

ENERGY JUSTICE IN MALMÖ'S ENERGY POLICY

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Abstract

The city of Malmö is recognized as one of the world's leading cities in the pursuit of sustainable development. The city has established ambitious targets for renewable energy adoption and climate neutrality, aiming to surpass both the European Union target for Sweden and the Sweden's National Plan. However, despite its green development achievements, Malmö faces significant social challenges that coexist and complicate its pursuit of sustainable development. The city has experienced substantial integration, segregation, and marginalization challenges of immigrant population, one of the highest rates of immigration in Europe.

This study explores how the city's strategic energy policies that aim to achieve its environmental and sustainability goals, including the Energy Strategy, 2024 Budget, and the city's Master Plan, consider the coexisting societal challenges and include social equity on the transition to renewable energy. The study explores whether these policies consider the inequalities that vulnerable groups face within the city to ultimately achieve a Just Energy Transition and true sustainable development. Specifically, the study analyses to what extent the core tenets of a Just Transition, distributive, procedural and recognition justice, are present in the policies.

The analysis reveals both the strengths and the areas needing improvement in Malmö's efforts to ensure that its transition to renewable energy is both environmentally sustainable and socially equitable. The paper concludes with policy recommendations aimed at addressing any identified gaps in social equity, enhancing Malmö's pursuit of a truly Just Energy Transition.

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1. INTRODUCTION

1.1 Malmö's background

Malmö, Sweden's third-largest city, has undergone a remarkable transformation over the past few decades, becoming a global exemplar of sustainable urban development. The history of Malmö is marked by resilience and transformation. The late 20th century was a period of economic recession for the city, as traditional industrial activities declined. This challenging period served as a motivation for change, driving Malmö's government to reimagine the city's economic base and urban structure. The city's strategic change towards knowledge and service-based industries was complemented by a strong commitment to sustainability. This dual approach has not only revitalized Malmö's economy but also positioned it as a leader in urban sustainability (Anderson, 2014).

This vision of sustainability set the stage for Malmö's commitments to energy and climate goals. Malmö has established ambitious targets for renewable energy adoption and climate neutrality, aiming to surpass both the European Union target for Sweden and the national plan. The city's Environmental Program and Energy Strategy established these goals, stating that by 2030 all municipal operations would transition to 100% renewable energy, and greenhouse gas emissions should be reduced by 70% compared to 1990 levels (Malmö City Council, 2021). These objectives are notably more ambitious than the EU target for Sweden, which aims at generating 100% of its electricity from renewable energy sources by 2040 (European Commission, 2019). To align with these goals, Malmö became in 2015 the first Swedish municipality to sign the 'Declaration of City Commitment to the 2030 Agenda for Sustainable Development'. This initiative reflects Malmö's local government's belief in the attainability of these targets and shows the city's commitment to environmental sustainability and renewable energy adoption (Malmö City Council, 2021).

To achieve these goals the city aspires to reduce its dependence on fossil fuels and minimize waste streams by converting waste into energy. Malmö significantly relies on waste energy as part of its energy mix. As of the data available up to 2019, about one-third of the total energy consumed in Malmö came from renewable and recycled sources, with a substantial portion of this derived from waste (Galleta & Noriega, 2021). Specifically, the renewable and recycled energy share in Malmö's energy mix has been quite consistent over the years, accounting for an average of 2200 GWh annually. Within this, a considerable amount, approximately 1500 GWh, originates from renewable waste and waste-to-energy processes (Galleta & Noriega, 2021). This reliance on waste-to-energy is a key component of Malmö's strategy to transition towards a more sustainable and renewable energy supply. However, it also creates the challenge of diversifying the energy mix and reducing greenhouse gas emissions associated with waste incineration. To reach its 100% renewable energy goal and foster a more sustainable future, Malmö needs to diversify its energy sources further and invest in renewable energy while promoting circular economy practices and waste prevention (Galleta & Noriega, 2021).

Despite Malmö's ambitious plans for the future, the city faces significant societal challenges that coexist with its goal for sustainable development. A large portion of these challenges are related to immigrant populations from various ethnic backgrounds, who experience economic disparities, residential segregation, and integration difficulties. Malmö's immigrant population represents about a third of the city's total population (Baeten, 2012) creating a hub of multiculturalism and a clash of different ethics, with residents coming from over 180 different countries (Malmö stad, 2023). However, part of it has encountered integration challenges in the labour market. The city exhibits lower employment entry rates for refugees compared to other regions in Sweden (Vogiazides & Mondani, 2019). One reason for this could be the historical significance of industry as a major employment sector for migrants in Sweden, which has suffered a steep decline in Malmö. However, it could also be because Malmö has the highest proportion of refugees in its population compared to

other Swedish cities, which may saturate the job market and leave many without employment opportunities (Vogiazides & Mondani, 2019). Despite its diversity, Malmö's urban planning and neoliberal policies have led to gentrification, marginalizing certain communities, and creating socio-economic disparities (Baeten, 2012). The policies have prioritized high-profile development projects and privatization, prioritizing developers at the expense of public interest and social equity. Projects that have focused on sustainable development, like the Western Harbor and Hyllie, are designed to attract wealthy residents, ignoring the needs of existing lower-income and immigrant communities. This focus on commercial interests and the marginalization of public and social concerns increased socio-economic disparities and segregation in the city, marginalizing certain communities (Baeten, 2012). Furthermore, other socio-economic measures such as the provision of social assistance to unregularized migrants in Malmö shows a complex scenario of inclusion and exclusion (Nordling & Persdotter, 2021). While Malmö has been progressive in some respects, such as extending economic support to unregularized migrants, the city's policies have also become more restrictive over time. Changes in municipal guidelines and the creation of specialized units for processing applications from undocumented migrants have contributed to a more hostile environment, emphasizing a trend towards encouraging self-deportation through restricted access to social services (Nordling & Persdotter, 2021)

In response to these challenges, Malmö has shown recent integration efforts that demonstrate the city's current approach to sustainability. The city's approach goes beyond conventional sustainability efforts, recognizing that true sustainability is not only about environmental and economic measures but equally about fostering a socially inclusive and equitable community (City of Malmö, 2023). Achieving this inclusivity and equitable community in Malmö, means ensuring that the diverse needs of various ethnic groups are considered, since it is a city where a lot of different ethnicities collide, thus if someone's needs are not considered, due to for example their ethnic background, Malmö's idea of true sustainability cannot be achieved. Through initiatives such as the Growth Commission for an Inclusive and Sustainable Malmö, the city is actively working towards improving socioeconomic conditions, promoting equality, and addressing the challenges of sustainable growth (City of Malmö, 2021). By focusing on inclusive growth, the Commission aims to address socioeconomic disparities, with a big focus on those that arise because of ethnic inequalities. It seeks to create a framework where the benefits of sustainable development are shared equitably, ensuring that no one is left behind in the city's journey towards sustainability (City of Malmö, 2021).

Furthermore, all these advancements towards integration and inclusion are tracked by Malmö on their Voluntary Local Review, a study of the progress towards the 2030 Agenda at the local level. Malmö continuous efforts to improve social equity, acknowledge that despite the progress, there is still a need for ongoing work (City of Malmö, 2021). This research seeks to understand if the policies that are being formulated are addressing their goals, particularly in relation to the ethnic disparities that persist within the city. Understanding how the cities strategic policies are formulated by analysing their content will provide valuable insights into the effectiveness and vision of Malmö's just energy transition and highlight areas where additional focus is needed to achieve true inclusivity and equity.

1.2 Problem statement

Despite Malmö's commendable efforts in integrating the Sustainable Development Goals into its policies and strategic planning processes, due to gaps on data the city faces a significant challenge understanding how policies, in this case the Energy Strategy, impact all residents to achieve a Just Energy Transition (City of Malmö, 2021b). A Just Transition, at its core, aims to integrate development for climate action, such as development on transitioning to low carbon economies and renewable energy, with principles of social fairness (A. Stark et al, 2023). Achieving equality in the development

of renewable energy is essential for a Just Transition (Williams and Doyon, 2019) and it is of particular importance to emphasize this in Malmö, due to the accelerated transition that they are trying to achieve with their ambitious goals, since, as Muttitt and Kartha (2020) explain, the more rapid the energy shift, the greater the social cost will be. Furthermore, due to the socio-demographic composition of the city, the research specifically addresses the challenges that vulnerable ethnic groups face in transitions to renewable energy. Although Malmö has incorporated anti-discrimination principles and the rights of national minorities into its sustainability initiatives, there is a crucial need for deeper evaluation to understand the impact of these efforts on different demographic groups within the population (City of Malmö, 2021). One pressing issue that emerges from this is, as stated in their Voluntary Local Review, the limited availability of quantitative and qualitative data that can provide insights into the disparities and inequalities experienced by various groups. Statistics Sweden highlights that certain areas lack statistical data, both nationally and locally, necessary to fully understand how various groups are progressing toward the 2030 Agenda goals. "So, when there are gaps in the statistics, or when there are no statistics at all, it becomes more difficult to say which groups of Malmö residents are at risk of being left behind" (City of Malmö, 2021, p. 58). Additionally, the lack of comprehensive monitoring mechanisms complicates the city's ability to track progress towards achieving equity and social justice goals outlined in the SDGs. Improving these mechanisms is one of the goals in their Environmental Plan for 2030, as the mechanisms in their 2009-2021 plan proved to be very insufficient (Galleta & Noriega, 2021). Addressing these challenges requires additional effort ensure that policies are effectively reaching and benefiting all residents, regardless of their background or demographic characteristics, so that Malmö can truly fulfil its commitment to creating a more sustainable and equitable city for all.

