

# Procedural (in)Justices by Mission-oriented Innovation Policy

Insights from Indonesia

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# Procedural (in)Justices by Mission-oriented Innovation Policy

Insights from Indonesia

By

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I hope this work inspires future research, whether by those who wish to explore Indonesia's procedural justice landscape or by others seeking to understand how procedural justice can shape the implementation of MOIP in different country contexts.

Fadhila Dewi Susetya

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# Summary

This thesis explores the implementation of Mission-Oriented Innovation Policy (MOIP) in Indonesia, focusing on the country's commitment to achieve Net-Zero emissions by 2060. While MOIP has gained prominence as a policy framework for addressing grand societal challenges, such as climate change, energy transition, and sustainability, most empirical studies have concentrated on high-income countries with well-established governance systems. This research addresses a critical gap by examining how MOIP unfolds in a lower-income country context, where institutional capacity, political culture, and stakeholder inclusion differ significantly. Indonesia, having recently transitioned from lower-middle to upper-middle income status, offers a compelling case to investigate how procedural justice influences the interpretation, implementation, and outcomes of mission-driven innovation policy.

Using a qualitative case study approach, the research applies the policy arena framework (Janssen et al., 2023) to map the roles and interactions of stakeholders across four interconnected arenas: strategic, programmatic, implementation, and performance. These arenas serve as analytical spaces to understand how the Net-Zero mission is negotiated, translated into policy instruments, and experienced by affected stakeholders. The study reveals that while Indonesia has formalized its Net-Zero commitment through instruments such as the Enhanced Nationally Determined Contribution (NDC), the National Energy Policy, and the Just Energy Transition Partnership (JETP), the interpretation of the mission diverges across ministries and levels of government. This divergence leads to fragmented strategies, misaligned targets, and inconsistent implementation, particularly in the energy sector.

To investigate stakeholder perceptions, the study conducted eight semi-structured interviews with actors from government agencies, NGOs, academia, startups, and civil society. The interviews were analyzed using a combination of deductive and inductive thematic coding, guided by the procedural justice index developed by Apergi et al. (2024). The findings identify four core types of procedural injustices: limited participation, restricted inclusivity, lack of transparency, and barriers to legal recourse. Participation is often symbolic, occurring after decisions have been made and without meaningful integration of feedback. Inclusivity remains unbalanced, with high-power actors dominating the agenda while citizens, NGOs, independent researchers, women, and marginalized groups are systematically excluded. Information flows are opaque and siloed, and while legal frameworks exist to guarantee participation, their enforcement is weak and inaccessible to most stakeholders.

These procedural injustices have significant implications for policy legitimacy, stakeholder trust, and learning mechanisms. The study finds that Indonesia's hierarchical and compliance-driven policy culture reinforces siloed working practices and narrows opportunities for reflexive learning both within and across policy arenas. This undermines the transformative potential of MOIP, which ideally mobilizes diverse stakeholders around a shared mission. Instead, the mission risks being co-opted by dominant actors, reproducing existing inequalities and limiting innovation.

The thesis argues that procedural justice should be treated not merely as a regulatory requirement but as a strategic enabler of mission legitimacy, collective ownership, and policy effectiveness. It recommends combining top-down structure with bottom-up co-creation approaches, enabling learning across stakeholders and arenas. While co-creation models have been primarily tested in high-income settings, their principles offer relevant inspiration for lower-income countries if adapted to local governance capacities. Indonesia's experience illustrates that procedural justice can serve both instrumental and intrinsic purposes: it enhances policy outcomes while also affirming the rights of stakeholders to participate in shaping their future.

In answering the main research question of "How do perceived procedural injustices by stakeholders affect the implementation of MOIP in lower-income countries?" this thesis finds that procedural injustices significantly hinder the implementation of MOIP by eroding stakeholder trust, fragmenting mission interpretation, and limiting collaborative learning. These injustices manifest through exclusion from decision-making, lack of transparency, restricted inclusivity, and inaccessible legal recourse. When stakeholders perceive the process as unfair or opaque, they disengage, resist alignment, or reinterpret the mission according to their own interests, leading to policy misalignment and reduced effectiveness.

In conclusion, procedural justice is not a peripheral concern but a foundational element of successful mission-oriented innovation policy, especially in lower-income countries where institutional constraints and power asymmetries are more pronounced. Recognizing and addressing procedural injustices can unlock more inclusive, coordinated, and suitable pathways toward change and transition. For Indonesia and similar contexts, embedding justice into the heart of mission governance is essential for achieving not only Net-Zero goals but also a more equitable and participatory future.

Ultimately, this research contributes to the literature on MOIP, energy justice, and transition governance by offering a context-sensitive analysis of how missions are implemented in lower-income countries. It highlights the need for inclusive, adaptive, and reflexive policy design that bridges ambitious climate goals with social legitimacy. The insights from Indonesia's Net-Zero mission offer valuable lessons for other countries navigating similar challenges in their pursuit of a just and effective energy transition.

## Table of Contents

Acknowledgments.....	1
Summary .....	2
List of Figures .....	6
List of Table .....	7
List of Abbreviations .....	8
1. Introduction .....	9
1.1. Background .....	9
1.2. Research Problem.....	10
1.3. Research Objectives.....	10
1.4. Research Question.....	10
1.5. Research Flow .....	11
1.6. Research Scope.....	12
1.7. Engineering and Policy Analysis (EPA) Relevance.....	13
1.8. Outline .....	13
2. Theoretical Review.....	14
2.1. Mission-Oriented Innovation Policy .....	14
2.2. Procedural Justice in Mission-Oriented Innovation Policy .....	18
2.3. Implementation of Theory in the Study .....	19
3. Methodology.....	21
3.1. Case Description .....	21
3.2. Research Approach.....	22
3.2.1. Sub Research Question 1 .....	22
3.2.2. Sub Research Question 2 .....	24
3.2.3. Sub Research Question 3 .....	24
3.2.4. Sub Research Question 4 .....	27
4. Net-Zero Effort as Mission in Indonesia.....	29
4.1. Emergence of Net-Zero by 2060 as Mission .....	29
4.2. The Institution and Machinery of Policy Governance in Indonesia.....	30
4.3. Policy Arena for Net-Zero by 2060 in Indonesia.....	32
4.3.1. Strategic Arena.....	32
4.3.2. Programmatic Arena .....	33

4.3.3.	Implementation Arena.....	34
4.3.4.	Performance Arena.....	35
4.3.5.	Notable Points from The Arenas of Indonesia Net-Zero by 2060.....	36
4.4.	Stakeholder Analysis.....	37
5.	Perceived Procedural Injustices .....	43
5.1.	Participation in Decision Making .....	43
5.2.	Inclusivity .....	44
5.3.	Information Disclosure and Transparency.....	45
5.4.	Access to Legal Process.....	46
5.5.	Insights from Stakeholders .....	47
5.6.	Stakeholders' Recognition of Procedural Injustices .....	48
6.	Discussion.....	49
6.1.	Interpretation Within and Across Policy Arena .....	49
6.2.	Misalignment Impact .....	50
6.3.	Procedural Injustices and The Implication for Decision Making .....	51
6.4.	Implication for Lower Income Countries .....	53
6.5.	Limitations and Reflections .....	55
7.	Conclusion and Recommendations.....	57
7.1.	Conclusion .....	57
7.2.	Academic Contribution .....	59
7.3.	Recommendations.....	60
7.3.1.	Recommendations for Policymakers .....	60
7.3.2.	Recommendations for Future Research .....	61
	References.....	62
	Appendix A: Literature Summary.....	75
	Appendix B: Policy Instruments .....	78
	Appendix C .....	80
C.1.	Stakeholders Interest, Objective, Perceptions and Resources .....	80
C.2.	Scoring Table for Stakeholders .....	82
	Appendix D.....	84
D.1.	Interview Questions.....	84
D.2.	Informed Consent Form.....	86



## List of Figures

Figure 1.1 Research Flow .....	12
Figure 2.1 From challenges to mission based on Mazzucato (2018) .....	14
Figure 2.2 Mechanism on mission across and within policy arenas taken from Janssen et al. (2023) .....	17
Figure 4.1 Adaptation of Mission-Oriented Framework in Indonesia Net-Zero by 2060 .....	30
Figure 4.2 Hierarchal structure of Indonesian legislation .....	31
Figure 4.3 Timeline of Net-Zero by 2060 Key Decision .....	33
Figure 4.4 Energy Transition Roadmap to NZE 2060 .....	34
Figure 4.5 Illustration of Policy Arena and the Policy Instruments.....	36
Figure 4.6 Formal Chart for Innovation in Energy Sector .....	40
Figure 4.7 Power Interest Grid of Stakeholders.....	42
Figure 6.1 Looping diagram of procedural injustices and the Net-Zero by 2060 .....	52

## List of Table

Table 3.1 Search Process.....	23
Table 3.2 Interviewee List .....	25
Table 3.3 Codebook used in the analysis of interview result .....	25
Table 4.1 Clause regarding Innovation in Energy-related Documents .....	37

## List of Abbreviations

BRIN	<i>Badan Riset dan Inovasi Nasional/ National Research and Innovation Agency</i>
CCS	Carbon Capture Storage
CIPP	Comprehensive Investment and Policy Plan
COP	Conference of the Parties
CPI	Climate Policy Initiative
DEN	<i>Dewan Energi Nasional/ National Energy Council</i>
DPD	<i>Dewan Perwakilan Daerah/ Regional Representative Council</i>
DPR	<i>Dewan Perwakilan Rakyat/ People's Representative Council</i>
GFANZ	Glasgow Financial Alliance for Net-Zero
IEA	International Energy Agency
IESR	Institute of Essential Services Reform
JETP	Just Energy Transition Program
KEN	<i>Kebijakan Energi Nasional/ Kebijakan Energi Nasional</i>
LTS-LCCR	Long-Term Strategy for Low Carbon and Climate Resilience
MOIP	Mission-Oriented Innovation Policy
MPR	<i>Majelis Permusyawaratan Rakyat / People's Consultative Assembly</i>
NDC	Nationally Determined Contribution
NGO	Non-governmental Organization
NRE	New and Renewable Energy
NZE	Net-Zero Emission
OECD	Organisation for Economic Co-operation and Development
PLN	<i>Perusahaan Listrik Negara/ National Electricity Company</i>
PSHK	<i>Pusat Studi Hukum &amp; Kebijakan Indonesia/ Center for Law and Policy Studies</i>
R&D	Research and Development
Renstra	<i>Rencana Strategis/ Strategic Plan</i>
RPJMN	<i>Rencana Pembangunan Jangka Menengah Nasional/ RPJMN</i>
RPJPN	<i>Rencana Pembangunan Jangka Panjang Nasional/ National Long-Term Development Plan</i>
RUED	<i>Rencana Umum Energi Daerah/ Regional Energy General Plan</i>
RUEN	<i>Rencana Umum Energi Nasional/ National General Energy Plan</i>
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UU	<i>Undang-undang / Law</i>
WRI	World Resources Institute

# 1. Introduction

## 1.1. Background

In recent years, innovation policy has shifted from being motivated by economic growth to addressing grand challenges in society (Janssen et al., 2023; Wanzenböck et al., 2020). To tackle those societal challenges, there is a re-emerging interest in missions. Different from how missions were first introduced as technology-led, societal challenge-led missions give promise to drive transformative change by mobilizing innovation capacities around shared societal problems (Elzinga et al., 2023; Janssen et al., 2021). The key characteristics of missions can be explained as being measurable, ambitious, time-bound, and suitable for engaging multiple stakeholders (Kattel & Mazzucato, 2018). It suits multiple stakeholders because the mission concepts are open to interpretation, so they can be substantiated differently by different stakeholders. This means missions are translated into a variety of policies in order to accelerate and align activities (Janssen et al., 2021). Mission-Oriented Innovation Policy (MOIP) is defined as addressing a societal challenge through a policy approach that employs 'an urgent strategic goal that requires transformative systems change aimed at overcoming a wicked societal problem' (Hekkert et al., 2020; Wiarda, Janssen, et al., 2024).

MOIP serves the purpose of providing directionality, which can be understood as the direction of transitional change from one socio-technical system to another (Wiarda, De Wildt, et al., 2024). However, in the field of transition studies, scholars argue that transition is an inherently political process because there are groups who will disagree about the desirable direction, which potentially leads to a winner and a loser (Köhler et al., 2019). The political nature of the MOIP then raises the question of which stakeholders get to give directions (Parks, 2022), as well as considering how power relations between stakeholders and the inclusiveness of the community can affect innovation and transition outcomes (Kok & Klerkx, 2023). This issue becomes important to address because, in MOIP's attempts to drive transformative change, it may risk generating maladaptive outcomes that intensify vulnerabilities across communities (Wiarda, Janssen, et al., 2024). To mitigate this risk, equal opportunities for different vulnerable groups to participate in decision-making must be considered. (Tschersich & Kok, 2022).

The MOIP approach relies on the notion that the government has the resources and capability to organize collective action (Coenen & Morgan, 2020), however there are differences in the capabilities of higher and lower income countries' governments due to the different social, cultural, economic, and political conditions (Hansen et al., 2018). For example, higher-income countries may already include the participatory style of policy-making (Karo, 2018), while lower-income countries have less transparency due to weaker state apparatus and less efficient bureaucracies (Hansen et al., 2018). These differences highlight the distinct *procedural injustices* that might be reinforced in the lower-income country as a form of participatory injustice (Tschersich & Kok, 2022) while pursuing the MOIP approach. To mitigate the emerging injustices, it becomes essential to scrutinize what the MOIP approach would look like in lower-income countries and whether it aligns with their characteristics.

## 1.2. Research Problem

The relation between how procedural injustices could affect the transition outcome pursued by MOIP is not yet fully understood in lower-income countries. Studies on MOIP are primarily focused on higher-income countries, and there is a lack of research and empirical studies exploring how the approach of MOIP should differ in lower-income countries (Zhang et al., 2024), even though the missions in themselves are embedded in a unique institutional context and could be contested in different countries (Wittmann et al., 2021). The lack of studies in lower-income countries makes it harder to address the context specific knowledge of MOIP, hence lower income countries may use replicating method in the missions pathway (Haswell et al., 2024). The *spillover* procedural injustices caused by the intersection of the MOIP approach in higher—and lower-income countries are also not yet covered because there is a lack of research on the MOIP approach in lower-income countries (Da Silva Hyldmo et al., 2024). The knowledge gap could increase, generate and distribute the inequalities and vulnerabilities that is already exist in lower income countries if missions are not adapted to their unique context (Eriksen et al., 2021; Schipper, 2020).

Furthermore, existing inequalities could emerge as justice issues, and injustice perceptions could influence the support of stakeholders and hinder transitions (Kerker et al., 2024). Support and trust from stakeholders could be built by inclusivity, transparency and accountability element during decision-making of transition effort and it is emphasized on the term procedural justice (Mendes et al., 2025). These reasons solidify the need to also study the perceived procedural injustices by the stakeholders in the MOIP approach in lower income countries to mitigate the risk of exacerbating inequalities because of the maladaptive outcomes of the transition pursued by MOIP.

## 1.3. Research Objectives

As a result, this research studies the procedural injustices perceived by the stakeholder's effect on the implementation of MOIP in lower-income countries. Building upon this notion, this research seeks to bridge the empirical gap between higher and lower-income countries in the approach of MOIP, seeing that MOIP gives a promising approach for lower-income countries that might face deadlock in the transition effort (Andreoni et al., 2022). It also seeks to explore how the governance of MOIP in the lower income countries could benefit from asking the question of the inclusiveness of stakeholders in MOIP (Wiarda, Janssen, et al., 2024) to mitigate the procedural injustices that the stakeholders perceive. In addition, it further interrogates the implications of procedural injustice that emerge in pursuing MOIP for policymakers to give insight into the policymaker's struggles in implementing MOIP and evaluate the innovation dynamics (Hekkert et al., 2020). Finally, by looking at the effects of perceived injustice by stakeholders in the transition effort pursued by MOIP, this research aims to give insight into how MOIP could be developed more just in lower-income countries.

## 1.4. Research Question

To reach the research objectives, this study asks the following research questions which are formulated as:

*‘How do perceived procedural injustices by stakeholders affect the implementation of MOIP in lower-income countries?’*

To address this research question, several sub-questions are synthesized as follows:

1. How do lower-income countries implement MOIP?
2. Who are the stakeholders that are included and excluded in the implementation of MOIP?
3. What procedural injustices is perceived by stakeholders in the implementation of MOIP?
4. How do policymakers recognize the perceived procedural injustices caused by MOIP in lower-income countries?

## 1.5. Research Flow

To answer the main research question, the research flow shown in Figure 1.1. is employed. The research flow demonstrates that an iterative process is used to answer sub-research questions, thereby gaining a more comprehensive understanding. The first sub-research question examines how the MOIP is implemented in lower-income countries, considering the existing policy-making and institutional contexts that shape the policy governance of these countries. The second sub-research question then analyzes which stakeholders are involved based on the mapped implementation. The initial group of stakeholders identified is then asked about their perceptions of procedural injustices that occur during MOIP implementation. At this stage, the interview results will also reveal which stakeholders are excluded from the discussion. This becomes an iterative process, as the list of excluded stakeholders expands to include those not initially identified until all interviews are completed. The perceived procedural injustices identified are then used in further interviews to validate these findings by conducting expert interviews to see how policymakers address these perceived injustices in the fourth sub-research question. All data, analysis, and discussion related to this will be used to answer the main research question regarding how perceived procedural injustices affect MOIP in lower-income countries. The detailed methodology used in this research can be seen on chapter 3.

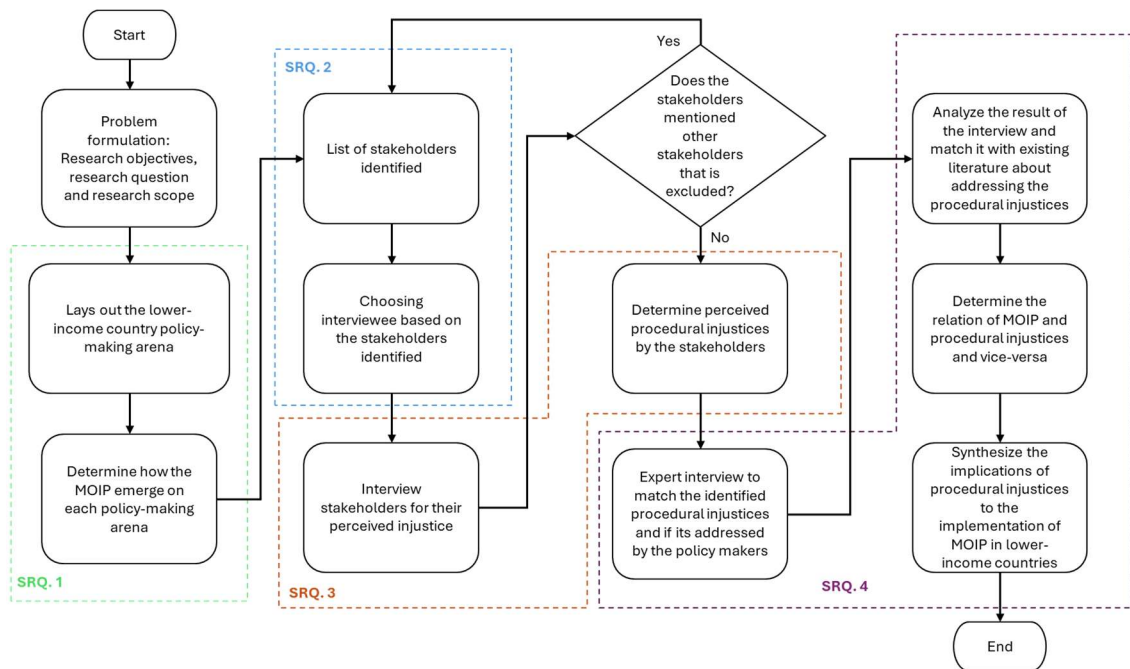


Figure 1.1 Research Flow

## 1.6. Research Scope

This research, conducted from January to August 2025, examines how addressing procedural injustices through MOIP can mitigate the grand challenges, such as climate change and the rising energy demand in lower-income countries. For this study, "lower-income countries" are defined as those not classified as high-income by the World Bank (2025) during the research period. These nations face unique penalties: they must balance economic development with equitable energy access while transitioning from fossil fuel dependency to low-carbon alternatives, a dual challenge exacerbated by systemic inequities in global climate action (World Bank, 2023a).

