy democracy aligns with the concept of energy justices by drawing connections between the harmful effects of traditional fossil-fuel-based energy on health and well-being, inequality in access to renewable energy, environmental racism, and the disproportionate effects of climate change on disadvantaged communities and women (S. H. Baker, 2016). It also recognises how fossil-fuel-based energy systems and the vast corporate profits linked with them have perpetuated disparities, worsened differential vulnerabilities, and facilitated pervasive injustices across and within communities worldwide. Additionally, energy democracy ties together and expands on each of these concerns, connecting energy system transformation to the positive possibilities for social justice and change (Stephens, 2019). However, in contrast to energy justice- which has been predominately present in an evaluative rather than a normative focus- energy democracy advocates for the need

to be proactive and collaborative, pushing for more local, distributive and community owned renewable energy implementations. As energy democracy clearly links social justice concerns to renewable energy transformation, then, broadening who benefits from the energy system is a fundamental part of the concept. Many studies on distributive justice coincide in that large-scale renewable energy project are not fullfilling local communities expectations in terms of distributions of benefits and risks (Iychettira, 2021; Liljenfeldt & Pettersson, 2017; Mueller & Brooks, 2020; Yenneti & Day, 2016), on the contrary, a focus on distribution of benefits without contesting issues of power might result in exacerbating vulnerabilities and injustices in local communities (Yenneti & Day, 2016). In this vein a distribution of power and the implementation of different alternative model to utility-scale developments are needed (Burke & Stephens, 2018). The extent to which the renewable energy transition realises this potential for power redistribution, nevertheless, is dependent on how renewable energy is distributed and who is included and excluded from the advantages of a renewable-based society, among other factors. In this sense, the energy democracy ideal "provides a valuable lens to guide... the renewable energy revolution... [and] requires prioritising local and community-controlled renewables and scaling-up and mainstreaming cooperative-model, publicly owned energy infrastructure" (Stephens, 2019, p. 5) Overall, I argue that ideals of energy democracy play a major role in achieving an more just energy transition. Therefore, this concept should be greatly included and consider when discussion energy justice frameworks, not only as a goal for improving energy justice literature but also as as response to local communities and activist claims who oppose current profit-led private renewable energy projects and advocate for indigenous communities to be given the chance to participate more actively in the renewable energy transition (S. Baker, DeVar, & Prakash, 2019).

5.4 Conclusion

Distributional justice call for an equitable distribution of benefits and risks on all members of society regardless of income, race, etc. While from an evaluative perspective, the distributional justice dimension is useful in analysing who are the winners and the losers in the energy transition, at a normative level has been mostly applied thorough corporate sharing benefits schemes. This Benefit Sharing Scheme approaches have been useful for companies and government to reduce opposition to energy projects, and in some cases, economically disadvantaged people have benefited from some of the economic and infrastructure benefits offered, including jobs or facilities improvements. However, in most cases this benefits have not compensated for what the community lose in turn -causing further inequalities and resistance to renewable energy projects.

Many of the interviewees agreed on the idea that a focus on justice of distribution limited to the institutionalised concept of shared benefits does not contribute to a just implementation of project, and much less to a just energy transition. This is mainly because focusing on claims such as "distribution of benefits" reinforces the assumption that people should, in the first place, accept a "development", i.e., it accepts and normalises the idea that there should be an appropriation of natural resources. Thus, centering the debates on how the benefits of this appropriation should be distributed rather than challenging the idea of whether it is just (in a socio-environmental context) to accept the development in the first place, who should take that decision, and under what conditions. Likewise, this reinforces the position that

extractivisms become tolerable to the extent that compensation in money is granted, either to local communities or to the whole of society. This reinforces that social and environmental impacts can be compensated through monetised instruments, which in turn reinforces the commodification of Nature and society .

We all know (and to some extent accept) that every energy transition has its winners and its losers. But what it should not be accepted nor made common practice is that always the more marginalised, the poor and the more vulnerable are the ones who always lose the most. Community members assure that since the colony started till these days, they and their resources have been exploited, having developers and governments often as the main winners at the expense of the communities.

Indeed a focus in finding benefits can function as a trap to disguise negative impacts for positive ones. When I asked her what she considered to be the benefits of the projects, she replied:

> "I think that with that (of the benefits) there is a double trap of trying to find positive impacts on them, because it is like saying: 'Well, they [the projects] do a lot of damage but they must have something good, you have to take their good side'. And I do not think that is what it should be about. What is happening in the regions of indigenous communities where the projects are already installed cannot be minimised by looking for a positive impact on them (Marina, local activist from Oaxaca, now working in Yucatan)"

Although Rawl's principles have been widely applied to evaluate justice in different circumstances, evaluating justice only under this principles generates a bias on ideas based on Global North philosophies. In this vein, this chapter tries to contribute to distributional justice and the energy justice framework overall by bringing the voices and conceptions of justice of people living in the Global South so that these ideas can be added and help to form a more diverse and inclusive concept of energy justice.

A focus in distributional justice (particularly in Rawls terms) can be very problematic in communities where private and individualism is not the norm. A more pluralist idea of justice including a collective idea of distributional justice and indigenous perspectives ideas of justice might be a way to bring more just transitions, but more importantly highlight the interconnected economic incentives from large-scale projects.

In this thesis, I observed the distributional justice dimension from the energy justice framework rely a lot in Rawls, and thus tend to emphasise individual, universal and libertarian ideas of justice. From a Rawls perspective distribution of justices, some people might argue that there was some justice in the implementation of solar and wind projects through the benefit sharing approach applied on the ground, since the least well-off gain something from them, even if it is just a water tank. But taking different perspectives of justice from the communities, mainly based on ideas related to non-western theories such as *Buen Vivir*. It can be argued that there is no justice in the project implementation and that this types of implementation contributes to worsening distributional injustices in the communities.

Finally, this chapter demonstrated that a distributional justice approach is not enough to evaluate justice. Although an equitable distribution of benefits and risks is key to achieve more justice in energy transition, first you have to recognised who are the people affected and more importantly, once one have detected that, who will take the key decision regarding not only the energy project but also the type of

development and energy transition models that should be implemented. For this reasons the next chapters on procedural and recognition-based justice are critical for these thesis.

Chapter 6

From Procedural Justice to Self-determination

6.1 Introduction

The previous chapter argued that it is critical to rethink the distributions of risks and benefits in energy transition practices and literature. However, social justice scholars contend that the techniques used to arrive at the outcomes are as crucial as the outcomes themselves for realising justice.

Figuring out what a "just" procedure entails - and according to whom - is more important than ever with the recent implementation of mechanisms such as the Free, Prior, and Informed Consultation (FPIC) and the Social and Environmental Impact Assessment (SEIA), which, in theory, seek to reduce the socio-environmental impacts of development projects and enhance local participation.

This chapter argues that commonly-used concepts in procedural justice such as consent, participation and inclusion -as currently applied in the siting of renewable infrastructure- are now mostly perceived as a legitimation of projects that align with the developer and governmental priorities. Emphasising self-determination over and above the aforementioned concepts is seen as a priority among affected communities for achieving a more socially just energy transition.

Overall, this chapter explores how ideas of procedural justice have been applied and perceived on the ground by analysing the policies and mechanisms used to inform and include local communities in key decision-making over wind and solar projects' implementations.

In the first section, I show that the inclusion of communities in key decision-making is left to governments and developers who arbitrarily decide who is affected and, therefore, who is included. In the second section, I argue that current participation in the project implementation is not meaningful since communities are included only in the last part of the process when everything is decided, and the complexities of the context are not taken into account. The third section evidence that there is no impartial information disclosure from the government and developer side since informational and consultation meetings mostly focus on the benefits offered to the communities, but they omit or minimise the negative impacts of the projects. This section also highlights some socio-environmental injustices derived from the above procedural injustices. Finally, the last section proposes how self-determination ideas could be used as a route for energy justice.

6.2 Inclusion and exclusion of affected communities in key decision-making

Procedural justice approaches suggest that governments and developers must include communities in deciding about the projects that will affect them. What inclusion means, however, has been highly contested at a local level. One of the main perceived and experienced injustices raised during interviews was who decides which communities are included (or not) in key decision-making and under what criteria. A clear example is represented in the determination of the "area of influence" of projects. That is to say, the area where the nearby communities will be potentially impacted by the projects implementation. This key decision on who will be considered impacted is mostly taken by consultancy firms -hired by the promoter company- who develop the Social and Environmental Impact Assessments (SIA). These evaluations are then revised and approved by the government. While the Secretary (Ministry) of Energy in Mexico provides certain general administrative provisions that suggest how to determine these areas of influence, there is a wide range of freedom for developers and consultancy firms to play with.

> "The company has all the freedom to define its areas of impact. The only thing that is requested in the regulations is that the areas of influence are contiguous to the core area [of the project]... The regulations give you some elements or socio-demographic and economic variables related to closeness, but that is it, developers can choose whether they can go through all the variables or some." (Interview with an ex-representative of the General Directorate of Social Impact and Land Usage of the Ministry of Energy, 2019)

This ambiguity in the regulations has meant that several communities are excluded - at the developer's discretion- to influence key decision-making, such as giving consent to the project to settle in their territories.

In the Yucatan Solar photovoltaic project in Valladolid, for example, the consultancy firm excluded Dzinup -one of the three communities located in the vicinity of the project area- under the basis of not having a "direct" connection to the project, as stated in the Social Impact Assessment: "The area of direct influence, in fact, was determined by the connection, through highway 180 Valladolid-Mérida, of two indigenous communities: Cuncunul, head of the municipality of the same name; and Ebtún, a town attached to the municipality of Valladolid" (SIA, 2016, p. 226). This decision meant not only taking away Dzitnup community right to a Free Prior and Informed Consultation (FPIC) but also to any compensation derived from the potential impacts of the project. In Figure 6.1, the reader can see the distance between the three communities and the project, showing a similar closeness between all of them.

For some Dzitnup community members, the fact that there was not a sealed road connected to the project does not mean that they would not be affected.

> "We, like the other two communities, also depend a lot on beekeeping, we also suffer very high temperatures throughout the year, with the deforestation of so much vegetation, we will be as impacted as the other communities." (Martin, local resident of Dzitnup)

The discontent of some members of Dzitnup -together with people from other localities such as Valladolid- was reflected in an *amparo* (claim for protection) lawsuit against the project to be halted under the basis of violations to their right to a

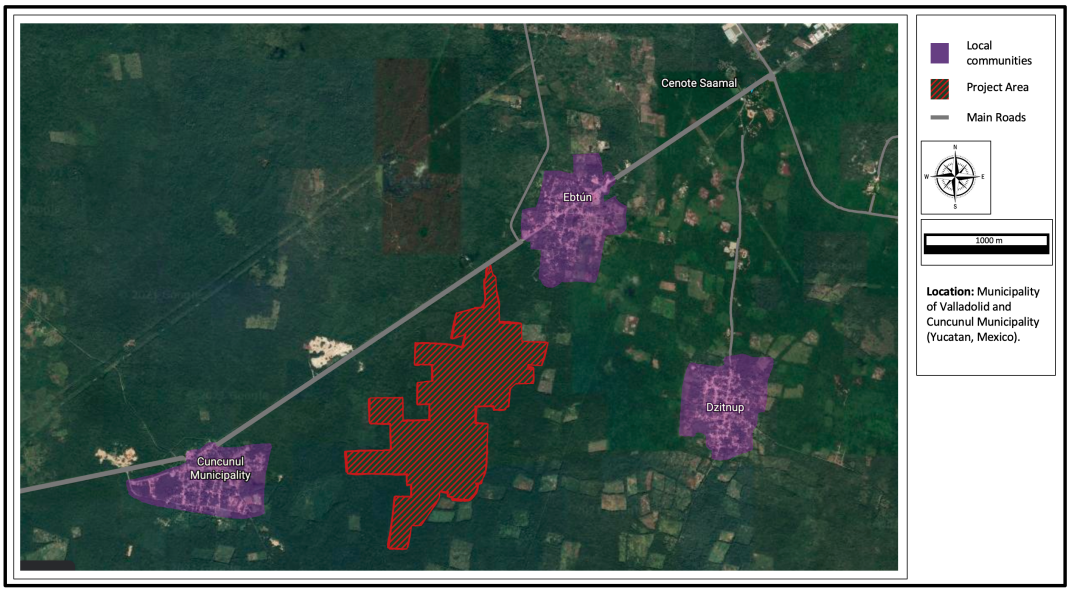

FIGURE 6.1: Distance between the three communities surrounding the project -Ebtún, Cuncunul and Dzitnup- (shown in yellow)- and the project area (in red). Approximately 1.5 km from the center of the project to the three communities.

safe environment and their right to an FPIC. In April 2019, the project was permanently suspended due to this lawsuit, and although there have been claims from the developers and the government to be resumed, at the time of writing this paper, the project is still stopped.

In the other three projects analysed, similar situations were evident: in the Ticul photovoltaic project, only the town of San José Tipceh was included in the indigenous consultation. As stated in the indigenous consultation protocol for this project: "Any individual, social group or organisation that does not belong to the indigenous Mayan community of San Jose Tipceh is excluded from the consultation process" (Protocol p. 6). This despite the fact that according to the same document, "the solar panels and associated infrastructures would be located in the municipalities of Muna, Sacalum and Ticul" (Protocol page 2). Although the human settlements that are within the three municipalities mentioned above are at a greater distance from the project (between 3 and 8 km in a straight line from the project polygonal), compared to the community of San Jose Tipceh -which is only about 20 meters from the project-, the project would still go on to the *ejido* lands of Muna, Sacalum and Ticul. For this reason, *ejidatarios* of those localities were in disagreement with not having been consulted. In a fieldwork visit to Sacalum, the *ejido* commissariat showed concern about the implementation of the project since "they recently learned that the project would touch part of their *ejidal* lands and yet they had not been consulted" (Quote from research diary, December 2019) .

Identifying who should be considered as impacted and therefore what communities or people should be consulted in the implementation of renewable energy is often a complex endeavor. It presents a number of procedural and recognition issues. The definition of "communities" itself present many challenges and the inclusion or exclusion of some of them often tend to be problematic and lead to division and conflict. Some scholars have distinguish between communities "of place"-referring to those who happen to reside in the vicinity of a project's development and communities "of interest" referring to individuals who choose to actively get involve in a

project implementation regardless of their geographic location M. Brennan, Birdger, and Alter (2013); Kaufman (1959); Savaresi (2019). In the four energy projects examined, both types of community were involved in the contestation of the solar and wind projects. The idea of communities "of place" however seem to be quite more often used by authorities and developers to exclude communities in key decision making. It is common to hear from the authorities that support the projects say that the opposing groups are not from the community, downplaying their right to object. In interview with the subsecretary of energy of the Yucatan state, I asked about who are the people who oppose the project and why. She answered that there is no people in the community that oppose the project, only groups outside the community and that their opposition was due to "personal and obscure interests".

> "There was a very small group that came from other communities [...] Groups from Oaxaca came to tell the people here that this was going to be the same as Oaxaca [...] So some groups in here [Yucatan] became polarised [...] There are projects that have caused division because [the community] wants the project to be done. But a small group does not want it [...] That small group has become in a certain way like the ugly duckling and has caused division because those who do want [the project] believe that it is not going to happen because of them (Interview, subsecretary of energy in Yucatan, 2019)."

This kind of discourses from government representatives have helped to delegitimisethe protest and opposition of local communities and grassroot organisations -provoking in turn procedural injustices.

Similarly, in a meeting held on March 2019 in Ebtún, while government representatives discussed with the residents the reasons why the project was halted, the government kept emphasising that the signatories of the lawsuit were members of other 'non-affected communities', such as Dzitnup and Valladolid. For the Mayan community members signatories of the lawsuit, however, as well as for many other grassroots and defenders of the Mayan territory, the fact that the project is not "in their backyard" or within the official limit of their locality, does not mean that it will not affect them. For them, the defence of a "territory" on a broader sense of the word is claimed: "The territory is that place where our ancestors come from, where we carry out our activities of daily life, not necessarily where the law limits it." (Ian, local Mayan resident).

The way that communities are constituted is often political and the delimitation of potentially affected areas and communities is not something easy to calculate, between each project, region and type of locality it can vary greatly. However, something that was constant in all the projects was that this decision was made only by top executives, and in each project it caused problems. While some claim that it is impossible to objectively define the areas of influence of the project, a more participatory exercise that allows the communities themselves to give their opinion on how they could be affected by the project could help to a greater perception of inclusion and justice in the process of decision making.

As can be seen in this example, making unilateral top-down decisions without considering in a more participatory way who may be affected by a project can have broad implications up to the point of suspending a project. For various members of the community, as well as for members of grassroots organisations, among others that supported the lawsuit against this project, this meant a victory for the defense of the Mayan territory and rights, however, several agreed on what impacts

had already been carried out as the deforestation of the project area could hardly be repaired. From the evidence above, it is apparent that a top-down approach to procedural energy justice can be ineffective for ensuring a more just implementation. The problem with this top-down approach in decision making is that it takes the goodwill of governments and developers for granted. It assumes that by offering the developer a code of ethics with best practices on how to carry out a fairer implementation of projects, they will have the political will to do it in this way (Galvin, 2020).