Without comprehensive data on socio-economic disparities, formulating effective policies to address them becomes challenging, and achieving energy justice can be hindered, and this is the main problem around which the study is centered. The historically neoliberal policies that led to gentrification and marginalization of communities plus the difficulties of obtaining complete data, can hinder Malmö's efforts to formulate policies for an effective just energy transition.

1.3 Research objective.

The main research objective is to explore how Malmö's strategic plans, including the *Energistrategi*, 2024 Budget, and Master Plan, address social equity on the transition to renewable energy to achieve a just energy transition, with a focus on ethnicity, due to its diverse population and the historical segregation and inequalities that exist within the city. Given Malmö's efforts to integrate sustainability and renewable energy solutions while also embedding principles of social equity and inclusivity into its urban development, the research wants to achieve its main objective by analysing to which extent the policies truly consider energy justice and aim to achieve equitable benefits for all residents. To do this, the research explores whether the strategic plans approach to sustainability and energy transition effectively include the needs and rights of vulnerable immigrant populations to reduce inequalities.

Based on the document analysis, this thesis will offer recommendations for policy adjustments that could enhance inclusivity and fairness, ensuring that the transition to renewable energy is beneficial for all residents, irrespective of their socio-economic background or ethnicity.

1.3 Research questions

As the primary objective of this research is to analyse how Malmö's strategic policy documents consider and promote a Just Energy Transition, it will be guided by the following main and sub-questions:

Main question:

- How do Malmö's strategic policy documents support a Just Energy Transition? A focus on ethnicity implications.

Sub questions:

- How is distributional justice being included in Malmö's strategic policies to support Just Energy Transition?
- How is procedural justice being considered in Malmö's strategic policies to support a Just Energy Transition?
- How is recognitional justice integrated in Malmö's strategic policies to promote a Just Energy Transition?

2. CONTEXT OF JUST TRANSITIONS

2.1 What is a Just Transition

Climate change is becoming an increasingly urgent issue on a worldwide scale, and in response, economies are increasing their efforts to reduce carbon emissions, resulting in economies transitioning from "brown" industries to "green" sustainable ones. This raises awareness on making sure that the transition that is undergoing is fair and just (A. Stark et al, 2023) and it is expected that the focus on achieving a just transition keeps intensifying (Brown and Spiegel 2019).

The term *Just Transition* has been used over the last recent years by many scholars, yet there is no single universally agreed-upon definition. This is because authors have different ideas of what constitutes the concept of "justice" (Heffron, 2021), which has led to ambiguity and created multiple interpretations, making theory interpretations difficult (Wang and Lo, 2021). Some define a *Just transition* as "a fair and equitable process of moving towards a post-carbon society" (McCauley & Heffron, 2018) and others such as the United Nations International Labor Organization, as a "conceptual framework in which the labour movement captures the complexities of the transition toward a low-carbon and climate-resilient economy, highlighting public policy needs and aiming to maximize benefits and minimize hardships for workers and their communities in this transformation" (Rosemberg, 2010, pp.141).

The concept *Just Transition* was developed to ensure that workers and communities that relied on fossil fuel industries were not negatively affected by the environmental policies that are created to mitigate climate change (Wang & Lo, 2021). The term emerged in the 1970s in the United States, where environmental regulations posed threats to jobs in polluting industries, making labour unions to advocate for financial help for affected workers, and asking for a fair shift to cleaner sectors without disadvantaging those in the declining sectors (Arora & Schroeder, 2022; McCauley & Heffron, 2018). Over time, *Just Transition* has broadened beyond its labour origins to encompass a wider range of concerns, including the need for comprehensive policy frameworks to manage the transition effectively. This includes ensuring that policies not only support displaced workers but also promote social inclusion, poverty eradication, and environmental sustainability across multiple sectors and

communities, showing a more holistic view of societal transformation towards sustainability (Krawchenko & Gordon, 2021; Wang & Lo, 2021). The concept *Just Transition* gained higher global recognition with the Paris Climate Change Agreement, that showed a worldwide acknowledgment of the need for a more rapid transition to avoid disastrous environmental consequences (Arora & Schroeder, 2022), and it has worked its way through influential bodies such as the United Nations Environmental Program (UNEP), where the principles are reflected in their policy documents. (Goddard and Farrelly, 2018). One example is the UNEP and the ILO joint release of "Just Transition Finance: Pathways for Banking and Insurance" in 2023. The document serves as a roadmap for the financial sector, giving guidance for integrating Just Transition principles into banking and insurance practices. The report emphasizes the critical role of the financial sector in creating an equitable transition to low-carbon economies by ensuring that the social and economic benefits are distributed fairly and that vulnerable populations are protected during the transition. (United Nations Environment Program Finance Initiative & International Labour Organization, 2023)

Despite the ongoing ambiguity through the evolution of the concept, there seems to be consensus among scholars that the concept of Just Transition encompasses three dimensions: climate, energy, and environmental (CEE) (McCauley & R. Heffron, 2018; Wang and Lo, 2021; Cha & Pastor, 2022). Each of these three dimensions has their own version of "justice scholarship"—, energy justice, environment justice and climate justice, and they can be defined as follows: climate justice focuses on distributing the advantages and disadvantages of climate change through the human rights lenses; environmental justice ensures that all individuals are treated equally and are actively involved in the creation, and enforcement of environmental laws and policies; and energy justice involves applying human rights principles throughout the entire life cycle of energy systems, from production to disposal (Heffron, 2021).

To accomplish a just transition is essential for the sustainable development of cities because, as Williams and Doyon, (2019) state, "we cannot achieve a sustainability transition without justice, indeed that an unjust transition is not sustainable". In this context, the idea of a Just Transition is becoming more widely acknowledged as an essential element of low-carbon transition regimes, and it must seek fairness and equity in relation to the major global justice concerns, including gender, ethnicity, and income. (McCauley & Heffron, 2018). Justice concerns in low-carbon transitions do not only come from the downfall of the high carbon industries but also from an unequal distribution of benefits. As Wang and Lo (2021) explain, previous studies such as those analysing the representation of women and people of colour in the United States solar industry or the "sacrifice zones" that arise in Germany with the implementation of renewable technology, show that the benefits of employment in the renewable energy sector may not be equitably distributed, potentially leaving out or not adequately benefiting individuals from disadvantaged or underrepresented communities. A just transition approach should ensure that historically marginalized groups are included in decision making processes (Goddard and Farrelly, 2018) to achieve a more equal distribution of benefits. According to Heffron & McCauley, (2018) historically marginalized communities, including low-income populations, and racial minorities, have often suffered the most from economic inequalities, as it is the case in Malmö, and ensuring their inclusion in decision-making processes helps to address past injustices and consider their current needs and perspectives, leading to policies that are more equitable and effective in addressing their specific challenges (Heffron & McCauley, 2018).

2.2 Focus on Energy Justice

Isolating energy issues from larger contexts of environmental and climatic justice can help in the development of suitable energy solutions as well as foster societal mobilization for energy transitions. (Finley-Brook & Holloman, 2016). Energy justice refers to the application of human rights across the energy life cycle (Heffron, 2021), and it requires the implementation of the three tenets of Just

Transition -distributive, procedural, and recognition justice. Distributive justice refers to an equitable share of risks and opportunities; procedural justice, to the ability to access power for decision-making power; and recognition justice involves respect for all peoples and acknowledging everyone's needs. The effective implementation of these three tenets on energy transitions can have a great impact on their social outcome. For example, effective participation of low-income communities and people of colour in energy decision-making can be a catalyst for broader change (Finley-Brook & Holloman, 2016). However, research by Larsson (2019) provides insights into how ethnicity can impact participation in community-based programs and that minorities rarely participate in informal governance structures, which has for access to renewable energy projects. Therefore, applying this point of view and studying Just Transitions through energy justice lens helps to understand where injustices occur, what impacted communities are being overlooked and what processes are in place to reduce such injustices (Jenkins et al., 2016). For example, it has been found that negative impacts from the energy sector, such as air pollution, are often unevenly distributed. In the US. children of colour and people in low-income communities are disproportionately affected by contamination, since power plants, transportation hubs and other high-emission industrial industries are frequently located in disadvantaged communities (Perera, 2016).