The distinction between high- and low-income countries is critical due to stark disparities in resources and capabilities. Innovation, manufacturing, and deploying low-carbon infrastructure demand significant economic strength, which many lower-income nations lack. Consequently, they often become consumers, rather than creators, of clean energy technologies, deepening financial burdens and perpetuating dependency (Babayomi et al., 2022). Without context-sensitive policies, efforts to advance climate technologies risk reinforcing inequalities by sidelining other developmental priorities.

The scope of this research is limited to the case study of Indonesia's Net-Zero by 2060 mission. Net-Zero by 2060 represents the international effort to reduce greenhouse gas emissions to near zero and balance them through carbon removal. While addressing this complex issue involves multiple sectors, this study focuses on the energy sector, especially electricity generation. As of 2023, 81% of electricity is produced from fossil fuels, with coal use contributing to increased emissions in the power sector. The energy demand from this sector is crucial for achieving Indonesia's economic development goals (Ember Energy, 2024). This study examines whether current applications of MOIP in addressing the grand challenges of climate change and

rising energy demand can be perceived as just, ensuring that climate mitigation strategies do not exacerbate inequities and promote fair participation in the global energy transition.

## 1.7. Engineering and Policy Analysis (EPA) Relevance

The topic of MOIP is highly relevant to the Engineering and Policy Analysis (EPA) master's program. Rooted in the effort to address complex problems, this thesis aligns with the core of EPA by employing a multi-actor perspective when examining MOIP in lower-income countries, with Indonesia as a case study. It clearly demonstrates the intersection of engineering, through its technological efforts to achieve Net-Zero by 2060 in Indonesia, and policy innovation that tackles societal challenges, making this thesis well-suited for an EPA master's program. While applying the multi-actor perspective, the thesis also examines whether the policy implemented in the selected case study considers justice, which is a key element in EPA courses, to assess the ethical implications of the policymaking process. Lastly, true to how the EPA program is structured, this thesis does not aim to decide for the policy maker; rather, it aims to influence both policymakers and the academic environment by highlighting the effects of MOIP in lower-income countries and exploring how to mitigate the risks that arise in the effort to tackle wicked problems. Overall, researching the implications of MOIP implementation in lower-income countries is appropriate and relevant for an EPA master's thesis.

## 1.8. Outline

This document comprises seven chapters. Chapter 2 establishes the theoretical framework, explaining Mission-Oriented Innovation Policy (MOIP) and procedural (in)justice in lower-income contexts. Chapter 3 details the methodology, introducing the Indonesia case study, research approach, data collection strategy, and analytical techniques. Chapter 4 analyzes how MOIP manifests across Indonesia's policy arenas using policy documents and arena interactions. Chapter 5 presents empirical findings from semi-structured interviews, highlighting stakeholder perceptions of procedural injustices. Chapter 6 discusses how these injustices create barriers to equitable decision-making and their implications for MOIP governance in lower-income countries. Chapter 7 synthesizes conclusions, addresses research questions, and provides reflections for future research.



## 2. Theoretical Review

The section for theoretical background will give explanation about the core concept which will be used in this thesis.

### 2.1. Mission-Oriented Innovation Policy

To respond to ‘wicked problems’ in the 21st century, scholars research innovation policy to address societal challenges, and it evolved the scope and paradigm of innovation policy to not only address the combination of technological, organizational, and institutional change where the challenges manifest (Janssen et al., 2023) but also considering the social and ecological challenge (Kemp & Mainguy, 2011). To facilitate this transformation, the interest goes into the once-popular missions to mobilize the innovation policy around a shared goal (Elzinga et al., 2023). The archetypical mission example is putting a man on the moon, where the goal is clearly defined. However, the interrelated challenge-led mission appears less clearly defined and must be co-defined by multiple stakeholders (Kattel & Mazzucato, 2018; Mazzucato, 2018). Thus, pursuing challenge-led missions raises the issue of identifying, defining, and targeting complex and unstructured problems where the solution cannot be predefined (Wanzenböck et al., 2020).

While challenge-led missions do not explicitly define the solution, they can nudge into the direction addressed by the challenge (Kuhlmann & Rip, 2018; Mazzucato, 2018). How challenges break down into actionable missions is described by Mazzucato (2018) in Figure 2.1. below.

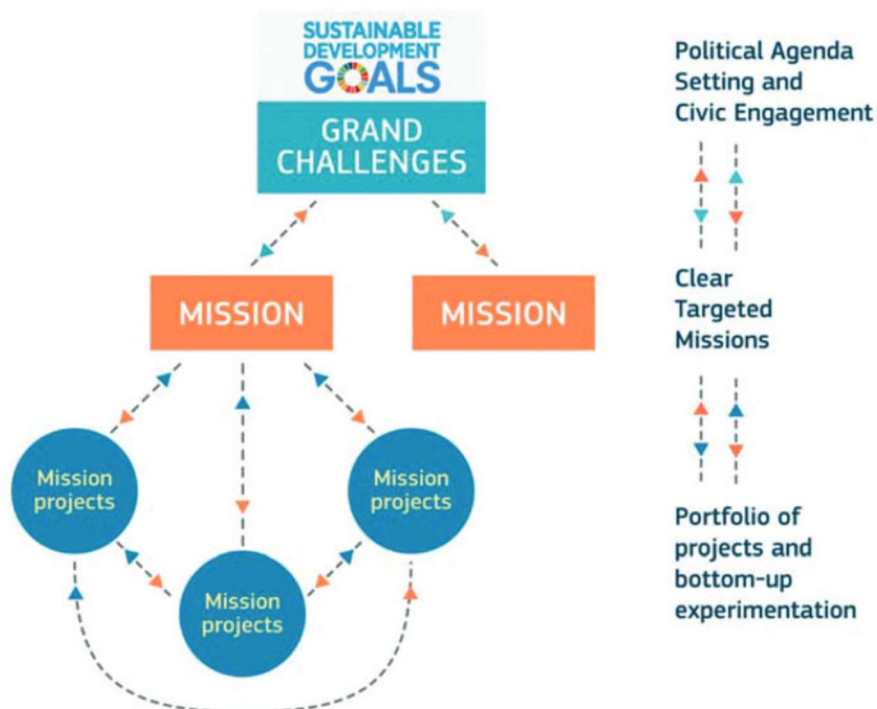


Figure 2.1 From challenges to mission based on Mazzucato (2018)

Challenges, which in this case are described as ‘Grand Challenges,’ serve as stimulation for research and innovation; however, missions need to be defined to get a clear definition of the problem. Mazzucato (2018) expanded the criteria for missions as follows:

1. Wide societal relevance  
To engage the public, missions need to be connected with the challenges and solutions that will have an impact on people’s daily lives.
2. Clear Direction  
By being clearly framed, quantifiable, and also including a clear time frame, it is possible to determine success or measure progress towards success.
3. Realistic research and innovation actions  
While missions should be posed as ambitiously as a means of taking risks, researchers and innovators need to be realistically challenged to deliver what would not be attempted.
4. Cross-disciplinary, cross-sectoral, and cross-actor innovation  
Missions aim to engage activity across scientific disciplines, industrial sectors, and different types of actors, even the private sector.
5. Multiple bottom up solutions  
Missions are not designed to be achievable by a single development path; rather, they need to be open to be addressed by multiple solutions.

If defined concisely, the characteristics of missions are measurable, time-bound, and engage diverse stakeholders (Elzinga et al., 2023). This concept of engaging multiple stakeholders means that missions are being adopted into a variety of policies to induce various forms of transformative change or innovation (Janssen et al., 2021), hence the term Mission-Oriented Innovation Policy (MOIP).

Sustainability transition scholars then framed MOIP as steering changes in the socio-technical systems opposed to merely supporting the research and development efforts by including grand social and ecological challenges (Ahokas et al., 2024). MOIP development, however, is part of governance arrangements (Janssen et al., 2021), and the governance context is one of the challenges in the implementation of MOIP (Kattel & Mazzucato, 2018). Overall, there is a growing consensus that ‘socio-technical transitions,’ possibly delivered by MOIP, require a policy and governance approach that balances both top-down directions and bottom-up experimental search (Karo, 2018). Policy science literature then addresses the different layers or functions that is implicated in policy coordination (Janssen et al., 2023). Building on the political science literature, there are four distinguished types of arenas where stakeholders could engage with each other in developing policies, as explained by Janssen et al. (2023). These arenas serve as a metaphor to illustrate how mission does not necessarily follow the typical levels of the policy development process, rather it negotiates and contests the direction of the mission around a particular task or agenda. The types of arena are as mentioned below:

- 1) Strategy Arena: Where mission is emerging as metanarrative. Concerned with how and why governments intervention is legitimized in the first place. Claims which policy is needed and suitable is the role of politician in the executive level.
- 2) Programmatic Arena: Where mission is set as the vision for the agenda setting. Proposing how to utilize resources through series of actions and measures the desirable outcomes which is mostly done by ministries.
- 3) Implementation Arena: Operational design and the execution of policy interventions which incorporate broader range of actors to exchange resources.
- 4) Performance Arena: Less conceptualized arena which actors are the ones that is the subject of the policy like firms, citizens and NGO where the puzzle of problem and solution takes place.

How MOIP meaning is defined in the policy arena, Janssen et al. (2023) notes key mechanism on how the meanings could emerge and transfer. The first mechanism is the *convergence* and *divergence* of the mission within the arena, *passage* where mission is transferred across the arena, and *learning* where the development of new-insight within the arenas and the *reflexivity learning* across the arena and sharing lesson to enable the (re)alignment of mission meanings.

*Convergence* and *divergence* mechanism, refer to how mission, while could be interpret differently by the stakeholders in the arena, whether they could (partially) converge or not and on what aspect they converge is depending on who is the stakeholders being engaged in the arena thus focusing on the importance of coordination and negotiation processes in the arena to reach the convergence. *Passage* refers to the point at which the mission is considered 'converged' in one arena, and it can then be passed into a different arena. However, contestation might happen when faced with different converged elements in the other arena, which can cause misalignment in the mission itself. *Learning* and *Reflexive learning* refers to the process of learning that occurs within and across arenas where different stakeholders interact and experiment with said misalignments. *Reflexive learning* itself is notes to be the mechanism where different policy arenas could benefit from adjusting and re-align their interpretation of mission while also taking notice on how it would interact with stakeholders from other policy arenas. The figure explaining this mechanism is shown in Figure 2.2.

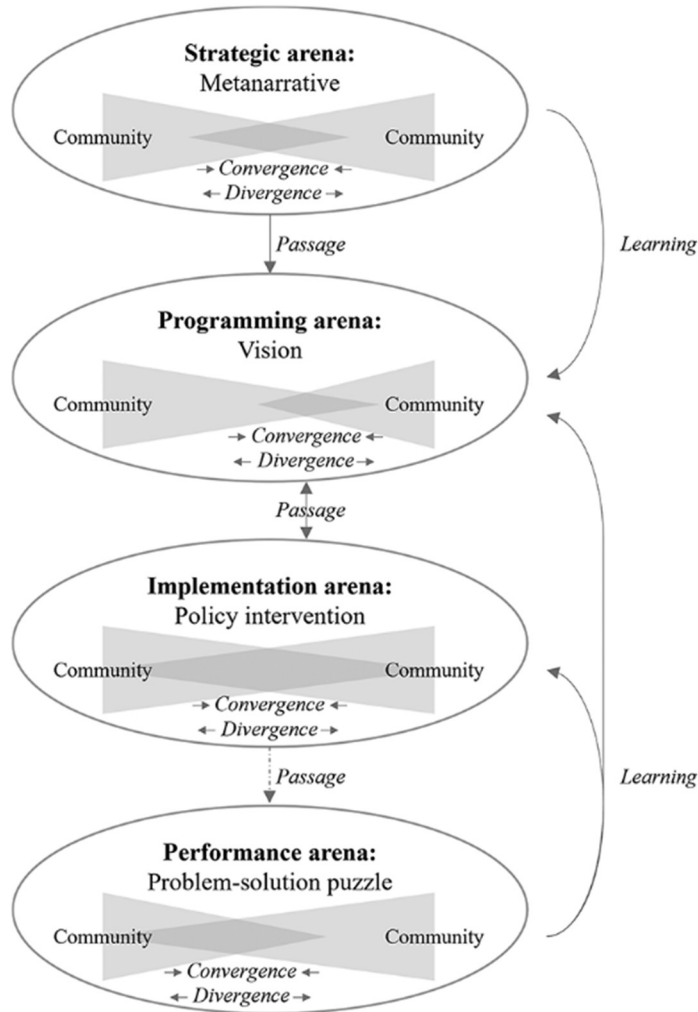


Figure 2.2 Mechanism on mission across and within policy arenas taken from Janssen et al. (2023)

Each arena which consists of different stakeholders could interpret MOIP differently, due to the conflicting stakeholder interests and limited understanding of the problem (Wanzenböck et al., 2020). Especially for wicked problems such as climate change, requires negotiation during the interpretation stages. Yet, it is noted that negotiation in strategy arena which comprises of a more global and national scope it is often easier compared to specify the urgent need on the local scope (Pihlajamaa & Valovirta, 2024).

As MOIP provides directionality, it is important to explicitly address who drives the agenda and how the power structure shaped MOIP (Kok & Klerkx, 2023). As MOIP approaches are being applied in higher- and lower-income countries (Mazzucato, 2018), the need to note that innovation capacity may look different in different countries becomes apparent (Coenen & Morgan, 2020). Capacity in this context, taken the definition of capacity shared by the OECD (2022) that capacity includes, inter alia, competencies of individual such as knowledge, skills, and ability to set and achieve objectives; the organizational structure, functions and system; and the enabling environment which consist of policy, legal, and economic and social support. Consensus of the appropriate 'solution space' requires dominant locally-embedded socio-

technical ‘regime’, existing policy and also local elements including the readiness of the infrastructure which could influence the ‘solution space’ (Pihlajamaa & Valovirta, 2024). This variation underscores the importance of examining how the structural and institutional differences between countries influence their capacity to engage with MOIP processes. The structure of countries not only shape their ability to foster innovation but also impact who is included in decision-making processes and how these processes are framed. Emphasizing the outcome of MOIP and who is included in the shaping of MOIP becomes important due to the need for representation of affected groups and communities (Tschersich & Kok, 2022). However transitions encouraged by MOIP governance is not value-neutral and have the potential for maladaptive outcomes (Wiarda, Janssen, et al., 2024). This outcome might be affected by the misrepresentation or mis-framing during the design and execution process of MOIP, which entails injustices (Tschersich & Kok, 2022). Although the design and execution of policy interventions happen in the *implementation arena*, the stakeholders who are affected by the policy exist in the *performance arena*. Due to the interconnected nature of these arenas, this research will focus on both of them. Therefore, understanding how MOIP approaches are implemented in *the implementation and performance arenas* and how they relate to injustices is essential.

## 2.2. Procedural Justice in Mission-Oriented Innovation Policy

MOIP serves as direction to mobilize stakeholders in the interconnected four policy arenas (Janssen et al., 2023), however the diversity of the stakeholders is not necessarily different from conventional policies (Wiarda, Janssen, et al., 2024). Scholars note that there are negotiations and contestations that implicates different interest where certain stakeholders may be more vocal in certain arenas than the others, and those stakeholders might be included too early or too late in the discussion, thus unequal stakeholder representation in the arenas may cause unintended injustices in the different arenas of policy coordination (Janssen et al., 2023; Wiarda, Janssen, et al., 2024). To address the injustices that emerged, the concept of just transition is used by scholars in expressing a more desirable process and outcome of transitions pursued by MOIP (Kok & Klerkx, 2023).

In this case, just transition is conceptualized as four tenets of justice: distributive justice, procedural justice, restorative justice, and recognition justice (Jenkins et al., 2016; Tschersich & Kok, 2022). As a way to legitimize how logic and value are expressed, Pesch et al. (2017) define two trajectories of how justice-related attributes are pursued. The formal trajectories are taken by institutionalized stakeholders, and residents, citizens, and NGOs take the informal trajectories. The formal trajectories allow for shared understanding among the stakeholders, while also giving space for NGOs and residents to access these trajectories through a participatory procedure. The formal trajectories take procedural justice as an entry point to another element of justice, from which the distributive and recognition are considered. In contrast, the informal trajectories take the recognition justice as an entry point. However, Pesch et al. (2017) also noted that while the entry point is different, both serve the same moral question on justly distributing the disadvantages and the benefits. This thesis will follow the formal assessment trajectories since the MOIP decision-making and agenda-setting happen in the institutionalized context, so the decisions in the multi-actor settings can be made effectively.

Thus, procedural justice will serve as an entry point to understand just transition led by MOIP in lower-income countries.

The study for justice in transition mostly only cover higher income, developed country (Apergi et al., 2024) but especially with procedural justice, findings from lower income countries note that there is a lack of attention to procedural justice compared to attention to distributive justice (Müller et al., 2020). Procedural justice refers to the fairness and inclusivity of the decision-making process that governs the opportunities and, at its core, emphasizes the need to engage all stakeholders without discrimination (Jenkins et al., 2016). While there are multiple ways to elaborate on procedural justice, this thesis will use the ‘categorization’ of procedural justice as 1) Information; where the information disclosed to the affected stakeholders to gain informed consent is done appropriately, 2) Consultation; where the local knowledge is mobilized to seek inclusion of communities and 3) Participation; which specify the representation of stakeholders in institutions context for decision-making (De Luca et al., 2020; Jenkins et al., 2016). Procedural injustice arises when approaches to include all stakeholders are not appropriate or ignored, such as misinformation, not conducting impact assessments that might affect consent, or not incorporating feedback from stakeholders (Sovacool & Dworkin, 2015).

As all the justice elements serves as a ‘useful’ decision-making tool to inform the stakeholders a more informed choices in achieving the just transition (Sovacool & Dworkin, 2015), the eight aspects of decision-making: availability; affordability; due process; transparency and accountability; sustainability; intergenerational equity; and responsibility, also needs to be considered (Apergi et al., 2024). The linked justice elements and the decision-making process is used as the main framework to measure the procedural justice as proposed by Apergi et al. (2024) as Table 2.1. shows.

*Table 2.1. Procedural justice index in decision making, modified from (Apergi et al., 2024)*

Component	Metric
<b>Participation in Decision Making</b>	Impact assessment
	Community consultation
<b>Inclusivity</b>	Representation of stakeholders
<b>Information Disclosure and Transparency</b>	Information availability
	Transparency of decision making
<b>Access to Legal Process</b>	Judicial Independence

By linking the procedural justice elements in the decision making revolving the policy approach driven by missions, there can be a more nuanced understanding of innovation dynamics and policy choice in lower-income countries, as such engaging with stakeholders, data, and methods which are not common in higher-income countries (Haswell et al., 2024).

### 2.3. Implementation of Theory in the Study

In defining the context of MOIP in lower-income countries, this thesis utilizes the framework presented by Mazzucato (2018) for defining and interpreting the mission, which stems from the wicked problems that need to be addressed until the relevant projects or policies of the MOIP itself (Chapter 4). After the MOIP is defined, the policy arena framework proposed by Janssen

et al. (2023) is used to illustrate how the policy arena surrounding the missions looks. This policy arena serves as a figure to show which stakeholders are included and excluded during the pursuit of the agenda within the policy arena (Chapter 4). The goals of the first theory are to help define the settings of the MOIP itself as well as the stakeholders involved in the arena. Following the use of the first framework, the second theory is applied. When analyzing the decision-making process in the arena that shapes the direction of the MOIP itself, this thesis adopts the procedural justice perspective as a way to recognize the process necessary to achieve a just transition on a formal pathway, as proposed by Pesch et al. (2017). The element of procedural justice that is analyzed follows the framework of Apergi et al. (2024) for the procedural justice index in decision making (Chapter 5). The use of these frameworks aligns with the objective of this thesis, which is to provide insights into how stakeholders' perception of procedural injustices affects the implementation of MOIP, especially in lower-income countries.