Deciding who will be affected (or not) should not be left to policymakers and developers to decide. The fact that local communities do not have the say whether they will be affected or not by a project already constitutes a violation of their collective indigenous right to self-determination. And, therefore, it constitutes an injustice. Grassroots and community members that oppose these projects' ideas of justice as an individual concern. They conceive themselves as a whole community, and as such, if some of them or their lands are affected, everyone is affected, regardless of the fact that the project is not literally right around their house. These collective injustices are hardly ever mentioned in the energy justice framework as their theoretical basis are strongly focused on Global North western individualist justices frames, most notably that of moral philosopher John Rawls (Galvin, 2020). In Schlosberg and Carruthers (2010, p. 17) words, 'unlike traditional liberal political thought, contemporary movements do not limit themselves to understanding injustice as faced only by individuals; justice for communities is often at the forefront of their interests and protests'.

If the energy justice framework aspires to have an impact beyond the North, it is key that it recognises the broader conceptions of justice. It must also pay more attention to the collective mobilisations' views, such as those who demand their right to self-determination to be respected so that the people decide who is affected, who should be consulted, and under what conceptions of justice a transition to renewable energy must be carried out.

6.3 (Un)Meaningful participation

Besides the contentious process of partial inclusion of communities in key decision-making, another significant procedural injustice perceived and experienced on the field is the type of participation of peoples in the project implementation. Within the current large-scale private model for energy transition, the participation of people to decide over the project is often limited to a yes or no decision in the so-called FPIC. For many community members, being consulted once all key decisions have been made in terms of location, size of the project, type of technology and areas of influence of the project does not amount to meaningful participation.

> "They [developers] arrive when the project and everything else is done, the staff who come already know what the deals are… the government is already included too, so what outcome do you expect from that? The company comes ready to start its business. (Marcelino, local resident Ebtún)"

This way of community participation is mostly seen by grassroots movements as a facade, an attempt to legitimise a project's imposition while pretending that communities have been allowed to exercise their right to self-determination and informed consent.

> "The consultations are made when the projects are already defined, when the contracts have been made when everything is clear between them, then a simulation is made, people go and vote, and that is it. That is not a consultation; that is deception. (Mario, local resident Valladolid)"

The procedural justice approach in the energy justice framework suggests that spaces for meaningful participation of people should be provided to ensure a more just transition, making an emphasis on the FPIC instrument to obtain consent from communities before the siting of energy projects (Sovacool & Dworkin, 2015). A focus on this institutionalised instrument, however, does not ensure justice by itself. Being implemented by the government (with the help and information from developers) it relies on the goodwill and interpretations of those who carry it out. Although FPIC has become a dominant symbol in discussions of human and indigenous rights, and even in neoliberal policies, this mechanism has been highly contested by grassroots movements. This is because it can be seen either as "a mere procedure, very typical of neoliberal governance or as a substantive element of the right to self-determination of indigenous peoples" (Llanes Salazar, 2020, p. 172). Most indigenous organisations and their allies argue that, in the context of Mexico, it has been used as a mere consultation procedure, not satisfying the demands for justice as the self-determination of the peoples.

> "The problem is that even if the consultation were made free, prior and in good faith, it still wouldn't be an exercise of self-determination since it would not serve for the people to determine what they want or what they are going to be in the future, it only serves for the community to decide over the initiative of an external third party (Gabriel, member of a locally active NGO)."

Overall, focusing on institutionalised, procedural precepts is not enough to bring forward just energy transitions. As Rodríguez-Garavito (2011, p. 273) argues, "an emphasis on procedure postpones or mitigates, but does not eliminate substantive disagreements, nor contrasting visions of participation and empowerment defended by the governance crowd and the indigenous rights movement". On the contrary, in many cases, procedural instruments such as the FPIC have proved to increase conflicts over land and resources (Dunlap, 2018:d; Rodríguez-Garavito, 2011) due to the "abysmal difference between the contexts in which FPIC is regulated and the contexts in which consultations actually occur" (Rodríguez-Garavito, 2011, p. 291). Similarly, contexts where scholars theorise about the meaning of justice are quite different from the context where people struggle for justice, leading to limited perceptions and ungrounded policies. More attention should be paid to grassroots opinions of what justice actually means, and what just inclusion, participation and transition could look like.

Similarly, a meaningful participation should engage local complexities so that power dynamics do not incline towards one side only, provoking an unjust procedure. However, under top-down participatory spaces, such as the FPIC and similar "public informational meetings" organised by the government or developers themselves, the local complexities are hardly or not at all taken into account. In the implementation of the Yucatan Solar project, for example, historical marginalisation and discrimination have led to people not having the confidence to express what they think. In a public meeting in Ebtún, for instance, after a few calls from the government representatives for people to collect signatures to support the project, a Mayan woman decided to stand up and said:

> "The truth here is that there are very few people who know how to read or write, and although it might seem that they [people] are understanding what they are being told, sometimes they do not understand it. Then, there are other people who, although they want to speak out because they know that this project can affect them, do not dare to say it because sometimes they are ashamed or do not know how to express themselves." (Flor, Mayan woman at an informative public meeting)

Claims such as people not participating from being ashamed or scared of being singled out as "opponents of progress" or even threatened for opposing the project were very common in the field. These fears were not far from the reality since a couple of the signatories of the lawsuit against the project declared publicly to have been threatened or harassed. A Mayan activist and teacher in the Dzitnup community expressed in a press conference being intimidated by representatives of the company visiting her in her workplace in an attempt to convince her to withdraw from the lawsuit. Likewise, another signatory of the legal demand was visited at his place by a stranger and was left a note asking him to withdraw from the legal demand. These forms of intimidation discourage the population from having greater participation and involvement, especially when it comes to speaking out against projects that are perceived to have great political support.

Being threatened for opposing to development of megaprojects in Mexico is not rare. However, in the context of Yucatan, the arrival of this new model of large scale "clean energy" energy infrastructure represent an even more serious threat due to its nature of being settled across large areas of territory. Pablo, a Mayan activist in opposition to these developments, expressed his worry by making an analogy with historic colonial impositions

> "I have always say that these [companies] from the renewable energies and its projects are like when the Bible came to us, it had a message of hope, but if you do not accept it they will kill you, so today these clean energies do not understand if they are clean because it will clean us all or they are clean because it will do justice to all." (Pablo, Mayan activist threatened for opposing the project)

Although procedural normative suggestions for fairer implementation of projects such as consultation exercises have served as a space for convergence between different actors, systematic and dominant power dynamics have not allowed them to serve as a space for meaningful participation, where communities can exert agency over what occurs in their territories. In this line, procedural and energy justice frameworks would benefit from moving away from top-down procedural rationalities where power relations are ignored, and assumptions of equal parties participating in the consultations process are made. Collective claims of cultural identity, self-determination, and control over territories often invoked by indigenous peoples present themselves as an opportunity to focus on more impactful understandings of energy justice.

6.4 Partial information disclosure

While there are clear socio-environmental impacts and injustices derived from renewable projects, host communities are hardly informed of these. The incomplete

disclosure of information for these projects was a recurrent issue highlighted by interviewees. Most respondents mentioned that the information provided during informational meetings and consultations with developers and the government was biased since they would predominantly focus on the benefits and reject or minimise local impacts.

> "If they come and tell you that they are going to put you in a project, where they will give you work, they will pay you well, it will not affect you at all, it will generate clean energy, and they will even lower your electricity payment. Well, who says no? However, they are taking advantage of the need and the lack of knowledge of the people because that information is not real, and with that, they manipulate people." (Omar, local resident Cuncunul)

When developers were confronted with uncomfortable questions about the social, health and environmental impacts, these were frequently avoided, blatantly disregarded or half answeredDunlap (2018:d).

In a small impromptu meeting between members of the organisation in defence of the Mayan territory Múuch' Xíinbal, academic allies of the organisation, and representatives of Jinko Solar Company and SEIA consultants hired by the company, there was a heated debate on the impacts of the project in the local area. While the representative of the company claimed to "be open and available to dialogue and to provide information to the community", an academic repeatedly asked about the impacts of the project on beekeeping. The representative responded that they provided information to the community on how "the panels" would not affect the bees. To which the academic replied: "the problem is not if the panels affect bees, the problem is if deforestation affects beekeeping". While the representatives interrupted each other trying to answer the question, one of them concluded that there was no "significant honey production in the polygon", avoiding the main question again. Similarly, questions regarding the amount and type of forest in the polygon before the deforestation were asked. Several of them were answered with "I do not have the exact figure" and 'since we are not environmental specialists [...] we could ask a specialist, in this case, to talk with you to give you the precise details of the concern you have.' Affirming that they are not "environmental specialist" but still being in charge of the SEIA development did not comfort the sceptical attendees. With disappointment for the mostly incomplete or unanswered questions, one of the attendees argued excitedly,

> "It would be important that you, who are somehow representing this company and come to dialogue, at least had the information. In other words, I find it incredible that in addition to the "200 hectares approximately" and others "approximate", that you do not know how much it is. Now, you say that the process [of deforestation] does not affect beekeeping. That is something very ignorant to say; one thing is that there might not be so many beekeepers in the area, [but] wild bees are affected, even a primary school child knows that. Why do you always seek to deceive people?" (Nayely, member of the grassroot organisation 'Múuch' Xíinbal')

Frequently, people who attended these types of public meetings organised by developers or the government - including official project information meetings, the

FPIC consultation, or these small meetings like the one mentioned above - left attendees disappointed with the information they received. In Tizimin, for example, while I was doing my field work, there was an informative meeting to report on the possible expansion of the Tizimin Wind Project, which sought to expand from an area of 1,725 ha for the original project to more than 2,247 ha for the expansion. In this informative meeting, where community and civil society organisations participated -including the Assembly of Defenders of the Maya Múuch 'Xíinbal Territory and Yucatán Articulation-, they were denouncing the denial of environmental impacts in the presentation on the project carried out by the developers. In many of the questions that were asked about impacts on birds and the lack of geohydrological studies to know the effects of the foundation of turbines in the karst soil, the developers evaded or answered the questions in a limited way. This caused some of the attendees to walk out of the meeting saying that these briefings were rigged. An attendee, for example, got up from his place, turned his eyes towards the table where the government representatives were and said out loud:

> "I want it to be written in the minutes of this meeting that I am leaving here because this information meeting is a farce, the company is not really answering any of the questions that are being asked, it is not worth staying here any longer." (Ezequiel, member of the organisation Múuch' Xíinbal).

As can be seen, in these meetings and public spaces for participation, the information provided to the population tends to be partial and of little use to local communities and organisations.

Much of the problem with these type of participation spaces, including public informative meetings and consultations is that are "invited spaces" where normative and instrumental rationales prevail (Clausen, Rudolph, & Nyborg, 2021). That is to say, people are invited to engage in places that have been institutionalised via various forms of consultation by various types of authority, whether they be governmental, developers, etc. This generally tips the balance of power relations towards those who invite, rather than the guests. In this sense, this type of participation is criticised for not being reliable or even false, which can lead to exclusion of certain opinions and knowledge:

> "Since the power to give preference to certain forms of 'knowledge' and particular perspectives of the 'planning problem' (Ellis et al. 2009) belong to the inviting party, invited spaces tend to exclude emergent values that do not 'fit' into existing objectives (Clausen et al., 2021, p.4)."

This examples above evidence how a institutional participation approach derived from top-down agendas is often not enough to fulfill local expectations and guarantee justice in renewable implementations. Indeed, wanting to supplant the right to self-determination of indigenous people by instruments of institutional participation such as the public consultations has caused that the energy projects are halted for months and even years, stopping or slowing down the renewable transition in the region.

6.5 From institutional participation to self-determination

While participation, along with acknowledgment and representation of socially and culturally marginalised groups, are crucial parts of procedural justice, performative

participation and apparent inclusion can actually be detrimental for achieving energy justice. Especially when this protocols comes from the top, since procedures tend to be bias, tilting the balance of power towards multinational companies and governments that normally seek to maintain and concentrate wealth and power. More weight should be placed on grassroots perspectives on what justice genuinely entails and how process of inclusion and participation could be more fair from a bottom-up perspective.

Environments in which intellectuals debate the meaning of justice are markedly different from those in which people battle for justice, resulting in restricted perceptions and ill-founded policies. Prominent academics claim that energy justice frameworks can hold governments accountable by building more equitable processes for energy planning decision-making (Heffron & McCauley, 2018; D. A. McCauley et al., 2013; Sovacool & Dworkin, 2014) . However, a focus on formal decision-making might mask the informal and implicit behaviours that influence the process's real outcomes. For example, in her study of solar energy in India, (Yenneti & Day, 2015) recommended that minorities should participate and be included in the government-led solar megaproject "Jawaharlal Nehru National Solar Mission". Nevertheless, her study demonstrates that the complexity and servitudes ingrained in the caste system was one of the main reasons affecting the due process in the implementation of the project. That is to say, even if the minority groups were included in government consultation or otherwise, there was a big chance of not reaching procedural justice, as the complexities of the local context, including having caste system, would not allow participants to be significantly taken into account. In this vein, I argue that current frameworks for energy justice may be insufficient to tackle entrenched structural factors that obstruct cultural and social changes toward equitable and sustainable energy futures (Broto et al., 2018).

Grassroot movements and some scholar have suggested a response that emerges from the bottom-up, including energy sovereignty and self-determination ideas: "when we think of energy sovereignty, we believe that the production, extraction, distribution and consumption of energy is controlled by the peoples" (Gutierrez, 2018, p. 13). Other scholars have also advocated for energy sovereignty as the right of individuals, communities and peoples to make their own decisions regarding the generation, distribution and consumption of energy so that these are appropriate to their ecological, social, economic and cultural circumstances, as long as they do not negatively affect third parties Cotarelo et al. (2014). The concept of self-determination varies among indigenous peoples, scholars and nations. The most prevalent interpretation of self-determination holds that peoples that share a similar political and cultural organisation have the right to govern themselves and their territory. Mexico's current Constitution recognises the right of indigenous peoples and communities to self-determination to decide their internal forms of coexistence and social, economic, political and cultural organisation. In practice, however, the country continues to misrecognise these rights and impose projects on these type of territories. Although the definition of self-determination varies across peoples and countries, it is very well rooted in claims for justice in grassroot indigenous movements (Corntassel, 2012; Lâm, 2021) and in their struggles against private led large scale renewable energy projects (Muuch' Xiinbal, 2018). Despite of the importance of this concept for enhancing justice in energy transitions only a couple of studies in energy justice touch on this concept. Among these studies we find Broto et al. (2018), who emphasise the dimension of self-determination as a complementary aspect of energy justice. She argues that self-determination is a key element of energy sovereignty, which in turn focuses on delivering energy as an emancipatory project.

Although self-determination and autonomy are concepts that are based on Western conceptions of social development (Ryan & Deci, 2000), this ideas have been incorporated and adapted to the different indigenous contexts. The importance of this concept relies on promoting a change in thinking toward concepts of justice with a commitment to allowing individuals to make their own choices about their lives (Aparicio Wilhelmi, 2009b; Villoro, 1998). In this thesis self-determination is understood as going beyond institutional participation, it can be conceived as the "asset of values that challenges the homogenising force of Western liberalism and free-market capitalism," while "honor[ing] the autonomy of individual conscience, non-coercive authority, and the deep interconnection between human beings and other elements of creation" (Alfred & Alfred, 2009)

In a post-colonial setting, such as Mexico, where this study is carried out, this also entails developing an understanding of how people engage in the creation of daily technology, through hybrid forms of locally produced innovation and the adaptation and appropriation of external ideas (Broto et al., 2018; Mavhunga, 2014). To sum up, energy sovereignty complements energy justice by accentuating the need of recognising people's autonomy and self-determination when making energy-related decisions that impact them, including the frameworks used to assess such decisions (Broto, 2017). In short by advancing and increasing debates on energy sovereignty, self-determination becomes a central tenet of energy justice theory (Broto et al., 2018).

6.5.1 Self-determination as a route for energy justice

Respondents also pinpointed the limitations of the large-scale renewable energy model in regards to control over their territories and decision-making power, with calls for greater self-determination and autonomy in the deployment of renewable technologies:

> "I believe that communities should make their own public policy and be recognised within the framework of their autonomy and self-determination. They [external agents and government] should not make policies for the communities. It is what we have suffered for 500 years, making the same public policy for all when we are not all the same. [...] Here, the problem is that the law is made by some for everyone when we are not all the same. That needs to be understood, and if that diversity is recognised, I think we will live better." (Pablo, Mayan activist)

As seen in the quotes above, indigenous communities and grassroots have critical insights to bring into the energy justice and development conversation. Despite this, their ideas and knowledges have been highly disregarded. Communities should have the possibility to develop policies from their own background that encompass their complexity so that solutions are adaptable to the communities' context (McHugh, 2017; Tsosie, 2012). As Ramon states:

> "I think it [my vision] coincides a lot with the Zapatista approach that has to do with autonomy and self-determination. What does this mean? The possibility of laws that allow the [Mayan] people to make our own laws, respecting our historical, cultural and identity peculiarities. That is what we would have to build in the first place. The rest will follow by itself." (Ramon, member of Mayan grass-root organisation)

These echoes ideas of Broto et al. (2018); Cowell (2017) on energy sovereignty and decentralising energy governance for a more democratic and just energy infrastructure decision-making (Broto et al., 2018; Cowell, 2017, see). Broto et al., for example, concluded that "energy sovereignty thought complements energy justice thinking by emphasising the need to recognise the autonomy and self-determination of people in framing energy decisions that affect them, including the frames applied to evaluate them"(Broto et al., 2018, p. 648). As seen in the quotes above, communities can bring many insights in imagining a more just and sustainable transition. It is important to truly recognise these voices and knowledge. As Eloy eloquently argues:

> "For a just energy transition to take place, it is necessary for it to happen from the perspective of the community, from the perspective of us as people, since this transition is supposed to be for the benefit of the people. So, we are the ones who must decide, how we want it, where we want it, and what we want for our community." (Eloy, Mayan local resident)

Some people might think that the self-determination principle raises challenges for infrastructural systems like energy because claims of self-determination introduce new potential veto points within systems that some actors would like to see extending "smoothly" across space. However, principles of autonomy and energy sovereignty are an opportunity for pushing forward alternative forms of energy projects (Stefanelli et al., 2019). In Mexico, conflict over large scale solar and wind developments put pressure on the government to halt the auction system, leading to its current suspension. This has presented an opportunity to consider community-based renewable energy (at least in theory) since the 'National Development Plan 2019-24' stated that the new energy policy would promote sustainable development through the incorporation of populations and communities into the production of energy with renewable sources. This opens a scenario in which the Mayan peoples living in those territories could take an active role in the transition, gaining control of the energy production within their territories and pushing for a more sustainable and just transition.

