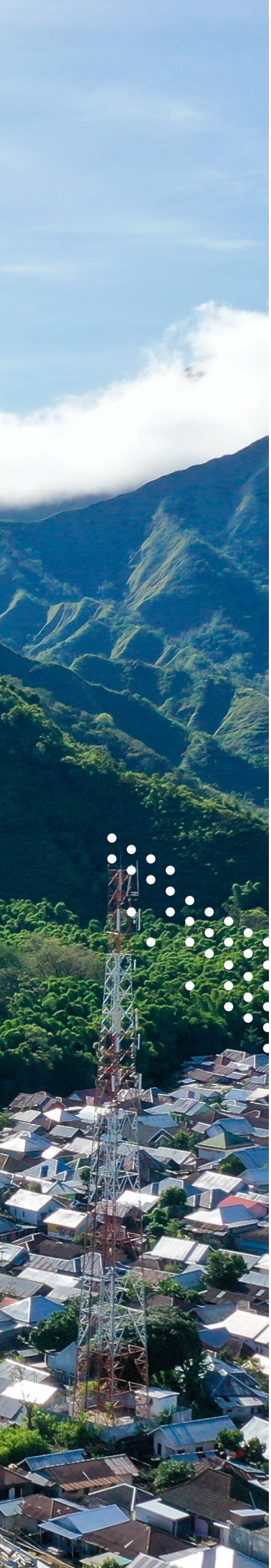

ICLEI Local Governments for Sustainability

100% RENEWABLES CITIES & REGIONS ROADMAP

Supported by:

Federal Ministry for Economic Affairs and Climate Action

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IKI INTERNATIONAL CLIMATE INITIATIVE

LOCAL POLICY RECOMMENDATIONS

Supporting the Vision of 100% Renewables in West Nusa Tenggara Province, Indonesia

This set of local policy recommendations for West Nusa Tenggara, Indonesia is meant to accompany the province's 100% Renewables Roadmap. It provides a number of suggestions on steps the government can undertake to support the implementation of the measures detailed in the Roadmap.

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ABOUT 100% RENEWABLES CITIES AND REGIONS ROADMAP PROJECT

The 100% Renewables Cities and Regions Roadmap project facilitates the energy transition by raising local awareness on renewable energy sources, showcasing how local and national governments can create coordinated enabling frameworks and policies, exploring access to public and private sector finance, and building local renewable energy projects to address electricity, heating and cooling.

The 100% Renewables Cities and Regions Roadmap project is implemented by ICLEI – Local Governments for Sustainability and funded by the International Climate Initiative (IKI), which is implemented by the Federal Ministry for Economic Affairs and Climate Action (BMWK) in close cooperation with the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and the Federal Foreign Office (AA).

ABOUT ICLEI – LOCAL GOVERNMENTS FOR SUSTAINABILITY

ICLEI – Local Governments for Sustainability is a global network working with more than 2,500 local and regional governments committed to sustainable urban development. Active in 125+ countries, ICLEI influences sustainability policy and drives local action for low emission, nature-based, equitable, resilient and circular development. ICLEI's Members and team of experts work together through peer exchange, partnerships and capacity building to create systemic change for urban sustainability.

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EXECUTIVE SUMMARY

The involvement of local governments in the energy transition and the development of renewable energy (RE) is fundamental to ensuring that national energy policies can be adapted to local needs, enhancing sustainability and implementation effectiveness. Active participation by local governments enables the adjustment of energy transition strategies based on local geographic, economic, and social characteristics, as well as facilitates support from local stakeholders. Additionally, it opens up opportunities for local economic development through renewable energy investment, creating new jobs, and enhancing energy independence and resilience. In West Nusa Tenggara Province (WNT Province), the commitment to strengthening the energy transition is reflected in the achievement of a renewable energy mix that surpasses the national target**, reaching 22.43% by the end of 2023**. This makes WNT a significant contributor to the achievement of the national renewable energy target, while also strengthening a more sustainable local economy.