### 3. Methodology

The method utilized in this thesis is qualitative case study methodology as it is well suited for a policy analysis by giving in-depth examination of how specific policies may succeed or fail while also retain a holistic perspective (Kodithuwakku, 2022).

#### 3.1. Case Description

This study examines Indonesia's pursuit of its Net Zero by 2060 mission as its case study. Net Zero by 2060 serves as a global pathway to net-zero emissions 2060 and also as a reminder of the commitment by countries during the 2015 Paris Agreement to limit the global rise in temperature to 1.5°C (IEA, 2021). The global commitment moves countries into putting their effort to tackle climate change into projects and policies as advised by the United Nations, which includes collaboration and mobilizing multiple sectors and actors (United Nations, 2024).

As the fourth most populous country, Indonesia recently moved on the income grid from lower-middle income to upper-middle income countries, also making an ambitious commitment to address the Net-Zero 2060 (Hamadeh et al., 2023; International Energy Agency, 2022). Regarding emissions ranking, Indonesia ranks among the top 10 countries for greenhouse gas emissions, with a per capita CO<sub>2</sub> consumption of 2.6 tons, making it one of the most significant contributors to climate change (IEA, 2022b). At the same time, it is one of the most vulnerable countries that will be affected by the impacts of climate change, such as the sinking of the coastline due to rising sea levels, floods and droughts, and also shift in rainfall patterns which will affect agriculture, which is also one of the country's main income (World Bank, 2023b). The combination of the risk of not addressing emissions and the threats it poses, along with Indonesia's recent status as an upper-middle-income country, makes it a suitable case. Currently, most literature on the MOIP case focuses on the perspectives of higher-income countries, which have different concerns regarding climate change threats and emission levels. Therefore, Indonesia provides an adequate case for gaining insights from lower-income countries.

Regarding the suitability of the MOIP definition itself, Indonesia has a suitable policy pipeline that can be addressed. When addressing the ambitious goal of Net Zero by 2060, Indonesia put the goals in Nationally Determined Contribution (NDC) as several strategies and actions to achieve the mitigation target to achieve climate resilience (UNFCCC, 2022). While the broader topic of this case study is the Net-Zero by 2060, this case study will focus on the energy sector with an emphasis on electricity generation. The alignment with global climate goals has spurred a series of policy adjustments, particularly in Indonesia's electric supply planning, aligning with the country's emission reduction targets. Although a specific innovation policy cannot be pinpointed, the existing innovation environment reflects a mission-oriented approach driven by policies encouraged by the Net-Zero by 2060, such as aligned energy planning. The example of MOIP, which translated into several instruments in Indonesia related to the energy transition in the electricity sector, solidified Indonesia's selection as a case study.

However, literature also notice that policies regarding Net-Zero emissions in Indonesia frequently reinforce inequalities because of insufficient governance frameworks, and while these policies already consider the element of justice, they only narrowly go into the distributive



justice aspect part (Maskun et al., 2023; Sekaringtias et al., 2023). Social inequalities can also be seen in purposefully excluding small communities and lower-income groups from decision-making (Setyowati, 2021). Thus, as the trust in the policies combined with political influence can be seen to widen the gap of the outcomes of the net-zero related policies (Anuar & Dewayanti, 2021) the need to see how missions, in this case, is the Net-Zero 2060, is being contextualized in the institutional level of Indonesia and how the procedural (in)justice plays a role in shaping the direction and the outcome of the missions.

In sum, Indonesia's effort towards Net-Zero by 2060 offers a rich, multi-dimensional case for analyzing MOIP in a lower-income country setting by providing the context of the effort to shift in the energy transition while also examining the need to scrutinize the effects of injustices on the transition effort, all within a mission-oriented framework. The results of this case study can inform not only Indonesia's national discourse but also offer insights for the literature on MOIP in lower-income countries.

## 3.2. Research Approach

To answer the main research question, the sub-research question was addressed to guide the flow of the research by combining methods such as literature review, semi-structured interviews, and content analysis of the interview result.

### 3.2.1. Sub Research Question 1

*How do lower-income countries implement MOIP?*

To understand the nuances and context of how the Net-Zero by 2060 mission is unfolding across various policy arenas within Indonesia's formal institutional setting, particularly regarding innovation policies, desk research is conducted. The first targeted literature search utilizes the SCOPUS database with keywords such as "Mission Oriented Innovation Policies" and "geograph\*" to gain insight into how the MOIP might be interpreted in different countries by highlighting geographical differences. This search yields limited results, producing only five articles. After reviewing the abstracts, only two articles remain that discuss the MOIP across various geographical locations in the scope of countries difference. The second targeted literature search employs Google Scholar, using keywords in both English and Indonesian: "Mission-Oriented Innovation Policies Indonesia" and "*Kebijakan Inovasi Berorientasi Misi*," generating one relevant paper. The third round of targeted literature searches focuses on the SCOPUS database to examine how the justice element is considered. The search query combines 'net-zero', 'renewable energy', and the justice element in Indonesia. In addition to this third round of targeted literature review, the snowballing method is employed to utilize available documents and enhance the understanding of the MOIP context. The publication type is limited to articles in the energy subject published within the last 10 years to ensure relevance. The outcome of this literature review provides insight into how Net-Zero by 2060 is being translated within the Indonesian context in general.

To align the translation of the Net-Zero by 2060 mission with the policy arena in Indonesia, three relevant master's theses from the TU Delft Repository were included based on expert

recommendations regarding how the institutional context could influence the interpretation of the Net-Zero by 2060 initiative. These theses also provide insights into which stakeholders are involved in the decision-making process for the Net-Zero by 2060 efforts in Indonesia. In addition to utilizing the online article database, legal policy documents in Indonesia related to Net-Zero and Energy are also analyzed. The analyzed legal policy documents aim to identify the pertinent regulations that formalize the interpretation of the mission within the policy arena. Due to the nature of this thesis that focus on the electricity sector, policy documents in the scope of electricity supply is also included.

Lastly, grey literature, such as reports from reputable organizations like the Institute of Essential Services Reform (IESR) and the International Energy Agency (IEA), and also the Center for Law and Policy Studies (PSHK) along with various statements from Ministry officials, is used to gain the latest updates on energy policy. This research method produces a comprehensive explanation of how the Net-Zero by 2060 mission is contextualized within the formal regulations of Indonesia's policy arena. The summary of the search process is displayed in Table 3.1 and the summary of the contents of the literature reviewed can seen on Appendix A.

Table 3.1 Search Process

Search Type	Database	Search Query	Publication Found	Publication Selected
<b>Targeted Literature Search</b>	SCOPUS	TITLE-ABS-KEY ( "mission oriented innovation policy" AND geograph* ) AND ( LIMIT-TO ( PUBSTAGE , "final" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) )	5	2
<b>Targeted Literature Search</b>	Google Scholar	<i>Kebijakan Inovasi Berorientasi Misi</i>	2	1
<b>Targeted Literature Search</b>	SCOPUS	TITLE-ABS-KEY ( "net zero" OR "renewable energy" OR energy AND indonesia AND justice ) AND ( LIMIT-TO ( PUBSTAGE , "final" ) ) AND ( LIMIT-TO ( SUBJAREA , "ENER" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) )	16	4
<b>Recommendation</b>	TU Delft MSc Repository			2
<b>Legal Documents</b>	Indonesian Regulation Website			5
<b>Grey Literature</b>	Own Organization Website			3

### 3.2.2. Sub Research Question 2

*Who are the stakeholders that are included and excluded in the implementation of MOIP?*

To address this sub-research question, a stakeholder analysis is conducted to identify the actors directly involved in organizing missions across the policy arena. The goal is to identify who is involved in the scope of the Net-Zero by 2060 mission in Indonesia. The first round of stakeholder analysis follows the steps of actor analysis provided by Enserink et al. (2022), which involves creating an inventory of the actors involved. This inventory focuses on the actors directly involved with the Net-Zero by 2060 mission across the policy arena, as well as those involved in the innovation scope of the mission. The actors in this inventory are those explicitly mentioned in legal documents and those that express their interest by publishing reports regarding the Net-Zero by 2060. This means these actors have formal roles, mandates, and regulatory or operational authority to influence the Net-Zero by 2060 discussion significantly. These actors are then analyzed for their interests, objectives, perceptions, and resources related to the Net-Zero by 2060 mission.

Based on the summaries of these actors, those with direct interests and goals in the energy sector, particularly in electricity generation, are selected. The selected actors are then organized into a formal chart to provide insight into how each actor relates to others in the formal setting. To visualize the interdependencies of these actors, the power-interest grid proposed by Enserink et al. (2022) is created. The power-interest grid provides insights into how power is distributed among stakeholders involved in achieving Net-Zero by 2060 in the electricity sector. The power axis refers to the ability of actors to influence decision-making and policy formulation, while the interest axis indicates the level of engagement of actors in reaching Net-Zero by 2060. Based on this, stakeholders are scored on their power and interest levels, drawing from their interests, objectives, perceptions, and resources. Scoring was assigned on a scale from 1 (very low) to 5 (very high) for both dimensions. The scoring table can be seen in Appendix C.2.

However, due to the actor inventory only considering the explicitly stated stakeholders, an iterative process is also conducted to include stakeholders that are not mentioned. The additional stakeholders were identified from the interview results, where participants were asked whether they believed there were stakeholders who were intentionally or unintentionally excluded. The stakeholders list, which encompasses both formal and informal stakeholders, has now been inventoried as a means to select the interviewee for the next sub-research question.

### 3.2.3. Sub Research Question 3

*What procedural injustice is perceived by stakeholders in the implementation of MOIP?*

To capture perceived injustice, semi-structured interviews are conducted with selected interviewees from the stakeholder list. The semi-structured interview method is used to understand the issues and present results for discussion (Stermann, 2002). While the interviews followed a designated set of core questions, the format allowed interviewees to elaborate on related topics and for the interviewer to probe further where relevant. The interviewees are chosen based on their relevance to innovation, electricity generation, and the new and renewable energy sector, which represents the stakeholders in both the *implementation* and *performance arena*, as well as the author's personal communication. The informed consent form

and questions are accessible in Appendix D.1. The interview question explicitly asked the interviewee to identify the stakeholders they perceived as excluded from the decision-making setting of the Net-Zero by 2060 agenda. A total of eight interviews were conducted, both in person and via online meeting platforms, each lasting around one hour. The interviews are conducted in Indonesian, as all interviewees are Indonesian. The list of the interviewee can be seen on Table 3.2. This interview was held according to TU Delft's ethical regulation and standard, the clearance for ethical standard can be seen on Appendix D.2.

*Table 3.2 Interviewee List*

Interviewee	Stakeholder	Desc.
1	National Research Agency	Policy Analyst
2	National Development Planning Agency	Civil Servants in Energy Sector
3	Climate NGO	Program Director
4	Citizen Representatives	Local Innovator
5	Innovation Startup	Project Manager
6	Academia	Professor in Technical University
7	State Owned Enterprise – Energy	Energy Transition Manager
8	Energy NGO	Researcher

The interview transcripts were hand-coded using a combination of deductive and inductive thematic analysis. The deductive coding was guided by the procedural justice index by Aperi (2024), which provided a theoretical framework for identifying key dimensions of procedural justice in decision-making. However, inductive coding was also incorporated to allow themes that may not fit within the procedural justice framework to emerge from the data. The result of the inductive coding is the theme 'Decision-making culture,' which reflects how the interviewees interpret how norms and culture affect the decision-making process regarding Net Zero 2060. This theme, while not explicitly part of the procedural justice index, offers insights into the procedural dynamics. The codebook can be seen in Table 3.3.3.3.

*Table 3.3 Codebook used in the analysis of interview result*

Theme	Code	Description	Example
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<i>Participation in Decision Making</i>	Consultancy	Limited outreach or willingness to engage stakeholders for their insights in decisions related to Net-Zero 2060.	"I have been consulted by the representatives of the Ministry of Energy and Mineral Resources, but the consultation is more like a casual presentation rather than a consultation."
	Collaboration	Lack of cooperative efforts among stakeholders working toward the Net-Zero 2060 mission.	"We have a collaboration scheme going on, but due to limited funding, we also limit the collaboration level. So we end up working on our own again."
	Feedback Processing	Absence or weakness of effective channels for collecting and following up on stakeholder feedback.	"The response to feedback tends to be delayed because decision-makers don't engage with it directly—it has to pass through several layers of bureaucracy."
<i>Inclusivity</i>	Stakeholder Representation	Stakeholders involved in Net-Zero 2060 discussions do not sufficiently represent the diversity of relevant actors.	"We hope that the stakeholder representation of the private sector and the community is more varied, but that is not the case now."
	Limited Inclusion	Some stakeholders are excluded or only marginally included in the Net-Zero 2060 decision-making process.	"This is not inclusive at all, especially for women and disabled people who could benefit from this project."
<i>Information Disclosure &amp; Transparency</i>	Information Availability	Relevant information regarding Net-Zero 2060 decisions is not made publicly available.	"Often the information is not shared, so we need to ask directly from the person involved regarding the decision, and its using our personal communication channel."
	Information Clarity	Available information on Net-Zero 2060 is vague, insufficient, or difficult to interpret.	"They already told us about their plan regarding collaboration and relevant information regarding the Net-Zero 2060, but I still don't understand until now."
	Information Accessibility	Even when information is available, impacted stakeholders have limited means of accessing or engaging with it.	"Not everyone can access information. Sometimes, just being invited to discussions is the only way to stay informed."
<i>Access to Legal Process</i>	Equal Access to Law	Stakeholders face unequal barriers when attempting to challenge decisions related to Net-Zero 2060 through legal or formal mechanisms.	"We've publicly challenged them over the legitimacy of their decision, and we could do that because it is our rights."

<i>Decision-Making Culture</i>	Law Enforcing	Existing regulations surrounding Net-Zero 2060 mission are either unenforced or not enforced uniformly.	"Even though public participation is mandated by regulation, it hasn't been fully enforced."
	Regulation Availability	There is a lack of appropriate legal frameworks or policies supporting the Net-Zero 2060 mission.	"Local innovators or independent innovators are having a hard time actually providing results due to the unclear regulations about foreign technologies that are being applied in Indonesia. I think if there were regulations that addressed this, it would be good. "
	Strict top-down hierarchy	The decision-making of Net-Zero 2060 often follows a strict hierarchy that is based on a top-down approach.	"Well, we can submit our proposal to the higher up, but then the higher up might propose something else, and that ends up being what gets adopted. Even though we try to get our proposal included, sometimes it doesn't mean we actually agree; it's more like we've given up, because in the end, there has to be one unified voice."
	Silo Way of Working	The institution working on the Net-Zero 2060 tends to work unconsciously in a silo manner.	"We haven't really collaborated with other departments yet, because each already has its main duties and functions."

Following the coding of the interview results, the perceived injustices by the stakeholders were then explained according to each theme and the policy arena each stakeholder represents, to better understand the perceived procedural injustices in the implementation and performance arena.

#### 3.2.4. Sub Research Question 4

*How do policymakers recognize the perceived procedural injustices by MOIP approach in lower-income countries?*

The perceived procedural injustices that have been identified were then validated through two online expert interviews with stakeholders involved in the implementation process who possess knowledge of the policy-making process in Indonesia. The interviews are structured to assess whether policymakers are aware of the procedural injustices occurring and, if they acknowledge these injustices, whether they can explain any strategies used to address them. In addition to

discussing procedural injustices, the experts were also asked about the implications of these injustices on the policy-making process, which is currently focused on the Net-Zero by 2060 initiative, covering aspects from policy design to the implementation of policy interventions. Answering this final sub-research question will help address the main research question: how do perceived procedural injustices by stakeholders influence the implementation of MOIP in lower-income countries, using Indonesia as a case study. The insights gained will then be discussed to explore how other lower-income countries might also experience procedural injustices within the organization of MOIP and how these injustices can impact its implementation.

## 4. Net-Zero Effort as Mission in Indonesia

This chapter explains the result of the literature review, law and regulation review, as well as the grey literature review, to lay out how the Net-Zero target by 2060 emerged within the context and nuances of the Indonesian policy arena. After discussing the policy arena, this chapter covers stakeholder analysis, the formal chart, and the power-interest diagram. The list of interviewees is also included in this chapter.

### 4.1. Emergence of Net-Zero by 2060 as Mission

Paris Agreement, established during COP21, marks the global commitment where countries strive to limit the global warming of 1.5 °C by reducing global net anthropogenic CO<sub>2</sub> emissions from the levels recorded in 2010, in progressing towards net-zero emissions by 2050 (Siregar, 2024; United Nations, 2015). The term net zero refers to the effort to cut carbon emissions to a small amount, where residual emissions can be absorbed and stored by nature, thus leaving zero in the atmosphere (United Nations, n.d.). Indonesia pledged to reduce emissions in the Enhanced Nationally Determined Contribution (NDC) with an emissions reduction target of 31.89% unconditionally and 43.20% conditionally, which aligned with the Long-Term Strategy for Low Carbon and Climate Resilience (LTS-LCCR) 2050, with the vision to achieve net-zero emissions by 2060 or sooner (UNFCCC, 2022). The Enhanced NDC of Indonesia puts emphasis on the energy sector as the most significant contributor to emissions, and as the means of implementation, the enhanced NDC highlights key elements of implementation, which are finance, technology development and transfer, and capacity building (UNFCCC, 2022). With the nature of the enhanced NDC as a pledge, it sums up the direction Indonesia as a country pursues in the Net-Zero Effort (Ordenez & Eckstein, 2020). In relation to mission, as Mazzucato (2018) explain that missions must be clear, with specific targets and measurable outcomes, and not comprise a singular R&D project, while at the same time encouraging joined-up policy making across different types of actors, which in this case could be illustrated through the Net-Zero Effort in Indonesia. One of pathway taken by the Net-Zero Effort in Indonesia is by focusing on reducing the number of emissions through the electricity generation sector by utilizing three main projects; utilizing the existing coal-fired power plants but make it greener through exchanging coals for biomass and using carbon capture storage (CCS), Enhancing the existing renewable energy power source such as solar, wind, geothermal and hydropower, and expanding the innovation to other energy sources such as hydrogen and nuclear (Sisdwinugraha et al., 2025). The way the mission is translated into projects can be seen in Figure 4.1.