6.6 Conclusion

The analysis of the aforementioned wind and solar projects clearly demonstrates the challenges of achieving a just implementation of renewable energy infrastructure due to the limitations of realising normative top-down approaches to procedural justice on the ground. The analysis shows that the imposition of profit-led models produces and reproduces injustices, inequalities, and power dynamics that risk the cultural and socio-environmental local context. Addressing the energy transitions requires the meaningful engagement of local communities and consultation and complete disclosure of key information for informed decision-making (Huesca-Perez et al., 2016; Sovacool & Dworkin, 2015). However, institutionalised procedural mechanisms such as the FPIC and the SEIA have proved ineffective in ensuring a just renewable implementation and transition overall.

Models of transition that grant greater decision-making power to communities and that respect and promote their rights to autonomy and self-determination are needed. Although current energy justice frameworks are useful at helping identify the injustices perceived and experienced on the ground, it lacks an emphasis

on bottom-up approaches, which leads to serious socio-environmental injustices on the ground. Existing energy justice frameworks need to be more sensitive to the grievances of indigenous communities and shift from top-down normative approaches to more bottom-up policy-making to address systematic energy and socio-environmental injustices.

It is increasingly evident that indigenous energy sovereignty is a critical element for improving justice in the energy transition (Cotarelo et al., 2014; Schelly et al., 2020). Prioritising self-determination over consent, participation and inclusion in indigenous contexts can be a way to achieve a more socially just and sustainable energy transition (Gutierrez, 2018). Therefore, integrating energy sovereignty concepts such as the self-determination of indigenous communities into the energy justice framework will not only make the energy transition more just (by contemplating wider understandings of justice and framing energy decisions according to what communities believe is best for them) but also, in the process, transitions might get more effective through reducing the opposition and promoting alternative decentralised ways to renewable energy infrastructure. Overall, the energy justice literature would benefit from recognising and embracing pluralist notions of justice as reflected in the claims and struggles of grassroots movements. The next chapter will explore in depth the challenges, issues and implications of recognising these pluralist views.

Chapter 7

From Recognition-based Justice to Self-recognition

7.1 Introduction

Environmental and energy justice scholars have tried to address some of the limitations on the distributional and procedural elements brought by liberal justice notions by introducing the concept of recognition into their analytical frameworks. While recognition-based justice can be more closely related to some of the justice claims found on the ground, this chapter argues that recognition-based justice, as currently applied and proposed in predominant energy justice frameworks, is limited to institutional recognition, i.e., recognition of vulnerable people is left to governments and elites at will. While recognition from the state is critical for communities to have the legal mechanisms to defend themselves against the state itself and other political actors seeking to interfere within their territories, it is essential to start moving away from colonial top-down institutional ways of recognition. It is, therefore, critical to start pushing for self-recognition and anti-colonial ideas that give major decision-making powers to local communities.

Overall, this chapter analyses to what extent recognition justice principles have been applied (or not) on the ground by analysing how and whose people's views, knowledge and values have been recognised and respected and whose have been ignored in energy policies and projects implementation.

In the first section, I argue that we must examine historical injustices to understand current recognition injustices in energy transitions. I briefly recapitulate some of the historical injustices suffered by indigenous peoples and peasants in Mexico. Within this recapitulation, I call attention to three critical historical moments: colonisation, the formation of the nation-state, and the impulse of neoliberalism. Within these historical moments, I make some links to issues of identity misrecognition and non-recognition injustice. I also make some links to current issues with the climate emergency and the urgency for a more sustainable and just energy transition. In the last part of the chapter, I present a section on the non-recognition of knowledge, discrimination, and disrespect of values and local people's worldviews in the Social and Environmental Impact Assessments of the wind and solar projects analysed. I conclude by pointing out some of the main problems with institutional recognition and giving some ideas for how we could move beyond this narrow view.

To ensure clarity I will mention the difference between misrecognition and non-recognition in this chapter.

"Non-recognition" occurs when people is "render invisible", that is to say, they are not acknowledged, or "taken into account" in the prevailing discourses and value social and legal systems of society at large (Fraser, 1995; Simcock et al., 2021).

Misrecogniton, on the other hand, can be define as the improper recognition of social groups (Simcock et al., 2021). That is to say, when groups are are being recognised, categorise or identified in an erroneous way. This can occur when groups are recognised in a way that does not match with the way they identify themselves, or that does not allow the group to access specific rights. An example is the recognition of indigenous communities as "entities of public interest", instead of recognizing them as "subjects of law" (see Torres-Mazuera et al., 2018).

As Fraser argue, misrecognition is embedded within:

> "...a variety of institutional sites, and in qualitatively different modes. In some cases, misrecognition is juridified, expressly codified in formal law; in other cases, it is institutionalized via government policies, administrative codes or professional practice." (Fraser, 2000, p.114)

In words of Charles Taylor (1992):

> "Nonrecognition or misrecognition... can be a form of oppression, imprisoning someone in a false, distorted, reduced mode of being. Beyond simple lack of respect, it can inflict a grievous wound, saddling people with crippling self-hatred. Due recognition is not just a courtesy but a vital human need." (Taylor, 1992, p.25)

7.2 Historical Recognition Injustices

One of the main injustices mentioned in the indigenous activist interviews regarding the implementation model of wind and solar megaprojects is that this model reproduces and intensifies "historical injustices and discrimination of Mayan peoples beliefs, knowledge and identities" which have suffered from the Spanish conquest to the present (Interview with Ian, Mayan indigenous activist, 2019).

In order to understand and contextualise historical injustices as well as recognition, identity and respect for difference, it is important to make a brief recapitulation of some of the historical injustices suffered by indigenous peoples and peasants in Mexico. For this, I will highlight 3 key historical moments: colonisation, the formation of the nation-state and the impulse of neoliberalism in Mexico. Within the latter, its relationship with the current climate emergency and the policies of green capitalism derived from it stand out; and in which the wind and solar projects of this study are cited (Normann, 2021).

7.2.1 Colonialism

Asking an activist defending the Mayan territory about how he began his fight against renewable energy projects in Yucatan, this was his first response:

> "Particularly in my case it was in 1992. In 1992 there was a Latin American announcement in which it was proposed by the governments of many countries of the world to carry out a celebration of the 500th anniversary of the Discovery of America. So it kind of bothered and annoyed many indigenous people who were already beginning to think about us, to meet again, to discover ourselves, to value our identity and our voice, our words and our thoughts. Then comes a great Latin American march of all the indigenous peoples of this continent in which we

> demonstrate against this great celebration. We stated: 'we do not agree to celebrate the genocide of the native peoples, of the indigenous peoples, we do not agree'." (Pablo, mayan activist in Yucatan)

I then start from the basis of colonialism as the first key moment in the historical injustices demanded by the dissidents of rural Mexico. This colonialism at the same time is directly related to capitalism, because as we know, colonisation was motivated by commercial expansion purposes, a necessity of a capitalist economic model that was just beginning to develop in Europe after the Middle Ages. So, we start from two main systems of oppression, colonialism and capitalism, which allowed the exploitation of the territories in Latin America through their resources and slave labor, being the basis for extractivist projects and subsequent economic development models. This capitalist and colonising model at the same time would bring with it the philosophy of modernity - a set of social and historical processes that took place in Europe from the fifteenth century, and that shows profound changes in the thought and ideas of the Middle Ages and that prioritiserationality, individualism and scientific thought.

Colonisation, as is well known, brought serious consequences for the indigenous people, including genocide, forced processes of assimilation -including the repression of their languages, forcing those conquered to learn Spanish- and the oppression of all worldviews and ways of life of Indigenous peoples Sittón (1998).

To the Maya of Yucatan, for example, many conquerors saw the Maya as "infidels" who needed to be pacified and forcibly converted to Christianity, regardless of their civilisation's achievements (achievements that included one of the writing systems fully developed of the pre-Columbian American continent, art, great architecture, its mythology and the remarkable numbering systems, as well as great advances in astronomy and mathematics).

The most used justification for these injustices was the superiority of the white Spanish race, imposed through the caste system. This system of social stratification -created due to the fear of the most privileged groups of losing political or economic power in the face of the growing mestizo population- took into account as mother races: the white or Spanish, the black and the indigenous races (although, Of course, other types of breeds emerged that became increasingly complex as a result of the mixtures). The point here is that derived from this system the white race is imposed as a "superior" caste and is justified in pseudoscientific studies and racist theories brought from ancient times and complemented with writings from the Catholic Church.

That is to say, it is said that colonisation is a fair right given its racial superiority over the Spaniards, ideas imported from Aristotle, in his well-known and famous book Politics, where he talks about"barbarian peoples, slave peoples by nature, whose destiny is not other than to be conquered and enslaved to work and serve the Greeks" (E. Barker & Stalley, 1995). This thesis of Aristotle spreads widely and reaches the conquest of America, where some radicaliseit to the point of maintaining that "American Indians lack souls and do not belong to the human species" Lipschütz (1967). Similarly, in his Treatise on the just causes of the war against the Indians, a catholic brother, Ginés de Sepúlveda, kept looking for reasons to justify the subjugation of the American Indians, including the usually mentioned lack of reason , a series of defects Lipschütz (1967). For his condemnation of what he calls little men with barely traces of humanity, he bases himself not only on Aristotle, but also on Saint Augustine, Saint Thomas Aquinas and some biblical passages. As the next quote reads:

> "With perfect right the Spaniards exercise their dominion over these barbarians of the New World and adjacent islands, who in prudence, ingenuity and all kinds of virtues and human sentiments are as inferior to the Spaniards as children are to adults, women to men, as cruel and inhuman people to very meek, exaggeratedly intemperate to continents and moderate, finally, I am about to say how much monkeys are to men." Lipschütz (1967)

Under these ideas of racial superiority is how all kinds of oppression, submission and exploitation of the original peoples of America are justified. Mesoamerican civilisation had constituted a multicultural and multilingual social model; however, the Western model attempted to hegemonically displace indigenous populations by not recognising their cultural or linguistic rights. Since the conquest of the territory that Mexico now occupies, a project was established to eliminate the religious, linguistic, political, and cultural plurality of the peoples that occupied said territory. These racist ideas are inherited even after the independence of Mexico, where the search for the formation of a Nation State begins.

7.2.2 Nation-State Creation and identity non-recognition

The second key historical moment is given after the independence of Mexico, with the formation of the Mexican nation. This nationalist project dissolved the caste structure inherited from the Colony and sought to establish a homogenising reference system. In this system, the category of mestizo would be the only one existing. As a result, 70% of the Indian population was disidentified and then identified with a new idea that is the Mexican identity. However, with the racist class heritage of the Colony, this homogenising system would later justify the assimilation of the "Indian" to promote the idea of progress and development of the new nation (Guerrero, 1994). The creation of the nation-state is, therefore, the turning point of a new social discourse that reaffirmed against foreign conquerors the right to national differences, but at the same time, internally, denied ethnic differences.

As the anthropologist Sittón states:

> "Upon separating from Spain, the new Mexican nation continued with the colonial project and instead of recognising and giving a place and space to each of the indigenous peoples; their disappearance was attempted through genocide or ethnocide so that they would assimilate into the Hispano-Mexican culture." 1998, p. 143

In addition to a lack of knowledge of the identity of "Indian" (which later became the category "indigenous"), the creation of the nation-state began a lack of knowledge of the "collective", a quality of great importance for current indigenous movements. The important thing to highlight here is that the creation of the Mexican state, by ignoring the indigenous identity of peoples, also ignores their relevance as political groups. Therefore, the relationship it establishes is only between the category of citizen and the category of state, there are no collective entities in between. So it is an individual pact, of liberal democracy, which puts the existence of indigenous political groups in crisis. The recognition of indigenous rights to land, territory and identity is key to understanding many of the injustices currently experienced by rural communities in the face of the new energy transition model in Mexico, as we will see in the section 7.2.3 below.

The policy of the Mexican federal government tried, through military repression, evangelisation, or education, to eliminate ethnic plurality and the indigenous

languages of Mexico (Sittón, 1998). In recent years, with the international treaties regarding the protection of indigenous peoples, this homogenising policies have been gradually changing (at least in paper). Today the right of indigenous peoples to bilingual and intercultural education is recognised. In 1992, for instance, the Mexican Political Constitution was reformed to recognise the cultural rights of indigenous peoples. However, these policies have been slow and contradictory and their effects are limited, as will be demonstrated in the example of section 7.2.3 below. There it will clearly show the techniques used by renewable energy companies trying to "disindigenize" the local population -through the Mayan language requirement- in order to avoid the requirement of asking for their 'Free, Prior and Informed Consent' needed for project implementation. Before presenting this example, I will briefly draw some analysis on the third and last key historical moment regarding the recognition of historical injustices against indigenous peoples.

7.2.3 Identity non-recognition in wind and solar projects implementation

The lack of recognition indigenous communities as political entities is key in understanding many of the injustices that rural and indigenous communities face today as a result of Mexico's large-scale energy transition model. This can be clearly seen in the case of the Ticul A and Ticul B photovoltaic projects, where members of the Assembly of Defenders of the Mayan Territory "Muuch' Xiinbal" denounced that the foreign multinational SunPower, through the company Vega Solar, sought to ignore the indigenous rights of the Mayan people of San José Tipceh, Muna. This, with the aim of not requiring the consent of the population, and thus, go ahead with the project.

In a press release from the grassroots organisation "Muuch' Xiinbal" the following is stated:

> "Through this communication we publicly denounce the foreign multinational SunPower, which, through the company Vega Solar, seeks to disregard the indigenous rights of the Mayan people of San José Tipceh, Yucatán, in the midst of the process of dispossession of communal lands, for the construction of photovoltaic megaprojects that would involve the clearing of more than 500 hectares of jungle and the installation of more than a million solar panels just 200 meters from the community." (Press release, February 2019, Assembly of Defenders of the Mayan Territory "Muuch' Xiinbal")

In the same statement, it was explained that in a legal hearing (which was part of the legal conflict between the company and the community explained in section 3.3.2), the plaintiffs opposing the megaproject requested the participation of a translator certificate from Spanish to the Mayan language, so that the Mayan plaintiffs would have greater clarity on what was being discussed at the hearing. The press release states that in response to this request, "and in an act of clear discrimination," the company questioned the identity of the plaintiffs and asked the judge to question the Mayan plaintiffs about their level of understanding of Spanish, alleging that "it is not enough to self-identify as indigenous, since that awareness of identity must be linked to the verification of the existence of the community to which it belongs" (Press release, Assembly "Muuch' Xiinbal", 2019).

It is important to note in this context that the same company points out in its Social Impact Assessment the existence of the Mayan community of San José Tipceh in the municipality of Muna, in which, according to the 2015 intercensal survey, 80.54%

of the population self-ascribes itself as Mayan and the self-ascription being sufficient to be recognised as such, being clearly indicated in article 2 of the Constitution when it says that:

> "Awareness of their indigenous identity should be a fundamental criterion to determine to whom the provisions on indigenous peoples apply, as well as in the "Law for the Protection of the Rights of the Maya Community of the State of Yucatan" (Decree Number 407) in article 2, section 3, when it states that the Mayan indigenous is: "the person who lives in populations of the State of Yucatan or descends from the Mayan people, and preserves in whole or in part ethnic, cultural, linguistic and social traits of the Mayan Culture."

In other words, despite the fact that in the Social Impact Assessment is recognised that San Jose Tipceh is a Mayan community -and even begins the process of the Indigenous Consultation-, when the developer realised that the community opposes the project, the company tried to de-indigenise the community to skip this consultation requirement.

It should be noted that the General Law on Linguistic Rights of Indigenous Peoples, Chapter II, Article 10, states that:

> "The State shall guarantee the right of indigenous peoples and communities to access the jurisdiction of the State in the national indigenous language of which they are speakers. To guarantee this right, in all trials and procedures in which they are a party, individually or collectively, their customs and cultural specificities must be taken into account, respecting the precepts of the Political Constitution of the United Mexican States." (Art. 10, LGDLPI)

Despite all the legal precedents already mentioned, Judge Antonio Luis Betancourt Sánchez, who presided over the hearing, granted the company this request, an action that the members of the Assembly of Defenders of the Mayan Territory Muuch' Xiinbal described as bias.