In Malmö, ethnicity is closely related to the income levels. In a study by Scarpa (2015), that investigates the relationship between income inequality and residential segregation in Malmö, the author observed that income disparities often correlate with a higher proportion of ethnic minorities in the least wealthy neighbourhoods, indicating that ethnic background might play a role in economic disparities, which shows to have a great relationship with the adoption of renewable energy. In line with this, a study by Andersson and Hedman (2016) explain how economic recessions have deepened income segregation in Malmö, with ethnic minorities often ending up in economically disadvantaged positions.

To combat this effectively, energy transition policies should be in place, but frequently, they increase inequality instead of decreasing it. (Stark et al, 2023). For example, Cipler and Harrison (2020) draw attention to how financial benefits such as subsidies or incentives are frequently given to those who already have the financial resources, thus increasing inequalities.). Similarly, when policies are created to decrease fossil fuel consumption, some remove subsidies on them, which can lead to higher retail energy prices, disproportionately impacting poorer consumers who depend on these fuels for heating, energy, and cooking (Stark et al, 2023).

2.3 The Role of Local Governance in Shaping Energy Transitions

Local governance plays a critical role in shaping energy transitions. As explained by Young and Brans (2017), local governments are key policy entrepreneurs, providing unique knowledge into community needs to transform to sustainable energy practices. They influence greatly energy policy, implementation, and community engagement in the transition to renewable energy (Young & Brans, 2017). Community engagement is essential for energy transitions, as effective transitions require community buy-in, which local governments can facilitate through education and engagement initiatives. Workshops, informational campaigns, and participatory decision-making processes help spread understanding of renewable energy technologies and showcase their benefits, creating public support and encouraging behavioural changes (Pawlowsky et al., 2023). Furthermore, local governments often act as intermediaries, creating partnerships between private firms, non-profit organizations, and community groups. These collaborations can lead to innovative projects and solutions that are more effective than those developed by any single entity alone (Bataneh et al., 2023).

In addition, local governments also take direct action to smooth the path for renewable energy adoption through regulatory adjustments. By adjusting local regulatory frameworks, local

governments can remove barriers to renewable energy adoption and create incentives for businesses and households to convert to cleaner energy sources. (Braun, 2020). Through these and more mechanisms, local governance can profoundly shape the pace and character of energy transitions, making them more sustainable and aligned with local needs and values to achieve a just transition. Thus, through policy formulation, Malmö's government can advocate for equality and justice in all aspects of development, including in the rapid energy transition that they are pursuing, by addressing the diverse needs of its multi-ethnic population

2.4 Energy Strategy policy

The "Energistrategi för Malmö 2022-2030", addressed as *Energy Strategy* in this study, is a policy document that serves as a comprehensive municipal energy plan aimed at addressing the challenges and requirements of Malmö energy system (Malmö stad, 2022a). The Strategy outlines a structured approach to transform the city's energy system into one that is sustainable, resilient, and efficient by the year 2030. Its primary goal is to ensure that Malmö is powered entirely by renewable and recycled energy, significantly reducing greenhouse gas emissions. The policy details four focus areas for achieving these goals, and they are: the security of the electricity system to meet increasing demands, promoting the local production and efficient use of renewable energy, enhancing energy efficiency across all sectors of society, and transitioning to sustainable energy use within the transportation sector. Each of these areas is approached with plans that define three categories to take action on: Precursors, planners and societal actors. (Malmö stad, 2022a).

Furthermore, the Strategy emphasizes the importance of integrating and aligning with other municipal and regional policy documents, contributing to a comprehensive and holistic approach to sustainable development. At global level it aims to align with the United Nations Sustainable Development Goals, specifically Goals number 7 and 13 (Affordable and clean energy, and Climate action), at National Level with Sweden's Climate Targets, at Regional Level with the Climate and Energy Strategy for Skåne, and at Local Level with Malmö City Budget, Master Plan for Malmö, Environmental Program for the City of Malmö 2021-2030, Traffic and Mobility Plan for Malmö and the local roadmap for a climate-neutral building and construction sector in Malmö 2030. (Malmö stad, 2022a).

Overall, the "Energy Strategy for Malmö 2022-2030" is designed to position Malmö as a leader in sustainable energy and urban development, setting a framework for achieving global climate goals, and enhancing the quality of life for its residents through improved energy security and efficiency.

2.4 Aligned policies

Out of the aligned policies at the local level, the two documents that serve as overarching steering documents for all policies are the 2024 Budget and the Master Plan. These plans will influence how the Energy Strategy is implemented, and, for that reason, they are also included in the study.

The Budget 2024 for the City of Malmö outlines financial plans and strategies to navigate economic challenges and foster sustainable development. Its section "A More Equal City" focuses on eliminating segregation and promoting equality across the city. It aims to do that through strategies like enhancing community involvement and combating discrimination. The Budget emphasizes support for vulnerable groups, such as children and economically disadvantaged families, through targeted welfare measures. (Malmö stad, 2023b).

The Master Plan for Malmö 2023 serves as a strategic document that guides the city's development over the next 20 years. It provides a long-term vision for sustainable growth, emphasizing the use of

land and water areas, and the development of the built environment. It aims to inspire and support both public and private sector in their developing decisions by focusing on promoting economic, social, and environmental sustainability, ensuring that Malmö remains an attractive place to live and work. Key strategic directions of the Plan include making Malmö a regional engine for green growth and employment, creating a cultural and democratic living environment, and developing a close, dense, green, and mixed-use city. The plan acknowledges the existing health and welfare disparities within the city, noting that these disparities are often linked to socio-economic factors and the ethnic backgrounds of residents. Efforts are made to improve health outcomes by increasing access to green spaces, recreational areas, and travel opportunities, which are essential for promoting health and well-being across different communities. Recognizing that school performance varies significantly between different parts of Malmö, the plan emphasizes the importance of educational investment, to provide equal opportunities for children from all backgrounds. (Malmö stad, 2022a).

3. RESEARCH DESIGN

3.1 Theoretical Framework

The Just Transition theory is developed and applied through the Just Transition Framework. This framework has been used in many studies that aim to analyse policies through their social impact and their effectiveness in creating fair sustainable development (Arora & Schroeder, 2022; Cha, 2020; Goddard and Farrelly, 2018). The implementation of the Just transition framework consists of addressing the fundamental tenets of justice: distributive, procedural, and recognition justice (Heffron, 2021) for each of the justice dimensions: Climate, Environmental, and Energy. The three tenets of just transitions are applied in every justice dimension by tailoring each of them to their specific context. This results in three other analytical frameworks, one for each justice dimension. This study will focus on applying the tenets in Energy Justice, therefore using the Energy Justice Framework. All the definitions of the concepts that follow are explained as they are defined in Energy Justice literature.

Just Transitions have had various different interpretations, some authors include more justice tenets into their frameworks, such as cosmopolitan justice or restorative justice (Heffron, 2021), but narrowing the focus to just the three chosen tenets of Just Transition ensures adherence to the core implementation of the and the energy justice framework, as they are universally applicable and well-defined. This approach avoids the variability of interpretations found in some literature, ensuring the research remains aligned with the core theoretical aspects of the framework. The three-tenet approach does not rely on specifying principles (such as availability, affordability, etc.), and every study analyses each tenet according to the specific context of their application (Sovacool & Dworkin, 2015).

The following explanation of each tenet includes the criteria that enable their evaluation. This study focuses on criteria that can be related to the ethnic implications in energy transitions, in order to analyse how Malmö's strategic policies address them. The criteria for each tenet have been chosen following Baker et al., (2023) guidelines for robust indicators. They should be "decision-relevant, grounded in the preferences of vulnerable and marginalized communities, understandable, and measurable, even if qualitatively." (Baker et al., 2023)

3.1.1 Distributional Justice:

Distributional justice focuses on an equitable distribution of the outcomes of the transition, it is defined as ensuring that the benefits and costs of a transition decisions are equally shared across all groups (Bennett et al. 2019; Cha 2020), considering both in time and space (Labanca et al., 2020; Heffron, 2021). Another definition or way of achieving distributional justice, although less seen in literature, is by making sure that a transition's benefits are concentrated in the areas and communities where its disadvantages are felt the most (Goddard and Farrelly 2018). Other authors even suggest that sharing the costs and benefits is not enough, but that distributional justice is achieved but by completely removing the negative effects and increasing the positive effects while facilitating greater access to the later ones (Holifield 2001). Distributional justice in energy justice research mainly demonstrates where communities are vulnerable in terms of access or affordability (Bouzarovski and Simcock, 2017; Reames, 2016). In the other areas of Just transitions, such as environmental justice, Ethnicity and race have been a central focus point for scholars and activists when analysing distributional equity (Liljenfeldt & Pettersson, 2017).