The WNT Provincial Government in collaboration with ICLEI Indonesia implemented the **100% Renewable Cities and Regions Roadmap** project from 2019 to 2024. This program produced strategic actions in the form of a roadmap towards 100% renewable energy by 2050. The program also recommends technologies, business models, and policies to support the energy transition, including energy modeling by Fraunhofer ISE, which shows that WNT Province has the potential to reach 100% RE in electricity, heating, transport, and other sectors. The energy modeling suggests that solar PV and wind energy will be the primary sources, and that energy system integration between Lombok and Sumbawa is necessary to enhance supply security. WNT has also set a target **of Net Zero Emissions (NZE) by 2050**, prioritizing RE to reduce emissions and preserve the environment. These regional policy recommendations aim to review existing energy policies and identify the changes needed to support these targets.

At the national and regional levels, policies specifically regulate RE management and development. Nationally, these policies include **Law No. 30/2007 on Energy, Law No. 30/2009 on Electricity, Government Regulation No. 79/2014 on National Energy Policy, and Presidential Regulation No. 22/2017 on the National Energy Plan (RUEN). Regionally, WNT Province has Regional Regulation No. 3/2019 on the Regional Energy Plan (RUED) and Governor Regulation No. 671-951 of 2016 on the Regional Electricity Plan (RUKD).** Recently, WNT also issued **Governor Regulation No. 13/2024** on Green Energy Development, which encourages energy source diversification, energy conservation, energy efficiency, and social inclusion to achieve the vision of WNT as an energy-independent and environmentally friendly province.

The challenges identified in achieving energy transition targets and 100% renewable energy (RE) include: the lack of specific policies related to the vision of 100% RE and NZE 2050, spatial regulations that do not include new technologies like green hydrogen and methane, limited capacity of local governments, insufficient regional involvement in national energy planning, limited regional authority, and reliance on national policies.

Additionally, regional regulations and funding schemes for renewable energy projects remain limited.

Some national policies already provide space for energy transition at the regional level, but active local government participation remains crucial to ensure that local policies facilitate energy development, especially when regional targets are set to exceed national goals. Some recommendations for implementation include:

1. Integrating the 100% Renewable Energy Vision of West Nusa Tenggara Province into the Regional Development Plan.
2. Developing technical policies and regulations that support the 100% Renewable Energy Vision of WNT.
3. Strengthening renewable energy infrastructure in WNT Province.
4. Forming a Regional Renewable Energy Coordination Team.
5. Building systemic partnerships for renewable energy policies.
6. Strengthening cooperation with external parties in the 100% renewable energy program in WNT.
7. Conducting regular evaluations and consultations for 100% renewable energy policies in WNT.

The timeline for implementing these recommendations is divided into three phases: short-term (1-3 years), medium-term (4-10 years), and long-term (11+ years). In the short term, renewable energy targets must be integrated into regional development plans, the regulatory framework should be finalized, and initial renewable energy projects should be launched. In the medium term, the focus shifts to strengthening renewable energy infrastructure and developing financing models to support large-scale renewable energy integration. In the long term, full implementation of 100% renewable energy policies across all sectors becomes the primary focus, with ongoing adaptation to emerging technologies and policy adjustments as necessary.

Contents

1. Introduction

The involvement of local governments in the energy transition and the development of renewable energy as part of the national agenda is fundamental. At the local level, local governments play a crucial role in implementing national energy policies, allowing for adaptation of these policies to local conditions and needs, ensuring sustainability and effectiveness in implementation. Additionally, local government involvement enables the adjustment of energy transition strategies to the unique geographic, economic, and social characteristics of each area, creating more relevant and positive impacts. By facilitating the participation of local stakeholders, such as communities, companies, and non-governmental organizations, local governments can enhance support and involvement in the energy transition while minimizing potential resistance. Moreover, active involvement in the energy transition opens opportunities for local economic development through investments in renewable energy and sustainable projects, creating new jobs, and strengthening the local economy. Local governments can also contribute to creating more independent and sustainable energy systems, reducing dependence on conventional energy sources, and enhancing regional energy resilience.

By implementing renewable energy and energy efficiency projects, local governments can help reduce greenhouse gas emissions at the local level, aligning with national and global efforts to combat climate change. Active participation of local governments can also help alleviate the national energy burden by utilizing local resources, reducing pressure on national energy infrastructure. Finally, investments in renewable energy technology and innovation can enhance the economic competitiveness of regions, making them more attractive for investments, creating green jobs, and overall strengthening the region's position in a sustainable economic scenario.