> "In an act of clear benefit to the Vega Solar company, [the judge] questioned, as requested, the Mayan plaintiffs, who replied that, although they understand Spanish, their original language is Mayan and they want to fully understand everything that happened in the trial, for which they requested an interpreter." (Press release, February 2019, Assembly of Defenders of the Mayan Territory "Muuch' Xiinbal")

However, the magistrate decided to grant the plaintiffs three business days to show proof of belonging to a Mayan indigenous community to recognisetheir right to a translator, "an act that clearly violates the Mexican constitution," the members of Muuch Xiinbal claim. Also noting that, in the case of not being able to present the evidence within that period, the possibility of having an interpreter in their mother tongue for the rest of the trial would be left out. This shows how, although in theory, indigenous self-identification is the way to decide whether a person is indigenous or not, this criterion is not respected in practice.

With great indignation, the members of the Mayan organisation responded to the judge's decision: "We denounce these acts before the international community for being an attack against indigenous rights and representing an insult to the Mayan

people, being one more attempt to benefit the large multinational companies at the expense of the violation of the rights of the indigenous communities of this country" (Press release, February 2019, Assembly of Defenders of the Mayan Territory "Muuch' Xiinbal").

This information was triangulated during my field work in one of the interviews with Alfonso, one of the members of the San Jose Tipch community. Alfonso detailed during the interview how, after the judge's decision, he accompanied a government representative and another from the company for the next three days, going "house to house with the representatives to ask the people of the community if they spoke Maya". Some people, Alfonso says, "couldn't even answer the question," since it was asked in Spanish. Others "were manipulated into saying they didn't speak Maya," advised by some *ejidatarios* "who had been bought by the company," Alfonso continued. And finally there were some, "especially the younger ones, who no longer speak Maya." It should be noted that in several indigenous families it is decided not to teach the mother tongue to their children, so that they are not discriminated against, since often students who come from indigenous populations and manage to access higher education usually have many problems with the Spanish language and that causes them to be discriminated against (Pedraza Ramos, 2020) .

Yamira, indigenous activist, defender of indigenous languages, highlights the incongruity of trying to judge indigenous identity based on the language spoken, despite the fact that these have been suppressed and attacked for many years in long processes of assimilation, since the Spanish conquest and up to the present.

> "Part of a perverse logic to be contending with [indigenous] languages continuously for decades and [now] to use linguistic criteria to categorise what is indigenous and what is not, and thus be able to avoid making the consultation." (Yamira, indigenous activist, in a forum on extractivist projects in Mexico)

This cultural and linguistic discrimination results in systematic violations of human rights that make it impossible to exercise other rights, such as access to justice (Torres-Mazuera et al., 2018).

In a similar vein, it is worth highlighting a conversation with a representative of the area of social impact assessments of the Ministry of Energy at the national level, in this interview the representative told me that the day before he had gone to a Mayan community where they intended to make an expansion to a solar project - project not studied in this research but also to be implemented in Yucatan-. The representative told me that she went to "observe if the community could still be considered Mayan" to see if an indigenous consultation should be carried out or not. When I asked her what the result of her observation was, she replied: "Well, I think we are not going to do the consultation, because there are several aspects that show that this community can no longer be considered Mayan." This despite the fact that for the first solar project implemented in this same area an indigenous consultation had been carried out for its implementation. But now for the extension of this same project, it was alleged that a consultation was probably no longer needed because apparently the community was no longer Mayan enough to deserve that right.

It is very serious and unacceptable that it is left to the will of a small elites in power to decide even on the identity of people.

This example illustrates not only how the dangerous ambiguity of the Mexican energy policies blatantly favours capital over community rights, but also, this example clearly shows the outrageous attempts to de-indigenise Mayan communities

in order to achieve an "easy" implementation of solar and wind megaprojects. It is really worrying that the renewable energy transition models, implemented from top to bottom, increase and sharpen the recognition-based injustices in rural communities in order to put forward the economic interests and power of energy companies and the government itself.

Prominent literature on energy transitions has argued that the transition must be from a top-down model (Heffron & McCauley, 2018; D. McCauley & Heffron, 2018; Sovacool & Dworkin, 2014). For this to happen, however, it would be essential for the institutions to be reasonably impartial. That is to say, that authorities act without regard for personal, financial, or other irrelevant motives when dealing with specific cases (Rawls, 1971). In the context of Mexico, however, it is clear that this becomes practically impossible, since the government agenda supports companies in full measure.

As seen in the examples above, top-down energy transition models allow elites to even decide on people's own identity. This is inadmissible and should not be allowed in any type of transition that advocates for sustainability and social justice.

7.2.4 Neoliberalism and difference misrecognition in renewable energy

The third key historical moment in the array of historical injustices toward indigenous peoples is the "neoliberal period "- characterised by the neoliberal economic development policies adopted by Mexico and which came as a result of the Latin American debt crisis of the 1980s. Under Ronald Reagan's proposal defining that the State is not the solution, but the problem, the United States together with the International Monetary Fund (IMF) carried out a tactic to implant the neoliberal economic and political model in the countries of Latin America, since they had numerous resources and national goods that meant a lot of value for private companies and that would put the neoliberal model to work in an entire continent.

In 1970s, several Latin American countries, including Mexico, relied on loans from international banks or private firms. Private debt of those countries later became indebted became public debt. These countries struggled to pay the foreign debt, and the most powerful countries exploited these obligations. Along with military intervention or union intimidation, they transform such nations into their neocolonies. This, in turn, give them access to their natural resources at very low prices and enforced legislation that would keep benefiting the powerful neo-coloniser countries.

From this decade, the free market theory gained strength and social objectives were minimised. The government canceled or reduced support programs in the countryside, leading many peasants into poverty and causing many young people to lose interest in working the land. Some injustices of this period that are frequently mentioned in political forums where indigenous communities and their allies participate is the approval of the Agrarian Reform of 1992. Until 1992, under Article 27, native communal landholdings or *ejidos* were protected from sale or privatisation, i.e. *ejidos* had the same protection as communal property. But that year, the Article 27 of the Constitution was modified to open to the market those lands endowed or restored as *ejidos* and communities respectively, which until that moment had an inalienable character. Starting in 1992, all land tenure models can be transformed at the will of their owners, as long as the majority of votes are obtained in the assembly for the change of regime.

> "There is a contradiction between the figure of the *ejido*... which becomes more flexible with the constitutional reform of 1992 [...] Before the *ejido* was a source of land protection, that is, it guaranteed that the land would remain in the hands of the peasants and the indigenous communities, now it becomes a mechanism of dispossession[...] This is important because the implementation of the [renewable energy] development model with racist overtones has to do with the legislative and political restructuring of those [legal] figures, that before they were sources of resistance or permanence of land and territory for the communities." (Jorge, indigenous ally working for "Indignacion" a local NGO in defense of indigenous and human rights)

This new "freedom" in land use changes as well as other key government programs boots a systematised process of land dispossession. As is well known, the privatisation of land is often the necessary condition prior to the dispossession of territories, as has been demonstrated in various studies in Mexico and around the world (Martiniello, 2013; Torres-Mazuera et al., 2018; Zhang & Donaldson, 2013).

The usurpation of indigenous territories driven by economic and power purposes has had consequences of all kinds in Mexico. The arrival of multinationals, including solar and wind projects, has led to the deterioration of the ecosystem, so that it has been nature that has had to adapt to man. Among the social consequences, neoliberal policies have also led to cultural domination, trying to mutilate the indigenous communities' traditions and ways of life (Guerrero, 1994).

For these reason, indigenous communities have tried to recover their "original territories" so that they have more protections against renewable energy developments, as it will be shown in the following example of the Chicxulub Wind Project below.

It is worth mentioning that derived from the previous historical injustices, plus the attachment and need for the land that indigenous peoples and peasants have in order to reproduce their culture and life, it is critical that their right to territory be recognised, not only as land, but as the broad integrated vision of life and culture that local populations have about it. This recognition of their particular and differentiated needs is key to improving justice in the energy transition processes in rural Mexico.

7.2.5 Misrecognition of difference

As mentioned in the case study section 3.3.4, Ixil (one of the communities surrounding the Chicxulub Wind Project) is currently under a legal battle against a privatisation attempt of the *ejido*, where land speculators with privileged information convinced the *ejidatarios* to go under a land parceling and privatisation process so that they could buy cheap land from peasants and sell or rent it at high prices to potential developers. Even before the privatisation of the *ejido* finished, the company promoting the Chicxulub Wind park had already made a deal with particulars to rent the land for the project, which cause outrage from the Ixil community. As a result, the Ixil community is now not only trying to stop the illegal privatisation of their lands by speculators, but also trying to recover the communal regime, in which they could legally reaffirm their rights as a Mayan community and request the restitution of their historic lands (currently, a part of these historic lands are considered as national governmental lands; and, according to the local population, it is possible that the Wind project will move there if it is not possible for the project to be establish in

its current intended location. Some members of the community have begun to mobilise near the area to ensure that construction work on the project does not begin. They have also put signs that say "Property of Ixil" on rocks near the area as a form of protest, see figure 7.1.

FIGURE 7.1: Marking territory as a sign of protest by Ixil community members

In a brochure collected during my fieldwork at an event in the Ixil -where the *ejidatarios* sought to demand the government for protection of the *ejido* and against the implementation of wind energy and other megaprojects-, the following could be read:

> "The map of Ixil (figure 7.2) reflects a history plagued with injustice, dispossession and discrimination. [...] If they now adopt the communal regime, they will legally reaffirm their territorial rights as a Mayan community and could request the restitution of their historic lands. If they do, they will pioneer a phase in the history of the Mayan people's struggle to defend and protect their territory and culture. The decision is in your hands" [Printed brochure, Ixil, December 2019]

This example clearly shows how energy development and land in Mexico are inextricably linked; and reaffirms that to be able to analyse the justice and injustice of energy implementations and transitions it is key to first consider the wider social and historical implications of the contexts where energy projects are planned to be implemented. In other words, when evaluating ways for achieving more just transitions process, the historical context and complexities should be carefully considered.

It is worth mentioning that during this legal process of the Ixil *ejido* against the implementation of the Chicxulub wind project, the communities had many problems in accessing legal justice. Structural deficiencies, racial discrimination and linguistic, cultural or economic barriers are some of the difficulties that communities and their members have to face when they appear as plaintiffs or defendants before legal institutions Torres-Mazuera et al. (2018).

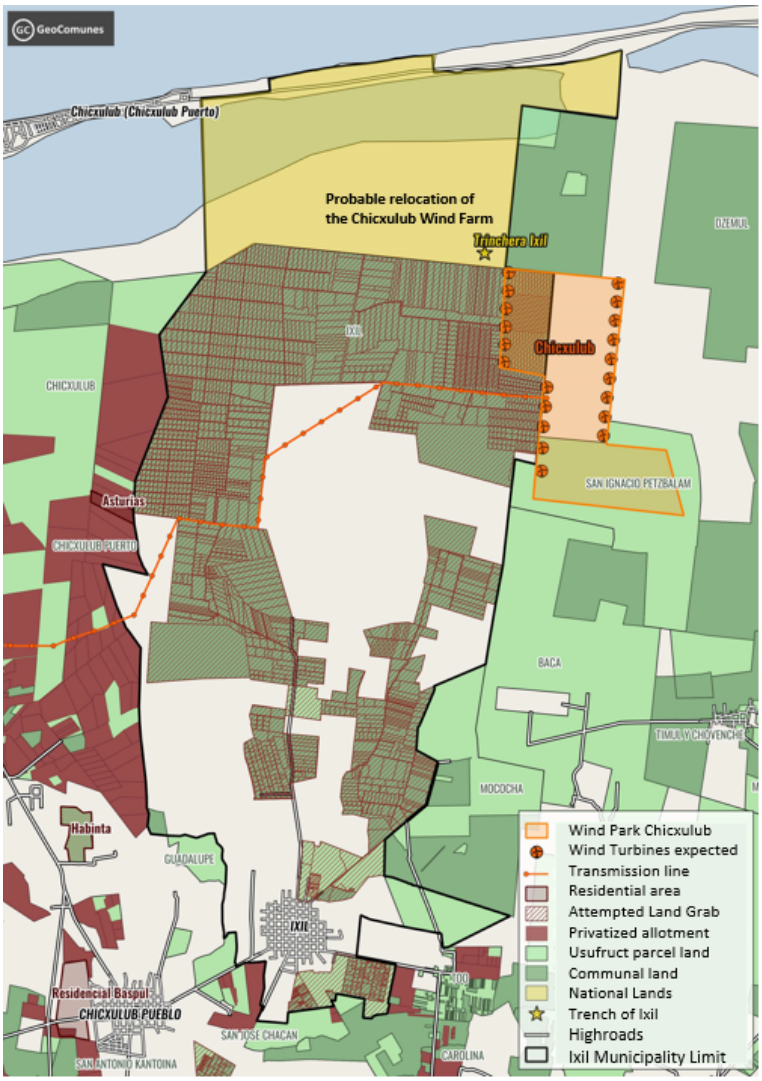

FIGURE 7.2: Ixil Map. Source: Geocomunes. Adapted to English version by the author.

7.2.6 Legal racism and non-recognition of difference

These injustices regarding difficulties of access to the legal system by indigenous communities is referred as "legal racism". This type of racism can be manifested in the obstacles these communities have to protect of their human rights due to their different systems of values and worldviews. This means, the difficulty of having to present, in terms of positive law, their worries about the damage to the environment and to their territories, including the broad, deep and spiritual definitions of what the territory means to them according to their beliefs. As the indigenous activist Yasmira sharply explains:

> "One has to raise the ideas we have about the defence of our territory in legal terms, even knowing that this system is not going to recognise inter-culturality or pluralism in this respect. For example, in defence of water, when we are at the negotiating tables with the institutions, we explain to them the ritual, historical and community importance of our spring, but the only response we receive is: "if you don't tell me in terms of rights, I do not understand you'. In other words, there is a short circuit where we

> have to learn the legal language, to express our system of knowledge and our desires in their terms, because otherwise, if we do not it in that way, then that means "magical thinking" for them, [that is to say] our conception is not valid. Therefore, there is also a very strong racism there, from the knowledge and the part of the legal structure." (Yamira, indigenous activist, forum on racism and extractivist projects, January 2021)

This legal racism has been reproduced with greater force, with the implementation of clean or renewable energies, due to its clean and sustainable discourse it is even more difficult for the indigenous to convince the authorities about the legitimacy of the defense of their territory.

> "With this new [renewable] megaprojects, it is reinforce the idea of the 'wild Indians who do not understand, rebels who will always be with the machete, they say'. I mean, there is a whole series of disqualifications when there is this type of resistance to Western rationality expressed in a legal framework." (Yamira, indigenous activist, forum on racism and extractivist projects, January 2021)

This affirmation puts western law into question. The fact of pondering other ways of conceiving justice and the duty to be linked to collective and political identities that go beyond hegemonic legal conceptions and subject them to continuous interdiction. This highlights the particularity of indigenous law, to the extent that it advances other conceptions of the world and of life that affect the very meanings of justice; that is, other ontologies that come into tension with Western law. These are legal systems that maintain their validity to the extent that they respond to the needs and horizons of indigenous people and their communities, so seeking to subject them to the state regulatory model and its values is incongruous (Sierra & Lemos Igreja, 2020)

Traditionally, modern law is considered hegemonic and universal. However, as Brunnegger and Faulk (2016) argue, the notion of justice is not universal, but depends on the different contexts and meanings of what is fair and unfair that social actors grant, which usually does not correspond to what defines the law. For these reasons, rather than subjecting indigenous justice to legal formalism, what is imperative is its respect for difference and the establishment of certain guarantees so that this right to difference is guaranteed (Sierra & Lemos Igreja, 2020).

This section demonstrates that adopting a top-down approach to the implementation of energy transition projects undoubtedly makes the peoples at the bottom subject to visions of universal justice imposed by the state and Western law. It is evident that the challenges faced by indigenous peoples for the justiciability of their collective rights —that is, to make them effective and respected by the State justice system considering indigenous identities, their worldviews and their claims by autonomy- are massive. Therefore, promoting pluralist and multicultural notions of justice that emerge from the bottom-up is vital if a transformation to more just energy transitions (and indeed, fairer societies) is sought (Sierra & Lemos Igreja, 2020).

7.3 Non-recognition of knowledge, discrimination and disrespect of values and worldviews

In addition to the historical, identity and difference lack of recognition mentioned above. There is a lack of recognition of the values and knowledge of local communities. This is very clear in the fact that the knowledge of local people is not considered

to carry out social and environmental impact assessments. These evaluations are carried out in most cases by environmental consultants hired by the same developer company, which leads to strongly questioning whether the information presented in the Evaluations is partial or complete, and under which ideologies and values are they justified (Sanchez et al., 2019).

An example is the Environmental Impact Assessment (EIA) of the photovoltaic project 'Yucatán Solar'. As mentioned before, for the execution of this project, it was required to clear 206.51 ha of jungle (EIA, 2016e). Within this poligon there was a cenote that was considered sacred by the community. However, in the environmental impact assessment they simply mention it as a "hollow" not given any type of particular value to it. This practice of disrespect to local values provoked anger in several members of the community.