Unfair distributional outcomes can be a result of poorly execution of the other two justice tenets, unfair decision-making processes or issues with recognition (Liljenfeldt & Pettersson, 2017). However, often the only way to see that there are real issues with equality in energy systems and their development is to examine them through the distributional elements. (Jenkins et al., 2016).

According to Kluskens et al. (2019), energy justice literature acknowledges three most well-known forms of distribution of benefits to improve the distributive justice: Compensation, Community Benefits and Ownership, and since they also have consistently come up in the research for this study (Arora & Schroeder, 2022; García et al., 2016; Upham et al., 2022), they will be used as the criteria for the analysis. As Kluskens et al., (2019) explain, compensation measures cover the negative impacts of the transition for the individuals affected. However, this form is not the most effective form of distribution, as the distinction between compensation and bribery is sometimes hard to make, and it may raise trust issues and doubts regarding the fairness of the measures. In contrast, community benefits are not limited to a few individuals but provide advantages for the entire community. These benefits are based on the principle of equality, aiming to give everyone involved an equal share of the benefits, such as a locally reduced electricity tariff for the community. Ownership measures can be seen as the most direct form of financial participation. Various forms of citizen involvement exist, with degrees of ownership ranging from investment by shares to full community ownership. Regarding this last one, Baker et al. (2024) points out that the distribution of energy asset ownership is not well-researched, particularly concerning income and race.

3.1.2 Procedural Justice:

Procedural Justice focuses on ensuring that decision-making processes are inclusive and transparent, aiming for fair procedures that involve all stakeholders without discrimination (Jenkins et al., 2016). It particularly focuses on the legal process of taking a project from start through to finish, including planning, development, execution, and end use. It emphasizes whether all stakeholders have a legitimate opportunity to participate or be represented at each stage (Heffron, 2021). Even though the focus of this justice lays on the legal systems in place, it is also influenced by other softer, non-regulatory factors such as practices, values, and behaviours (Jenkins et al., 2016). In relation with the previous tenet, procedural justice takes a step back and emphasizes the importance of the process used to reach a distributive decision, ensuring its quality and fairness. (Schnaudt et al., 2021). Some authors highlight the importance of procedural decision-making power as it facilitates advancements in other areas. For instance, meaningful participation of low-income communities and people of colour in energy decision-making can lead to wider transformative impacts. (Finley-Brook & Holloman, 2016).

Important aspects of meaningful stakeholder participation are who is included and the degree of involvement. The degree of participation is dependent on the timing and the frequency of the involvement of stakeholders. (Klusdens et al., 2019).

As Sweden has ratified the Aarhus convention, its provisions should be followed in all decision-making processes related to environmental issues. The Aarhus convention defines three pillars of procedural justice: access to information, access to participation and access to legal procedures. This will be the criteria applied on the study, in line with what Ramasar et al. (2022) follow.

The United Nations Economic Commission for Europe (1998) defines the three pillars of the Aarhus convention in the following way. Firstly, access to information ensures that the public has the right to request, receive, and share information on environmental issues. Public authorities are required to provide communities with comprehensive and understandable information about energy projects, policies, and their potential environmental impacts. This includes data on energy production methods, emissions, and any environmental risks associated with energy infrastructure. Access to such information empowers communities to make informed decisions and support sustainable energy practices. Secondly, access to participation guarantees the public the right to participate in environmental decision-making processes. Public authorities must involve communities in the planning and decision-making processes for energy projects and policies. This could include public consultations, hearings, and forums where community members can express their concerns, preferences, and suggestions regarding energy developments. Ensuring diverse and inclusive participation helps address the needs and interests of all stakeholders, particularly marginalized groups who are often disproportionately affected by energy projects Brown and Spiegel (2019). And lastly, access to legal procedures provides the public with the right to access legal procedures to challenge public decisions that have been made without respecting the mentioned rights or environmental law. Communities have the right to seek judicial or administrative review of decisions related to energy projects and policies. Access to legal procedures ensures accountability and provides a means to address grievances and protect community interests against unjust energy practices. (United Nations Economic Commission for Europe, 1998).

3.1.3 Recognition Justice:

This tenet explains the importance of acknowledging and addressing the needs, rights, and perspectives of marginalized and vulnerable communities. It addresses whether rights of different groups are recognized as development happens (Crowe and Li, 2020). Recognition justice in energy justice has focused on the effect of energy developments on indigenous communities, but it is not only indigenous communities that deserve recognition for their rights, but many disadvantaged communities also do, as this tenet fundamentally addresses the roots of societal inequality. (Heffron, 2021) Lack of recognition can happen in multiple ways of cultural and political domination, insults, degradation, and devaluation. It may not only involve a failure to recognize but also misrecognizing. There are three main categories of misrecognition (Shelton & Eakin, 2022, pp.21): “cultural domination (dismiss cultural arguments, unquantifiable values), non-recognition (failure to recognize needs particular to certain groups or marginalized individuals), and disrespect (i.e. delegitimizing expressed concerns about a project)”.

According to a literature review carried by N. van Uffelen, in scholarship there have been two methods used to detect misrecognition. Firstly, Honneth suggests that misrecognition can be identified through the large-scale articulation of experiences of injustice and N. van Uffelen argues that, relying solely on personal experiences of injustice is insufficient and not always necessary for detecting misrecognition, as they can be misleading or absent, even when injustices occur. Fraser, on the other hand, proposes detecting recognition injustices through democratic deliberation, involving public debates to assess whether institutionalized cultural values obstruct equal participation. Ultimately, both methods are

not mutually exclusive but complementary. Combining both approaches provides an effective way of identifying recognition injustices.

Due to the nature of this policy analysis, recognition cannot be analysed as the authors above suggest. Instead, it is analysed by focusing on how well the policies acknowledge and aim to address the needs of Malmö's diverse demographic. One approach is by highlighting the potential risks and opportunities in Malmö's Energy Strategy.

A summary of the three tenets that compose the Energy Justice Framework, and the criteria selected to study each of them on Malmö's energy policies is shown in the image below (figure 1)

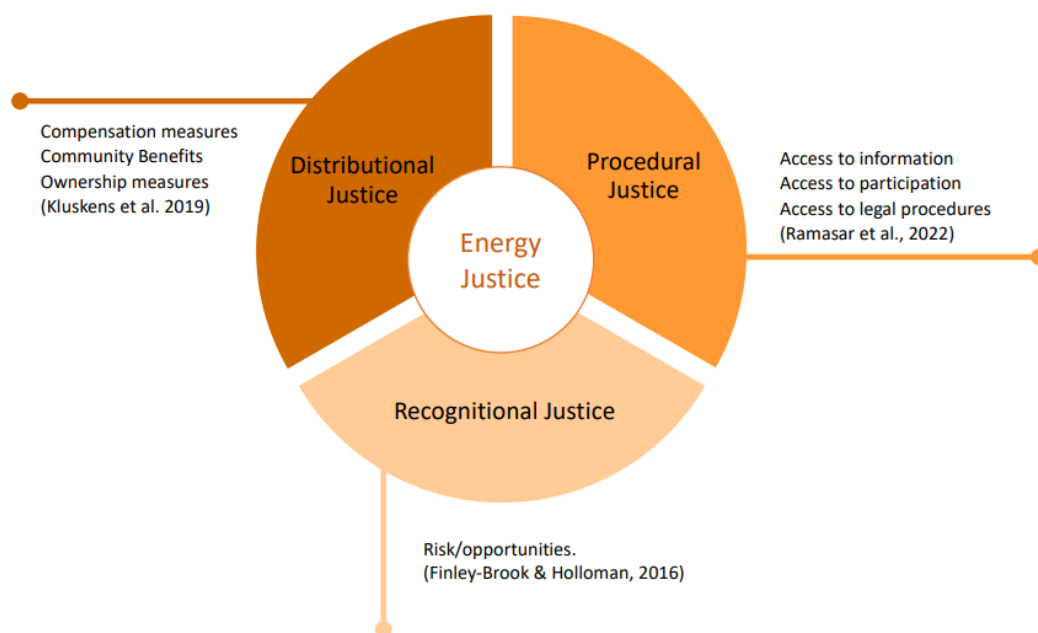


Figure 1 Energy Justice Tenets and criteria for policy analysis.