West Nusa Tenggara Province is dedicated to bolstering the national energy transition and advancing renewable energy initiatives. This commitment is underscored by achieving a renewable energy mix of 20.44% in 2023, surpassing the targeted 19% (Energy Agency of WNT Province, 2024). Moreover, the provincial government aims to enhance local energy independence by prioritizing the development and utilization of sustainable local energy sources, thereby reducing reliance on fossil fuels and external energy sources.

West Nusa Tenggara Province has significant potential in developing renewable energy sources such as solar, wind, hydro, and biomass energy. This potential plays a pivotal role in the province's contribution to achieving Indonesia's national renewable energy targets. By optimizing its local renewable energy resources, it not only impacts its own energy targets but also significantly contributes to national renewable energy targets. Therefore, West Nusa Tenggara Province’s role in leveraging its local renewable sources holds strategic importance in supporting Indonesia's overall renewable energy goals (ICLEI Indonesia, 2020).

2. Towards 100% Renewables for WNT

In support of these transition efforts and the development of renewable energy, the West Nusa Tenggara Provincial Government has partnered with ICLEI Local Governments for Sustainability to develop a program to implement the 100% Renewable Cities and Regions Roadmap project from 2019 to 2024. This initiative has produced initial studies on the energy profile in West Nusa Tenggara Province, 100% renewables energy system modeling results, and strategies through the West Nusa Tenggara Province 100% Renewables Roadmap by 2050.

Moreover, the program has generated recommendations for suitable technologies, business models, and viable proposals to achieve the mission of 100% renewable energy in West Nusa Tenggara Province by 2050. The 100% Renewables Roadmap serves as a basis for developing and revising more comprehensive policies to achieve West Nusa Tenggara Province's target towards net-zero emissions by 2050.

The 100% renewable energy system modelling for West Nusa Tenggara Province conducted by Fraunhofer ISE and ICLEI Local Government for Sustainability in 2021 using the KomMod model revealed that West Nusa Tenggara has the potential to achieve 100% renewable energy in the power, heating, cooking, commercial, industrial fuel, and land and water transportation sectors. The main finding is that renewable energy can be fully integrated into all demand scenarios, but for a separate energy system in Lombok, increased demand may be challenging to meet with the available RE resources. Therefore, one of the main findings of the modelling exercise was that combining energy systems between Lombok and Sumbawa can provide economic benefits and enhance supply security due to higher biomass potential in Sumbawa.

In WNT, photovoltaics dominate as the technology with the highest electricity supply and lowest energy cost, but batteries are needed to balance supply and demand. Wind power also plays a significant role in renewable energy scenarios. Although the Indonesian government focuses on geothermal and hydropower, their potential remains limited in WNT. Biogas fuel prices affect consumption patterns, with lower price scenarios leading to more use of CHP and biogas stoves compared to higher price scenarios and therefore affecting the use of alternative sources of energy. Implementing the main scenario combining energy systems with average demand and low fuel prices can drive renewable energy deployment in West Nusa Tenggara, while the business-as-usual scenario is much less ambitious and more costly with high CO2e emissions (Steingrube, 2021).

As an initial step, in 2021 the Provincial Government of West Nusa Tenggara formulated the Vision of West Nusa Tenggara Province towards 100% Renewable Energy and set a target of Net-Zero Emissions by 2050. The primary priority of West Nusa Tenggara Province is to reduce greenhouse gas emissions by focusing on the use of renewable energy such as solar, wind, hydro, and biomass. Transitioning to these clean energy sources is an active effort to reduce the region's carbon footprint, in line with the commitment to mitigating the impacts of global climate change. Besides

reducing emissions, the emphasis on renewable energy is also closely linked to environmental preservation. The province aims to protect its natural ecosystems and wildlife habitats, which are critical to its natural wealth, by reducing dependence on conventional energy that often harms the environment. This effort supports the conservation of natural resources, including maintaining unique ecosystems and wildlife habitats in West Nusa Tenggara Province, aligning with the ideals of creating a balanced and sustainable environment for residents and wildlife in the region.

To realize these commitments, the Provincial Government of West Nusa Tenggara has outlined steps that include strengthening infrastructure to support the production and use of renewable energy such as solar or wind power plants and other facilities, as well as investing in the latest technology to maximize the potential of local energy sources. Policies also play a significant role by drafting regulations and incentives to encourage the adoption of environmentally friendly technologies, not only in the public sector but also in the private sector and within the community. These efforts have the potential to increase energy resilience, reduce dependence on conventional energy, and create a more sustainable economic and environmental environment at the local level.