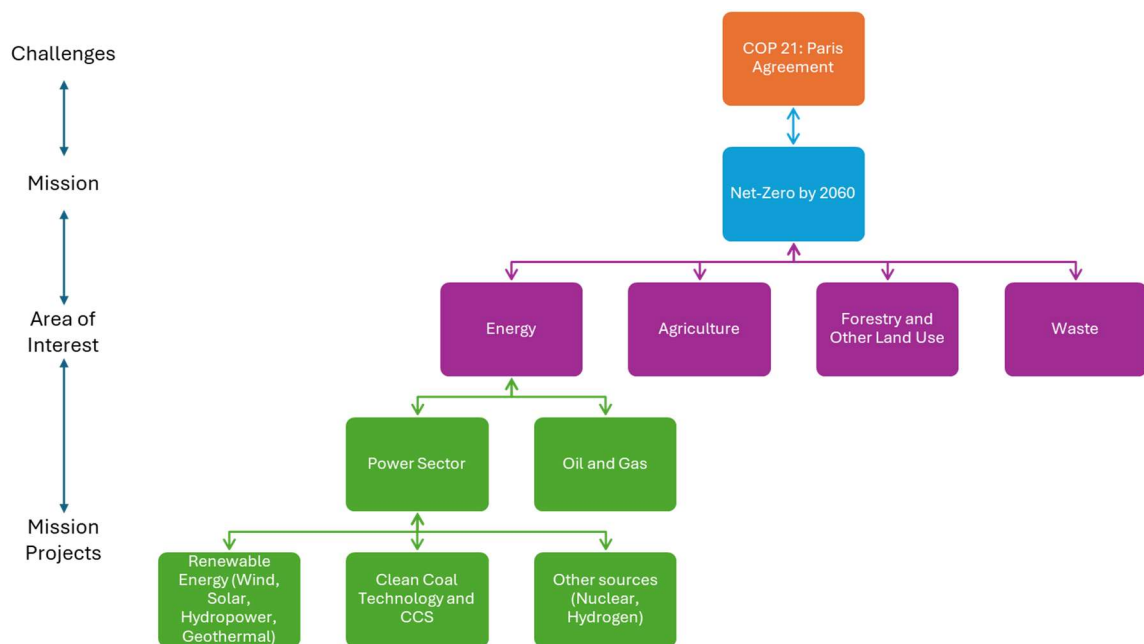


Figure 4.1 Adaptation of Mission-Oriented Framework in Indonesia Net-Zero by 2060

## 4.2. The Institution and Machinery of Policy Governance in Indonesia

Before understanding how the Net-Zero by 2060 mission is implemented in Indonesia, it's important to provide context on how the government generally operates in the policymaking process in Indonesia. Indonesia has adopted a presidential system, and based on the 1945 constitution, it has three main branches of government: executive, legislature, and judiciary.

The executive power is held by the President, who is elected directly by the people of Indonesia. Working directly with the president is the cabinet, which includes the vice-president and high-ranking ministers appointed by the president. The ministries' role here is explained by Blomkamp et al. (2017) It is to translate the president's pledges into policies. The legislative power is in the Indonesian parliament, the People's Consultative Assembly (*Majelis Permusyawaratan Rakyat*, MPR), which has two chambers. The people's representative council (*Dewan Perwakilan Rakyat*, DPR), which has the authority to make and change laws, and the regional representative council (*Dewan Perwakilan Daerah*, DPD), which is the advisory board. However, the people's representative council has to work closely with the executive in policymaking. It is worth noting that, due to the large number of political parties in the parliament, they are grouped into factions to coordinate the activities of their members. The judiciary role is with the constitutional court, which can review and strike out a law, creating a legal pathway through which citizens can challenge government policies (Blomkamp et al., 2017).

In terms of policy instruments, Indonesia has a strict hierarchical structure of the power of legislation and regulation. According to Article 7 of Law No.12 of 2011 (Odering, 2025) On the

Formulation of Law and Regulations, the structure is defined in Figure 4.2. In addition to these legal instruments, there are presidential instructions or decrees and ministerial decrees that add further detail to laws and government regulations.

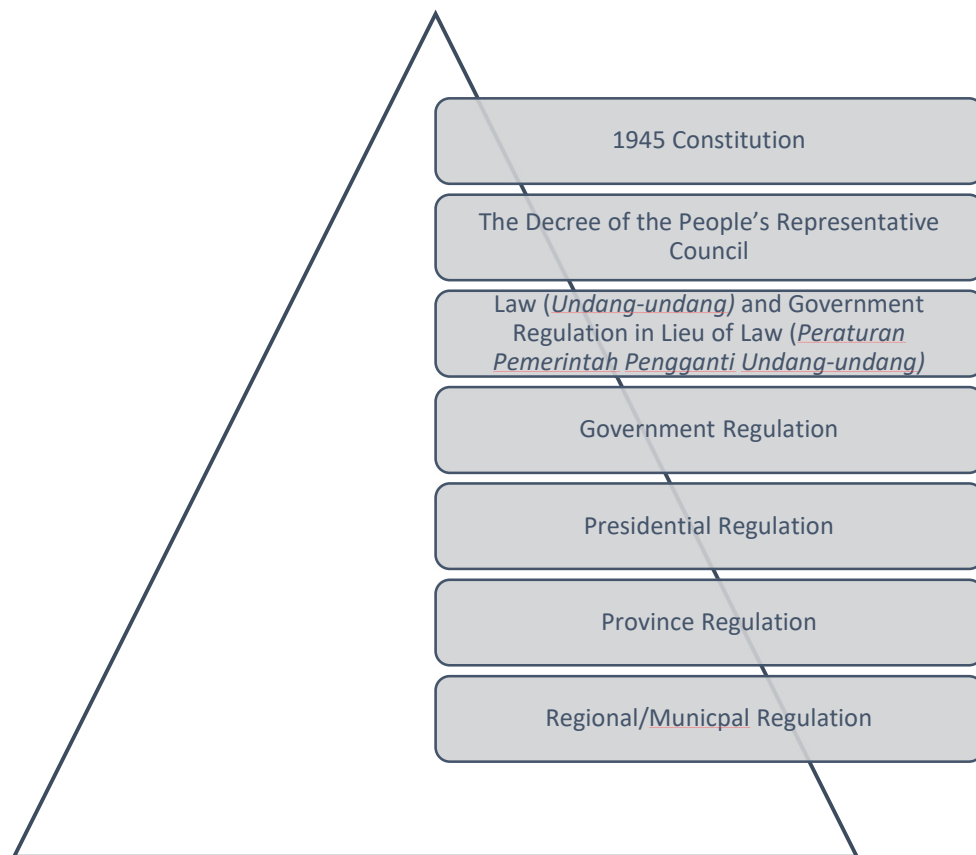


Figure 4.2 Hierarchal structure of Indonesian legislation

While the legislation and regulation is the same, the process and output of the policymaking differ per policy sectors. In the context of energy and electricity sector, the defining law is the Presidential Regulation 26/2008 about the creation of National Energy Council and Law 30/2009 which lays out the governance structure of the electricity sector (Simanjuntak, 2021). The National Energy Council (*Dewan Energi Nasional, DEN*) responsible for the creation of the National Energy Policy (*Kebijakan Energi Nasional, KEN*) and the Law 30/2009 mandates that the supply of electrical power is controlled by the state and must be constantly be increased in line with the development growth to ensure the electrical power will be evenly available in high quality and the general plan of national electricity need to drawn from the national energy policies.

In the scope of mission organization, Net-Zero by 2060 in Indonesia could be depicted in the policy arena. It gives it gives a more detailed depiction how policymaking activities in the varying

level of arena may be looked in Indonesia with how every stakeholders in each arena interpret and interact with each other.

### 4.3. Policy Arena for Net-Zero by 2060 in Indonesia

Based on the literature, Net-Zero by 2060 mission is being interpreted across four different policy arenas in Indonesia: *strategic*, *programmatic*, *implementation*, and *performance*. Each arena has its own specific purpose for the agenda it tries to achieve there.

#### 4.3.1. Strategic Arena

In the strategic arena, the debate during the development of the pledge to commit to the Paris agreement is on the position of the (new) climate policies on top of existing climate policy instruments in Indonesia. Before committing to Net-Zero Emissions, Indonesia had already established a roadmap to secure an energy supply to meet the country's ever-growing energy demand, along with the aim of reducing greenhouse gases (Suroso et al., 2020). The pledge is then treated as a time limit for the existing policies and as a way to legitimize the collaboration between multiple stakeholders, both nationally and internationally (Cherry et al., 2021). After the legitimization of the Paris Agreement's pledge as an official regulation of UU 16/2016, Indonesia, through the National Energy Council, adjusted the direction of its energy planning, as outlined in the National Energy General Plan (*Rencana Umum Energi Nasional*, RUEN) No. 22/2017. The making of this National Energy Plan is also coordinated with the National Long-Term Development Plan (*Rencana Pembangunan Jangka Panjang Nasional*, RPJPN). This national development planning document is valid for twenty years as goals of development and realizing national ideals, ensuring that the effort to address the energy supply and reduce emissions goes hand in hand with the nation's development.

The nation's development is highly dependent on the electricity consumption per person, as stated by the Ministry of Energy and Mineral Resources (Muliawati, 2025). The National Energy Policy also projects that in 2060, the electricity demand of Indonesia will fall around 1.813-2.347 TWh (Sisdwinugraha et al., 2025). However, up until 2022, coal still dominated the electricity generation sources by 66% (IEA, 2025).

In setting the agenda, this arena consists of stakeholders that hold significant roles in defining Indonesia's energy policy, which is managed by the Presidential Office and the House of Representatives. The President, who also serves as the head of the National Energy Council, mainly directs the overall direction of the National Energy Plan, and during negotiations within this arena, the President consults the House of Representatives. The House of Representatives is built on a coalition of political parties supporting the government, so the interests of these parties, as represented through the House, also influence the overall direction (Massagony et al., 2025).

Outside the scope of Indonesia, the largest climate finance initiatives also happened between the high-income countries and lower-income countries, which is the Just Energy Transition Program (JETP). In Indonesia itself, during the G20 summit in 2022, it was announced that JETP with Indonesia is established. The initial commitment of public funds is also aided by the

statement by Glasgow Financial Alliance for Net-Zero (GFANZ), which is the world's largest financial coalition, to remove the barriers to private finance for energy transition in Indonesia (Sud, 2025). JETP currently focuses on the phasing out of coal for lower-income countries. This creates tension in the strategic arena, as the executive level of the government must balance reliance on coal with the new and renewable energy mix, while international pressure, as mandated by COP, requires a coal phase-out through financial means. In this arena, although there are tensions with different interpretation of the international stakeholders the Net-Zero is seen as reducing the coal usage, while the interpretation of the Indonesian cabinet focus on the electricity supply, the mission itself could be seen as converging into the same interpretation of addressing the need to reduce emissions while at the same time still focusing on how the supply of electricity could be secured as can be seen on the policy instruments that comes up from this policy arena. The timeline of these decisions can be seen in Figure 4.3.

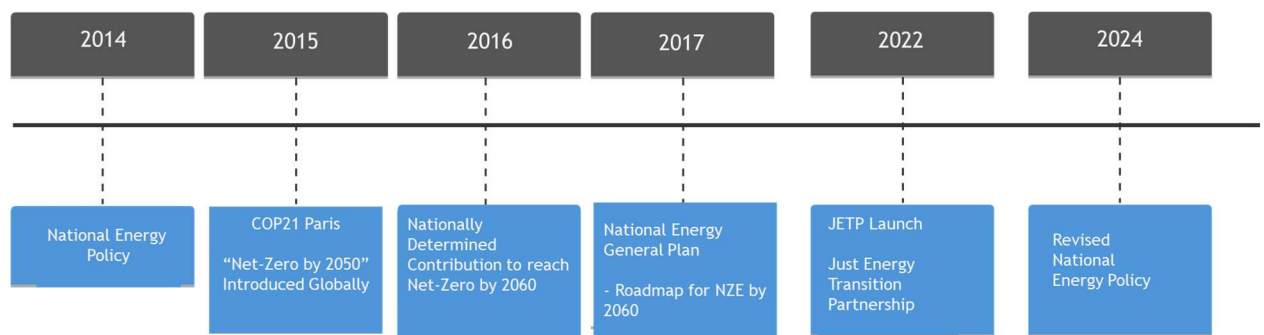


Figure 4.3 Timeline of Net-Zero by 2060 Key Decision

#### 4.3.2. Programmatic Arena

The main task in this field is to turn negotiation outcomes in the strategic area into an actionable agenda. The National Energy General Plan outlines the areas and specific sectors that must be addressed to achieve the objectives outlined in the National Energy Policy. The major difference of the National Energy General Plan, compared to other instruments that talk about energy, is that the National Energy General Plan has a concrete regulatory clause that binds multiple stakeholders to the same goals. However, the decision-makers comprise multiple ministries, including those in the national energy council, which have autonomy in defining the scope of policies implemented in their respective areas. As the Ministry of Energy and Mineral Resources both work directly under President authority and the chair of the National Energy Council, the direction of the agenda is focused on the Ministry of Energy and Mineral Resources and other ministries which included in the National Energy Council tend to have limited influence to the result of the negotiation (Massagony et al., 2025). The national energy general plan then serves as an agenda for energy planning, which includes the general direction for each ministry, including the timeline. The National Energy Plan not only consults the National Long Term Development Plan, but also the National Medium Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional, RPJMN*).

The main goals of the national energy general plan is to realize energy management that is equitable, sustainable, and environmentally conscious by prioritizing the development of renewable energy and energy conservation in order to achieve national energy independence

and security. Highlighting its vision to prioritize the development of renewable energy, the national energy general plan is to increase the energy mix until 2060, with the road map shown in Figure 4.4.

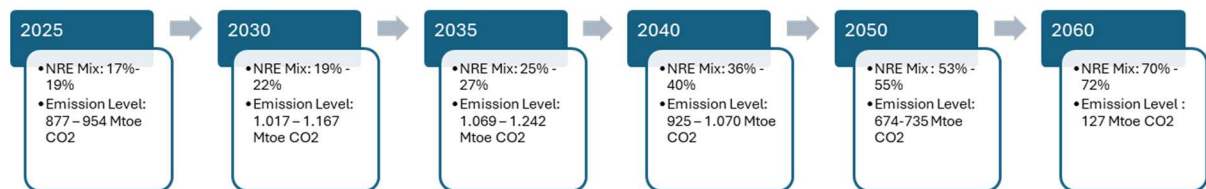


Figure 4.4 Energy Transition Roadmap to NZE 2060

However, the JETP program through the Comprehensive Investment and Policy Plan (CIPP) targets the share of renewable energy mix to reach the number of 44% in 2030 (JETP Indonesia, 2023) which is significantly higher than the target set by the National Energy Policy. Different targets with little to no consolidation create a sense of ambiguity about which target should be pursued. Here, the interpretation starts to diverge in different directions as the agenda that is set in this arena focuses on multiple interpretations of Net-Zero by 2060 from the renewable energy side that Ministry of Environment and Forestry interpret the Net-Zero by 2060 through the land-use and forestry while the Ministry of Energy and Mineral Resources focus on the renewable energy. The effort to bridge the different interpretations is evident in the creation of the energy transition roadmap, facilitated by the National Energy Council, which encompasses multiple stakeholders. This effort aims to accommodate the interests of every stakeholder. However, this does not automatically mean that the interpretation of the Net-Zero by 2060 is converged into a similar meaning, yet after the creation of the Energy Transition Roadmap, every ministry creates its own version of policy instruments that serve their own interest.

#### 4.3.3. Implementation Arena

Due to the highly hierarchical nature of policy making in Indonesia, every ministry draws from the national energy plan while also consulting the National Medium Term Development Plan to align its Strategic Plan (*Rencana Strategis*) with that of other ministries. The result is the concrete policy interventions by every ministry, with tools such as subsidies, budget allocation, collaboration mandate, and platform creation, as can be seen in Appendix B. The stakeholders in this arena are civil servants from all ministries. However, the same situation occurs as in the *programmatic arena*, where the Ministry of Energy and Mineral Resources also holds the most power. Power in these arenas can be described as having the greatest interest, allowing them to direct resources to serve the interests of the Ministry of Energy and Mineral Resources. For example, the Ministry of Energy and Mineral Resources might coordinate with the Ministry of Higher Education, Science, and Technology to advance the Strategic Plan in New and Renewable Energy technology. (KESDM, 2024). On the other hand, the strategic plans devised by other ministries, such as the Ministry of Environment and Forestry, which also share an interest in reducing emissions in Indonesia, did not gain enough traction compared to the Ministry of

Energy and Mineral Resources. For example, the instruments to address the need for biomass and new energy sources, while falling under the jurisdiction of the Ministry of Environment and Forestry, are being implemented by the Ministry of Energy and Mineral Resources (KESDM) (2020). At the sub-national level, the regional government also plays a role in the national energy general plan through the creation of the Regional Energy General Plan (*Rencana Umum Energi Daerah*, RUED), which outlines the budget allocation for each region's Net-Zero Effort. The stakeholders actively involved in this arena include civil servants at the national level, who create national regulations, and regional-level civil servants' units that implement local regulations.

However, there are disjointed goals as stated on the National Energy General Plan, with the Regional Energy General Plan as well as the National Electricity Supply Business Plan 2021-2030. While the documents should be interconnected with each other, the National Energy General Plan has slightly different targets if compared to the Electricity Supply Plan. In the National Energy General Plan, the Renewable Energy capacity is set at 318 GW in 2060. However, the Electricity Plan targets a renewable energy capacity of 281 GW. The most notable plan is that while the national energy general plan targets the coal retirement starting from 2030, the electricity plan did not mention early retirement; rather, it focuses on utilizing biomass co-firing in the existing power plant. The emission levels stated are also different, where the midway ambitious goal of the national energy plan is on 394 MtoeCO<sub>2</sub> in 2040, the electricity plan realistically sets the target at 536 MtoeCO<sub>2</sub> in 2040. Again, discrepancies between official documents can also be seen in the implementation arena, creating a sense of misalignment of Net-Zero by 2060 interpretation between stakeholders at this stage.

#### 4.3.4. Performance Arena

The performance arena encompasses the stakeholders, to whom policy interventions have an impact. Regarding the Net-Zero Effort, the most affected sector is the energy generation sector, which is, nationally, primarily undertaken by the National Electricity Company (Perusahaan Listrik Negara/*PLN*). While the National Electricity Company are interested in the Net-Zero Effort by looking for alternative energy sources, at the same time local communities who are also interested in both securing the energy supply and looking for way to using alternative energy sources as the energy consumer are also looking for a chance to be included in the discussion through the Non-Governmental Organization (NGO) or startups that gain funding through the regulation implemented on the national level and the local level. For example, community energy initiatives emerged among the local communities as a way to secure the energy supply and are seen as a larger economic development for the community (Saio, 2024).

Currently, with the existing policies, Indonesia's emission level in 2023 is 733.2 MtoeCO<sub>2</sub>, which is lower than the target set by the National Energy Policy; however, the share for renewable energy mix is lower by 3% if compared to the goals in the National Energy Policy (Ritchie & Rosado, 2024). While the emission level is in line with the target, there has been no significant progress regarding Indonesia's renewable energy development, especially in the power sector.

The Net-Zero Effort in this case is structured to cascade from the national level up until the level of the citizen, as can be seen in Figure 4.5. While following the top-down method in the effort, the discussion on the *performance* arena could also serve as a learning point for both the

*implementation* and the *programmatic arena*, as there are discussions with multiple stakeholders when talking about the Net-Zero Effort.

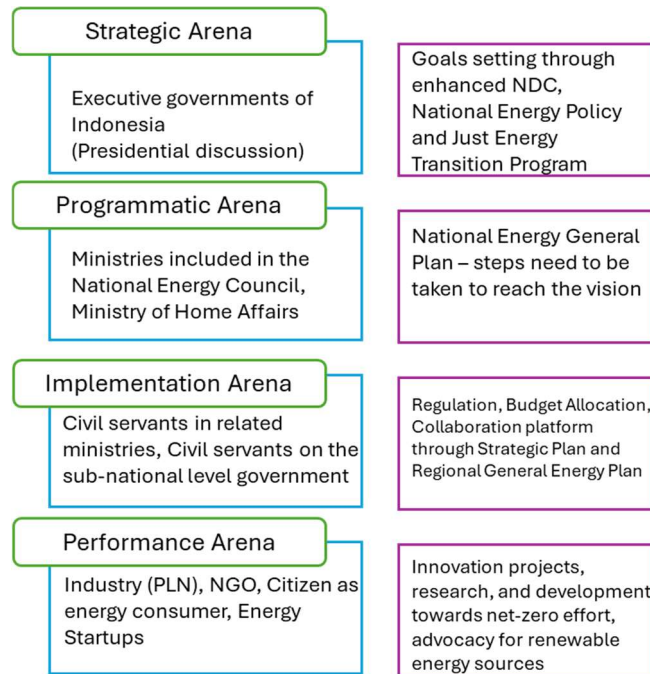


Figure 4.5 Illustration of Policy Arena and the Policy Instruments

#### 4.3.5. Notable Points from The Arenas of Indonesia Net-Zero by 2060

The Net-Zero by 2060 mission in Indonesia emerges not only from the needs of the Indonesian energy sector, but also significantly shaped international pressure, particularly through global climate agreements such as the Paris Agreement and through financial mechanisms such as the JETP. This external influence has both accelerated the process of formalization of the mission and introduced tensions between Indonesia's existing internal priorities of energy which focus more on securing an optimum energy mix comprising all viable energy sources (Mujiyanto & Tiess, 2013) into new goals of achieving an energy mix prioritizing new and renewable energy sources, less in carbon emissions (UNFCCC, 2022).