3.2 Research strategy / Methodology

The first step of the research involved a clarification and unification of the energy justice framework followed by the identification of the selected criteria to analyse it in the policy documents. For this selection a deep literature review about energy justice was necessary, as well as literature review about Malmö, to have a clear understanding of its current social fabric and the elements of the energy policies that could impact social equity. The literature review was conducted by searching on relevant academic databases sources such as Scopus, Science Direct or Google Scholar. On these databases a list of pertinent search terms such as "Energy Justice," "Just Transition", or "Malmö sustainability" was searched. Studies were included based on their relevance to energy justice and urban settings like Malmö, and many of them were part of three specific Journals: "Energy Research & Social Science", "Energy Policy", and "Applied Energy ". Furthermore, an important strategy in the literature review was the snowball technique, which significantly expanded the research. This consisted of reviewing the references and bibliographies of the identified articles that were initially found in the databases to find additional relevant studies. By following citations and references, the research was able to use a considerable number of articles that were not initially found on the database searches. Lastly, the

key policy documents were found in Malmö's townhall official website, providing the latest up-to-date information on the city's Energy Strategy and strategic plans.

Next, with the criteria established, the collection of data from the policies was the second step, done through a content analysis of Malmö's Energy Strategy, 2024 Budget, and Master Plan (see Table 1). The data collection was done following a codebook, to understand how and when the tenets of justice are being incorporated into the policies. The codebook was based on the one used by Looze et al (2024) in their study *Temporalities of energy justice: Changing justice conceptions in Dutch energy policy between 1974 and 2022*, where they analyse the how policies during that period of time address energy justice. The first step to collect the data and implement the codebook was to conduct a keyword search on the three policy documents (Energy Strategy for Malmö 2022–2030, Master Plan, Budget 2024) to identify sections of the policies relevant to the tenets of Energy Justice. This initial search focused on keywords such as "distribution", "benefits", "compensation", "ownership", "access", or "affordability" for distributive justice; "share", "information", "participation", "consultation", "stakeholder" or "community" for participatory justice, and lastly, to address recognitional justice, terms such as "diversity", "segregation", "inclusion", "marginalized", "vulnerable", "and "needs" were searched.

After conducting the keyword search, which allowed to highlight several relevant areas of the policies, a more in-depth reading of the documents was also conducted. This further examination allowed to find and analyse aspects that might not have been captured through keyword searches alone. This includes parts of the policy regarding energy justice that were completely missed by the initial keywords search or, additional information regarding the initial results. While a keyword search might have revealed a mention of " participation," an in-depth read could uncover detailed descriptions of how participatory processes are addressed, who is included, and the extent of their involvement.

Table 1 List of the reviewed policies and their objectives

Steering Documents	Objective
Energy Strategy for Malmö 2022–2030. (Malmö stad, 2022a).	To ensure a long-term sustainable and secure energy supply for Malmö, aiming to reduce greenhouse gas emissions, improve public health, and achieve energy efficiency and climate neutrality by 2030
Master Plan (Malmö stad, 2023a).	To guide the city's long-term development, addressing social, economic, and environmental sustainability to support Malmö's growth.
Budget 2024 (Malmö stad, 2023b).	To provide an overarching policy framework for the city's councils and owned companies, outlining the political vision, municipal council objectives and specific tasks for the year aimed at achieving good economic management for Malmö

Once the data had been collected, the next step was the policy analysis. The study applied the identified criteria to evaluate how the Energy Strategy and the overarching guiding policies consider energy justice and analyses each justice tenet individually. In the process of the evaluation, the study points out key areas where the policies address energy justice, whether good or bad, and in addition it points out possible risks and opportunities of the policies, similar to the approach taken by Finley-Brook & Holloman (2016) in their analysis of the possible decarbonization strategies for transition

policies. One example of the study from Finley-Brook & Holloman is shown in Table 2, and this paper will similarly identify and discuss any risks and opportunities associated with the measures and objectives, or the lack of these, in the policies under review. The reason for adding this approach is because although analysing policy content alone provides valuable insights, it is also useful to uncover the implicit information and potential consequences of these policies. By examining not only what is explicitly stated but also consequences that could emerge from it, the study can reveal underlying issues, hidden opportunities, and unintended consequences. Moreover, identifying risks and opportunities can be very useful for forward-looking policy development. It enables policymakers to anticipate potential challenges and exploit beneficial opportunities, leading to more resilient and adaptable strategies.

Finally, the paper takes the results and the risk and opportunities to provide policy recommendations and adaptations, aiming to address identified gaps in social equity, if they are present.

Table 2 Example of policy Risks and opportunities by Finley-Brook & Holloman, 2016 "Equity and justice potential from renewable energy"

Risks (R) and Opportunities (O)		Justice Type	Sources
R/O	-There are extensive job training and employment opportunities, although these are not always accessible to low-income populations	Distributive	[21,22,65]
O	-Renewable energies can be engines of growth, innovation, and entrepreneurship; they can stimulate urban revitalization and "green recovery"	Distributive	[21,27]
O	-Declining costs make renewables more affordable	Distributive	[31]
R	-There is a rooftop solar access gap with uneven adoption	Distributive	[23,66]
O	-Grassroots organizations include renewable energy access and employment in broader social, economic, and environmental justice campaigns	All	[6,47]

4. RESULTS.

This section presents the results of the analysis, structured around the three types of justice: distributive, procedural, and recognition justice. Each subsection shows how these forms of justice are present in Malmö's policy documents, following the established methodology. Each subsection details the trends of keywords and specific policy sections that discuss and integrate Energy Justice concerns.

4.1 Distributional Justice

Distributive justice is address in the three policy documents to some degree, but it appears to be the least emphasized of the three tenets, as its keywords showed very few results relevant Energy Justice. Although "distribution" was one of the terms that appeared the most out of all the keywords of the three tenets, it is always referring to the technical aspect of distribution, and not to equal or fair distribution, for example, "Production and distribution in the electricity system are adapted for the current and future amount of intermittent electricity production, both local and regional. To achieve this, storage is an important enabler" (Malmö stad, 2022a, pp. 12). When the term distribution does appear underlying a fair distribution, it is referring to other aspects of development, such as urban planning, and not relating to the energy system, "An important prerequisite for participation is an even distribution of recreation, sport, meeting places, culture and entertainment across the city". (Malmö stad, 2023a, pp. 20). The rest of the terms all appeared a similar number of times, not being very

extensive, except for the term “Access,” which did appear a large number of times in the Master Plan. However, similar to what happened with the term “distribution,” most of the times it does not refer to fair energy distribution, but to access of physical spaces. As this happened with many keywords, then in-depth analysis was essential to detect distributional justice elements in the policies relevant to a just energy transition, and it provided the following results.

Before delving into the specific criteria identified for this justice tenet, the analysis found a few statements that overall can be related to distributional justice, for instance, the Budget states that “A key task for the municipality is to (...) ensure that this development takes place in a sustainable way and that the positive effects benefit the whole of Malmö and all Malmö residents” (Malmö stad, 2023b, pp.17). Furthermore, distributional justice can also be noticed when the Master Plan states that Malmö’s urban development aims to ensure that “the energy system is reliable and meets the energy needs of all Malmö residents now and in the future.”(Malmö stad, 2023a, pp.14) This effort includes integrating considerations for “production and distribution capacity and storage” into “all aspects of urban planning” (Malmö stad, 2022a). But, ultimately, to ensure that the benefits of the transition are equally distributed Malmö acknowledges in its Master plan that “major efforts are required to ensure ... all Malmö residents can benefit from it.” (Malmö stad, 2023a, pp. 8).

Focusing on identifying the three most common forms of distribution of benefits that compose the specific framework applied; community benefits, ownership, and compensation measures, each is mentioned to different extents within the strategy. Regarding ownership, its presence was not high, with its main keyword “own” (and its variations) only indicating a couple of relevant results, and others such “equity” or “property” not providing any results. The Strategy sees the potential for community-owned energy projects and the importance of local involvement in the energy transition “Through the city's new energy and grid company, innovative solutions such as energy communities will be tested in collaboration with others.” (Malmö stad, 2022a, pp. 27). It also acknowledges that citizens are starting to own energy systems, “Another trend that is likely to continue is that customers and energy users are becoming increasingly active, and more and more people are moving from being classic energy consumers to being prosumers” (Malmö stad, 2022a, pp.34). Ownership is also addressed in the Energy Strategy by suggesting that Mobility as a Service is an increasing trend and they are putting effort into introducing it to the city and reducing private car ownership, “reduced need for private car ownership and the transfer of trips from cars to walking, cycling and public transport” (Malmö stad, 2022a, pp.34). However, it also predicts “a strong increase in electric vehicles” (Malmö stad, 2022a, pp.7) and aims to “Promote and facilitate electric vehicles” (Malmö stad, 2022a, pp.25) and improve the necessary infrastructure, “a growing share of electric vehicles requires society to keep up.” (Malmö stad, 2022a, pp.32).