The program has produced recommendations for appropriate technologies, financial strategies, and actionable proposals to achieve West Nusa Tenggara Province's goal of 100% renewable energy by 2050. The 100% Renewables Roadmap will guide the development and revision of comprehensive policies necessary in supporting the province's Net-Zero Emissions target by 2050. To align the Provincial Government’s policies with this vision, the preparation of this report is essential. It will specifically review existing policies and identify needed policy adjustments to achieve the 100% renewable energy and net zero emissions goals. This energy policy gap analysis will facilitate the formulation of targeted recommendations to ensure alignment with renewable energy development objectives in West Nusa Tenggara Province.

3. Regulatory Framework: Existing Energy Policies

In terms of policy, the national government has issued regulations to encourage the energy transition and the development of renewable energy in Indonesia. Some of the policies are listed below in Table 1.

Table 1: Policies and regulatory frameworks applicable to the energy sector in Indonesia

Ministry/ Institution	Regulation	Brief Description
National Government	Law No. 30/2007 on Energ	- Regulates sustainable energy supply and utilization. - Mandates the national and regional governments to utilize renewable energy according to their authorities.
National Government	Law No. 30/2009 on Electricity	- Regulates the integrated electricity supply business area division. - Imposes regional tariff application limited to specific business areas. - Regulates the use of electricity networks for telecommunications, multimedia, and informatics purposes.
National Government	Law No. 1/2022 on Financial Relations between Central and Regional Governments	Exempts renewable energy-based vehicles from taxes and transfer duties.
National Government	Government Regulation No. 33/2023 on Energy Conservation	Implementation of energy conservation through energy management activities and mandatory reporting.
National Government	Government Regulation No. 79/2014 on National Energy Policy	Sets targets for 23% renewable energy in the national energy mix by 2025 and 31% by 2030.
National Government	Government Regulation No. 14/2015 on Masterplan for National Industry Development (RIPIN) 2015-2035	Promotes the use of new and renewable energy in industrial processes.
National Government	Government Regulation No. 29/2018 on Industrial Empowerment	Gradual enforcement of Green Industry Standards covering raw materials, auxiliary materials, energy, production processes, products, management, and waste management.
National Government	Government Regulation No. 16/2021 on Building Construction	Implementation of the obligation to meet green building criteria for both new and existing buildings
National Government	Government Regulation No. 74/2021 on Motor Vehicles subject to Luxury Goods Sales Tax	0% tax incentive on PPnBM (Luxury Goods Sales Tax) for electric vehicles
President	Presidential Regulation No. 22/2017 on RUEN	A national-level energy management plan that is the elaboration and implementation plan of the National Energy Policy to achieve a renewable energy mix of 23% by 2025 and 30% by 2050.
President	Presidential Regulation No. 112/2022 on the Acceleration of Renewable Energy	Determining the price of electricity from various renewable energy sources, accelerating the

Ministry/ Institution	Regulation	Brief Description
	Development for Electricity Supply	operational termination of coal-fired power plants (PLTU) and prohibiting the construction of new coal-fired power plants.
Minister of Public Works and Housing ("PUPR")	Peraturan Menteri PUPR No. 02/2015 tentang Bangunan Hijau	Green building principles; types of buildings that meet green building requirements; green building requirements; certification; incentives for green building implementation; role of society
Minister of Environment ("LH")	Permen LH No. 4/2009 concerning Thresholds for Exhaust Gas Emissions of New Type Motor Vehicles	Sets the maximum limit of polluting substances or materials that may be emitted directly from the exhaust pipes of new-type motor vehicles.
	Minister of Environment Regulation No. 20/2017 on Quality Standards for Exhaust Gas Emissions of New Type Motor Vehicles Category M, N, and O	Sets the maximum limit of polluting substances or materials that may be emitted directly from the exhaust pipe of motorized vehicles with 4 (four) or more wheels.
Minister of Energy and Mineral Resources	Minister of Energy and Mineral Resources Regulation No. 50/2017 and its amendments concerning Utilization of Renewable Energy Sources for Electricity Supply	Regulates the determination of tariffs and mechanisms for the procurement of renewable power plants.
	Minister of Energy and Mineral Resources Regulation No. 13/2020 concerning the Provision of Electric Charging Infrastructure for Battery-based Electric Motorized Vehicles	Regulates the electricity charging infrastructure for battery-based electric motor vehicles, including battery recharging and exchange facilities, as well as private electricity installations and SPKLUs.
	Minister of Energy and Mineral Resources Regulation No. 14/2021 concerning the Application of Minimum Energy Performance Standards for Energy Utilizing Equipment	Implementation of *Minimum Energy Performance Standard* (MEPS) for household electrical appliances including fluorescent lamps, and air conditioners.
Minister of Transportation	Minister of Transportation Regulation No. 65/2020 on the Conversion of Motorcycles with Fuel Motor Drives to Battery-based Electric Motors	Regulates the organization of conversion of conventional fuel motors to electric motors, including conversion workshops, conversion certification, etc.
President	Presidential Regulation No. 112/2022 on Accelerating the Development of Renewable Energy for Electricity Supply	Regulates the preparation of a business plan for the supply of electricity (RUPTL), the preparation of a Roadmap to accelerate the end of the PLTU operational period, the implementation of power purchases, and government support in efforts to accelerate the development of renewable energy. This regulation generally replaces the Minister of Energy and Mineral Resources Regulation No. 50/2017.