In response to this designation, in the lawsuit against this project, people claimed that omission of this cenote in the EIA 'in addition to ignoring local knowledge, it seriously endangers the historical, cultural and spiritual heritage of the peoples of Ebtún, Cuncunul and other communities that make ritual and spiritual use of the cenote and that benefit ecologically from the site to be affected' (Lawsuit against Yucatan Solar project, 2019).

After certain investigations, specialists from the Center of the National Institute of Anthropology and History (INAH) also recognised the existence of this sacred cenote called 'Múusench'een', which is part of an ancient pre-Columbian settlement that has been used as a site uninterrupted ceremonial for about 2,300 years. They also affirmed that the site where the project would be developed 'turned out to be more important than previously thought because it represents a living expression of the beliefs of the original peoples in this case the Mayans.' The archaeological site where the sacred cenote is located consists of three intact pre-Hispanic buildings, of which two adjoin the interior of the cenote and one is located exactly above it. It was also stated that five burials were found inside the cenote and the cenote still fulfills the primary function of providing the Mayan priests of virgin water for the performance of ritual ceremonies. The head of the INAH team declared the following to the media:

> "The site is still considered a sacred space, those in charge of the exploration and rescue of the burials, we had to perform two ceremonies to enter, at the same time, the workers performed a ritual every day before starting to work inside Cave."

Despite this, the consultancy firm and the developers stated in the EIA: "it should be noted that the project will not affect in any way the historical and archaeological heritage" (EIA, 2016e, 231). This despite the fact that at the time they presented the EIA they already had knowledge of the existence of the cenote, characterised as "hollow" (p. 153-156). In the same vein, in the lawsuit, it was stated that the spiritual importance of the sacred site is intimately related to the jungle that surrounds it, due to the central role of nature and its spirits in the Mayan worldview and spirituality:

> "The jungle around the cenote is as sacred as the cenote itself. This jungle has been conserved by the local Mayan population and used in a sustainable way through beekeeping and other activities without negative impacts. These forms of sustainable use will be made impossible by deforestation, which represents a significant economic and cultural impact on the vulnerable indigenous population." (Lawsuit document)

The case of the Yucatán Solar project is not isolated, but by contrast, it is a pattern that is reproduced in many indigenous territories of Mexico. Key information on the potential areas where a renewable energy project is to be developed is hidden, ignored or undervalued by the "environmental consultants" and developers, who present the assessments according to their knowledge and perspectives.

A similar example occurs with the "valuation of nature" and the ideologies under which it is justified whether it is worth destroying the jungle or not. In the same Environmental Impact Assessment of the Yucatan Solar project, many impacts were classified as adverse but "mitigable". By mitigable, it is usually understood that they try to "affect as little as possible" as long as it does not interfere with the interests of the project. In the so-called Prevention and Control Measures of the Flora and Fauna Conservation Subprogram of the EIA, it is declared as a measure of conservation that 'In the areas of temporary affectation and where it is feasible to ensure the safe circulation of [project] vehicles, the larger trees will be kept... This activity will also take place on the edges of the access road.'(EIA, 2016e, ch. 6,p. 12). For them, the deforestation of more than 200 hectares can be mitigated by promising to leave some trees untouched. Similarly, they place high emphasis on restoration measures, which involves rescuing some species that "specialists" consider important: "The rescue of complete specimens of plant species included in NOM-059-SEMARNAT-2010 will be carried out [...] it will discriminate those specimens that, due to their size, had a low probability of survival after transplantation. In general, specimens of more than one meter in height will not be rescued". Developers also affirmed that they would comply with the mitigation measures by paying the government for the damage caused, "with the understanding that the [government] entity (CONAFOR) responsible for the application of the contributed resources will channel the [economic] resources to restore forest ecosystems in the same area of Project influence" (EIA, 2016e, ch. 6,p. 16). None of these assumptions acknowledges or refers to whether the community values the environment in any other way. At no point does the EIA mention that certain mitigation measures will be taken 'according to what the community considers important.' In this sense, recognition of values and knowledge are totally disregarded. As it can seen, the knowledge and the values that are taken into account is decided completely from the top down. In the current private utility scale implementation model, the communities have little influence in being able to reclaim the value they give to their territories.

The energy transition in Yucatán can be seen from very contrasting imaginary points. The hegemonic socio-technical imaginary represents a model of fast deployment large-scale projects, own by the industry and with a market-capitalist led logic. According to the government and developers, this form of transition will not only turn Yucatán into a sustainable state, but also, with the attraction of foreign investment, will help indigenous communities out their "marginalisation" and "improve social inequalities" in the region EIA (2016e). This, by boosting the progress, modernisation and development in the state. For many members of Mayan communities, however, the imaginary of progress and modernisation that the government has been promising them for decades will not come with the deployment of renewable projects, but on the contrary, "these projects pose a threat perhaps even bigger than other non-renewable projects and they are more difficult to contest due to its "clean and green" narrative." (Juan, Mayan activist)

Those who oppose renewable projects, however, are constantly attacked and pointed out as being "opponents to progress and modernity". These imposed visions of development and progress are a form of discrimination and cultural domination that keeps infiltrating and causing conflict among indigenous communities

Dunlap (2018:a); Fraser (1995); Gudynas (2011c). For the Maya in Yucatán, as well as for many other cultures, such as the Sámi peoples, wind and solar power is neither green nor progress. It is just another industry that is gradually fragmenting their environment and cultural landscapes (Fjellheim, 2020).

It is increasingly accepted that the profound global challenges brought by the era of the Anthropocene, the ideas and lifestyles of the Global North, and the alleged infinite economic growth - accompanied by ecocides and epistemicides - poses a global crisis (de Sousa Santos, 2015; Lander, 2013; Quintero, 2014). For these reason is critical that solutions that try to address the current energy systems issues, such as a transition to renewable energy, also contests modernity values that promote permanent grown and unjust renewable energy development (Kumar, Höffken, & Pols, 2021).

7.4 Conclusion

This chapter demonstrated that a lack of political recognition, misrecognition, and discrimination of different worldviews, values, and knowledge of indigenous peoples underpins the (re)production of vulnerabilities and hinders a just and sustainable energy transition.

Several scholars looking at energy justice issues increasingly recognise that the dimension of recognition-based justice is one of the most important tenets of energy justice (Hurlbert & Rayner, 2018; Simcock et al., 2021). However, this key tenet has received the least attention within the energy justice literature (K. E. Jenkins et al., 2021). This is the case globally, but particularly when looking at Global South cases and contexts. At the heart of energy injustices are cultural and institutional processes that have given individuals, communities, and social groups unequal recognition, either overtly or implicitly (B. Walker & Salt, 2012). Therefore, exploring recognition-based injustices in different contexts is critical. To achieve a broader impact, these explorations, however, should involve ideas from non-Western grassroots and scholars who are not generally included in the transitional debate (Sovacool et al., 2017; Williams & Doyon, 2019). This chapter contributed to widening the energy justice literature by empirically analysing recognition-based injustices embedded in the renewable energy transition in Yucatan, Mexico.

Recognition justice on the ground has been limited to some forms of institutional recognition. This chapter showed that institutional recognition is insufficient when recognising the indigenous people's values, needs, differences, knowledges, ways of life and rights. This type of recognition does not guarantee the improvement of injustices issues in renewable energy implementations since the recognition of vulnerable people is left to governments and elites with conflicting agendas, which usually prioritise their economic interests over proper recognition of local people's rights. Despite the increased awareness at the international level of indigenous people as "custodians of the land and the traditional knowledge that underpins it", along with their "rights to ancestral lands and the resources they contain" (UN 2017), this recognition does not seem to be reflected on the ground. At the national and regional levels, there is still racism and structural discrimination towards indigenous ways of life, knowledge and values.

I argue that the energy justice framework must be expanded and integrate the dimension of "self-recognition" -meaning the re-valorisation of identity and one's mode of life- (Coulthard, 2014), a dimension which is currently under-addressed in both the environmental and the energy justice literature (Álvarez & Coolsaet, 2020a).

This can potentially help to complement and decolonise the prevalent liberal universalist energy justice frameworks. The conclusion section 8.2 details how this concept can help improve understanding of energy justice and contribute to the challenging mission of forming a more just energy transition in Mexico and beyond.

Chapter 8

Conclusion

8.1 Introduction and Research contribution

This thesis examined the renewable energy transition in Mexico through investigating the policies, practices and experiences on the implementation of solar and wind energy projects in rural indigenous communities of Yucatan. In so doing, I explored how theoretical ideas and experiences from the Global South can enhance energy justice frameworks to inform more socially just renewable energy implementations and transitions overall.

Current evaluative energy justice frameworks -which include the distribution, procedural and recognition justice dimensions- prove partially useful for analysing justice in the Mexican energy transition polices and controversies over renewable energy implementations. However, the application of normative top-down western-framed energy justice ideas - such as participation through public consultations, and the distribution of projects outcomes through benefit-sharing schemes -are insufficient and, in some cases, counterproductive when applied to Global South countries, especially in rural indigenous contexts (Barragan-Contreras, 2021).

Similarly, predominant top-down imposed energy transition models such as profit-led large scale solar and wind are demonstrated to be unjust and unsustainable, as they lead serious socio-environmental injustices on the local contexts -including deforestation, damage to local livelihoods and conflict. The findings of this research have several implications for both academic literature and policy practice.

First, while work on energy justice in Global North and South contexts is expanding, including on project impacts and acceptance (Cowell et al., 2011; Roddis et al., 2020; Yenneti & Day, 2015, 2016; Zoellner et al., 2008), these works continue to be dominated by uncritical and unproblematic use of Western worldviews and Global North theories, either in Mexico or other Global South countries. There is little scholarship based on Global South conceptions of justice and philosophies (Bombaerts et al., 2020; Kumar, Höffken, & Pols, 2021; Sovacool et al., 2017). By bringing the experiences and voices of Global South rural and indigenous communities in respect to renewable energy implementations- alongside Latin American theories related to socio-environmental justice (Acosta, 2013; Escobar, 2014; Gudynas, 2011c; Nova Laverde, 2018), this thesis makes a critical contribution to filling this gap.

Second, by demonstrating the problems caused by following top-down transitions models as well as normative universalit ideas of justice, I have argued for the importance of a more nuanced approach which builds upon pluralist ideas of justice and people-led energy transitions. In making this argument, this research has provided new insights to the increasing body of knowledge on energy justice and just energy transitions (see framework 8.1).

Overall, while current energy justice frameworks are useful at helping classify the injustices perceived and experienced on the ground, they lack an emphasis on

bottom-up, self-recognition, self-determination and pluralistic justice ideas. This research makes a significant contribution to filling this critical gap.

Existing energy justice frameworks need to be more sensitive to the grievances of indigenous communities, and shift from top-down normative approaches to more bottom-up policy-making to address systematic energy and socio-environmental injustices.

Overall, the energy justice literature would benefit from recognising and embracing pluralist notions of justice as reflected in the claims and struggles from grassroots movements. A final contribution of the research is its relevance to policy practice. Various studies in Mexico (Mejía-Montero et al., 2021; Velasco-Herrejon & Savaresi, 2019; Zarate Toledo & Fraga, 2016) have identified that social justice issues, such as inadequate inclusion and participation, lack of transparency in information disclosure and land acquisition practices, and inequity in the distribution of benefits as a problem for the completion of renewable energy megaprojects. However, these studies provide no further recommendations beyond improving participation, inclusion, and distribution of corporate benefits of megaprojects. That is to say, they do not try to go to the root of the problem and therefore do not question the underling development model which drives much of the injustices in the first place.

By bringing empirical findings and policy analysis of the Mexican model of renewable energy transition, this research also provides critical insights into the importance of promoting people-led renewable energy models. The main empirical findings and practical policy suggestions from this thesis argue for both locally appropriate renewable energy and governance models that empathise with the wide multiculturalism in Mexico as well as in other Global South countries seeking to effectively harness their renewable energy potential.

After highlighting my key research contributions, in the next section I will explain in more detail the thesis contribution based on some reflections of my critical findings and arguments. I will also summarise the implications of these findings for local communities and for energy transition processes overall. Based on these I will draw my contribution to policy practice. Finally I will offer some ideas for future research.

8.2 Findings and reflections in response to my first Research Question

This thesis addressed the following first main question:

1. From a bottom up perspective, what issues of justice arise in the implementation of renewable energy- particularly solar and wind projects in rural Mexico?

To answer this question, the thesis considered the following sub-questions which will be responded next.

1.1 What are the main policies influencing the Mexican Renewable Energy Transition and to what extent do they consider principles of justice?

1.2 How do issues of justice arise in how the risks and benefits of solar and wind projects have been distributed among key stakeholders in Mexico?

1.3 How effectively have procedural justice principles such as participation, inclusion, and information disclosure been applied in the implementation of projects in Mexico?

1.4 To what extent are recognition-based justice principles found in the sitting of renewable energy infrastructure in Mexico?

Energy policies reflections

In response to the first sub-question (1.1) this thesis found that some of the key policies influencing the renewable energy transition in Mexico are those derived from the constitutional Energy Reform in 2013. From there, key laws such as the *The Electricity Industry Law and the Energy Transition Law* (ETL) were published; and two others main laws were modified: *The General Law on Climate Change, and The General Law of Ecological Balance and Environmental Protection*. These laws marked the arrival of renewable energies on a large scale.

In order to promote renewable energy production and fulfil its promise of increasing clean energy generation from 21% in 2016 to 35% by 2024, Mexico developed ambitious policies to attract international investments, including an auction/bidding system. This fostered competition between national and international companies to try and get the lowest solar and wind energy prices.

From the economic point of view, this action model worked very well for private companies and the Mexican government : in 2017 Mexico was able to generate some of the world's cheapest solar power — with prices as low as 1.77¢/kWh, just below that of Saudi Arabia (Beach, 2017). These factors led to a significant increase in implementation of wind and solar energy projects in Mexico. By 2018, 8,600 million dollars of investments were committed to build 65 new renewable energy projects: 46 solar and 19 wind farms (Beach, 2018). In the case of the Yucatan peninsula, it was selected to host more than 20 large-scale wind and photovoltaic generation parks. If approved, these projects would occupy almost 14,000 hectares of land, of which 30% are *ejido* land (Sanchez et al., 2019).

While from an economic point of view this worked out, this deployment of megaprojects favoured financial speculation and land privatisation, increasing land-use changes and damaging the local environment and livelihoods, causing serous socio-environmental injustices at a local level as well as community opposition to renewable energy infrastructure.

Policies governing the renewable energy transition in Mexico are strongly based on neoliberalist ideals and designed by technocrats without any type of participation of the potentially affected people. This has caused governments and companies to have total control over what considerations and models of renewable energy have priority to be implemented in the territory.

The Electric Industry Law (LIE), for instance, grants the activities of electricity companies the character of "public utility", despite the fact that these companies only seek their own profit. The qualification of "public utility" gives legal priority to energy projects over any other use of the territory. This also violates the right of indigenous communities to use and enjoy their lands and resources protected by the ILO Convention 169.

Interestingly, along with the publication of these laws, where dispossession is basically legalised, mechanisms that seek to protect the human and indigenous rights of local communities were also introduced, such as the Free and Informed Prior Consultation (FPIC), evaluations of environmental and social impact (SEIAs), and the "corporate benefits sharing" protocols that suggest to companies how to share their benefits with the communities (PROBESCO). It should be noted, however, that these protocols (PROBESCO) are not mandatory and it is left to the discretion of the company how to carry them out. In addition, the environmental and social impact

assessments are carried out by companies contracted by the developers themselves, noting a conflict of interest there.

Based on the above, it can be concluded that public policies are contradictory in their position as guarantor of social justice. While they consider, to some extent, principles of procedural and recognition justice -by bringing institutional mechanisms of participation and protection-, at the same time, that same law encourages companies to abuse their power and protects the interests of international companies against peoples disagreements. As such, current considerations of justice in the law are not enough to protect indigenous peoples from companies and developers abuses. Therefore, a change of policies -that work for the people- must be done if we aim to achieve a more socially just energy transition.

Distribution of risk and benefits reflections

In response to my second research sub question (1.2), findings in the distributional justice chapter evidenced that the benefits and risks of wind and solar project are unequal among key stakeholders. These inequities have exacerbated the vulnerability of local people , producing division and conflict among the different stakeholders - in many cases, causing more resistance to renewable energy projects and slowing down a renewable energy transition.

Distributional justice calls for an equitable distribution of benefits and risks on all members of society regardless of income, race, etc. While from an evaluative perspective, the distributional justice dimension is useful in analysing who are the winners and the losers in the energy transition, at a normative level it has been mostly applied thorough Corporate Sharing Benefits Schemes. This Benefit Sharing approaches have been useful for companies and government to reduce opposition to energy projects, and in some cases, economically disadvantaged people have benefited from some of the economic and infrastructure benefits offered, including jobs or facilities improvements. However, in most cases, these benefits have not compensated for what the community lose in turn -causing further inequalities and resistance to renewable energy projects.

In the four projects examined in this thesis, the main benefits mentioned by the community members and *ejidatarios* interviewed was the land rent revenues, jobs and the potential improvement of some basic infrastructure that the companies promised to make in the communities. These benefits, however, would vary widely according to different factors, including the type of land where the project are to be implemented, the level of resistance from the local communities and above all, the criteria set by the company.