The second criterion of distributional justice, community benefits was not identified in the policies. One of the last sections of the Master Plan, “Guidelines with maps” shows several development projects that intended in different geographical areas of Malmö, therefore, different communities. These mapped guidelines show the intention of future energy projects in the areas that are more suitable for them, for example, “The City of Malmö's ambition to contribute to a more long-term sustainable and secure energy system means that an expansion of Lillgrund's existing wind farm is proposed as a future possibility” (Malmö stad, 2023a, pp.92). However, no statements were found that could support this type of distributional justice in ensuring a fair energy transition, as there are no energy development projects that aim to benefit certain communities over others with the explicit goal of achieving a more equitable distribution of resources. This means that, focusing on what is relevant to this study, no community benefits explicitly addressing disparities or injustices faced by vulnerable ethnic groups are present.

Lastly, the third form of distribution of benefits, compensation measures is explicitly mentioned in both the Strategy and the Master Plan, but in both with limited information. The Strategy promotes the implementation of compensatory measures for emissions that cannot be avoided, as part of a

broader commitment to reducing the city's overall carbon footprint "Promote the development and implementation of compensatory measures for unavoidable emissions from fossil recovered energy." (Malmö stad, 2022a, pp.19). And the Master plan states that "Methodologies such as compensatory measures, evidence from social impact assessments or cultural life analysis provide guidance on certain issues." (Malmö stad, 2023a, pp.10). Both policies lack an explanation of how compensatory measures should be practically implemented, which can generate potential risks, as the transparency of compensation measures is essential in energy policy, discussed further in the next section.

Overall, the documents want to communicate that Malmö is aware that "Urban development should contribute to equal access" (Malmö stad, 2023a, pp.19). However, as happens with compensation measures, the information provided also lacks specification and concreteness. For instance, the energy strategy aims to achieve its second focus area, *Local resource-efficient and renewable energy supply*, by "Promoting the development of renewable fuel production and distribution using various urban planning tools." (Malmö stad, 2022a). While it outlines goals for distributing renewable fuel, it lacks specifics on the distributing process, the possible urban planning tools, and does not include goals for equitable or fair distribution.

4.2 Procedural Justice

Procedural justice appears to have been a greater focus point of Malmö's efforts when developing the policy documents than distributional justice was. Keywords like "participation" and "information" are very recurrent in the Master Plan and Budget, where they are mentioned significantly more often than those related to distributional justice, and they often hold relevance for a Just Energy Transition. In the Energy Strategy however, these keywords did not reveal as much relevant information as in the other two policies, especially regarding access to participation. The policies integrate procedural justice by emphasizing access to information, access to participation, and legal procedures in the following ways.

The importance of participation is mentioned in the Master plan from the very beginning. The preface, signed by the Chair of the Municipal Executive Board, states that "In short, it is a plan that aims - together with Malmö residents, associations and businesses - to build Malmö fully and sustainably." (Malmö stad, 2023a, pp.6) mentioning from the start that it aims to involve the residents. Furthermore, the plan has three priority areas and one of them (*the city as a cultural and democratic living environment*) aims to "stimulate democracy and participation" (Malmö stad, 2023a, pp.7) arguing that "The city is socially strengthened by citizen participation" (Malmö stad, 2023a, pp.7). The Master Plan also understands that society is constantly evolving, and forms of participation must evolve with it, "Forms of cooperation that work well today and the participation of Malmö residents in building a sustainable city also need to be further developed" (Malmö stad, 2023a, pp.11). The documents emphasize access to participation through the importance of involving different groups in strategic planning processes early on from the initial stages "Early involvement and participation of different groups should be implemented in strategically important plans." (Malmö stad, 2023a, pp.20). The Master plan also states that "co-creation, local knowledge and anchoring should be the basis for the work" (Malmö stad, 2023a, pp.15) guided by principles so that processes and their implementation "are inclusive, create flexibility and open up for difference and diversity" (Malmö stad, 2023a, pp.15). Furthermore, truly relevant the case study of choice, the budget 2024 states that "For Malmö's councils and companies, this means working with active inclusion and participation, together with Malmö residents and against all different types of racism, xenophobia and discrimination, based on Malmö's human rights policy." (Malmö stad, 2023b, pp.28).

All these statements mentioned show good implementation of Energy Justice in policy formulation, however, it is important to analyse what type of participation is really taking place, since participation can take different forms, ranging from informing to consulting to partnership and delegated power (Kluskens et al., 2019). The policies do not specify any preferred or desirable type of participation, but

if we analyse the processes through which these policies were created, as they do provide this information, we can gain insights on the methods of participation that Malmö employs. The Master Plan was created through a process of consultation, but the energy strategy says that it is primarily drafted by the government, govern companies, and private energy companies, and there is no evidence of consultation or any other form of participation of society, and less so vulnerable groups. This leads to believe that the energy strategy did not have any public participation or if it did it was at informing level. The consultation process of Master Plan happened on the preparation phase when “drafts of the comprehensive plan are made available for two periods, consultation, and review, to give citizens and other stakeholders the opportunity to comment on the proposal. All written comments are collected and reported in the consultation report and the review report”. The document of this consultation is available to the public, and it showed that residents' associations like the tenants' association or the student association were involved (Malmö stad, 2022b). This shows a practical example of how they incorporate access to participation in policy formulation and is likely the best and most clear real-life implementation example of participation in the documents.

Moving on to access to information, this pillar is also very present on the policies, with most of the relevant results coming up when directly searching for the keyword “information”, frequently used in the documents. The policies highlight the importance of clear and continuous communication to achieve trust and counteract misinformation. This involves “clear communication are vital to achieving the Energy strategy” (Malmö stad, 2022a, pp.9) in which it also says that “it is crucial to have a broad and open dialog, both within the City of Malmö's operations and with external actors as well as residents and workers in Malmö. The forms for dialogue need to be developed in the continued work on energy issues” (Malmö stad, 2022a, pp.9) The Energy strategy explains that the municipality has the role of planner but also of a societal actor, which means that as a societal actor it should be “continuously contributing to knowledge sharing by actively participating in various forms of networks and collaborative functions” (Malmö stad, 2022a, pp.11). The Energy Strategy acknowledges that “the role of the municipality as a driving force and information provider should not be underestimated” (Malmö stad, 2022a, pp.16), pointing out its capacity to “provide targeted information on economically and environmentally suitable energy solutions.” (Malmö stad, 2022a, pp.17). An example of this targeted information is explained when it addresses the electrification of transport as part of the fourth focus area of the strategy. The municipality states that it should “Promote information dissemination and skills development on renewable fuels, electric vehicles and the possibility of installing a charging point at home”. (Malmö stad, 2022a, pp.25). Another example of targeted information is on the transition of the energy supply for homes, as it is stated that “Through information initiatives and support, the City of Malmö can make it easier for Malmö's gas network customers to switch to biogas. Work on knowledge building in networks at all levels for a holistic perspective and increased focus on energy issues “(Malmö stad, 2022a, pp.18). However, it is evident that none of these targeted information efforts aim to address inequalities among residents, highlighting an opportunity to incorporate such considerations into the policy.

Finally, the last pillar of the Aarhus convention, access to legal procedures, was searched through keywords such as “accountability”, “rights” or “legal” but no relevant information was found in the policies. The Energy Strategy does not explicitly explain the available legal procedures for the residents in the development of activities but does include ensuring compliance with other relevant national legislation in environmental and health protection, as well as planning and construction laws. The City of Malmö's goals to transition towards a sustainable energy system involve adhering to these legal frameworks, but other than confirming compliance with other with other legal documents, legal procedures are not present further in the Energy Strategy nor in any of the other two policies. This omission poses a potential risk. The absence of legal standards for energy access can lead to unintended negative outcomes and may exacerbate disparities in global energy access (Heffron and de Fontenelle, 2024), further explained in the following discussion section.

4.3 Recognitional justice

In Malmö's policies, the concept of recognitional justice is particularly interesting because while it is highly incorporated into the city's key overarching policy documents, the Master Plan and Budget, it is completely overlooked in Malmö's Energy Strategy. In the Strategy neither the keyword search nor the deeper analysis showed any meaningful mention of recognitional justice addressing the disparities that exist within the city related to vulnerable or segregated groups. The Master Plan and Budget, on the other hand, did highlight numerous instances where recognitional justice was addressed.

Malmö's 2024 Budget aimed to reduce welfare disparities and promote social cohesion across the city. "The continued development of Malmö will actively counteract segregation, contribute to a necessary climate position and build a mixed city." (Malmö stad, 2023b, pp.20). The Master Plan acknowledges the significant welfare disparities within the city, noting that "gaps within the city must be reduced (...) welfare disparities are high within the city. Despite strong development in some areas, there are major challenges in securing welfare for all." (Malmö stad, 2023a pp,9) It explains further that these disparities are particularly pronounced "between Malmö residents born in Sweden and those born outside Europe" (Malmö stad, 2023a, pp,9). Having taken the first step of recognizing these disparities, one of the main goals of the Budget is "to ensure that the city is free from segregation." (Malmö stad, 2023b, pp.7)

The Master Plan approach to development and planning is guided by the principle that "positive forces arise in the meeting between people with different conditions and backgrounds." (Malmö stad, 2023a, pp.13). Malmö's municipality acknowledges that "different groups use the city in different ways and have different experiences, backgrounds, and needs that should be made visible in the planning to create good conditions for all Malmö residents." (Malmö stad, 2023a, pp.15). It also calls to prioritize understanding "the needs of different groups for good living environments" (Malmö stad, 2023a, pp.18) as foundational elements for urban development. This inclusive approach is intended to be mirrored in the Energy Strategy, which asserts that "energy and power needs should be considered early in the planning process." (Malmö stad, 2022a, pp.22), however, unlike the Master Plan, it does not recognize the specific needs of different groups.