As shown in Table 1, several regulations exist to regulate and promote the development and use of renewable energy. The national government has set targets for the use of renewable energy on a national scale by providing incentives, such as tax exemptions, for vehicles and facilities relying on renewable energy. There are also measures aimed at saving and using energy more efficiently, including minimum standards for electrical equipment, green building principles, and regulations affecting vehicle exhaust emissions.

Moreover, these policies also emphasize the development of infrastructure supporting alternative energy use. This includes the construction of dedicated electric charging facilities for battery-powered vehicles and the transformation of motors from conventional fuel to electric power. Regulations also govern the industrial sector with the aim of encouraging them to switch to more environmentally friendly energy sources in their production processes.

In addition, there are regulations governing electricity provision concerning business area division, tariff setting, and the development of renewable energy sources for electricity supply. All these policies are part of a national plan that includes energy management strategies, renewable energy use targets, and measures to accelerate the development of renewable energy outlined in the National Energy General Plan (RUEN) and other plans. In essence, the focus of these policies is on the development and utilization of renewable energy, energy savings, efficiency, and infrastructure development to promote the transition to a more sustainable energy system.

These policies form the main basis for the NTB Provincial Government in supporting Indonesia's government policies to achieve net zero emissions by 2050 or earlier, as stated in Enhanced Nationally Determined Contribution (E-NDC) document and the Long-Term Strategy on Low Carbon and Climate Resilient Development 2050 (LTS-LCCR 2050).

As a derivative of national policies related to energy transition and renewable energy, the government of West Nusa Tenggara has issued the following policies outlined in Table 2.

Table 2: Regional energy sector regulation in WNT Province

Regulation	Brief Description
Regional Regulation No. 3 of 2019 on Regional Energy General Plan (RUED) of West Nusa Tenggara Province	It mentioned the target for energy mix and provides comprehensive energy management guidance for the region. This includes strategies to utilize renewable energy to meet the province's energy needs, aiming towards more sustainable utilization.
Regional Regulation No. 2/ 2015 on Energy and Electricity Management	This policy provides a comprehensive framework to regulate and enhance the energy sector and govern electricity management in WNT Province. Its goal is to provide a strong structure for the development of the energy sector and electricity infrastructure.
Governor Regulation No. 12/ 2015 on Business Procedures in New and Renewable Energy and Electricity	This policy serves as formal guidance for establishing and operating renewable energy and electricity sector businesses in West Nusa Tenggara Province.
Governor Regulation No. 671-951 of 2016 on the Regional Electricity Plan (RUKD)	It outlines strategies for developing the electricity sector, including the potential use of renewable energy for electricity supply from the Year 2015 to 2050
Governor's Instruction 670/372/DEDM/2023	Encourage the use of electric vehicles among civil servants (ASN) and supporting local industries involved in electric vehicle manufacture
Governor's Instruction 671/18/KUM/2021	Promote the utilization of rooftop PV to at least 20% of PLN's installed capacity in government buildings, public facilities, and educational institutions as a practical step to support renewable energy.
Governor Regulation (Pergub) of West Nusa Tenggara (NTB) Province Number 13 of 2024 on Green Energy Development in West Nusa Tenggara Province	The regulation guides the provincial government and stakeholders in achieving the sustainable, independent, environmentally friendly, and equitable use of green energy. With a focus on energy source diversification, efficiency, conservation, and social inclusion, this regulation supports WNT's vision to become an energy-independent and environmentally friendly province.