In adapting the new Net-Zero target by 2060, the process can be explained through the arenas mentioned in section 4.3.1 up to section 4.3.4. However, although arenas are defined as a way to explain mission emergence that may not follow the same policy-making structure as other policy pathways, the case in Indonesia shows that how arenas operate largely follows Indonesia's hierarchical policy-making structure. As Blomkamp et al. (2017) mention, Indonesia still follows a rigid hierarchy of laws, and the arenas that serve as metaphorical spaces for interaction demonstrate that negotiation and contestation are not really occurring, marked by differing instruments used by stakeholders that often clash with each other (Hasjanah, 2024). On the other hand, the existence of stakeholders in multiple arenas is happening in Indonesia,



exemplified by the Ministry of Energy and Mineral Resources, which provides direction in almost every arena, albeit with varying levels of inclusion which will be explained in the later section.

#### 4.4. Stakeholder Analysis

Given the Net-Zero by 2060 mission, organizations across various policy arenas involve multiple stakeholders in the policy-making and decision-making process. Focusing on the electricity sector, the policy documents are analyzed to identify stakeholders that are included as well as the institutional context of Indonesia's electricity system, as taken from the research of Warner (2025) and Simanjuntak (2021). However, the Indonesian policy documents did not explicitly mention innovation as part of its policy instruments; rather, it is indicated in the way research and development is created. To see the relevance with the innovation side, a specific clause that focuses on innovation is also analyzed within the policy documents, which can be seen in Table 4.1.

*Table 4.1 Clause regarding Innovation in Energy-related Documents*

<b>Regulation</b>	<b>Document Number</b>	<b>Innovation Policy Clause</b>
National Energy Policy	Government Regulation No. 79/2014	Paragraph 5: Research, Development, and Implementation of Energy Technology
National Energy General Plan	Presidential Regulation No. 22/2017	Supporting Regulation 5: Research, Development, and Implementation of Energy Technology
Regional Energy General Plan (example)	West Java Regional Regulation No. 2/2019 Central Java Regional Regulation No.12/2018	Supporting Regulation 5: Research, Development, and Implementation of Energy Technology
National Electricity Master Plan 2019-2038	Ministerial Decrees of Ministry of Energy and Mineral Resources No. 143K/20/MEM/2019	IIA: Electricity Supply
National Electricity Supply Business Plan 2021-2030	Ministerial Decrees of Ministry of Energy and Mineral Resources No. 188.K/HK.02/MEM.L/2021	III: New and Renewable Energy Sources
Accelerating Renewable Energy Development for Electricity Supply	Presidential Regulation No. 112/2022	Clause 23: Support by the Government for the development of electricity generation plan using renewable energy sources



Stakeholders that are explicitly mentioned in the discussion regarding innovation and also the Net-Zero by 2060 on the electricity sector is mentioned on the list below.

- **Presidential Office:** As the highest executive authority, the Presidential Office has final say over national priorities. Have the right to both issue and revoke law. Also the chair of National Energy Council
- **People's Representative Council:** While it jointly shapes laws with the President, the diversity of political parties within the council means conflicting interests often emerge. Some factions may support ambitious climate action, while others prioritize fossil fuels or regional industrial interests.
- **Ministry of Energy and Mineral Resources (MoEMR):** Arguably the most powerful technical ministry on climate-energy issues. MoEMR leads the design of energy policy, oversees national energy planning, and coordinates Indonesia's energy transition pathway. As chair of the National Energy Council, it steers decisions on everything from emissions targets to electricity mix projections. It is also closely connected to PLN.
- **Ministry of Finance (MOF):** It sets subsidies, fiscal incentives, and climate-related investment frameworks such as carbon pricing and green bonds. Their priorities influence the pace of energy innovation and the financial burden shared across stakeholders. Member of National Energy Council.
- **Ministry of State-Owned Enterprise (MoSOE):** Since SOEs control electricity and key infrastructure, it is managed through state owned enterprise ministry.
- **Ministry of National Development and Planning (MoNDP):** This ministry ensures that energy goals are harmonized with broader national development objectives like economic development. It develops Indonesia's Medium and Long-Term Development Plans (RPJMN and RPJPN), which are meant to align sectoral missions under one strategic umbrella. Member of National Energy Council
- **Ministry of Higher Education, Science and Technology (MoEST):** Connects education and R&D to national climate strategy. Member of National Energy Council.
- **National Research and Innovation Agency (BRIN):** Created to centralize public research, BRIN coordinates innovation agendas across ministries as well as Net-Zero by 2060 in Indonesia.
- **Ministry of Home Affairs (MoHA):** Manage sub-national engagement. It channels national mandates to provinces and ensures that regional energy planning (like RUED) is implemented. Responsible for the development of Net-Zero by 2060 on the sub-national level.
- **Sub-National Level of Government:** These actors develop and implement regional energy plans based on national targets. Provincial governments may struggle to align their Regional Energy General Plans (RUED) with competing national strategies (e.g., from MoEMR or PLN), leading to policy misalignment.
- **State-Owned Electricity Company (PLN):** Mandated by the government to handle electricity generation, transmission and distribution. Have interest in securing sustainable electricity generation across Indonesia.
- **Just Energy Transition Program Secretariat:** Represents Indonesia's formal partnership with international financiers to transition from coal to renewables.

However, while not mentioned in a formal setting, there are stakeholders that are not necessarily mentioned but expressed interest in the discussion. Some of these stakeholders are also mentioned to be excluded in the discussion of energy and electricity according to the interview results, which will be explained in chapter 5.

- **Climate Non-Governmental Organization (NGO):** These include organizations like TrendAsia and Tara Climate, which advocate for equitable energy transitions, transparency, and stronger regulatory enforcement. They often act as watchdogs, amplifying community voices and exposing justice issues like forced exclusionary practices in renewable project.
- **Energy Think-tank:** Different from NGO, think tank like Institute of Essential Services Reform (IESR), World Resources Institute (WRI) and Climate Policy Initiative (CPI) provide data, policy analysis, and scenario modeling for Net-Zero planning. While not part of formal governance structures, they wield soft influence by informing policymakers and international partners. Their research is often cited in strategic documents, even if they're not consulted during official decisions.
- **Independent Researcher and Innovator:** These actors operate in liminal spaces between government, academia, and the private sector. Often founders of local energy startups or researchers without institutional backing, they face barriers to entry in policy dialogue.

How these formal and informal stakeholders who have an interest in the development of Net-Zero by 2060 interact with each other will be explained in the formal chart in Figure 4.6.

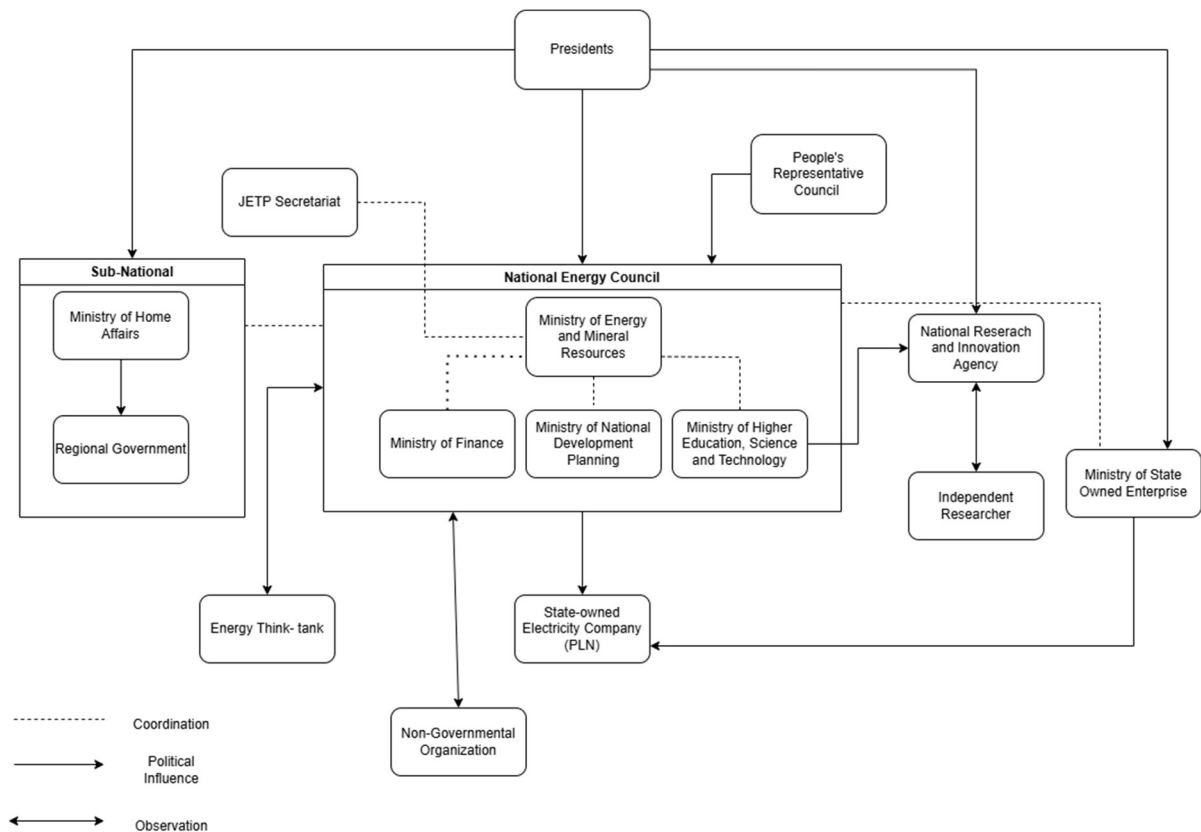


Figure 4.6 Formal Chart for Innovation in Energy Sector

Many stakeholders are officially represented in the National Energy Council, notable exceptions include Sub-National Governments, whose interests are only indirectly represented through the Ministry of Home Affairs, and the National Research and Innovation Agency (BRIN), which operates outside the council despite its central role in coordinating national R&D. Additionally, although not officially acknowledged in governance structures, Climate NGOs, Energy Think Tanks, and Independent Researchers and Innovators have shown a strong interest in shaping Indonesia's Net-Zero by 2060 plan, through advocacy, policy papers, or grassroots initiatives.

Although all stakeholders show strong interest in the energy transition, their actual power and institutional influence vary greatly. The Presidential Office, Ministry of Energy and Mineral Resources, Ministry of Finance, and National Electricity Company dominate the high power–high interest quadrant, guiding regulations, fiscal decisions, and electricity infrastructure. The Ministry of National Development and Planning also holds significant power, though its broader development goals slightly reduce its focus on Net-Zero objectives.

Conversely, agencies such as the National Research Agency, the Ministry of Higher Education, Science, and Technology hold moderate or indirect authority. The capacity of the National Research Agency to influence policy is mediated by decisions from the Ministry of Energy and Mineral Resources as well as the Ministry of Finance. Meanwhile, the power of the Ministry of Higher Education, Science, and Technology is limited to the academic sphere. Sub-national governments, although they have budgetary autonomy and formal inclusion in decision-making,

heavily rely on decisions made at the national level. This includes budget planning by the Ministry of Finance, development planning by the Ministry of National Development and Planning, and national energy policy created by the Ministry of Energy and Mineral Resources. Although sub-national governments have the capacity to interact closely with regional levels, making them critical in policy implementation, they depend on national directives for key decisions.

Peripheral yet influential, Climate NGOs, Think Tanks, and Independent Innovators provide thought leadership, public engagement, and technological innovation. However, without institutional mandates or decision-making authority, they often relying on partnerships or external networks to build momentum.

Classification of different interests, perspectives, objectives, and also resources of these stakeholders can be seen in Appendix C.1. Based on this table the stakeholders scoring is also put at Appendix C.2. which serve as the basis to visualize the power-interest grid that can be seen in Figure 4.7.

1	Presidential Office	9	JETP Secretariat
2	People's Representative Council	10	National Research and Innovation Agency
3	Ministry of Energy and Mineral Resources	11	Sub-National Government- Province Level
4	Ministry of Home Affairs	12	Ministry of State-Owned Enterprise
5	Ministry of Higher Education, Science, Technology	13	Energy Think-tank
6	Ministry of Finance	14	Climate NGO
7	Ministry of National Development and Planning	15	Independent Researcher and Innovator
8	National Electricity Company		

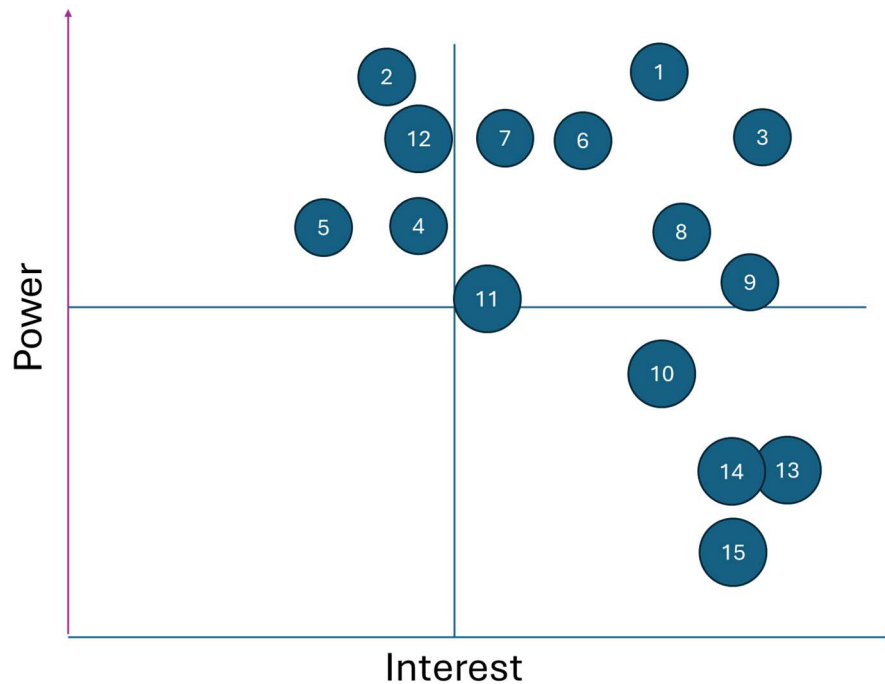


Figure 4.7 Power Interest Grid of Stakeholders

When visualized, the pattern of how power and interest appear among stakeholders becomes clear. Although many stakeholders hold high institutional power, their interest in the Net-Zero by 2060 varies significantly. Stakeholders such as the Ministry of State-Owned Enterprises and even the legislative body of the People's Representative Council have high power; however, since their main interest is not solely in energy, they have significantly lower engagement in energy efforts (Warner, 2025). As a result, the critical stakeholders with both power and interest are concentrated within ministries and agencies directly responsible for energy policy and planning, such as the Ministry of Energy and Mineral Resources and the National Electricity Company, which operate under the mandate of the Ministry of Energy and Mineral Resources (Sisdwinugraha et al., 2025). However, multiple stakeholders also exist within the spectrum of high interest but low power, such as climate NGOs, energy think tanks, and independent innovators. This suggests that power distribution is heavily centralized within the formal institutions backed by law.

To better understand the procedural injustices of the innovation policy directed by the Net-Zero Effort mission, interviews are conducted with selected stakeholders who have a high interest in the innovation of the Net-Zero Effort but varying degrees of power. Compared to the policy arena, the interviewee will comprise the stakeholders in the *implementation arena*, meaning the civil servants who must implement the policy intervention from the Ministry, and the *performance arena*, which is the stakeholders who felt the impact of the policy intervention. The result of the interviews is presented in the next chapter.

## 5. Perceived Procedural Injustices

This chapter aims to present the results of the semi-structured interviews. The results were analyzed per parameter of the procedural injustices aspect in the decision-making. Then it is followed by the summary of the interview results that presents the perceived injustices by the stakeholders in the implementation arena and in the performance arena of the Net-Zero by 2060 mission in Indonesia.

### 5.1. Participation in Decision Making

In theory, mission that is translated into MOIP emphasizes on participation of all stakeholders. However, in practice, especially within the Indonesian Net-Zero context, participation is often reduced to formalities. This section explores how stakeholders, particularly from the performance arena, perceive their involvement as tokenistic rather than substantive.

*"We do want to do it (community consultation) at the planning stage. But tight deadlines force us to consult after decisions are set in stone. Assessments would take too long." – Interviewee 2*

Many implementation-level stakeholders describe consultations as administrative obligations rather than meaningful engagements. The scheduling of these consultations, after strategic decisions are already made, renders feedback symbolic rather than influential. While assessments may be conducted, the act of consulting communities is viewed as a formality to tick regulatory boxes.

*"We publish assessments and open feedback channels, but bureaucracy makes it impossible to incorporate input before final decisions." – Interviewee 1*

This limitation reflects systemic constraints where institutional rigidity overrides responsiveness. Even if feedback mechanisms exist, they are not integrated early enough to reshape policy design. Bureaucratic layers and overlapping mandates prevent real-time adaptation, closing off opportunities for communities to shape outcomes.

*"They never explicitly include us. Group discussions feel like presentations, not consultations." – Interviewee 4*

Stakeholders in the performance arena describe their experience not as inclusion but as passive reception. Events framed as "consultations" often resemble announcements, lacking space for negotiation or open dialogue. This perceived lack of reciprocity reinforces a sense of detachment between stakeholders.

*"Consultation only occurs when we demand it. Otherwise, they proceed with their agenda." - Interviewee 3 and Interviewee 5*

For several stakeholders, consultation is not a built-in component of the planning process, it's a reaction. When advocacy coalitions actively push for dialogue, consultations are arranged. But in the absence of pressure, decisions move forward unilaterally.

Indicated from the interview result that the perceived procedural injustices manifest as a barrier to meaningful participation. How participation is seen only as regulation and not as something that is actively needed. They felt that it is normal for the decision-making to only include the decision-maker and not the community that is impacted. On the other hand, some members of the local community also felt that it is indeed normal not to be consulted and not asked to participate because of a sense of detachment from the decision-making process. These findings are supported by a study conducted by Akbar et al. (2020) regarding participation in the planning stage of the decision-making process, where the participation procedure is being bypassed in favor of time due to the tight scheduling of policy-making, due to the mismatched policy. This also notes that the vast difference in power between stakeholders, where stakeholders who are deemed to have higher power could make decisions unilaterally without the support of other stakeholders, which is supported by the findings of Grillos (2017) in a similar case of power asymmetry in the planning stage of decision-making.

## 5.2. Inclusivity

Inclusivity in the procedural justice is the representation of the stakeholders along the process of the planning and the implementation of the innovation policy regarding the Net-Zero by 2060, however interviews notes that inclusivity is still a topic that needs to be addressed.

*“If we include all affected stakeholders, there will be heated discussions. We avoid this by not inviting them.” - Interview 2*

*“We limit participation because we cannot trust them.” – Interview 1*

In the *implementation arena*, inclusion during the planning of Net-Zero by 2060 policy is highly selective. Stakeholder engagement is dominated by actors with formal power, primarily ministries and affiliated institutions, while those with less institutional authority, such as citizens and NGOs, are left out. These exclusions are not fully accidental. Interviewees revealed that invitations are often withheld to prevent potential conflict or because of institutional distrust. Other point of view for the inclusion of the stakeholders also cause by the regulation limitation and the siloed way of working that can be seen in the implementation arena, as stated by the interviewee ‘I don’t have clearance to include more stakeholders in this discussion, and I believe that they also have similar discussion on their department thus I don’t feel that I need to include them in mine.’ Other argument about the need to include and making sure that all stakeholders is represented in the discussion of the innovation policy regarding Net-Zero by 2060 is also because they felt the stakeholders that is represented now is enough and sufficient ‘We do have representatives from local scale to the national scale so I think it is enough and if they do not express anything meaning they do not have anything to say regarding this.’