The two overarching policy documents are full of considerations of recognitional justice that showed up easily when looking for keywords, requiring minimal deep analysis, since all the references were highly relevant for Just Transitions. For example, Malmö embraces its diversity with pride, "Malmö is the world, the world is here. Differences, life experiences, and talents make us a smart city in the heart of Europe." (Malmö stad, 2023b, pp.8) and assures its commitment to listen and learn from previous injustices and policy decisions, "Malmö listens, learns and does. Malmö is a brave city that learns from its mistakes and dares to admit their shortcomings." (Malmö stad, 2023b, pp.8), and aims to create an environment of inclusion and respect, "In Malmö we want to understand each other. There is community and solidarity, people are kind here." (Malmö stad, 2023b, pp.8). Statement that shows Malmö's acknowledgement of their status as a multicultural city and its willingness to achieve deep inclusion and eliminate recognitional injustices.

5. DISCUSSION.

Malmö is clearly aware of the diverse social fabric that composes its city, as well as the disparities and inequalities that exist within it. Its awareness and willingness to target inequalities is reflected in the policy formulation. However, the analysis indicates that principles of Just Transitions are implemented with different emphasis in Malmö's policies. It shows that procedural and recognitional justice are more present in the policies than distributional justice is. The frequency and emphasis placed on the

first two types of justice are significantly greater, whereas distributional justice is barely integrated throughout the policies. Furthermore, the results reveal significant differences among the policy documents, which is the basis for the structure of this section. The Energy Strategy fails to adequately include considerations of energy justice, while the Budget and the Master Plan perform better, particularly concerning the above-mentioned procedural and recognitional justice.

The main policy in this study, the Energy Strategy, fails to properly include the tenets of Just Transition. Although it states it relies on other central steering documents such as the Master Plan and the Budget, where segregation and disparities between residents are well acknowledged, the Energy Strategy itself completely lacks that awareness, thus, it does not integrate recognitional justice. It doesn't mention the specific needs that different people have on the energy transition, focusing solely on developing an energy transition from a technical and technological perspective, ignoring every issue related to the city's social challenges.

Regarding participatory and distributive justice, the Energy Strategy is formulated around four focus areas, and the results showed that none of them considers inequalities in the energy system. The four areas are focused on the technical aspects of an energy system such as efficiency, reliability, and renewable energy, which alone, are ineffective to achieve a just transition if vulnerable groups find barriers to access energy systems in the first place. According to García-García et al., 2020, policies must remove the barriers so that the collectives that have them benefit in equal conditions of the transition benefits, such as energy efficiency programs. Focus areas number two and three discuss energy efficiency. According to Finley-Brook & Holloman, 2016, since electricity costs represent a larger portion of the budget of low-income households, efficiency programs could offer greater relative benefits to these households, however, it comes with risks to be aware of. The same authors also point out that there is a distributive risk as efficiency upgrades are often out of reach for low-income populations because they may not have the financial means to cover upfront costs or may not own their homes, making it difficult to implement these improvements. Contemplating this risk in the Strategy and assuring that the energy efficiency goals reach all of Malmö's population specifically targeting vulnerable groups, would be a good opportunity to capitalize on and improve the policy. Focus areas two and four, which are '*Security of supply of the electricity system*' and '*Energy and resource-efficient society*' respectively, emphasize the adoption and investment in renewable energy, a theme that appears throughout the entire document. Having high investment of renewable energy as the main decarbonization strategy may also come with a set of risks. For example, Finley-Brook & Holloman (2016) explain that a distributional justice risk is that while many job training and employment opportunities become available, they are often inaccessible to low-income populations. Although this is contemplated in the Budget, "jobs that have emerged have not sufficiently matched the skills and qualifications of Malmö residents" (Malmö stad, 2023b, pg.17) and in the Master plan "The City of Malmö will work to create a variety of jobs with different qualification requirements" (Malmö stad, 2023a, pg.21), it not addressed in the Energy Strategy itself, and according to Sievers, et al. (2019), ensuring qualified jobs must be a focus on all transition policies.

The results also show that the Energy Strategy has put a considerable amount of focus on the transition to electric mobility. Studies show that disadvantaged communities experience significant disparities in the adoption of electric vehicles (Hardman et al., 2021), where income is the most common barrier (Baker et al., 2024). Once again, acknowledging this barrier lacks in the strategy, and it could be enhanced. Other improvements that could also benefit the Strategy are regarding compensation measures. When creating energy policy, it is important to emphasize transparency and timing in offering compensation to avoid perceptions of bribery. The timing of when compensation is given can significantly impact public perception. Offering benefits too early or too late can be construed as attempts to buy support or silence opposition (Cass et al., 2010). Furthermore, studies suggest that public compensation (initiatives or improvements that benefit the local community as a whole) is more acceptable than private compensation (cash payments) as private compensation is often seen as

bribery (García et al., 2016). Due to this risk of distributional justice, the documents should provide a more clear definition of the compensation measures and how they intend to implement them.

The strategy mentions Malmö's willingness to develop community-owned projects which can have a high potential to achieve a fair distribution of benefits (Norbu et al., 2021). However, Ramasar et al. (2022) found that in Sweden, people perceived significant difficulties in accessing information on how to engage in small-scale energy production. The main issue was the established monopoly of large energy producers, leading to an energy system that excluded small-scale producers through complex legal frameworks. Related to the lack of information regarding community-owned projects, the strategy did show a few results considering positively access to information, as it acknowledges that the municipality has an important role as an information provider. However, none of the examples provided could be related to the study of choice with a focus on vulnerable groups, and once again, was to be focus on spreading technical information rather than targeting specific needs of vulnerable groups.

Overall, the Energy Strategy lacks emphasis on how its goals will equally benefit Malmö's residents, appearing to prioritize a clean transition over a fair one. It could be argued that the Strategy tries to show certain commitment to fairness by aligning with SDGs 7 and 13, which, according to Zaidan and Ibrahim (2024), these SDG are one of the foundations where energy justice can emerge. However, the strategy only mentions them once in the introduction and doesn't reference them again, and similar to the policies being studied, it is said that the SDG are also vaguely formulated and lack specific, actionable steps to address the intricacies of energy access and climate action (Zaidan & Ibrahim, 2024). Consequently, when it comes to tackling the social challenges that Malmö faces, this vagueness affects negatively the capability of these SDGs to effectively address the inequalities faced by vulnerable ethnic groups in the city, making them insufficient to argue that the Energy strategy truly aims for a just development.

The Master Plan and Budget differ a lot from the Energy Strategy, they show a much greater aim for achieving a fair development rather than a clean and efficient one. This is clear from the start, as the Master Plan's preface emphasizes citizen participation, and both documents include goals that are focused on the people and the social disparities rather than on efficiency and technology. They aim to eliminate segregation and promote equality, recognizing welfare disparities within the city and linking them to ethnic and cultural backgrounds, aiming that all communities benefit from sustainable growth and urban planning initiatives. The two tenets of Justice that are integrated best in these two policies are recognitional and procedural justice, with distributional justice related specifically to energy development remaining absent, and not offering much room for discussion. Out of the first two mentioned tenets, procedural justice holds the most potential for further discussion, as recognitional justice is already deeply embedded in the policies.

Regarding procedural justice the results show many instances where participation is positively considered, however, the policies do not specify any preferred or desirable type of participation. They show that The Master Plan was created through a process of consultation, but a risk of this for this type of participation, this form of participation does not have any mechanisms to assure that the opinions are taken into account (Klusken et al., 2019). The results when analysing participatory justice are in line to what A. de Looze et al. (2024) found in their analysis of Dutch policies, the study that served as a basis for this policy analysis. They observed that procedural principles have been increasingly considered, but they are mainly framed around the ideas of acceptability and public consensus. The extent and quality of public inclusion, particularly the representativeness of cultures and backgrounds invited to participate in decision-making and their contribution to energy justice, should be further investigated.