Referring to the regulatory policies issued by the WNT Provincial Government, it is evident that the government has taken a series of strategic steps to provide policies for managing and utilizing renewable energy. These initiatives include Regional Regulation No. 3 of 2019, which formulates the Regional Energy General Plan (RUED) of West Nusa Tenggara Province. RUED focuses on

strategies to utilize renewable energy to meet the province's energy needs more sustainably. This policy paves the way towards more environmentally friendly and sustainable energy use.

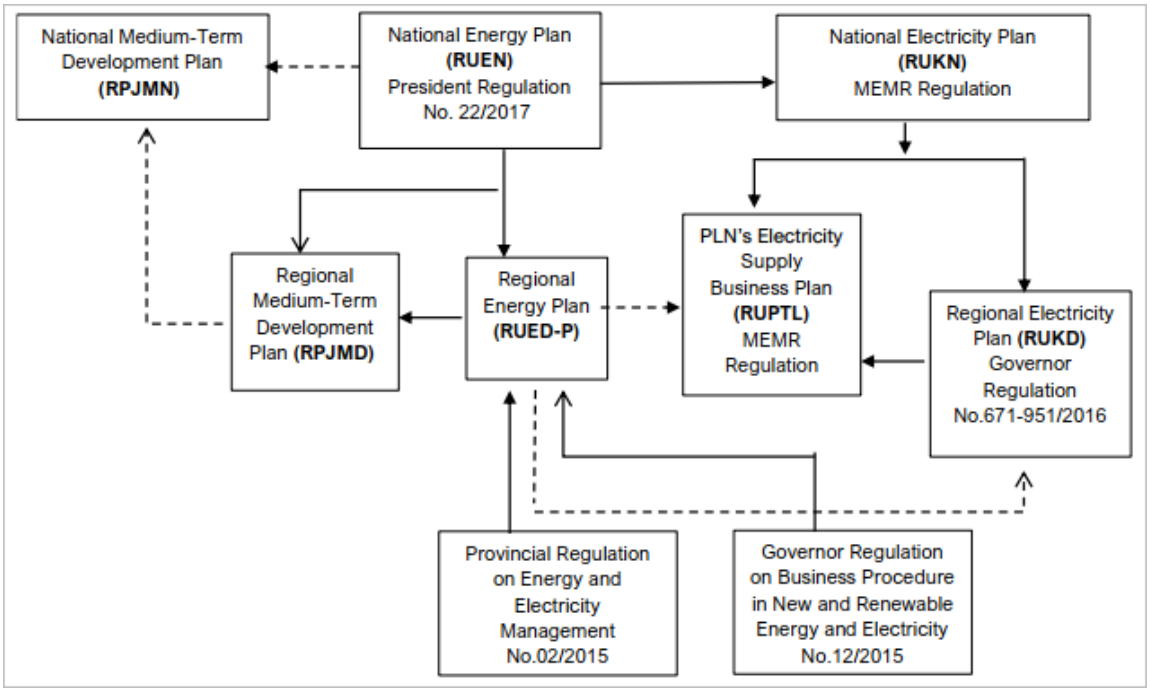

Figure 1: Legal Framework for Energy in West Nusa Tenggara Province (ICLEI, 2020)

According to the National Energy General Plan (RUEN), the Provincial Government is mandated to develop the Regional Energy Plan (RUED), which sets targets for the province's energy mix, including renewable energy's target for 2025 and 2050. Meanwhile, cities or districts will adhere to established regulations. West Nusa Tenggara Province has established the Regional Energy General Plan (RUED) under Regional Regulation No. 3/2019. This regulation outlines the general guidelines for energy management in West Nusa Tenggara Province, reflecting the vision and status of regional energy, energy availability for regional needs, and priority energy development.

Specifically, Article 7 of this regional regulation states that RUED can be used as a reference for developing Regional Development Plans, Regional Electricity Plans, and/or Regional Budgets, and can serve as a guide for regional governments to formulate Strategic Plans (Renstra) or for community participation in energy development.