Regarding land revenue, for example, from the two projects intended to be implemented in *ejido* land (Chicxulub and Ticul A and B), only in the Ticul photovoltaic project were the *ejidatarios* receiving an income from land rent. However, this occurred only after the *ejidatarios* legally pressured to cancel some contract that had been signed illegally between an intermediary (-who had previously deceived the *ejidatarios* to take away the usufruct of the lands where it was intended to implement the project-) and the promoter company. After various legal processes and pressure from various *ejidatarios* and their allies, the *ejidatarios* were able to renegotiate directly with the company, winning the right to receive rent for the land. The *ejidatarios* of the Chicxulub wind project -to be implemented also on *ejido* land-, however, were in a worse position, since they are still in court and at risk of losing their land due to a similar situation to the *ejidatarios* of Ticul project -an intermediary with privileged information tried to privatise the land to keep the land where the project

is planned to be installed- and thus keep the benefits of renting the land for the company. Two main conclusions can be drawn from this. While the implementation of renewable projects have the potential to economically benefit the *ejidatarios* through the payment of land rent. There is a high risk that they will first lose their land through legal or illegal privatisation by intermediaries looking to grab the land as soon as they learn of a potential wind or solar project.

In general, it has become an increasingly common practice for large companies promoting renewable energy projects to rely on local intermediaries in charge of identifying those *ejidos* "suitable" for the development of the projects. It is these intermediary companies that carry out the usufruct contracts, as well as the Environmental Impact Statements (MIAs). In this way, the *ejidos* are not able to negotiate directly with the renewable energy companies, but rather their land passes into the hands of intermediaries who negotiate directly with the companies. Intermediation entails different types of problems, not only because the negotiation between *ejidos* and companies goes through third parties, but also because it can immobilise the lands of the *ejidos* in the event that the project is not carried out and legal proceedings are followed due to the dispute over the land (Torres-Mazuera and Gómez Godoy 2020). This is currently the case of the Ixil *ejido* and the Chicxulub project.

In addition to this, an important finding is that even when the *ejidatarios* manage to get the intermediaries out of the way and have a direct negotiation with the promoting company, the rent of the land is very low compared to other countries. In other words, there is a great inequality in the amount paid for land rent at the international level compared to the average payments in Mexico. According to SEGOB (SEGOB, 2012), in the case of wind farms, payments in Mexico are between 0.025% and 1.53% of the gross income from energy sales, while at the international level those same payments they range between 1 and 5 % of said income (GEOCOMUNES et al. 2020).

In this sense, the risk of losing the land is much greater than the potential and real economic benefit on the rent of the land. Although several interviewees assure that the income from the rent of the land helps them relieve economic pressures, the majority agree that the amount received does not greatly improve their standard of living, since the rent has to be shared between all the *ejidatarios*, these being normally at least 100 of them, depending on the size of the community. Therefore, the income ends up not being very significant.

In cases where renewable projects are implemented on private land (as is the case of the Tizimin Wind Park), this benefit of the rent of the land, of course, remains only for the owner of the land. While the law states that the indigenous communities near the projects also deserve compensation, this compensation is, certainly, much less than what is paid for the rent of the land. So, *ejidatarios* and communities benefit less while often still bearing the brunt of the projects by living close to it.

In the Tizimin wind project - the only one in operation of the four projects analysed -, for example, this compensation has been reflected in the construction of some basic infrastructure facilities, including a children's playground, water tanks and the paving of a street. Although this is a direct benefit to the communities, most interviews also state that the compensation is not fair compared to what the company earns. Although the communities do not have access to real information about the profits of the company, there is a strong perception that the companies are the ones that really win in these implementations. Several interviewees suggested that they would like to know the profits of the company, in order to know if the arrangement is fair or not. In this sense, greater transparency on the part of the company could help local populations to have greater bargaining power vis-à-vis the company.

The application and amount of benefits offered by the company to the communities also seem to be motivated according to the level of resistance and opposition found in the local people. For instance, in the case of San Jose Tipceh, the economic benefits offered rose proportionally to the increase in resistance encountered, as several interviewees stated. This led to an inequitable distribution of benefits and burdens, as communities that did not resist more (usually because they did not have the social and knowledge capital to know their bargaining power or because they live in very remote places which prevent them from making strategic alliances with local organisations) were offered less compensation than the ones with stronger ties to activist and grassroots organisations that possessed more knowledge on the topic.

It is worth mentioning that companies expressly prefer to develop projects on private land, as negotiating with individuals instead of collectives facilitated and sped up the negotiation process. However, for local communities, the fact that the model of wind and solar megaprojects encourages the privatisation of land increases the risk that peasants and indigenous people are left without land, and consequently, without their means of subsistence.

Along these lines, another important finding is the fact that Benefit Sharing Schemes, in practice and in the context of Mexico, most of the time lend themselves to complex processes of corruption, where normally some leaders were bribed to try to convince people to approve the projects. These new spaces of corruption triggered many problems. In addition to co-opting the leaders or *ejitarios* for the sake of the company, serious social conflicts were also generated between the members of the communities and families which helped to break the social fabric. Thus, it became increasingly difficult for communities to organisethemselves and reach agreements to defend their rights and territories.

What is worse, when the *ejidatarios* or community members refuse to be bribed, they were pressured and threatened to sell their land. These pressures and threats were often given by intermediary actors who already had certain power over the community. Among these threats, the most common one was that if *ejidatarios* refuse to take the money, the government was going to take away their land anyway. Therefore, people were often cornered and end up accepting the deals proposed by the aggressor. Although in many cases these threats were only a trick used by intermediaries to manipulate and persuade people, it was difficult for *ejidatarios* to not fall for these pressures, especially when the law explicitly prioritise companies' interests. As noted above, the law explicitly states that in cases where an agreement is not reached between the owner of the land and the company, in any case the land will be taken from the peasant and he will be paid according "to the market". In any case, the developer is the winner of this competition for the use of the land.

From these main findings, it can be concluded that the energy transition model promoted through megaprojects with mercantilist and neoliberal logics is causing serious risks to the communities. These risks may even reach the expropriation of the land and therefore the loss of livelihoods of the peasant people. It is clear then that the risks and benefits of renewable projects are not distributed in a fair manner, but on the contrary, the priority over the development of the projects is explicitly stated, regardless of the effects and opinions of the local inhabitants.

The government's dominant discourse often justifies these injustices in the name of progress, economic growth, and job creation for indigenous communities that need to be "lifted out of poverty." Promises of work and improved income was key to companies and government efforts to gain local support and approval. The realities of employments however, failed to live up to the expectations offered. This was due to working conditions, salaries and temporality of the jobs. In most of the

projects people were reported to work under very bad conditions, despite of the fact of been promised otherwise. In one project people also mentioned that they were being paid less than what they were told at the beginning of the job, and that in all cases the employment offered was only temporary and short-term, typically lasting for between 2 and 6 months. Although companies have been more careful to not promise long-terms jobs to local population, people were still disappointed and frustrated at the pay, conditions and duration of these jobs - which were seen in stark contrast to the durability and long-term impacts of the 30, 60 or 90 years that the project will be in their lands. What is more, when this temporary income and employment benefits were compared with the potential impacts to their traditional livelihoods such as beekeeping -which will be quite affected due to the large deforestation needed for projects-, as well as the impossibility to use these lands for other more long terms forms of livelihoods (such as the ones offer by the new government, where people are paid to plan threes), then local communities people would be very disappointed for missing out on those opportunities, and their perceptions of injustice would increase.

Finally, infrastructure development was one of the other very common benefits offered to compensate for the projects affectations. While the infrastructure developed in the communities was often appreciated by the local people, they also argued that it was the government responsability to provide this infrastructure, without being conditioned to accept a project. In addition, they noted that once the infrastructure works were finished, if the infrastructure got damaged, the company was not willing to repair it, since it had already complied with their commitment to implement them. This, many times resulted in short-term benefits rather than long term.

Making a balance between the risks and benefits of energy projects, it can be seen that the risks are greater than the benefits for the most vulnerable populations. These findings coincide with the analysis of other renewable projects in Mexico Velasco-Herrejon and Bauwens (2020); Zarate-Toledo, Patino, and Fraga (2019) and in other countries of the Global South, such as India Yenneti and Day (2016). These studies, however, have been limited in suggesting a better distribution of burdens and benefits to achieve acceptance of the projects. In other words, to gain "community support and buy-in for development" (Mueller & Brooks, 2020, p.1).

Although a better distribution of risks and benefits has the potential to improve to some extent the injustices found in renewable energy projects, this normative approach is limited as it often does not address the roots of the injustices. What is more, in some cases, such as in the photovoltaic projects Ticul and Yucatan Solar, it even worsen inequalities and provoked local conflict. This thesis, therefore, argued that what is needed for a fairer renewable energy transition is not a better distribution of "benefits" but a better distribution of power. Transitions to renewable energies have an inherent political character. This distribution of power can occur through ideas such as those promoted by the concept of energy democracy, where the fight for a just transition joins the fight for an economic and political democratisation. (S. H. Baker, 2017; **?**). Energy democracy seeks to "shift power over all aspects of the sector – from production to distribution and supply, from finance to technology and knowledge – to energy users and workers" (Angel, 2016, p.3). Movements that use the principle of energy democracy also call for a more socially just energy transition, fighting for an energy system that serves the public good, and not to the profit interest, prioritising social and environmental objectives. More particularly, it sees renewable energy technologies, especially solar and wind technologies, as an opportunity for decentralising energy and power, through community own projects and distributive energy, pushing to embrace the idea that low-income and historically

marginalised communities are capable of envisioning, participating and leading alternative energy futures (Angel, 2016; Burke & Stephens, 2018; Stephens, 2019).

Likewise, I argue that focusing on a distribution of "benefits" with institutional and market mechanisms such as "corporate benefit sharing schemes" -implemented from a top-down approach -and that leaves its correct compliance to the discretion of the authorities and companies is not effective in achieving justice in local communities. This is because it is left to the will of the elites to carry out this justice. Although there are some government guidelines -such as PROBESCO- on good practices for benefit sharing programs, these are flatly ignored by companies due to their non-mandatory nature, and those companies ultimately carry out the distribution of benefits and risks according to their economic convenience.

In addition, a focus on better distribution reinforces the imposition of these development models, since it makes people focus on "the type of benefits they prefer" instead of questioning whether the implementation of the project is viable from an environmental and sustainable perspective in the first place. That is to say, this approach marketises nature, spaces and the territories where the communities live. It is assumed that as long as a "fair price" is reached, then it is fair to make a development.

I argue that this approach is not appropriate as not all peoples, and specially indigenous communities, value nature, their spaces and territories in the same way. Many of the claims during interviewes seemed to be in contradiction to the dominant mercantilist ideal, where claim for a "no price for nature" and "the land is neither to be sold nor to be rented" were constant. This was also demonstrated through several examples in which strong opponents were offered a lot of money to stop publicly resisting the projects as well as for selling their land. However, they did not give in to the economic incentive. As explained in the case studies, two of the photovoltaic projects involved the devastation of thousands of hectares of jungle, as well as damage to other elements with spiritual value for the communities. In this sense, and as demonstrated by the fact that the two projects are held up by legal demands from the community for damage to their cultural heritage and sacred land. It can be concluded, then, than a (re)distribution of risk and benefits in market terms is not sufficient to achieve a just transition to renewable energies.

As seen in the examples in this chapter, local communities are fighting not only for better economic conditions, but also to save their culture and traditions from the dominant "rational" capitalist models that are increasingly looking for more and better excuses to continue exploiting the indigenous territories. First with "dirty" energy projects and now with "clean energy", but the same logic of exploitation and destruction of the most precious and essential resources for the life of the communities continues.

Along these lines, I argue that if we seek to develop transitions to renewable energies that are more socially just and sustainable, the implementation model must be changed from the bottom up. Instead, models that are more locally appropriated according to communities traditions and ways of life should be promoted. It is essential that these transition models are led by the people. In such a way that their values and visions of justice can be better included.

According to Rawls' view of justice (1971), and its difference principle, even when equal distribution is not possible, as is the case here, justice is still satisfied if the most disadvantaged sections in a community benefit the most. Some could argue that some sort of justice was achieved in the implementation of these solar and wind projects due to the fact that even people of the community without land (non-ejitarios) was offered some sort of compensation and benefited however small.

In the lens of the Good Living philosophy (a common philosophy amongst many local people and activists), however, in order to start making things more social and environmentally just, there always has to be, in the first place, a plea for more fundamental changes, calling into question the domination and exploitation of nature in the name of economic growth, development and progress -as imposed by western ways of thoughts- (A. Kothari, Demaria, & Acosta, 2014). This call for fundamental changes is certainly not found anywhere in the current large-scale project deployment of the Mexican energy transition model to renewable energies. The Good Living theory invites us to debunk the myth of infinite economic growth as well as the mechanism that back it up, including the corporate benefits sharing schemes that help to legitimise and facilitate the explotation of nature and that render environmental issues into a technical problem, making impossible win-win promises (A. Kothari et al., 2014). Without questioning the roots of the problem, it is evident that the remedies -in form of benefits sharing- will invariably fall short of being transformative and effective enough to achieve more just and sustainable energy transition. In Burke et al. words, "renewable energy transition is fundamentally a political struggle, efforts to shift from fossil fuels and decarbonisesocieties will not prove effective without confronting and destabilising dominant systems of energy power" (Burke & Stephens, 2018, p.78).

If we aspire to achieve a fairer and more sustainable transition to renewable energy, it is essential that we begin to incorporate pluralistic ideas of justice into the framework of energy justice, that empathise with elements of energy democracy and that recognise and value counter-hemonic visions of a “good life”. The values expressed in the theory of living well, including the revaluation of nature, the realisation of a balanced life and the support of ethical values against the dominant economistic and predatory development model, are critical for the formation of pillars that promote a transition model from the bottom up and that leads to the transformation to a more sustainable society.

Procedural justice reflections

In response to my third research sub question (1.3) on procedural injustices, three key finding were encountered. First, there is an exclusion of local communities in key decision-making -meaning that entire communities are being left out from any influence on the type of developments and projects that will affect them. Second, mechanisms of institutionalised participation lead non-meaningful and purely performative involvement of local communities. And, third, there is a clear partial information disclosure from government and companies when it comes to negative and positive impacts of renewable energy projects. These procedural injustices are causing serious implications in the local communities, including damage to the local livelihoods, extensive deforestation of well conserved natural areas, lack of compensations for negative implications, and clashes among native populations.

After several years of conflict, struggle and opposition from indigenous communities in the Isthmus of Tehuantepec, Oaxaca (the first area to be considered as a "sacrifice zone" to begin the transition to renewable energy in Mexico), the Mexican government was forced to improve the unfair procedural practices it incurred to facilitate the implementation of more than 1500 wind turbines implemented in those territories since 2007 till now. Derived of that resistance and conflict among communities and companies, as part of the 2013 energy reform laws, some legal mechanisms

were put in place that seek to improve "due process" for the implementation of renewable projects, hoping to achieve less opposition. These legal instrument were the FPIC and the SIEAs.

While the electricity industry law stipulates the obligation of companies promoting wind and solar projects to obtain the consent of local indigenous communities before their implementation, the same law leaves it up to the developers to choose which communities they consider will be the ones effected. Although there are a series of recommendations on the criteria to take into account, the developer has the authority to decide which ones to consider. Leaving the last word on this important decision to the promoting companies has caused many communities to be excluded from participating in the indigenous consultation, as well as taking part in any compensation for the damages incurred. This was the case in at least two of the projects investigated, where for insignificant reasons (for example, arguing that there was no paved road connecting the community with the project) communities that were roughly the same distance from the project were excluded. This provoked a reaction of *amparo* (protection) lawsuits from the excluded claiming their right to be consulted and their right to enjoy a healthy environment, which will be affected due to the deforestation and other implications to their livelihoods. This speaks to the danger and bias that exists when decision-making power is left to the people at the top. That is, when key decisions are made in a technocratic way and based on models imposed from the top down.

For those communities who were lucky enough to be contemplated by the group in power as potentially affected, their participation and decision making was limited to a yes or no decision, to be taken in the Indigenous Consultation public meeting. Due to the complexities of the local context, including strong power dynamics, lack of information and difference in cultural practices, this space was not appropriate for taking an informed and free decision. What is more, for many community members, being consulted once all key decisions have been made in terms of location, size of the project, type of technology and areas of influence of the project did not amount to meaningful participation. Indeed, this way of participation was mostly seen by local grassroots movements and activists as a facade, an attempt to legitimise a project's imposition while pretending that communities have been allowed to exercise their right to self-determination and informed consent.

Finally, there was a noticeable bias on the information provided by the company and government, since there was a predominant focus on the benefits that the project would have, using at the same time a discourse that would minimise the local negative impacts. Overall, it was evident that the principles of participation, inclusion and information disclosure were not effectively applied so that they could improve the justice in the implementation of renewable projects.

This findings agreed with various other empirical case studies carried out in Mexico and worldwide (Avila-Calero, 2017; Velasco-Herrejon & Savaresi, 2019; Villavicencio Calzadilla & Mauger, 2018; Yenneti & Day, 2015, see, for example). Most of these cases, however, limit their normative suggestions to institutionalised mechanisms such as the FPIC and the SIAS as panaceas to solve these limited inclusion and participation of the "unheard voices" (Sovacool et al., 2016).