*“I notice that the policy on the innovation scope did not take into account the citizen at all during the planning stage, thus we need to advocate for the inclusion of the citizen during the discussion.” – Interviewee 3*

*“Women benefit from energy innovation but aren’t invited to discussions.” – Interviewee 5*

*“Universities only receive directives – no direct dialogue.” – Interviewee 6*

*“Local innovators? They ignore us until we build a successful startup.” – Interviewee 4*

Respondents in the performance arena consistently noted that citizen, and on a deeper level of citizen is women and disabled communities, researchers, and local innovators are insufficiently represented or included far too late in the policy process to contribute meaningfully. Universities, while formally aligned with Ministry of Education, Science, Technology, lack direct lines of communication with decision-makers. Independent innovators felt recognition only came after they had independently succeeded, suggesting that institutional legitimacy is a prerequisite for inclusion.

*“We’re not necessarily included, but we created a coalition to demand a seat at the table.” – Interviewee 5 and Interviewee 8*

In response to exclusion, stakeholders from the performance arena have begun forming coalitions to amplify their voices. These coalitions, often composed of NGOs, startups, and local advocates, aim to push back against top-down governance by demanding more inclusive dialogue structures. They also strive to represent communities systematically overlooked in formal forums, such as women, rural citizens, and other vulnerable groups. Indicated in the interviews is that the perceived injustices are where the inclusion of stakeholders is often limited by the regulation, and the perception that if it's not directly mandated to them, they have no obligation to seek a broader stakeholder group, even though they have the same mission in the Net-Zero by 2060 scheme. The power asymmetry is also seen because the stakeholder with lower power is often sidelined to serve the interests of stakeholders with higher power. These findings are supported by the study conducted by Sekaringtias et al. (2023) It was mentioned that although the civil servant who represents the government already felt that the inclusion is already embedded in the current efforts, stakeholders such as NGO and citizens did not feel included due to the power imbalances against incumbent groups. On the other hand, the government's ability to focus on inclusivity is hindered by the perception of inclusivity and the time- and resource-consuming demand in implementing policies regarding energy transition, which are not sustainable.

### 5.3. Information Disclosure and Transparency

Information disclosure and transparency plays an important role in shaping how stakeholders could interpret and interact with Net-Zero by 2060 mission, however availability, clarity and accessibility aspects of information is still an issue that is noted by the interviewee.

*“Information is shared internally, not on websites. Public must request specifics.” – Interviewee 1*

*“We avoid disclosure – we can’t handle potential backlash or rejection.” – Interviewee 2*

Stakeholders within the implementation arena acknowledged that policy-related information is often not made publicly accessible. Instead, it circulates through internal channels or is selectively released upon request. This practice stems partly from institutional caution, officials expressed concern about their capacity to respond to public criticism or manage negative



feedback if information were shared more openly. As a result, disclosure is risk-averse, creating an opaque environment where knowledge is treated as privileged rather than public. The stakeholders in the performance arena also note that they do not have access to the information, even though they have already asked for it. One of the interviewees stated, 'If we ask for the information, the information is often delayed or they do not disclose the information at all. So we have to gather it from multiple sources and (often) rely on personal connections.'

*"If they only share fragments, I don't ask for more , maybe it doesn't concern me." – Interviewee 4*

However, because it is seen as common not to get the information, some of the interviewees feel it is indeed adequate to only see the result rather than getting access to the information about the innovation policy. Some interviewees expressed resignation, suggesting that partial or delayed disclosure is simply business as usual. Over time, this normalizes disengagement, stakeholders internalize the belief that unless information is voluntarily provided, it must not be relevant to them. Such normalization reinforces passivity and further weakens the democratic oversight.

*"Meetings happen? I wouldn't know, they never share anything." - Interviewee 6*

*"We get conflicting directives. Zero visibility into negotiations or reasoning." – Interviewee 7*

The decision-making is also not transparent because the decision is often made behind closed doors in a limited meeting setting. The meeting often consists of the decision makers, and the result is also not published to the public. The absence of documented rationale or inter-agency coordination leads to policy contradictions on the ground. Stakeholders outside these circles feel disoriented by conflicting instructions and have no way to trace how or why decisions were made.

It is indicated in another interview that the perceived injustices are caused by the information not being disclosed, and if it is indeed disclosed, it is not disclosed in a way that explains to the stakeholders the information correctly. Meanwhile, the decision-making process is not transparent at all, with no way of knowing whether the discussion and negotiation for the decision-making is happening, and if it is indeed happening, who is involved in the decision-making.

## 5.4. Access to Legal Process

On the metric of access to legal process, it refers to the judicial independence of the stakeholders regarding the innovation policy of the Net-Zero by 2060.

*"We do have regulations for participation, like Act 12/2011, but it is still not working." – Interviewee 3*

While judicial independence in Indonesia is formally acknowledged by all interviewees, the issue lies not in the existence of laws but in their functionality. Act Number 12/2011, which mandates public participation in legislative processes, is central to the procedural justice aspect. However, stakeholders pointed out that its implementation lacks clear enforcement. As a result, the law

is seen as a symbolic gesture where its present on paper but weak in practice. Due to the lack of enforcement, legal obligations are often met through superficial compliance, publishing a report or hosting a one-way consultation suffices. For affected communities, this minimalist approach feels disempowering and undermines the spirit of procedural justice embedded in the regulation.

*“Legal recourse exists but is too time-consuming and resource-heavy for ordinary stakeholders.” – Interviewee 3*

Even when there are legitimate grounds to challenge decision-making, stakeholders face logistical barriers. The legal process is perceived as costly, slow, and inaccessible to the average citizen or NGO. This discourages formal complaints, especially when communities lack legal literacy. As a result, many accept decisions they disagree with not due to approval, but due to exhaustion.

## 5.5. Insights from Stakeholders

Based on the interview results, all the parameters that comprise the procedural justice element are not yet fulfilled. Across all four parameters examined, stakeholders in both the implementation and performance arenas perceive procedural injustices that undermine the legitimacy of the decision-making process and the implementation of innovation policy in the scope of Net-Zero by 2060 in Indonesia.

1. **Participation:** Meaningful participation is largely missing. Consultation often takes place after key decisions have already been made and is driven more by regulatory compliance than by a genuine desire for input. Additionally, bureaucratic obstacles hinder the timely incorporation of feedback. There is a troubling trend of excluding communities from decisions that directly affect them.
2. **Inclusivity:** Stakeholder representation is significantly limited and unbalanced. In the planning phase of the implementation process, powerful stakeholders largely dominate discussions, intentionally excluding citizens, NGOs, independent researchers, universities, local innovators, women, and people with disabilities. The reasons for this exclusion include a reluctance to engage in conflict, a lack of trust, regulatory silos, and a mistaken belief that current representation is "sufficient." This power imbalance effectively sidelines vulnerable groups, although coalitions in the performance phase strive to counter this exclusion.
3. **Information Disclosure & Transparency:** Access to information is often restricted and unreliable. Information is usually kept internal, not shared publicly in a proactive manner, making it difficult or even impossible to obtain upon request. Decision-making processes take place behind closed doors, within small groups or isolated departments, with no visibility into discussions, negotiations, or the reasoning behind final decisions. This lack of transparency breeds distrust among stakeholders.
4. **Access to Legal Process:** While judicial independence is acknowledged, the practical *enforcement* of legal mandates for participation (like Act 12/2011) is weak. The lack of clear implementation mechanisms allows actors to fulfill only minimal

requirements. Accessing legal recourse is perceived as prohibitively time-consuming and resource-intensive, leaving stakeholders without effective avenues for redress.

The perceived injustices create significant barriers to building the trust, ownership, and collaboration necessary for the ambitious and long-term societal transformation required by the Net-Zero 2060 mission, and this barrier needs to be addressed.

## 5.6. Stakeholders' Recognition of Procedural Injustices

To validate whether the barriers that stem from the procedural injustices affect the decision-makers and how the policy intervention is organized, expert interviews are conducted with the decision-makers.

*“We can only follow the rules and mandates that have been set up for us.” – Interviewee 2*

*“We know we could benefit from wider inclusion, but with limited funding we have to be strategic, we prioritize those who use the least resources but give us the most benefit.” – Interviewee 1*

Although the decision-makers in the *performance arena* did not explicitly acknowledge the procedural injustices happening that are caused by the organization of the Net-Zero by 2060 mission, they do agree that procedural injustices could act as a barrier that could lead to protest, even rejection of the policy intervention of the Net-Zero by 2060 mission. Policy implementers also cite constraints like regulatory silos, time pressures, and resource limitations as reasons why they have not yet addressed the procedural justice issue. This is inline with the findings of Massagony et al. (2025) where perceived lack of sustainable funding act as barrier to ensure the successful energy transition.

Beyond perceived procedural injustices, the interviews highlight misalignment in how the mission is interpreted. Although Net-Zero by 2060 is meant to be a shared goal, stakeholders across levels and sectors offer fragmented and sometimes competing interpretations, and the effort to address that faces another barrier of power asymmetry.

*“Even different ministries have different interpretations... It would be better if the goals were aligned so the bureaucracy would be easier.” – Interviewee 2*

*“We don’t struggle with communication, we struggle with power dynamics. Negotiations always favor the higher-level ministries. In the end, there’s no consensus or we opt to create a new definition by disregarding the consensus.” – Interviewee 1*

They note that the misalignment of interpretation is happening across the arena, resulting in the closing of discussion and negotiation efforts, especially in the *performance arena*, thus creating a siloed pathway which can be seen as inconsistent (Interviewee 2). This is in line with the arguments that is put forward by Simanjuntak (2021) that the inconsistent planning by the centralized stakeholders, which encompasses the stakeholders in the *performance arena* and *programmatic arena*, could create an institutional barrier that could hinder the Net-Zero by 2060 effort.

## 6. Discussion

This chapter will explain and discuss the results of Net-Zero by 2060 in the Indonesian context presented in chapters 4 and 5, as well as show the implications of the results to a wider scope of lower-income countries.

### 6.1. Interpretation Within and Across Policy Arena

As the Net-Zero by 2060 mission becomes formalized into effective regulatory and innovation policies in Indonesia, tensions can be observed within and across the policy arena. The *strategic arena* is where the mission first emerges as a goal-setting initiative. In Indonesia, this mission in the strategic arena is shaped by stakeholders at the executive level, primarily the President, who holds the highest executive authority, alongside the parliament, which shares legislative authority. Simultaneously, this arena is where Indonesia faces both international pressure and support. The interpretation of the Net-Zero by 2060 agenda in this arena encompasses interests from both the energy sector and the economy (IEA, 2022a). The interests negotiated here require that electricity demand is met with a mix of renewable energy and fossil fuels, while addressing the limitations of current coal reliance. The international interest aims to reduce coal utilization, especially in power plants (Sud, 2025). In this arena, the interpretation largely converges on the idea of utilizing new and renewable energy sources, targeting an energy mix, as evidenced by formal documents such as the Enhanced NDC, National Energy Policy, and the JETP agreement. The transfer of meaning and interpretation in this arena occurs through legal documents and is also mandated to the *programmatic arena*.

In the *programmatic arena*, the Net-Zero by 2060 mission is initially interpreted through formal channels, as the mission is communicated from the strategic arena via the National Energy Policy. Stakeholders in this arena, which include ministries with significant interests in the energy sector, particularly electricity, as explained in Chapter 4, translate this into working plans for each ministry as a vision for future developments. Often, these interests that are formalized into policy clash with each other (Hasjanah, 2024). However, negotiations among stakeholders to converge on a common interpretation of the mission have not been completed, leading to varying interpretations of the Net-Zero by 2060 mission in this arena (Interviewee 7). Although in the formal setting, councils to facilitate this negotiation have already been established through the creation of the National Energy Council, the effectiveness of this function has yet to reach an optimal level where a convergence of meaning can be observed (Interviewee 8). Optimal level here refers to the satisfaction felt by the interviewee with the work produced by the National Energy Council, which is perceived as inadequate. The divergence of mission targets has, however, been reflected in the formal documentation for the *implementation arena*.

In the *implementation arena*, the stakeholders, which consist of civil servants in the ministry and the National Electricity Company, grappled with the differing meanings and interpretations of Net-Zero by 2060 as outlined in each ministry's strategic plan. Due to these varying interpretations, the approach in this arena, which treats the Net-Zero by 2060 mission as a concrete policy intervention, has become more siloed rather than collaborative (Interview 8). Discussions in this arena tend to follow a vertical approach where civil servants often converse

within their own ministry instead of fostering horizontal discussion (Interview 1; Interview 2). The divergent interpretations that arise in the programmatic arena are further exacerbated in this context, resulting in regulations passed down into the *performance arena* that are often confusing due to the multiple interpretations.

The *performance arena* where the Net-Zero by 2060 should be treated as a means to tackle the problem-solution puzzle often operates in isolation. Although the objective of the converging interpretation of the mission, which is to reduce emissions, is based on the referenced material, it cannot be directly linked to the policy efforts that flow through these arenas. The performance arena consists of non-governmental organizations and citizens who are affected by the policy intervention. The Net-Zero by 2060 interpretation, while not necessarily converging into one singular definition, could mobilize stakeholders by opening up the discussion. The open nature of the discussion involves multiple stakeholders and plans to include those who have not been considered or mentioned before. By utilizing this method of explicitly involving different stakeholders, we can open up learning opportunities to find a middle ground in energy innovation that works for everyone, as put forward by Janssen et al. (Janssen et al., 2023).

Based on the way Net-Zero by 2060 is interpreted and negotiated within the arenas, there are direct consequences if convergence is not achieved. In this case, the direct consequence is the misalignment of instruments developed from the divergence itself. Consistent with points raised by studies conducted in energy transition in Indonesia, the mismatched policy instruments creates a bigger issue where public perception of the policy stability is lowered, thus eroding the effectiveness of the policy and reducing the investor trust to fund the policy itself (Massagony et al., 2025; Sekarintias et al., 2023; Setyowati, 2021). However, it is also noted that there is a distinct lack of coordination between stakeholders in multiple arenas, due to the silo way of working which is prevalent in the government of Indonesia (Guna et al., 2024) which directly affects the alignment of goals and interest between stakeholders. This lack of convergence could benefit from learning that includes both within-arena learning and reflexive learning across arenas. By utilizing learning mechanism, it is argued that there is potential to overcome the misalignment within and across arenas.

## 6.2. Misalignment Impact

In opening up the learning, whether within-arena or reflexive learning across arenas, stakeholder involvement is necessary for consultation and collaboration with each other (Johnson & Howsam, 2018). However, the process of opening up the learning method faces barriers caused by perceived procedural injustices among stakeholders. The procedural injustices identified in this study encompass the perceived inequities felt by stakeholders in the implementation and performance arenas. These perceived procedural injustices create barriers to organizing Net-Zero by 2060 in an effective and equitable manner. Regarding the participation index, meaningful participation is largely absent. While efforts to open up participation can be seen in the performance arena, attempts to foster discussion are mostly tokenistic in the implementation arena (Interviewee 2; Interviewee 3). Concerning the inclusivity index, stakeholder representation is significantly limited and unbalanced. By including only those stakeholders who align with the prevailing interpretation and deliberately excluding those who oppose the idea, opportunities for learning and converging interpretations are diminished,

potentially increasing conflict in the future. In terms of the information transparency index, the information appears opaque, which breeds distrust among stakeholders and limits their interest in participating in discussions and providing feedback (Interviewee 4; Interviewee 6), which could potentially opening up new solutions. While all stakeholders have the right to access legal processes, barriers persist, as their engagement in consultation and inclusion often meets only the minimum requirements and frequently serves merely to fulfill obligations (Interviewee 2).

Compounding these issues is Indonesia's hierarchical policy culture as put forward by Blomkamp et al. (2017), which reinforces power asymmetries. The same stakeholders often participate in multiple arenas, making their influence disproportionately dominant. The example is shown with the case of MoEMR, which occupies central positions both in the *programmatic arena* and the *implementation arena*. As the interview results note, negotiations often follow the preferences of MoEMR and allied elites, as evidenced by both aligned political parties or the same interest, steering the Net-Zero by 2060 agenda toward their priorities. In principle, the National Energy Council should function as a bridging institution to reconcile diverging ministerial interests and promote a balanced energy policy. In practice, however, its role is also dominated by actors sympathetic to MoEMR's perspective (Muttaqin et al., 2023), thereby undermining its capacity to mediate.

This power asymmetry has critical implications for MOIP. While MOIP is intended to be a flexible tool that accommodates the diverse interests of multiple stakeholders and mobilizes them toward a shared goal (Klerkx et al., 2025) In this case, it appears to have been co-opted to advance the agenda of a small set of influential actors. The resulting 'directionality' of the Net-Zero by 2060, however, is not balanced by a shared recognition of mutual interdependence (Wardani et al., 2025). Instead of fostering learning within and across arenas, the process narrows around the priorities of a few. Addressing the misalignment requires a conscious effort to rebalance the influence landscape and the power distribution, and to achieve this, it could benefit from recognizing the impact of procedural injustices on the opening up of learning mechanisms in the policy arena.

### 6.3. Procedural Injustices and The Implication for Decision Making

Perceived procedural injustices are closely tied to how the stakeholders view the legitimacy of decision-making. If legitimacy is perceived to be lacking, it could drive protests against new ideas, in this case, the Net-Zero by 2060 mission. The findings also suggest that when stakeholders perceive the decision-making process as unjust, their need to actively participate in the discussion diminishes. This contradicts the goals of opening up discussion and negotiation, as well as the promise of the MOIP to mobilize stakeholders around shared goals. Learning within the policy arena, as well as reflexive learning across policy arena, is essential for achieving convergence and overcoming misalignment. This relies on how stakeholders want to engage in the discussion, where they interact and experiment with the interpretation of the mission. These goals cannot be achieved if stakeholders are reluctant to engage with the mission or if their participation is limited. If decision-making is perceived as procedurally just, it could foster active

acceptance among stakeholders, potentially leading to active participation if paired with strategies for opening the learning mechanism (Radtke, 2025).

In Indonesia, however, hierarchical policy culture deeply shaped the policy-making process. As explained by Blompkamp et al. (2017), authority is centralized within the national level, and most, if not all, decisions follow a top-down approach following a clear chains of command. This culture, while organized, limit dynamic engagement between actors and creates mindset that reinforce obedience to institutional hierarchy over negotiation. The rigid way of Indonesia policymaking also results in stakeholders interpreting procedures to the letter, which in this case explained that the procedural injustices are not always deliberate, but rather unintentionally shaped by doing things by the book without acknowledging the participation, inclusion even transparency aspects.

The often lacking shared awareness of the opportunity to learn through collaboration, consultation or other means of learning backfires the promise of mission itself. Mission, which promises be common goals that encourage stakeholders to work together, if implemented blindly to the context where the stakeholders does not have the capacity in a sense of awareness, knowledge and resources, could become the main driver to let every stakeholders interpret and acts based on their own interest. This what makes the maladaptation of mission itself as explained by Wiarda et al. (2024) that by implementing mission could reinforce injustices happening. If explained in a cycle, without acknowledging the procedural injustices, that is happening due to the Net-Zero by 2060 mission, could create a closed-loop of ineffective transition effort. The looping diagram can be seen on Figure 6.1.