Article 13 of the regulation mentions that the Governor of West Nusa Tenggara Province can collaborate with other provinces, third parties, or international organizations in implementing RUED. Therefore, RUED can serve as a starting point for the 100% Renewable Energy Roadmap in West Nusa Tenggara Province. Additionally, the province has other regulations supporting the implementation of RUED, such as those governing Energy and Electricity Management, Licensing Procedures for Renewable Energy and Electricity Businesses, and the Regional Electricity Plan.

Furthermore, Regional Regulation No. 2 of 2015 on Energy and Electricity Management provides a comprehensive framework to regulate and enhance the energy sector and electricity

management governance in West Nusa Tenggara Province. Its aim is to provide a strong structure for the development of the energy sector and electricity infrastructure in the region.

In addition to regional regulations, gubernatorial policies play a crucial role. Governor Regulation No. 12 of 2015 on Business g Procedures in New and Renewable Energy and Electricity provides formal procedural guidance for establishing and operating renewable energy and electricity sector businesses in West Nusa Tenggara Province.

Moreover, the Regional Electricity Plan (RUKD) under Governor Regulation No. 671-951/2016 demonstrates strategies for developing the electricity sector, including the potential use of renewable energy for electricity supply in West Nusa Tenggara Province. The development of this RUKD is based on national regulations, specifically Government Regulation No. 79 of 2014 concerning National Energy Policy and Minister of Energy and Mineral Resources Regulation No. 24/2015 regarding guidelines for the preparation of the General Plan for Electricity. The RUKD serves as the basis for regional governments and relevant parties in developing electricity infrastructure in their region and serves as a reference for electricity supply business license holders whose licenses are issued by the Governor of WNT in preparing their electricity supply business plans (RUPTL). This RUKD is expected to enhance the participation of Regional-Owned Enterprises (BUMD), private sectors, cooperatives, and community self-help initiatives in the development of the electricity sector.

Governor's Instructions also contribute to promoting renewable energy use, such as Governor's Instruction 670/372/DEDM/2023 supporting the use of electric vehicles among civil servants (ASN) and encouraging local industries involved in electric vehicle production. Additionally, Governor's Instruction 671/18/KUM/2021 promotes the installation of solar panels equivalent to at least 20% of PLN's installed capacity in government buildings, public facilities, and educational institutions as a practical step to support renewable energy. Collectively, all these policies underline West Nusa Tenggara Province's commitment to supporting the transition to more sustainable and environmentally friendly energy.

In 2024, through the Governor Regulation of West Nusa Tenggara Province Number 13 of 2024 on Green Energy Development in West Nusa Tenggara Province, the basic concept of green energy management was defined, including renewable energy and energy conservation, with a scope encompassing green energy sources, management, community roles, incentives, and funding. The goal is to achieve energy independence in WNT Province, improve community welfare, and maintain environmental sustainability with the principles of efficient and environmentally friendly energy use through advanced technology. Recognized renewable energy sources include solar power, hydropower, wind power, geothermal energy, biomass, biogas, waste, and marine energy, in line with WNT's efforts towards 100% renewable energy. Energy management includes the provision, utilization, conservation, and conversion of green energy, as well as the importance of collaboration between local government, state-owned enterprises, region-owned enterprises, business actors, SMEs, cooperatives, and the community.

Green energy provision and utilization programs include the construction of solar power plants (PLTS), wind power plants (PLTB), geothermal power plants (PLTP), and encouraging the community to switch to electric vehicles and green energy in daily activities. Energy conservation promotes efficient technology and the development of green buildings with zero energy standards. The GEDSI approach is integrated to ensure equal access to the benefits of green energy for all communities, including vulnerable groups.

On the other hand, there are other policies that significantly influence the success of regional development initiatives, particularly regarding energy transition and renewable energy development, include:

1. Provincial Regulation No. 7 of 2003 on the Long-Term Development Plan (RPJP) of West Nusa Tenggara Province for the period 2005-2025 serves as a reference for Regional Governments in long-term development from 2003 to 2025.
2. Provincial Regulation No. 1 of 2019 on the Medium-Term Regional Development Plan (RPJMD) for the period 2019-2023 serves as a reference to determine the direction of regional development in West Nusa Tenggara Province.
3. Governor Regulation No. 17 of 2023 on the Regional Development Plan for 2024-2026.
4. Provincial Regulation No. 5 of 2024 on the Spatial Planning Plan of West Nusa Tenggara Province (NTB) for the period 2024-2044 serves as a reference for determining the utilization and spatial use in West Nusa Tenggara Province.