Addressing unjust energy transitions certainly requires the meaningful engagement of local communities, and consultation and complete disclosure of key information for informed decision-making (Huesca-Perez et al., 2016; Sovacool & Dworkin, 2015). However, institutionalised procedural mechanisms such as the FPIC and the SEIA have proved ineffective to ensure this endeavor. Models of transition that grant greater decision-making power to communities and that respect and promote their

rights to autonomy and self-determination are needed. Although current energy justice frameworks are useful at helping identify the injustices perceived and experienced on the ground, it lacks an emphasis on bottom-up approaches which leads to serious socio-environmental injustices in the ground. Existing energy justice frameworks need to be more sensitive to the grievances of indigenous communities, and shift from top-down normative approaches to more bottom-up policy-making to address systematic energy and socio-environmental injustices. Overall, the energy justice literature would benefit from recognising and embracing pluralist notions of justice as reflected in the claims and struggles from grassroots movements.

It is increasingly evident that indigenous energy sovereignty is a critical element for improving justice in the energy transition (Broto et al., 2018). Prioritising self-determination over consent, participation and inclusion in indigenous contexts can be a way for achieving a more socially just and sustainable energy transition (Gutierrez, 2018). Therefore, integrating energy sovereignty concepts such as self-determination of indigenous communities into the energy justice framework will not only make the energy transition more just (by contemplating wider understandings of justice and framing energy decisions according to what communities believe is best for them), but also, in the process, transitions might get more effective through reducing the opposition and promoting alternative decentralised ways to renewable energy infrastructure.

Recognition-based justice reflections

Finally, addressing my four research sub question (1.4) in term of to what extent are recognition-based justice principles found in the sitting of renewable energy infrastructure in Mexico, this research found that there is insufficient recognition of indigenous peoples values, needs, difference, knowledges, ways of life and rights. This lack of recognition and misrecognition has produced and reproduced injustices that help maintain the models of capitalist and neocolonial domination that to this day continue to cause racism, discrimination and even threats to the existence of the indigenous peoples of Mexico (Dunlap, 2018:c; Sierra & Lemos Igreja, 2020). Key injustices regarding energy development in Mexico are intrinsically related to land and need to be contextualised within Mexico's broader historical energy and development landscape.

For centuries peasant and indigenous peoples have been subject to recognition injustices. Only by recognising the abuses of power, discrimination and oppression that the colonialist, capitalist and neoliberal models have exerted on indigenous peoples is it possible to begin to recognisetheir rights to identity, self-determination and difference, as well as to value their ways of life and knowledge.

In the last few decades, indigenous peoples in Mexico have made progress in their fight for land, rights, and justice, but one main issue remains. Although the constitution has recognised plurinationality and their identity difference in its constitutional framework, these institutional recognition is not necessarily guaranteeing real indigenous rights to self-determination and autonomy. These fights demonstrate the ingrained neocolonial and racist logics that limit indigenous rights' justiciability (Sierra & Lemos Igreja, 2020).

As mentioned before, the right to self determination has been limited to the FPIC institutional instrument. Although in some cases, this instrument has the potential to give agency to indigenous communities to decide over their territories by acceptance or rejecting the development projects, this can only happen if people are recognised by the authorities as "belonging" to the indigenous category. In other words,

there must first be an institutional recognition from above regarding who are considered indigenous and who are not. This is problematic because "it re-centres the colonial state as the arbitrator of Indigenous rights, including granting the colonial state the right to determine Indigenous membership" (Coulthard, 2014).

As exemplified in the case of San Jose, energy companies often put great pressure on the government and try to discredit the indigenous identity of communities, in such a way that they did not need to consult them and are able to impose their project. It is unacceptable that elite groups are given the power to decide over the identity of people in order to further their economic and political domination. Renewable energy models that allow these injustices must be avoided.

An institutional recognition presents weak patterns in highly globalised societies. In these societies, the differentiated cultural patterns tend to fade, being absorbed by those that predominate in the dominant society. These peoples, however, claim the right to define themselves through self-definition and self-recognition. The recognition of their group rights implies respect for their ethnic identity, freely determined by themselves. In other words, they claim their right to be different (Aguilar Cavallo, 2006) .

Another important finding was that indigenous communities are subordinate before the law by being recognised as "objects of law" instead of "subject of law".

The example of the attempted de-indigenisation as well as the subordination of indigenous peoples before the law, helped to demonstrate then that, as well as distributive justice and procedural justice -within the current framework of energy justice-, justice of recognition (largely drawn by Fraser (1995, 2001) is also limited and needs to be supplemented if it is to be more inclusive of populations from the Global South.

Fraser's theory of recognition justice is, without a doubt, critical in expanding Rawls' limited idea of distributional justice. She demonstrated that injustices are not just economic in nature but also rooted in cultural and institutional systems. Thus, advocating for more "difference-friendly" societies (Fraser, 2001). Fraser's recognition justice idea, however, is limited by state based solutions, arguing that recognition should occur inside the public political realm, which is contingent upon structural constraints (Fraser, 2001). In other words, Fraser's theory lacks the necessary tools to critique the state's involvement in the (re)production of injustices (Álvarez & Coolsaet, 2020a).

The application of her theories in the energy justice literature frequently precludes a thorough examination of the suitability of a state-led solution to the problem of minority group recognition. For example Álvarez and Coolsaet argues that "Fraser's critique of identity-based and communitarian recognition has kept EJ [Environmental Justice] scholars from fully grasping the importance of local autonomy and self-recognition in overcoming injustices"(2020a, p. 60) I argue that this is also the case for energy justice scholars. Indigenous grassroots organisations increasingly make calls for decentralised non-state institutions that make their communities and modes of life stronger. This was demonstrated in this thesis throughout the communities, struggles for the defense of their communal territories, fighting against the liberal and neo-colonial logic of private property (Álvarez & Coolsaet, 2020a) .

Most of the Mayan communities in Yucatan, as well as other indigenous communities in Latin America (see for example the "communal system" in Bolivia (Paco 2009)), are characterised by a communalisation. That is to say, they organisethemselves in a collective way, posses commununal (or ejidal) land rather than private property, and carry out some sort of self-governance, through the *ejido* and community assemblies. As Escobar argues, struggles "reorganisesociety on the basis

of local and regional autonomy, characterised by social relations and forms of organising which are neither capitalist nor liberal" and this is reflected though "self-organisation focusing in the construction of non-state forms of power" (Escobar, 2014, p. 53-54)

This does not mean that the communities necessarily seek to separate completely from the state. However, these struggles for recognition and self-governance help us understand that, in the case of rural indigenous and peasant communities, energy justice cannot be limited only to the recognition of the state, as seen by most Western scholars. I argue that the energy justice framework must be expanded and included into the dimension of "self-recognition" -meaning the re-valorisation of identity and one's mode of life- (Coulthard, 2014), a dimension which is currently underaddressed in both the environmental and the energy justice literature (Álvarez & Coolsaet, 2020a). This will help to complements and decolonised the currently considered '(liberal/reformist) energy justice framework' (Dunlap, 2021).

A final key finding was that there is a non recognition and discrimination of indigenous knowledge, values and worldviews. This was particularly demonstrated in the development of the Social Impact Assessment and in the perceptions of government representatives interviewed.

The social impact assessments proved to be developed based on purely mercantilist logic and where the intrinsic, spiritual and cultural value that the community gives to territory and natural resources is not taken into account. In the SIA of the four projects, nature was commodified, allowing the deforestation of thousands of hectares for the implementation of wind and solar projects, with the only condition that a monetary amount be paid to the state in compensation. Similarly, several of the natural resources that the community considered sacred, as in the case of the "Yucatan solar" project, the sacred cenote and the jungle around it, in the EIS, were not assigned any type of particular value, They even downplayed the cenote to a "hallow". This lack of recognition of its particular value for nature and natural resources triggered a legal claim by the community that until now has stopped the construction of the project.

Likewise, the authorities demonstrated in their responses and speeches a great disrespect for indigenous values and knowledge, constantly resorting to the need to bring in experts "who really know and who have studied" to explain to the indigenous communities the benefits of renewable energy and why they should accept it. As well as to explain "the value" of the natural resources around them. In such a way that the communities "value and learn from what they have around them". Authorities also ignored, minimised and delegitimise the groups that oppose these projects, saying that they are small groups with particular interests.

All these types of comments - where it is assumed that the indigenous person or the "indian" does not know the real value of things, or of nature and therefore must be taught, reveals the deep racist and discriminatory ideology that has been held since the state apparatus towards indigenous peoples. It is impossible for authorities with this type of racist mentality to lead a fair transition to renewable energy. This is why I problematise top-down transition models and advocate the importance of promoting models from the bottom up led by communities.

Indigenous communities have demonstrated throughout the centuries not only their profound knowledge of nature -through their adaptation to extreme environments- but also their respect and care for it (UN 2017). By leading their ways of life close to and directly dependent on nature, indigenous peoples are more strongly connected to it and have nature in a status of an equal or superior to them, as seen in

the homage and ceremonies to “mother earth”. Natural resources are considered as shared property and are respected as such.

Despite the increased awareness at the international level of indigenous people as "custodians of the land and the traditional knowledge that underpins it", along with their "rights to ancestral lands and the resources they contain" (UN 2017), this recognition does not seem to be reflected on the ground. At the national and regional levels, as demonstrated throughout this thesis, there is still racism and structural discrimination towards indigenous ways of life, knowledge and values.

These condescending and paternalistic governmental comments and discourses are what legitimisethe practices and relations of superiority and inferiority between the dominated and the dominant. By putting the “expert” technocratic knowledge as superior, government representatives promoted a misrecognition of knowledge injustice, also called “epistemic” (Widenhorn, 2013) or “cognitve” injustice (De Sousa Santos, 2011). That is, the belief that forms of knowledge that deviate from dominant rationality are considered invalid. A cognitive injustice, “is the idea that there is only one valid knowledge, produced as perfect knowledge largely in the Global North, which we call modern science” (De Sousa Santos, 2011). It is not that modern science is wrong in principle. What is wrong, or criticised by the “epistemologies of the South” (De Sousa Santos, 2011), is this claim of exclusivity of rigour. In relation to indigenous knowledge, it can be said that a “epistemic inequality is manifest, among others, in the common assumption that modern science is objective and universal, while indigenous forms of knowing are not credible” (Widenhorn, 2013, p.378). This injustice of ignoring other forms of knowledge, cognitive and epistemic, is the worst of all injustices, since it “founds and contaminates all other forms of injustice that we have recognised in modernity, whether they are socioeconomic, sexual or racial injustice, historical, generational, etc. (De Sousa Santos, 2011). Thinking that there is a better or superior way of doing, being and knowing justifies all the practices of domination, exclusion, exploitation and assimilation that have existed from the colony to the present.

8.3 Findings and reflections in response to my second Research Question

This thesis addressed a second main research question:

2. How can Global South theoretical ideas and experiences enhance energy justice frameworks for more socially just energy transitions?

To respond to the above question, the thesis considered the following sub-questions, which will be answered next:

2.1 What can an examination of distributional, procedural and recognition justice principles (or lack thereof) in rural and indigenous contexts tell us about the energy justice framework and just energy transition overall?

2.2 What opportunities can be identified for making energy transitions more sustainable and socially just?

Towards a people centred energy transition. A theoretical framework for a just energy transition

In response to the above questions, this research found that predominant energy justice frameworks including its three main dimensions -distributional, procedural and recognition- allowed to identifying, categorising and evaluating the renewable energy projects injustices and implications - helping me to point out the controversies found in energy transitions processes. However, the normative dimensions shown to be inappropriate and insufficient when applied to Global South and especially indigenous contexts. This study showed that trying to implement energy polices based on narrow universalist top-down ideas of justice is problematic and prejudicial for local communities and for the smooth implementations of energy projects and transitions (Barragan-Contreras, 2021). Therefore, a pluralistic and bottom-up approach was proposed.

Faced with the injustices mentioned in the previous section, I argue that there is a need to build an alternative counter-hegemonic thought that incorporates the visions, values and ways of life of the original peoples, together with their historically excluded cultural paradigms. A notion of justice that includes the recognition of cultural diversity, ancestral knowledge, and nature as a subject of rights. Where the struggles for the defence of life and territory that are threatened by the current energy capitalist model are vindicated and supported. A fair and sustainable transition to renewable energy cannot be considered if the predatory logic of energy generation and infinite economic growth is not questioned. Instead, it is necessary to promote models and philosophies from the south that challenge these prevailing logics. I argue that including the concept and philosophy of Good Living -as the basis of the energy justice framework, is essential. In Figure 8.1, represented in a pyramid shape, I show a graphical proposal of how, from my perspective, a fairer and more sustainable transition to renewable energy could be achieved.

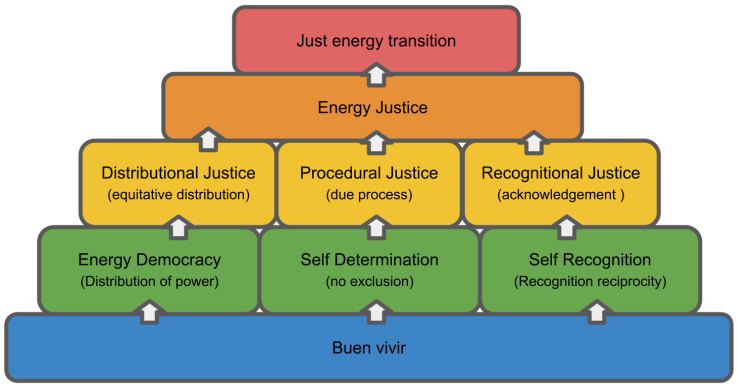

FIGURE 8.1: Towards a people-led energy transition

As shown in the figure, the concept and philosophy of Good Living is the base of this pyramid, which shows its strength and flow that goes from the bottom up. Good Living is the basis of this framework since it represents the values that are fundamental for a transformation and just energy transition. Values such as respect for nature and a conception of justice that conceives of human beings, the non-human world, knowledges and spiritualities as all existing in equal relation Acosta (2013); Escobar (2014); Nova Laverde (2018)

Many academic and technocratic proposals place the concept of sustainable development (Nations, 2015) as the center and basis of a just energy transition. While I do not disqualify the value of these proposals, most of them use what Gudynas (2011c) qualifies as weak sustainability, that is, they do not question the logic of progress and unlimited economic growth that is unattainable within a limited planet of resources. They also follow the anthropocentric current and assume the superiority of scientific knowledge (De Sousa Santos, 2011; Gudynas, 2011c). Faced with this logic of weak sustainable development that shows its failure day by day with the growing crisis of global warming and growing economic and social inequalities. A *super-strong* sustainability logic is needed (Gudynas, 2011c) where a biocentric perspective is prioritised, against material accumulation and in favour of the ecology of knowledge, corresponding to "alternatives to development" (Acosta, 2015; Gudynas, 2011c) , and within these, the Good Living philosophy (Acosta et al., 2009; Gudynas, 2011a; Nova Laverde, 2018).

With convincing clarity, the Quechua native Ollantay Itzamná offers a perspective of the difference between sustainable development and Good Living

> ...Good Living is completely different from the concept of sustainable development. Some analysts mistakenly assume the Good Living as one more phase of the development process. The development is anthropocentric, Good Living is cosmocentric, for the system of development, only humans enjoy rights, for the Good Living, our Pachamama (Mother Earth), the rivers, the trees, the animals, stones, protective spirits, humans, etc., we all have rights and obligations. For development to be sustainable requires trained individuals competing and sacrificing many for few; to enable sumaq kawsay [Good Living], balanced and cooperative coexistence is required in the cosmic community. The development is a flattening roller and uniform that annihilates biocultural diversity, the sumaq kawsay exists to the extent that the different types and forms of life (Ollantay Itzamná, 2014)

The defense of the territory and nature are struggles for the care of the common, for the protection of life. They pose a different grammar to individual interest and, by the principles of relationality and correspondence typical of Andean thought, articulate the spiritual dimension, feeling and thinking, to the understanding of the harmony of the cosmic community (Nova Laverde, 2018). The claims of Good Living give clues about how to think about a society whose link is not the conciliation of particular interests through the market, but rather cooperation as the social essence of humanity. The principles of solidarity, reciprocity, plurality and complementarity between human beings and between them and nature that promotes Good Living (Nova Laverde, 2018). The community life system is intrinsic to Good Living. From this, practices of an alternative democratic community governance can emerged.

From this idea of alternative democratic regimes, I arrive at my next step within the proposed pyramid framework 8.1. In this step I propose the concepts that will complement the dimensions of distributional, procedural, and recognition-based justice. First I start by suggesting that distributional justice needs to be complemented by ideas of "distributional power" as opposed to the limiting idea of the "(re)distribution of benefits and risks" and carried out through inequitable corporate profit sharing schemes. I suggest that adding distributional power represented through the concept of energy democracy is key.

The concept of energy democracy has already been suggested above as an important part of energy justice (S. Baker et al., 2019). Yet this is rarely touched on and

explicitly mentioned within prevailing energy justice frameworks. I believe that this concept of energy democracy -which seeks a transition to renewable energies led by societies from below, groups and individuals, fighting for policies that promote distributed generation models and community energy projects- must be an integral part of a framework of energy justice that aspires to a more socially just and sustainable transition to renewable energies.