Access to information is also positively considered in the two policies, however, as its actual implementation cannot be measured, it is important to point out that other studies in Sweden show

that people often find it difficult to access information. A review carried by V. Ramasar et al. (2022) reveals that information flow has been hindered on many occasions, for example information for affected Sami communities about land use for wind power projects was hindered by state-appointed agents. Additionally, citizens have felt poorly informed about the technology used in energy projects, as seen in the case of the wind farm near Vellinge, a municipality in the same county as Malmö, where locals complained about a lack of technical and financial information. Despite all these examples of hindering access to information in Sweden, Malmö's policies take a step in right direction and seem to guide development so that these issues on access to information are effectively targeted.

Lastly it is important to address the omission of the access to legal procedures that the results showed. This omission poses a potential risk. The absence of legal standards for energy access can lead to unintended negative outcomes and may exacerbate disparities in energy access (Heffron and de Fontenelle, 2024). There is often a significant gap in power between those who make decisions and the of most affected by energy access issues. This power imbalance can lead to inequitable outcomes, as the actors with the power may prioritize their interests over public benefits. (Sareen & Haarstad, 2020). Policies for sustainable energy transitions must address these power imbalances by stablishing strong accountability mechanisms that ensure all actors, particularly the most vulnerable, have a voice in decision-making processes. This involves not only creating legal standards for energy access but also ensuring that these standards are enforced through accountable governance structures. (Sareen & Haarstad, 2020). The absence of standards, however, is not surprising, given that the discourse on energy access has predominantly focused on defining energy poverty rather than establishing the legal measures or thresholds needed to alleviate it (Heffron and de Fontenelle, 2024). This focus has shifted attention away from creating enforceable legal frameworks that could provide consistent and equitable access to energy.

An interesting finding of the study, similar to what A. de Looze et al (2024) found, is whether the principles that dominate energy justice in current scholarship, while useful for conceptualizing injustices in theory, may limit our understanding of energy justice and, consequently, the fairness of energy policy. Instead of attempting to fit societal perceptions of justice or injustice into the tenets, a more contextualized approach might be necessary to how a just energy transition should be (Hoffman et al., 2021).

Finally, it is necessary to acknowledge the limitations of the study. One of the primary limitations is the impossibility of analysing all relevant documents comprehensively. Malmö's policy framework is extensive, encompassing numerous documents across various sectors. This study has focused primarily on the Energy Strategy and two central steering documents, the Master Plan and 2024 budget, but policies are often interconnected with various documents and strategies, and the energy strategy says that it was drafted with a system perspective and that it is central to the strategy to create synergy between policies. As such, it is possible that other documents such as the Environmental Program for the City of Malmö 2021–2030 or Malmö's Social Bond Framework, which were not included in this analysis, contain more detailed plans addressing social justice and equality in energy systems. However, Miller et al. (2015) observe that the energy systems approach frequently overlooks the social dimension, and that energy policy and governance rarely has a systemic organization. Instead, energy governance is often handled in a fragmented way, by sector or scale, leading to challenges in cross-jurisdictional coordination, which would hinder the effective alignment of different policy documents.

6. CONCLUSION

Starting by answering the main question of the study, '*How do Malmö's strategic policy documents support a Just Energy Transition?*' the analysis of Malmö's energy policies reveals both strengths and areas needing improvement in the pursuit of a Just Energy Transition. Malmö's policies show a mixed

approach to addressing a Just Transition, with significant variation in how well they incorporate the principles of distributive, procedural, and recognitional justice. The Master Plan and Budget reflect a strong commitment to procedural and recognitional justice, emphasizing inclusive participation, access to information, and acknowledgment of social disparities. These documents aim to involve vulnerable groups in decision-making processes and address segregation and welfare disparities. However, distributive justice is less emphasized across all policies, often lacking clear measures to ensure fair distribution of energy resources and benefits. The Energy Strategy is more focused on technical aspects of energy systems, with minimal consideration of social equity and justice. Overall, while Malmö's Master Plan and Budget indicate an awareness and intent to support a just transition, the Energy Strategy falls short, highlighting a need for more integrated and concrete policy to ensure that all residents benefit equitably from the energy transition.

Answering the first sub question *'How is distributional justice being included in Malmö's strategic policies to support Just Energy Transition?'*, the Energy Strategy, while ambitious in its technical goals, lacks comprehensive integration of distributional justice. Although the Master Plan and the 2024 Budget show greater alignment with principles of social equity, they still require more clear explanations of how the benefits of development are going to be equitably shared. The Energy Strategy's focus on technical aspects over social dimensions indicates a need for a more balanced approach to ensure fair distribution of energy transition benefits among all residents, especially marginalized ethnic groups. Moving on to the second sub-question, *'How is procedural justice being considered in Malmö's strategic policies to support a Just Energy Transition?'*, the policies analysed show better alignment with procedural justice principles. Malmö's policies aim to improve public participation and inclusivity in decision-making processes. The Master Plan and the Budget highlight the need for early involvement of different groups in strategic planning. However, the Energy Strategy does not integrate procedural justice as properly and lacks mechanisms to ensure that these participatory processes are effectively implemented in the energy transition. Additionally, while access to information and participation are well-addressed, there is a need for more transparent legal procedures to allow vulnerable communities to challenge energy decisions that do not respect their rights. Lastly, regarding final subquestion on recognition justice, *'How is recognitional justice integrated in Malmö's strategic policies to promote a Just Energy Transition?'* Malmö's policies, particularly the Master Plan and the 2024 Budget, emphasize the importance of recognizing and addressing the needs of its diverse population. However, once again, the Energy Strategy does not sufficiently incorporate the awareness about specific needs of different demographic groups into its framework.

These main findings of the study show that the Energy Strategy could not work as a steering document on its own, potentially causing unintended consequences if companies, residents or other societal actors understand it as such. Therefore, one of the main policy recommendations of this study is to enhance the consistency of the Energy Strategy with its related policies, and also include within the Strategy itself considerations for disparities that arise from Malmö's diverse social fabric. As García-García, et al. (2020) state, transition policies must be consistent between them, driven by a long-term vision with special emphasis on the participation of workers. Another policy recommendation, regarding all the documents, is to improve the specificity of the information provided. This does not mean including step by step plans. While policy documents are not intended to be detailed action plans, including specific possible mechanisms and policy instruments to address mentioned challenges could enhance the clarity and better guide the transition process. Lastly establishing within the policies themselves robust mechanisms to monitor the impact of energy policies on various vulnerable and ethnic groups would be highly beneficial. Although the 2009 Energy Strategy highlighted the need for a " For the next strategy the Energy Strategy for Malmö 2022-2030 is proposed a clearer and more ambitious monitoring and evaluation plan" (Malmö stad, 2022a, p. 40), the analysis revealed a lack of clear monitoring or evaluation mechanisms, and more work is needed moving forward.

Overall, understanding the three sub questions, the study shows that Malmö's Energistrategi, while robust in its technical and environmental ambitions, falls short in effectively supporting a Just Energy Transition, particularly concerning the needs and implications for its ethnically diverse population. The Strategy lacks comprehensive measures to address distributional and recognition justice, which are critical to ensuring that all demographic groups benefit equally from the transition to renewable energy. Although the Master Plan and the 2024 Budget show a stronger commitment to social equity, the Energy Strategy itself requires significant revisions to integrate these principles fully and effectively. Therefore, to truly achieve a just energy transition, Malmö should enhance its Energy Strategy to address social equity more comprehensively, ensuring that the transition benefits all residents, and leaves no one behind, especially marginalized ethnic groups.

One limitation of this study is the narrow focus on the Energy Strategy, Master Plan, and 2024 Budget, a comprehensive analysis of other related policy documents could provide further insights into Malmö's approach to social justice and equality in energy transitions. For future research, it is essential to broaden the scope to include a wider number of policy documents to gain a more complete understanding of Malmö's efforts towards a just energy transition. Additionally, future research should also assess the real-world implementation of these strategies, and how the energy justice principles reflected in the policies translate to real-life consequences, particularly how they affect marginalized ethnic communities. For this, the previously mentioned development of better mechanisms for monitoring and assessing the impacts of energy policies on different demographic groups will be crucial. Equally important is the need of future research to conduct interviews with policymakers, residents and other societal actors, as these interviews will provide necessary firsthand qualitative data and valuable insights and into the effectiveness and fairness of these policies in practice.

Malmö still has the potential to enhance its energy strategy to achieve a Just Transition , as the pursuit of energy justice is an ongoing and dynamic process. It is important to tailor energy justice tenet to specific contexts to avoid rendering them ineffective. A broad-brush approach, while valuable for emphasizing the significance of energy justice, may fall short in tackling the unique problems faced by different communities in Malmö (Heffron and de Fontenelle, 2024). Malmö does well tailoring its policies to address the city's specific context, emphasizing ethnic considerations, given the city's diverse demographic composition. The Master Plan and Budget recognize the disparities within the city, particularly between Malmö residents born in Sweden and those born outside Europe and aim to reduce segregation and promote equality. But, one last time, that essential approach for a fair and just development lacks in the Energy Strategy.

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