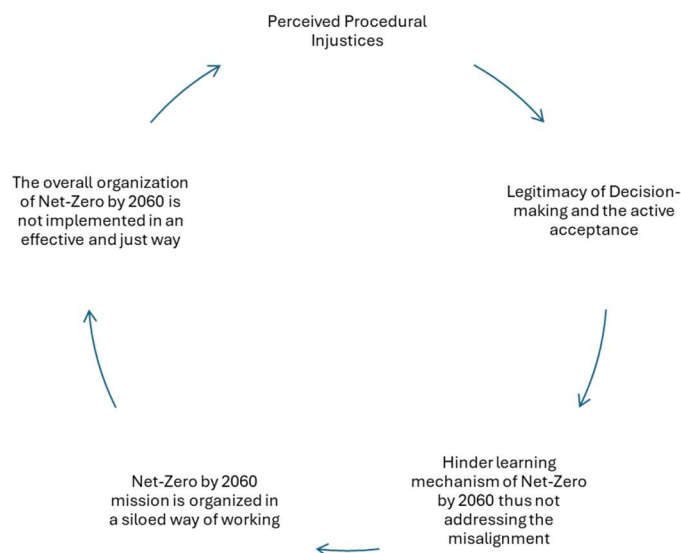


Figure 6.1 Looping diagram of procedural injustices and the Net-Zero by 2060

While there is no single best way to address this problem, recognizing that siloed ways of working can lead to procedural injustices is key to unlocking *learning* and *reflexive learning* in the policy arena. When all the stakeholders are aware and treat procedural injustices element



not as burdens or barriers but as an opportunity to share ownership of common goals, they can create room for alignment of missions and collectively interpret, shape, and own the mission and transform what used to be fragmented into a more coordinated pathway of transition that wants to be achieved using the Net-Zero by 2060.

One of the possible working learning mechanisms in Indonesia is not to completely replace the top-down method but rather to combine it with the bottom-up approach while raising awareness about the possibility of aligning interpretations through learning from multiple approaches. Radtke (2025) provides an example of combining both top-down and bottom-up approaches using the co-creation method. Co-creation here refers to the format of focus groups or workshops and collaborative development of solution. The co-creation process emphasizes the need to address procedural injustices by engaging stakeholders in inclusive participation and interactive dialogue, merging national goals with local interests. However, it is also necessary to consider that this approach is based on studies conducted in Central Europe, and further research is required to assess whether it is suitable for implementation in the Indonesian context. Although Wardani (2025) also mentioned that meaningful collaboration could bring a sense of mutual ownership, understanding and acceptance. Recognizing that overcoming the barriers of procedural injustices within and across arena learning could enhance both the convergence and contestation of issues, the organization of the MOIP could be a step toward a more equitable and just Net-Zero implementation by 2060 in Indonesia.

However, it also raises the question of whether overcoming barriers to procedural injustices needs to have an impact to be considered desirable. The definition of intrinsic value of justice is understood as being desirable for its own sake, while the instrumental value of justice is based on its effects or contributions. (Deplazes-Zemp, 2024; Ziliotti, 2020). When promoting the idea of procedural justice in the Net-Zero by 2060, this thesis presents the benefit of procedural justice as instrumental because it supports the effectiveness of the Net-Zero by 2060 transition effort. However, even though it does not have a direct impact, procedural justice has intrinsic value by providing equal opportunities for individuals to express their interests and have an equal say in how the Net-Zero by 2060 is achieved, regardless of its impact. Recognizing that the value of justice lies in what individuals are owed, rather than solely in the benefits it provides, can help foster a more equitable transition.

## 6.4. Implication for Lower Income Countries

Indonesia's experience provides valuable lessons for lower-income countries navigating similar challenges in their energy transitions, namely centralized governance, reliance on fossil fuels, and institutional fragmentation. These structural conditions often create procedural injustices that undermine the potential of MOIP. If left unaddressed, such injustices can lock countries into implementation deadlock.

For countries in the middle-income bracket, such as Indonesia, a central challenge lies in balancing the urgent demands of rapid electrification and economic growth with the long-term objectives of decarbonization, often under tight fiscal constraints and donor influence (Babayomi et al., 2022). While multiple studies have proposed leveraging private financing to close funding gaps (Setyowati, 2021), attracting such investment requires a stable and predictable policy environment. Indonesia's policy mismatches, partly rooted in unaddressed



procedural injustices, have contributed to investor hesitancy, illustrating how governance practices can directly influence the flow of climate and energy financing (Sekarintias et al., 2023).

Policy relevance and usability are key factors in overcoming these challenges. Policies must not only align with high-level climate commitments such as the agenda in the *strategic arena* but also be designed in ways that stakeholders from other policy arenas understand, implement, and adapt. In Indonesia's case, certain Net-Zero 2060 policies are perceived as relevant primarily to elite decision-makers, while their usability for less powerful actors is limited due to opaque procedures, top-down decision-making, and a lack of clear operational guidance. When stakeholders perceive that policies are either irrelevant to their roles or too rigid to be adapted to local contexts, their willingness and capacity to contribute to implementation decline (Akbar et al., 2020).

The role of political culture is also significant. Indonesia's hierarchical policymaking culture tends to concentrate influence among a small group of central actors, often leading to decisions that reflect the interests of dominant ministries rather than a balanced consensus (Muttaqin et al., 2023). This culture shapes not only who participates in policy formulation but also how information flows, how negotiations are conducted, and whose perspectives are prioritized. For lower-income countries with similar governance traditions, this highlights the need to consciously design participatory mechanisms that counterbalance hierarchy and embed stakeholder voice throughout the policy arenas.

This has important implications for other lower-income countries: addressing procedural injustice can serve as a pathway to building investor confidence. By creating fair, transparent, and inclusive decision-making processes, governments can enhance policy stability, which not only facilitates investment but also improves national resource availability and institutional capacity over time (Massagony et al., 2025). Importantly, procedural justice should not be treated merely as a means to attract benefit it is also an inherent requirement of equitable governance, ensuring that citizens benefit fairly from transition policies regardless of the immediate payoff.

As seen in Indonesia case study, central planning alone cannot achieve either procedural justice or Net-Zero efforts. Instead, using inclusive policy arenas, empowering stakeholders to address issues, facilitate negotiation and collaboration, and promoting transparent planning systems could help enhance legitimacy, ensure alignment, and support a more effective and just approach to Net-Zero initiatives.

As international frameworks, such as missions, grow in importance, the pressure to effectively translate high-level initiatives, which research primarily focuses on higher-income countries with varying capacities for organizing collective actions among stakeholders, becomes clear. However, insights from Indonesia highlight the risk of blindly applying governance models from missions, which can overlook differences in capacity and institutional culture. Identifying a country's policymaking style can help determine a better approach to mission governance and prevent maladaptation. Discussions on how policymaking styles relate to transition efforts in the energy sector should also be considered, such as research comparing policy styles in energy

transition participation by Radtke and Renn (2024), and studies by Cai and Aoyama (2018) that explore how institutional misalignments could affect renewable energy transitions.

Ultimately, procedural justice should be understood as a foundational enabler of just and effective energy transitions. For lower-income countries, embedding justice within the formal policy pathways can mobilize stakeholders, build coalitions, and create the trust needed to implement shared decarbonization goals.

## 6.5. Limitations and Reflections

This research acknowledges that there are limitations not fully considered during the process. It focuses on case studies of Indonesia; however, it does not include the effect of political influence on the policy-making process or how the interests of institutions might be affected by political parties. Methodologically, the study relies on a qualitative case study approach, which, while rich in depth, limits generalizability. The semi-structured interviews were conducted with stakeholders who share a common interest in the Net-Zero effort but do not represent the full geographic diversity of Indonesia. As such, local justice issues, particularly those emerging in remote or underrepresented regions, may be overlooked. Additionally, the interview sample may reflect selection bias, as participants were chosen based on accessibility and relevance rather than randomized sampling. The use of hand-coded thematic analysis, while rigorous, also introduces interpretive subjectivity, especially given the author's positionality as an Indonesian researcher. This may influence how procedural injustices are perceived and framed, potentially imposing the author's own interpretations onto stakeholder narratives.

Conceptually, the study adopts procedural justice as the primary lens for evaluating MOIP, drawing from the formal trajectory framework proposed by Pesch et al. (2017). While this offers a structured approach to analyzing institutional decision-making, it may underrepresent informal justice dynamics, such as grassroots resistance or community-led innovation, which are often critical in lower-income contexts. The procedural justice index used (Apergi et al., 2024) is also normatively grounded in higher-income governance models, which may not fully capture the nuances of justice in Indonesia's bureaucratic and political culture. This raises questions about the transferability of theoretical frameworks across income and governance contexts.

Theoretically, the study assumes that justice in the Net-Zero by 2060 mission is primarily organized and experienced at the national level. As noted by Van Uffelen et al. (2024), justice can operate across multiple scales (e.g. local, regional, national, and global) and restricting the analysis to national-level interactions may obscure how procedural injustices manifest in trans-scalar dynamics, such as donor-recipient relationships or regional disparities. Furthermore, while the study treats procedural justice as both instrumental (enhancing policy effectiveness) and intrinsic (a moral imperative), the emphasis leans toward its instrumental value. Future research could explore how justice is conceptualized and pursued by different actors, including those who view it as a normative end rather than a strategic means.

As the author of this thesis and an Indonesian national, I acknowledge the potential influence of my positionality on the framing and interpretation of procedural injustices within the Net-Zero by 2060 mission. My cultural familiarity, linguistic fluency, and lived experience within the Indonesian context have undoubtedly shaped how I engaged with stakeholders, interpreted

interview responses, and navigated institutional dynamics. While this insider perspective offers valuable contextual sensitivity and access to nuanced insights, it also carries the risk of subjective bias, particularly in assessing the fairness and legitimacy of decision-making processes. There is a possibility that my own expectations of justice, shaped by personal and academic exposure, may have influenced how stakeholder perceptions were categorized and analyzed. To mitigate this, I have adhered to rigorous qualitative research standards, including triangulation of sources, transparent coding procedures, and reflexive documentation throughout the research process. Nonetheless, I recognize that complete neutrality is unattainable, and I present this work not as an objective account but as a situated interpretation.

## 7. Conclusion and Recommendations

This chapter will elaborate the answer to the main research question by addressing each sub-research question based on the findings from the chapter 4 up until chapter 6. This chapter will also reflect on aspects that can be done on future research.

### 7.1. Conclusion

This research aims to study the procedural injustices perceived by the stakeholder's effect on the implementation of MOIP in lower-income countries with the following main research question:

*‘How do perceived procedural injustices by stakeholders affect the implementation of MOIP in lower-income countries?’*

To answer the main research question, the sub-research question is answered in the following section

#### **SQ1. How do lower-income countries implement MOIP?**

In the context of Indonesia, the challenge of climate change is formalized through the agenda setting of Net-Zero Effort, which in the time-bound effort is limited to Net-Zero by 2060. The Net-Zero by 2060 is then translated into various sectors, mainly the Energy, Forestry and Other Land Use, Agriculture, and Waste. Focusing on the energy and electricity sector, the Net-Zero by 2060 is implemented through multiple projects such as Renewable Energy, Clean Coal and CCS, as well as other energy sources. In explaining the implementation of MOIP, the policy arena is used to identify stakeholders, understand how policy instruments and interpretations are transmitted between arenas, and determine whether the interpretation of Net-Zero by 2060 converges or diverges within and across these arenas.

Indonesia's Net-Zero by 2060 mission reveals tensions across its interconnected policy arenas as differing interpretations emerge from the top down. In the *strategic arena*, executive and legislative actors align under international and national pressure to prioritize a renewable energy mix, formalizing direction through instruments like the Enhanced NDC and JETP. However, when this mission cascades into the *programmatic arena*, individual ministries interpret it through their own mandates, leading to fragmented strategies and weak consensus, even within the National Energy Council. These discrepancies deepen in the *implementation arena*, where civil servants and the national electricity company operationalize siloed policies with limited horizontal coordination. The *performance arena*, composed of NGOs and affected communities, receives inconsistent interventions and often operates in isolation.

#### **SQ2. Who are the stakeholders that are included and excluded in the implementation of MOIP?**

This study finds that the inclusion of Net-Zero by 2060 discussion is shaped by institutional authority and formal mandates. The included stakeholders predominantly comprise governmental bodies with regulatory or fiscal power. These include the Presidential Office and

the People's Representative Council, which provide high-level direction and legislative frameworks. Core ministries such as the Ministry of Energy and Mineral Resources (MoEMR), the Ministry of Finance (MoF), the Ministry of National Development Planning (MoNDP), and the Ministry of State-Owned Enterprises (MoSOE) are central actors in shaping energy policy trajectories, with MoEMR serving as a particularly dominant force due to its technical oversight of the energy transition. Agencies such as the Ministry of Higher Education, Science, and Technology (MoEST), the National Research and Innovation Agency (BRIN), and the Ministry of Home Affairs (MoHA) contribute to R&D coordination, sub-national policy transmission, and academic linkage. The State-Owned Electricity Company (PLN) and the Just Energy Transition Program (JETP) Secretariat also play significant roles in implementing and financing the transformation of electricity infrastructure.

However, several stakeholders remain formally excluded or only partially engaged in decision-making processes. Sub-national governments, while responsible for implementing regional energy plans, often struggle with limited autonomy and misalignment with national directives. Independent researchers, local energy innovators, and think tanks operate on the margins of influence, contributing research and insights that are not systematically integrated into formal planning processes. Climate NGOs are similarly excluded from institutional forums, despite their efforts to advocate for justice and community inclusion. These actors, although not officially acknowledged in governance structures, often offer valuable grassroots and technical perspectives; yet, their contributions are constrained by institutional silos, limited access to dialogue, and a lack of procedural avenues for input. This uneven inclusion reinforces the procedural injustices explored in this study.

### **SQ3. What procedural injustices are perceived by stakeholders in the implementation of MOIP?**

Stakeholders in the implementation of MOIP perceive four major procedural injustices that hinder the legitimacy and effectiveness of the Net-Zero by 2060 mission. First, participation is seen as superficial, with consultations occurring after decisions are already made and feedback rarely incorporated due to rigid bureaucracy. Second, inclusivity is severely lacking, as discussions are dominated by high-power actors, deliberately excluding marginalized groups such as citizens, NGOs, researchers, and vulnerable communities. Third, information transparency is limited; key decisions are made behind closed doors, with restricted access to information, leading to widespread distrust. Finally, access to legal redress is theoretically available but practically ineffective, as legal enforcement is minimal and the process is costly and inaccessible for most stakeholders. Together, these perceived injustices undermine trust, stall collaboration, and limit the shared ownership necessary for Indonesia's goals of reaching Net-Zero by 2060.

### **SQ4. How do policymakers recognize the perceived procedural injustices caused by MOIP in lower-income countries?**

In lower-income countries like Indonesia, policymakers while not necessarily acknowledge procedural injustices caused by MOIP but recognize that these injustices can act as barriers to implementation, leading to protest or disengagement. Institutional and cultural constraints such as rigid regulations, limited resources, and siloed working cultures, hinder their ability to

meaningfully address participation, inclusivity, and transparency. Misalignments in interpreting mission goals that persist across ministries and levels of government, often exacerbated by power asymmetries in decision-making processes. However, there is growing awareness that addressing these injustices through more inclusive, collaborative learning mechanisms could help realign interpretations and foster shared ownership of the mission. While top-down approaches dominate, combining them with bottom-up strategies may offer a more just and effective pathway for implementing MOIP in complex governance environments.

In conclusion, perceived procedural injustices such as exclusion from participation, limited inclusivity, lack of transparency, and ineffective legal recourse undermine stakeholder trust and weaken the implementation of MOIP in lower-income countries. When stakeholders perceive decision-making as unfair or opaque, they are less likely to engage meaningfully, which disrupts coordination, delays progress, and fragments the interpretation of the mission across the policy arena. These injustices are often reinforced by hierarchical policy cultures, resource constraints, and siloed institutional structures. Without recognizing and addressing these barriers, MOIP risks becoming a top-down directive rather than a shared, transformative agenda.

## 7.2. Academic Contribution

This thesis contributes to the evolving discourse on MOIP by offering an empirical investigation into its implementation in a lower-income country context. While most MOIP literature focuses on high-income countries with robust institutional frameworks and participatory governance cultures, this study provides a grounded analysis of how MOIP unfolds in Indonesia, a country navigating the dual pressures of rapid development and climate transition under constrained institutional capacity.

By applying the policy arena framework (Janssen et al., 2023) and integrating it with the procedural justice index (Apergi et al., 2024), the research advances a novel analytical lens that captures both the structural organization of mission governance and the stakeholder experiences within it. This dual approach enables a deeper understanding of how missions are interpreted, transmitted, and contested across strategic, programmatic, implementation, and performance arenas. It also highlights the mechanisms, such as convergence, divergence, passage, and reflexive learning, that shape the trajectory of mission interpretation and alignment.

The study's emphasis on procedural justice as both an instrumental and intrinsic value adds a critical ethical dimension to MOIP analysis. It demonstrates that procedural injustices, such as exclusion from decision-making, lack of transparency, and limited access to legal recourse, can undermine stakeholder trust, fragment mission interpretation, and ultimately hinder the effectiveness of innovation policy. This insight is particularly relevant for lower-income countries, where hierarchical governance structures and resource limitations often exacerbate these injustices.

Furthermore, the thesis contributes to the literature on energy transition governance by situating Indonesia's Net-Zero by 2060 mission within broader debates on climate justice, institutional capacity, and stakeholder engagement. It offers a detailed mapping of stakeholder power-interest dynamics and reveals how institutional silos and centralized authority can distort mission implementation. By doing so, it provides a foundation for future comparative studies on MOIP in the lower-income countries. It invites scholars to rethink how mission governance can be adapted to diverse political and cultural contexts.

### 7.3. Recommendations

While the solution to the wicked problems cannot be constrained into one true solution, these recommendations give a possible pathway to pursue to realize Net-Zero by 2060 in Indonesia and also address the possibility of procedural injustices that may come up during the implementation of MOIP.

#### 7.3.1. Recommendations for Policymakers

Policymakers in Indonesia and other lower-income countries pursuing mission-oriented approaches should consider the following recommendations to enhance procedural justice and improve mission effectiveness; however, the recommendations are not structured to be done sequentially, rather they should adapt to the conditions that are felt. The recommendations is as follow:

- **Institutionalize Reflexive Learning:** Create feedback loops between arenas to facilitate learning and realignment of mission interpretations. This could involve periodic reviews, cross-sectoral dialogues, and adaptive policy instruments that evolve with stakeholder input. This is to raise awareness of the possibility of collaboration within and across arenas to tackle the silo mentality.
- **Address Power Asymmetries in Decision-Making:** Empower less influential stakeholders by redistributing decision-making authority, especially in the implementation and performance arenas. This could include capacity-building programs, funding support for local initiatives, and legal safeguards for marginalized groups.
- **Embed Inclusive Governance Mechanisms:** Establish formal structures for stakeholder engagement across all policy arenas, including citizens, NGOs, independent researchers, and sub-national governments. This could involve participatory workshops, stakeholder forums, and co-creation platforms that go beyond symbolic consultation.
- **Strengthen Transparency and Information Access:** Develop centralized, publicly accessible platforms for sharing policy documents, meeting outcomes, and implementation updates. Clear communication channels can reduce misinformation, build trust, and enable informed participation.
- **Align Policy Instruments Across Arenas:** Ensure that strategic goals, programmatic plans, and implementation tools are harmonized across ministries and levels of government. This requires inter-ministerial coordination bodies with the authority to reconcile conflicting targets and timelines.

- **Combine Top-Down and Bottom-Up Approaches** While centralized planning is necessary, integrating bottom-up learning mechanisms, such as community-led innovation and local experimentation, can enhance legitimacy and adaptability. Co-creation models, as tested in European contexts, may offer useful templates if adapted to local governance cultures.