In this same step I include the concept of self-determination, which refers to going beyond the widely recommended "better institutional participation". This concept is complementary to the dimension of procedural justice, currently promoted in energy justice frameworks. The concept of self-determination is defined as the right that rural indigenous and peasant communities have to decide on what happens within their territories, but it is not limited to institutional mechanisms such as the "Free Prior and Informed Consultation" -which has demonstrated great deficiencies and dangerous biases in its application from the state- but rather seeks a system of stronger self-governance practices, where -although living within the Mexican nation- they can maintain their own ways of life and protect their territories.

More specifically, within the energy transition, it is reflected in the participation of the communities not only in deciding whether or not they want a state or private project already planned, but also take part in key decision such as 'National Development Plan. were decisions about the kind of politics and energy models are taken. This, so that they can really decide on the energy transitions models that fit within their territories. Broto et al. (2018) has already noticed that, self-determination and energy sovereignty are important concepts to include within the framework of energy justice. However, in the vast majority of existing energy justice literature, this concept is non-existent. I argue that in order to achieve a fairer and more sustainable energy transition in rural areas, self-determination must be incorporated and applied.

Finally, I propose the idea of including the concept of "self-recognition" as a complement to the concept of recognitional justice currently proposed in the frameworks of energetic justice and frequently limited -in theory- and in practice to institutional recognition, that is, within state boundaries. As mentioned above, it is essential that there exist a recognition of the rights, knowledge, values and ways of life of indigenous and peasant populations by the state. This, due to the fact that indigenous communities are currently living within the state range of influence. Therefore, it is critical to have the legal mechanisms to defend themselves against this and other actors who seek to interfere in their territories. However, as shown in the examples of recognition-based justice chapter, this recognition is limited and can sometimes reproduce and produce new injustices. In Coulthard (2014, p.3) words, "the politics of recognition in its contemporary liberal form promises to reproduce the very configurations of colonialist, racist, patriarchal state power that Indigenous peoples' demands for recognition have historically sought to transcend".

In this vein, it is critical to have a philosophy of self-recognition. (Álvarez & Coolsaet, 2020a; Coulthard, 2014). A philosophy of self-recognition means that indigenous identity and customs are revalued for themselves. To explain this concept in more detail, I will use some decolonial literature Álvarez and Coolsaet (2020a); Coulthard (2014); Escobar (2007); Fanon (2008); I. M. Young (2011).

My starting point is that to reach fair recognition, this must be mutual or reciprocal, and has to take place among equals (Fanon, 2008). However, the (neocolonial) Mexican state does not seek Indigenous recognition. Rather, it tries to ensure a legal framework that will allow for steady access to indigenous resources and territories.

As Coulthard (2014) argues institutional recognition do not take into account the interests at the core of colonialism. "What he (the master) wants from the slave is not recognition but work" (Fanon, 2008). Ultimately, material interests in Indigenous 'land, labour, and resources' underpin the reassertion of colonial political authority through recognition politics Coulthard (2014). Due to power relation with the state and the historical injustices suffered by indigenous peoples in Mexico, the parties can not be considered equals. Therefore, in Coulthard's words, following Fanon, there is a "necessity on the part of the oppressed to'turn away from their other oriented master-dependency, and to instead struggle for freedom on their own terms and in accordance with their own values" (2014, p. 43).

Several authors affirm that when people have been subjected to colonising ideas for a long time, they internalisethem as their own (Álvarez & Coolsaet, 2020a; Escobar, 2007; Fanon, 2008). The success of coloniality is making subjects believe that they want what the dominant ideology want them to want (namely, progress, development, modernity) and removes them from their own identity and values (Coulthard, 2014). This coloniality, in the current local context is reflected in the internal divisions of the communities, for example, due to religion or political parties that have come to influence, divide and colonisethroughout history. That is why now indigenous movements are seeking a vindication of their collective memory and identity, which claims to bring back its original cultural values.

Decolonial studies have also demonstrated that the desire of "the oppressed" can be co-opted for particular purposes of "the master" (Fanon, 2008). This was seen, for example, when companies managed to co-opt some people or community leaders so that they persuade, or even threaten, other people to accept the project.

Pablo, intellectual and Mayan activist in defence of the territory, brought up this fact in an interview during my fieldwork:

> It is going to be very important that we manage to rediscover our values that have been taken from us, it is also part of our territory, we have to recover our language and our culture, the advice of our ancient grandparents to know how to correctly exercise autonomy and self-determination. Otherwise, it will be a bit like what Frantz Fanon says, Black skin and white masks, here we are going to do that, our brown skin but our fucking white masks [...] there has to be a re-learning, a sensitivity, an education, the recovery of the values of our own culture, we have to recover that, we have to be men and women of corn [men of corn means men that respect nature, sow the land and never forget to worship the gods who had created them, in reference to the "Popol Vuh" Mayan book] to achieve that, otherwise, autonomy will help us to finish screwing what we have left

Indigenous self-recognition will emerge through rejecting colonial behaviours and ideals while turning inward towards Indigenous worldviews, ideas, values, and practises (Coburn, 2016)

In relation to energy justice, I argue that the concept of self-recognition is needed as a first step before recognition of the state. This will be key in allowing indigenous peoples to organizise and defend themselves from energy megaprojects that destroy and commodify their territory-. And based on this, reflect on the role they would like to play in the energy transition. As R. J. Young (2016) notes, many colonised communities developed a "distinctive postcolonial epistemology and ontology" as a result of this early process of collective self-recognition, allowing them to begin

to think about and create alternatives to the colonial enterprise itself. It is essential, therefore, that beside keeping the struggle for rights recognition from the states, communities begin a progressive redirection of the struggles away from a policy that seeks to achieve state recognition, and direct their efforts to strengthen re-encounter and re-organisethemselves as a community in such a way that they can fully exercise their autonomy and self-determination. It is important to recover the cultural part that colonialism and neo-colonialism have historically and continuously tried to take away from them, and based on this, reflect on the role they would like to play in the current needed energy transition to renewable energy.

To sum up, I argue that we must assess the "justicia" of the transition ongoing and whether it is reasonable and desirable (and for whom). For this to happen, the voices of the most marginalised have to be heard and respected. Propositions from the bottom up should be seriously considered, including aspirations to energy sovereignty through self determination; energy transition led by communities through energy democracy; and the impulse of "alternatives to development" and self-recognition. All of this based on ideas and values such those shown in the Good Living theory, which has the potential to point us towards a more just energy transition and futures. This thesis contributed to advance the energy justice and just transitions literature by bringing novel empirical data as well as complementing with Global South indigenous and Latin American justice and development theories.

8.4 Policy recommendations

After reaching the above conclusions on going beyond the established mechanisms of participation and institutional recognition, tensions can be found in the recommendations of policies. The following questions are opened: whose responsibility is it to enact recommendations, and who will ensure that these policy proposals are met? The state or the communities within their self-determination? Due to the urgency of the energy transition but also the urgency of having protection against predatory megaproject threats, I argue that a joint and coordinated approach is needed. In other words, efforts and changes must be made from both fronts (the institutional and the community; at the national and the local level). A primary recommendation of this study is that there should be an energy transition from the bottom up. To achieve this, profound transformations of the energy, economic and political system are undoubtedly needed. Although this is a monumental task, which some say can only be achieved with a global social revolution, here I will dare to propose some ideas, both of the more "transformative" type and of the "within the status quo" type, so that the chances of forming a more socially just and sustainable transition to renewable energy are increased.

8.4.1 Recommendations within the scope of the current status quo

Some policy recommendations that can help with improving justice issues in renewable energy implementations, which are more amenable to existing policy and political structures, are the following:

In communities where large-scale projects have already been installed, it is crucial to ensure a constant monitoring of projects implications. For this, it is vital to properly evaluate the social and environmental management and mitigation plans set out in the Social and Environmental Impact Assessments (SEIAs), in such a way that potential damages can be prevented and mitigated. Similarly, it is vital that

projects where human rights violations and attacks on human rights defenders are reported, are suspended.

To improve transparency and due process in carrying out the Social and Environmental Impact Assessments (SIAs) of the projects, it is suggested that prompt access to the information contained in these assessments be guaranteed so that external organisations seeking to assess the reliability of these documents can do so before any final decision or damage to the local context occurs. For better reliability of these evaluations, it is critical that the impacts are identified and evaluated together with the community. That is, both scientific and traditional knowledge have the same validity. It is also recommended that the Environmental Impact Assessment (EIA) and the Social Impact Assessment (EIS) are carried out prior to the granting of project concessions by the government in order to guarantee the human rights of the affected population.

Knowing that environmental and social impact assessments are limited to assessing impacts on separate projects, it is critical that the cumulative effects of projects in the region be evaluated. This is primarily due to the increase in the arrival of projects of this type and to the fact that the projects already installed begin to make significant expansions of their initial proposals. To this end, it is proposed that the Strategic Environmental Assessment (SEA) be carried out. The SEA is an environmental planning and management tool whose purpose is to facilitate the incorporation of environmental considerations from the start of the planning process, to ensure that the impact of any project on ecosystems is thoroughly analysed including the participation of local communities in the decision-making(CEMDA 2019). When I finished my fieldwork, a few local organisations began to campaign for the SEA to be carried out. However, so far, no significant progress has been seen on this issue by the government. The realisation of this tool has the potential to lead to a process of greater democratisation of the transition to renewable energies.

To improve not only the distribution of benefits and risks of renewable energy implementations but also the distribution of power, it is critical that the Mexican government generate the appropriate incentives and policies that allow and promote other diverse energy production schemes, such as distributed energy, or community generation that can be produced in the same place of consumption and controlled by the local communities. This could also help reduce energy poverty in towns and communities with restricted access to energy and advance the democratisation of the energy transition process. These initiatives can also be done through joint participation schemes, i.e. designed between developers, State and local communities, but always attempting to reduce negative impacts on the local environments as much as possible.

It is critical that public policies guarantee the highest standards of protection and respect for human rights. In the chapter on public policies, it was shown that the law explicitly allows the violation of human rights on "at least one occasion" and that it puts the interest of projects and companies above the rights of landowners, these practices abusive should be removed from the law. In this vein, it is recommended that energy laws incorporate a non-discrimination policy applicable to the entire energy sector, in order to prevent the sector from contributing to exacerbating structural conditions of discrimination and marginalisation of vulnerable groups.

Protection of the right to land and territory must encompass not just indigenous tribes and peoples, but also peasant groups that have historically relied on agricultural and forestry industries. The majority of Mexican peasants have indigenous lineage, which has been neglected, denied, or disregarded for over seven decades of integrationist indigenist policies. Non-ethnic identity should not exclude peasants

from the present legal protections provided at the constitutional and international levels for indigenous peoples and communities.

All in all, while increasing ambitions to transition to renewable energy is key in the current climate emergency, it is also necessary to carefully evaluate the solutions, technologies and models proposed. In Kumar, Pols, and Höffken (2021) words, "while urgency is critical for energy transitions in a climate-changed world, we must be wary of conflating goals and processes, and inquire what urgency means for due process". It is essential to ensure that the energy transition is not conceived solely as a technical process to change from one form of energy to another, but as a structural transformation of the sector based on principles of environmental protection and individual and collective human rights.

8.4.2 Recommendations from a "transformative" point of view

Implementing measures for a fair and sustainable energy transition will not be easy since the main actors - companies, government and above all the people, as producers and consumers of energy - will be forced to leave their comfort zones and imagine new solutions, roles and ways of living. The current business and governance status quo of energy generation, distribution and consumption have to change. We need to stop the dependence on the same economic thinking that led to the current state of affairs. There has to be a break from economic and energy systems that put profit at the core of the power sector's growth. Energy security and environmental protection are significantly more critical to a society's long-term existence than economic rivalry (Heffron, McCauley, & Sovacool, 2015). Therefore, the electrical industry demands a fundamental rethinking of its economic philosophical basis.

Within this radical transformation, it is inevitable to rethink questions about the ideology of modernity, from which the dominant idea of progress arose, and which in turn has manifested itself in unsustainable development policies. The exploration of any alternative for a more sustainable and fair transition requires addressing the problems of the "modern" condition (generally represented by European and North American culture), and that starts from thinking that there is a model to universalise(Gudynas, 2011c). Universal models and ideas of justice should be rejected. The efforts of the government and civil society, including academia, should be directed towards dismantling the discourses and political positions that presuppose knowing what is true and false, what is rational and what is irrational as if reality were binary. And where other knowledge that goes beyond the anthropocentric is excluded. Due to the fact that different actions and moral, social and economic perspectives must be contemplated, it will be essential to establish a system of governance, monitoring and democratic participation through which the knowledge, interpretations and types of planning of civil, academic society and on all historically oppressed and discriminated groups, on an equal footing, where their alternative suggestions and improvements are worth the same.

Also, dismantle the perspectives of utilitarianism and modernity that reinforced (and continue to reinforce) the colonial ideas of appropriation of extensive territories for their extraction and exploitation of human and material resources. Here, particular attention should be paid to the indigenous peoples, who have been constantly attacked and described as "backward" and who "prevent development". On the contrary, political efforts should be directed to valuing, caring for and learning from their practices, which for centuries have allowed for the care and sustainable use of natural resources. Ideas of radical biocentric environmentalism and Good Living, where different ways of understanding the world are valued and where intrinsic

values of nature are recognised, are necessary. Some countries such as Bolivia and Ecuador have already taken the initiative to establish constitutional rights of nature and have included the principles of interculturality and Good Living. Although the Mexican government has already constitutionally recognised the "plurality of the country" due to its great ecological and indigenous diversity, it is recommended that the Mexican government also consider the constitutional recognition of the rights of nature and the principles of Good Living. This recognition, however, must not remain on paper but must be backed by political will and concrete actions that help to comply with these new rights and principles.

Likewise, a fair energy transition must not lose sight of the "for what" and "for whom" that energy is created. In other words, to question ideas of growth and infinite generation on a finite planet. It is important that public policies consider the energy system as an element of the common good, where energy can be shared equitably, rather than a place where the few who control it get all the benefits. The role of the state must be the guarantor of a just economic and social order that uses the transition to renewable energy as a gateway places the common good and the empowerment of citizens at the centre of all its concerns, especially the most vulnerable. It is vital that the state does not limit itself to technological options and pretend that the cheapest and easiest solutions that the markets advise in the short term are the ideal ones. The solutions must be long-term, from the political, economic and moral point of view.

The power and influence of international markets that integrate conflicting interests and political visions —when not contradictory— and the physical restrictions imposed by current energy infrastructures make the challenge for a fair transition to renewable energies colossal. However, it is not impossible. The final panorama of this transformative change is seen as a more decentralised energy, political and economic system —with meaningful participation of self-consumers— and where decisions are made from the bottom up. Transition models to renewable energies are viewed in favour of a people-centred and people-led perspective.

8.5 Limitations and recommendations for further research

While exploring ideas, experiences, and perspectives of justice in Yucatan, Mexico, this research has found some opportunities for future research, which can improve our understanding of energy justice and renewable energy transitions.

As with the majority of studies, the design of the current study is subject to limitations. Apart from the limitations on positionality and access discussed in the methodology chapter section 3.6, some limitations of this work arise from the scope of the study. Initially, this thesis aimed to compare Oaxaca and Yucatan concerning the challenges and opportunities of implementing more just energy transitions. However, this was not possible due to time constraints in the field. An in-depth comparative study between Yucatan and Oaxaca in Mexico would be very useful. This is due to two main reasons. First, both states are expected to host many renewable energy projects (wind and solar) in the near future. Second, both regions have been characterised as very controversial places for the sitting of energy infrastructure due to their high cultural heritage and the number of indigenous communities living in their rural areas. While some independent research has already been carried out on the impacts of renewable energy projects in both regions, I believe that an in-depth comparative study could provide stronger empirical arguments on energy justice understandings.

This research could also be expanded to other regions of Mexico and other countries. For example, many Latin American countries share similar socio-environmental and political conditions. Developing a comparative analysis between two or more countries could provide further insights into justice issues in energy implementations. These insights could, in turn, help us to possibly make some generalisations regarding best practices and recommendations for energy transitions in countries with similar contexts.

Many different low-carbon technologies have to be assessed to find out the best ways to improve and achieve sustainable energy transitions. Another shortcoming of this research is that it is limited to wind and photovoltaic technologies. It would be helpful to look at and compare the (justice-related) impacts and outcomes of other renewable energy projects (such as bioenergy, hydropower, etcetera).

Different indigenous peoples and native peoples worldwide have been affected by the new invasion of so-called green capitalism, where various "clean energy" projects have come to occupy their territories. Derived from an idea gotten during fieldwork, where an indigenous linguist affirmed that what distinguishes indigenous peoples from other peoples is not race, nor the geography where they live, but the fact of having been colonised - which makes the category indigenous a political category -, I consider that a comparative study on perspectives of injustice between indigenous peoples of the Global North and the Global South could result in findings of great importance, not only for energy justice frameworks but also for decolonial theories.

While this study advances and critiques western understandings and frameworks of energy justice, it continues to rely heavily on terminology and concepts from the Global North. Building on and utilising more global south concepts and frameworks could improve further research on energy justice. Qualitative research that combines the energy justice framework and decoloniality approaches in different regions of Mexico and the world could provide a strong perspective on alternatives to achieve more just energy transitions.

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