### 7.3.2. Recommendations for Future Research

Building on the findings and limitations of this study, future research could explore several promising directions:

- **Comparative Studies Across Lower-Income Countries:** Investigate how MOIP is implemented in other lower-income settings, particularly in Africa, South Asia, and Latin America. Comparative analysis could reveal common barriers and context-specific adaptations.
- **Political Economy of Mission Governance:** Examine how political party dynamics, electoral incentives, and elite interests shape the prioritization and design of missions. This would deepen understanding of the political drivers behind procedural injustices.
- **Local-Level Justice and Decentralization:** Conduct regionally focused studies within countries to uncover how procedural justice manifests at the local level. This could include case studies of community energy projects, regional planning bodies, or indigenous innovation networks.
- **Intersectional Analysis of Stakeholder Exclusion:** Explore how gender, disability, ethnicity, and socio-economic status intersect to influence stakeholder inclusion in mission governance. This would enrich the justice framework and inform more equitable policy design.
- **Operationalizing Co-Creation in Lower-Income Contexts:** Test and evaluate co-creation models in resource-constrained environments, identifying the institutional prerequisites and cultural adaptations needed for success.
- **Longitudinal Studies on Mission Impact:** Track the evolution of mission implementation over time to assess how procedural justice influences long-term outcomes, including policy stability, innovation uptake, and stakeholder alignment.



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## Appendix A: Literature Summary

Summary of the literature reviewed. Consisting of Article, Policy Documents, and Grey Literature.

AUTHOR	TITLE	SUMMARY
(HASWELL ET AL., 2024)	The geography of circularity missions: A cross-country comparison of circular economy policy approaches in the Global North and Global South	Documents how mission develops differently between global north and global south using comparison study. Shows that (circularity) mission emerged in a different way among countries emphasizing on the policy instrument chosen is limited to place-sensitivity and geographical variation and if the Global South replicates the Global North trajectory the potential of the mission is threatened.
(KOK & KLERKX, 2023)	Addressing the politics of mission-oriented agricultural innovation systems	Politics of mission in agriculture systems is defined through the 4D framework which is directionality, diversity, distribution and democracy using literature from development studies, policy science, and transition studies. Questions about distribution of resources highlighted that missions should actively advance just transitions across different scales and geographical context
(MANJALI, 2023)	Mission-Oriented Innovation Policy: E-Government Development Trajectory in Indonesia's Bureaucratic Reform	How bureaucracy in Indonesia plays a big role in the challenge of MOIP implementation and focusing how embracing the mission-oriented strategy could help with the governance issues in Indonesia
(SEKARINGTIAS ET AL., 2023)	Untangling the socio-political knots: A systems view on Indonesia's inclusive energy transitions	This research examines Indonesia's energy transitions, highlighting the differing perceptions of justice among various actors. Using a mixed-method approach of literature reviews and interviews, the study captures the perspectives of decision-makers and vulnerable groups, identifying barriers and gaps in achieving inclusive transitions.
(ANANTHARAJAH & SETYOWATI, 2022)	Beyond promises: Realities of climate finance justice and energy transitions in Asia and the Pacific	In this article, justice is explored through the analysis of data from interviews and documents, focusing on themes such as access to finance, on-grid vs. off-grid energy, technological hierarchies, and co-benefits. The content and discourse analysis reveal connections, inconsistencies, and contradictions in

		how justice is perceived, particularly in relation to climate finance.
<b>(SETYOWATI, 2021)</b>	Mitigating inequality with emissions? Exploring energy justice and financing transitions to low carbon energy in Indonesia	The article argues that Indonesia's energy policies, when analyzed through distributive, procedural, and recognitive justice, perpetuate inequality. Policies narrowly focus on distributive justice. Procedural justice is undermined by minimal inclusion of diverse actors in decision-making, while recognitive justice is neglected as the needs of marginalized groups, such as indigenous and lower-income communities, are overlooked.
<b>(FATHONI ET AL., 2021)</b>	Is community RE always just? Examining energy injustices and inequalities in rural Indonesia	Research on CEs in Sumba Island, Indonesia by interviews to observe the politics of energy distribution, the need for community involvement, and the influence of traditional social stratification.
<b>(WARNER, 2025)</b>	Regulatory and Institutional Challenges to Renewable Energy in Indonesia: A PolicyOriented Analysis	Focusing on the instituional energy transition research in Indonesia focusing on the Net-Zero by 2060 process by providing policy that targets specific rule-based obstacle and deisgned to be implementable.
<b>(SIMANJUNTAK, 2021)</b>	TECHNO-ECONOMIC AND INSTITUTIONAL ASSESSMENT OF WIND ENERGY IN INDONESIA: A spatial evaluation of wind energy potential and its pertinent institutions	Focusing on the significant change that can be made to the instituional setting of Indonesia for the economic potential of renewable energy especially wind energy in Idnoensia
<b>(KEBIJAKAN ENERGI NASIONAL, 2014)</b>	National Energy Policy	Policy framework to guide energy development in Indonesia focusing on security, affordability and sustainability of energy.
<b>(RENCANA UMUM ENERGI NASIONAL, 2017)</b>	National Energy General Plan	Reference for strategic planning on the energy sector
<b>MINISTERIAL DECREES OF MINISTRY OF ENERGY AND MINERAL RESOURCES NO. 143K/20/MEM/2019</b>	National Electricity Master Plan 2019-2038	Reference for strategic planning on the electricity sector

<b>MINISTERIAL DECREES OF MINISTRY OF ENERGY AND MINERAL RESOURCES NO. 188.K/HK.02/MEM.L/2021</b>	National Electricity Supply Business Plan 2021-2030	Business plan on securing the electricity supply
<b>PRESIDENTIAL REGULATION NO. 112/2022</b>	Accelerating Renewable Energy Development for Electricity Supply	Increasing the investment and to reach the energy mix to lower the green house gas emission in term of development of electricity generation from renewable energy sources
<b>(SISDWINUGRAHA ET AL., 2025)</b>	Indonesia Energy Transition Outlook 2025	Report that lays the transformative pathways to achieve energy transition goals in Indonesia
<b>(IEA, 2024)</b>	Southeast Asia Energy Outlook 2024	Examination of South east asia energy markets and climate ambitions to explore the challenge and opportunity in clean energy transitions
<b>(BLOMKAMP ET AL., 2017)</b>	Understanding Policymaking in Indonesia: In Search of A Policy Cycle	The policy cycle practice in Indonesia which cannot be accurately represented as a cycle. Understanding this helps in understanding the policy networks and who is involved in the process and how they are able to shape debates on issues.



## Appendix B: Policy Instruments

Instruments used by Ministries on the Net-Zero Effort in Indonesia

<b>Ministry</b>	<b>Regulation</b>	<b>Context</b>
<b>Ministry of Finance</b>	Ministerial Regulation No. 103/2023	<i>Providing Fiscal Support Through Funding and Financing Frameworks to Accelerate Energy Transition in the Electricity Sector</i>
	Ministerial Regulation No. 20/2025	<i>Electricity Subsidies Based on Factors Such as Energy Mix</i>
	Presidential Regulation No. 98/2021	<i>Implementation of Carbon Economic Value (Carbon Trading)</i>
<b>Ministry of Energy and Mineral Resources</b>	Ministerial Regulation No. 6/2022	<i>Technical Implementation Units for Operational and Supporting Tasks in Electricity, New and Renewable Energy, and Energy Conservation</i>
	Ministerial Regulation No. 37/2021	<i>Energy Policy Facilitation for the National Energy Council in Drafting Regional Energy General Plans (RUED)</i>
<b>Ministry of Higher Education, Science and Technology</b>	Ministerial Regulation No. 29 of 2019	<i>Measurement and Determination of Innovation Readiness Levels as a Basis for Innovation Policy and Incentives</i>

	Ministerial Regulation No. 24 of 2019	<i>Innovation Management within Higher Education Institutions as a Basis for Granting Incentives</i>
<b>Ministry of Environment and Forestry</b>	Presidential Regulation No. 35/2018	<i>Utilization of Waste as Electrical Energy as a Form of Innovation in New Energy Sources</i>
	Ministerial Regulation No. P.24/MENLHK/SETJEN/KUM.1/5/2019	<i>Incentives for Regional Waste Management Service Costs</i>
<b>Ministry of Industry</b>	Green Industry Standards Regulation	<i>Emission Limit Standards for Each Industrial Level</i>
<b>Ministry of National Development Planning</b>	Ministerial Regulation No. 2 of 2024 on the Draft Government Work Plan for 2025	<i>Policy Direction for Energy Self-Sufficiency Supporting the Acceleration of Transition to New and Renewable Energy Through Incentives</i>
<b>All Ministries</b>	<i>Individual ministry-specific strategic plans</i>	

## Appendix C

### C.1. Stakeholders Interest, Objective, Perceptions and Resources

Stakeholders interest, objective, perceptions and resources

Stakeholders	Interest	Objectives	Perceptions	Resources	Source
<b>Presidential Office</b>	National development, energy sovereignty, international credibility	Set strategic direction and legitimize Net-Zero policy	Climate goals must align with national priorities and maintain political stability	Legislative authority, control over executive decrees	(Simanjuntak, 2021)
<b>People's Representative Council</b>	Political representation , balancing economic sectors	Legislation supportive of energy policy	Climate and energy policy should reflect party interests and constituency needs	Lawmaking power and approval process	(Simanjuntak, 2021)
<b>Ministry of Energy and Mineral Resources</b>	Energy Security and Transition into new and renewable energy sources	Increase renewable energy capacity and reduce fossil fuel dependency	Research and development of new and renewable energy sources should be done to achieve emission targets.	Regulatory authority and Energy sector funding	(Pembentukan Dewan Energi Nasional Dan Tata Cara Penyaringan Dewan Energi Nasional, 2008)
<b>Ministry of Finance</b>	Fiscal sustainability and Cost-effective climate action	Secure climate finance (international , private) and manage energy subsidy	Balancing economic growth with emission reduction	Budget allocation and Fiscal incentives	(Pembentukan Dewan Energi Nasional Dan Tata Cara Penyaringan Dewan Energi Nasional, 2008)
<b>Ministry of National Development Planning</b>	Align energy policy with national development goals (long-term and medium-term)	Align net-zero targets into national mid-term plans (RPJMN)	Innovation could drive sustainable economic growth	National Planning Frameworks and Inter-ministerial coordination	(Pembentukan Dewan Energi Nasional Dan Tata Cara Penyaringan Dewan Energi Nasional, 2008)
<b>Ministry of Higher Education, Science and Technology</b>	Strengthen R&D capacity	Fund energy-related research in the university and Foster academia-industry partnerships	Academia currently is underutilized in energy innovation	Research grants for universities	(Pembentukan Dewan Energi Nasional Dan Tata Cara Penyaringan Dewan Energi Nasional, 2008)

<b>Ministry of Home Affairs</b>	Regional compliance with energy policies	Ensure local governments stick to the regional general energy plan	Regional disparities hinder innovation	Coordination with local governments	(Rencana Umum Energi Nasional, 2017)
<b>Sub-National Government</b>	Local energy security; economic growth	Implement RUED; attract renewable energy investments	Limited technical/funding capacity for localized solutions	Regional budgets, authority to issue permits, community engagement platforms	(Rencana Umum Energi Nasional, 2017)
<b>National Research and Innovation Agency</b>	A technological breakthrough in energy	Create new standards in the energy technology	Collaboration of innovation with other actors is important	Competent researcher and International partnerships	(Rencana Umum Energi Nasional, 2017)
<b>State-owned Electricity Company (PT PLN)</b>	Grid modernization and renewable integration	Achieve renewable energy mix goals	Technical challenges in scaling renewable energy sources	Government-backed decisions and Single player in the electricity market	(Rencana Umum Ketenagalistrikan Nasional, 2019)
<b>Just Energy Transition Program Secretariat</b>	Equitable transition and coal phase out	Coordinate donor support and align JETP with national energy transition	Global partnerships must deliver not only just emissions but justice for affected communities	International funding, technical assistance, policy recommendations	(JETP Indonesia, 2023)
<b>Climate Non-Governmental Organization</b>	Accelerate just energy transition	Push for stricter emissions regulations and monitor policy compliance	Current policies lack ambition and enforcement	Public campaigns, international networks	(Sisdwinugraha et al., 2025)
<b>Energy Think-tank</b>	Evidence based policy transition and feasibility	Provide scenario modelling policy advice	Policy must be grounded in localized data and system analysis	Research publications, technical expertise	(Sisdwinugraha et al., 2025)
<b>Independent researchers and innovators</b>	Local solutions and inclusive innovation	Scale locally rooted energy solutions	Grassroot innovations are often overlooked	Prototypes and entrepreneurial ecosystems	(Sisdwinugraha et al., 2025)

## C.2. Scoring Table for Stakeholders

	<b>Stakeholder</b>	<b>Power</b>	<b>Interest</b>	<b>Reasoning</b>
<b>1</b>	Presidential Office	5	5	Has ultimate executive power, sets national priorities, strong political will on energy transition.
<b>2</b>	People's Representative Council	4	4	Legislative authority, budget approval, interest in policy oversight.
<b>3</b>	Ministry of Energy and Mineral Resources	5	5	Sector regulator, key decision-maker on energy transition, high commitment.
<b>4</b>	Ministry of Home Affairs	4	3	High authority over local governance but less direct focus on energy transition.
<b>5</b>	Ministry of Higher Education, Science, Technology	3	4	Research policy influence, supports innovation, but limited direct control over energy transition.
<b>6</b>	Ministry of Finance	5	4	Controls funding, can approve or block budget, moderate–high interest.
<b>7</b>	Ministry of National Development and Planning	5	4	Oversees national development strategy, strong link to climate plans.
<b>8</b>	National Electricity Company (PLN)	5	5	Key implementer, controls grid and generation, highly affected by energy transition.
<b>9</b>	JETP Secretariat	4	5	Core coordination body for JETP implementation, high commitment.
<b>10</b>	National Research and Innovation Agency	3	3	Supports R&D, medium influence and interest in applied transition.
<b>11</b>	Sub-National Government (Province Level)	4	3	Important for local implementation, moderate interest.
<b>12</b>	Ministry of State-Owned Enterprise	4	4	Oversees PLN and other SOEs, significant influence, good alignment.
<b>13</b>	Energy Think-tank	2	4	Low political power, high technical input and advocacy role.

<b>14</b>	Climate NGO	2	4	Advocacy-driven, strong interest but limited formal power.
<b>15</b>	Independent Researcher and Innovator	1	3	Contributes ideas but minimal decision-making authority.

## Appendix D

### D.1. Interview Questions

The interview will be conducted using Bahasa Indonesia to ease communication during the interviews.

<b>Introduction: Short questions about experiences</b>
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- |  |
|--|
| 1. What is your role or connection to the Net-Zero Effort in your community? |
| 2. How long have you been involved in this community?                        |

#### Questions on your Participation in Decision Making

- |  |
|--|
| 3. Have you ever participated in discussions or consultations about innovation or research and development in your community?<br><br>a. <i>If yes: How were these consultation organized? Were they accessible?</i><br>b. <i>If No: Do you know how decision about the innovation, research and development is made?</i> |
| 4. If there is a new innovation policy intervention, is the impact assessment of said policy is conducted before the implementation? Were the community member able to share their concerns during this assessment?  |
| 5. Do you feel your opinions were considered when the strategy for innovation or research and development were designed?   |

#### Questions on Inclusivity

- |   |
|---|
| 6. Which groups or individuals do you think most involved in the decision-making process?   |
| 7. Do you think there are individuals or groups that are being purposefully ignored or not included in the decision-making?   |
| 8. Have you ever felt excluded from the discussions about innovation in Net-Zero Effort?<br>a. <i>If yes: What could have been done to make these processes more inclusive?</i> |

#### Questions on Information Disclosure and Transparency

- |   |
|---|
| 9. How easy is it to access information about ongoing or planned policies regarding innovation or research and development in Net-Zero Effort?<br>a. <i>What sources do you use to stay informed?</i> |
| <i>For Stakeholders in Performance Arena</i>  |
| 10. Do you trust the information shared by the decision-makers about the innovation or research and development in Net-Zero Effort?<br>a. <i>If No: What would improve the trust level?</i>           |
| 11. Have you encountered conflicting information about the innovation or research and development in Net-Zero Effort?   |

### Questions on Access to Legal Process

- |  |
|--|
| 12. If you disagree with the decision regarding innovation or research and development in Net-Zero Effort, how confident are you in challenging it through legal channels?<br>a. <i>What obstacles might prevent someone from seeking legal channel?</i> |
|--|

### Context-Specific Questions

<i>For Policymakers in Implementation Arena</i>
13. How do you balance competing stakeholders interest when designing the policy interventions?
14. Do you recognize if some stakeholders might felt excluded? a. If yes: What mechanisms ensure marginalized voice are included in decision-making?
<i>For Stakeholders in Performance Arena</i>
15. Have you ever protested or raised concern about the decisions regarding innovation or research and development in Net-Zero Effort? a. <i>If yes: Were the concerns addressed?</i>

### Closing

- |  |
|--|
| 16. Would you rate the fairness of implementation of policies decisions regarding innovation or research and development in Net-Zero Effort? |
| 17. What changes do you think would most improve the procedural justice in the implementation of innovation policy in Net-Zero Effort?       |
| 18. Were you able to express your views fully during this interview? Is there anything else you'd like to add?                               |



## D.2. Informed Consent Form

**Researcher:** Fadhila Dewi Susetya, MSc Candidate, TU Delft

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### **Purpose of the Study**

The purpose of this research study is to explore perceptions in Indonesia's mission-oriented innovation policies, particularly regarding the net-zero 2050 target and will take you approximately 30 minutes to complete. The data will be used for completion of MSc thesis. We will be asking you to share your perspectives and experiences through interview questions.

### **Risks and Confidentiality**

As with any online activity, the risk of a breach is always possible. To the best of our ability, your answers in this study will remain confidential. We will minimize any risks by ensuring complete anonymity; no IP addresses or personal data will be collected. Audio recordings (if applicable) will be transcribed, anonymized, and stored on password-protected devices. Data will be permanently deleted after 1 year.

### **Voluntary Participation**

Your participation in this study is entirely voluntary, **and you can withdraw at any time**. You are free to omit any questions. Data cannot be removed after anonymization, as responses will not be traceable to individuals.

### **Contact Information**

Researcher:

Fadhila Dewi Susetya

PLEASE TICK THE APPROPRIATE BOXES	Yes	No
<b>A: GENERAL AGREEMENT – RESEARCH GOALS, PARTICIPANT TASKS AND VOLUNTARY PARTICIPATION</b>		
1. I have read and understood the study information stated above, or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>
2. I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	<input type="checkbox"/>	<input type="checkbox"/>
3. I understand that taking part in the study involves: <ul style="list-style-type: none"> <li>• Audio-recorded interview</li> <li>• The recording will be transcribed as text and the recording will be destroyed</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<b>B: POTENTIAL RISKS OF PARTICIPATING (INCLUDING DATA PROTECTION)</b>		
4. I understand that personal information collected about me that can identify me, such as name and affiliation, will not be shared beyond the study team.	<input type="checkbox"/>	<input type="checkbox"/>
5. I understand that the (identifiable) personal data I provide will be destroyed after the completion of the Master Thesis	<input type="checkbox"/>	<input type="checkbox"/>
<b>C: RESEARCH PUBLICATION, DISSEMINATION AND APPLICATION</b>		
6. I understand that after the research study the de-identified information I provide will be used for publication of the master thesis document	<input type="checkbox"/>	<input type="checkbox"/>
7. I agree that my responses, views or other input can be quoted anonymously in research outputs	<input type="checkbox"/>	<input type="checkbox"/>
<b>Signatures</b>  <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 30%; border-bottom: 1px solid black;"></div> <div style="width: 30%; border-bottom: 1px solid black;"></div> <div style="width: 30%; border-bottom: 1px solid black;"></div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 30%;">Name of participant</div> <div style="width: 30%;">Signature</div> <div style="width: 30%;">Date</div> </div>		

I, as researcher, have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

Fadhila Dewi Susetya

\_\_\_\_\_  
Researcher name [printed]

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Study contact details for further information:

Fadhila Dewi Susetya