In the context of regional development policies, each regional government develops Long-Term Regional Development Plans (RPJPD) and Medium-Term Regional Development Plans (RPJMD) as references for their regional development for 20 years and 5 years, respectively. In West Nusa Tenggara province, the latest RPJPD was developed for the span of 2005-2025 and the RPJMD is for the period 2019-2023 (based on Provincial Regulation No. 1 of 2019), which serve as strategic plans and activity guidelines for departments and institutions in West Nusa Tenggara Province. In both documents, there is currently a lack of detailed direction or integration regarding the vision to achieve 100% renewable energy in West Nusa Tenggara Province by 2050 and the target of net zero emissions by 2050. This is due to the NZE target and 100% RE vision having only been declared in 2021.

This gap will likely pose a significant obstacle to achieving energy transition and renewable energy development in WNT Province. Therefore, in the process of revising and/or updating the RPJPD for the period 2025-2045 and RPJMD for the period 2024-2029, it is crucial to ensure that the vision and targets for renewable energy in 2050 are comprehensively integrated into development directions and planning. This is important to ensure that all involved departments and institutions can move in sync and collaborate effectively towards achieving sustainable energy transition goals in WNT Province. Clarity and integrity in these directions are key to ensuring active participation and support from various stakeholders.

Governor Regulation No. 17 of 2023 regarding the Regional Development Plan for 2024-2026 includes various development programs and the utilization of renewable energy, including the

development of solar power plants (PLTS), hydroelectric power plants (PLTA), and wind power plants (PLTB). Funding for renewable energy projects comes from the state budget (APBN), provincial budget (APBDP), and private sector, with oversight from the Ministry of Energy and Mineral Resources (MEMR) and the WNT Energy Agency. Key programs include the construction of the Meninting Hydroelectric Power Plant in West Lombok Regency, the East Lombok Wind Power Plant in East Lombok Regency, and solar power plants on Gili Trawangan, Gili Meno, and Gili Air. This regulation emphasizes the importance of coordination between the provincial government, national government, and private sector in implementing renewable energy programs. Involvement of the MEMR and various regional energy agencies is crucial at every stage of the project, from planning to execution. Good coordination is expected to accelerate the realization of sustainable renewable energy infrastructure development. The RPD 2024-2026 demonstrates a significant commitment to renewable energy development; however, to achieve the 100% target by 2050, the policies and programs in the RPD must be consistent with long-term planning policies, including enhancing renewable energy capacity, integrating new technologies, and reducing dependence on fossil fuels. Monitoring and evaluation mechanisms for renewable energy programs need to be strengthened to ensure that each step towards the 2050 target can be achieved on time and as planned.

Provincial Regulation No. 5 of 2024 regarding the Spatial Planning Plan of West Nusa Tenggara Province for the period 2024-2044 aims to realize advanced and sustainable land and sea areas through the management and protection of natural resources, taking into account environmental carrying capacity and mitigation, in order to develop leading areas in the agribusiness, tourism, and competitive industry sectors. Enhancing the use of renewable energy sources is one of the regional development strategies for both Lombok and Sumbawa islands, including plans for the electrical infrastructure network, covering power generation infrastructure, electricity distribution, and supporting facilities. This document also details the planned infrastructure and includes planning for solar power plants (PLTS), hydroelectric power plants (PLTA), micro-hydroelectric power plants (PLTMH), biomass power plants (PLTBm), waste-to-energy power plants (PLTSa), and tidal power plants (PLTAL). For example, the Meninting Hydroelectric Power Plant in West Lombok Regency and the East Lombok Wind Power Plant in East Lombok Regency. The construction of this infrastructure demonstrates the regional government's strong commitment to supporting the use of renewable energy as a primary resource in the future. However, some fossil-fuel-based power plants such as coal-fired power plants (PLTU), diesel power plants (PLTD), gas-fired power plants (PLTGU), and gas turbine power plants (PLTMG) are still included in the plan until 2044.

The Spatial Planning Plan (RTRW) of West Nusa Tenggara (NTB) has also accommodated sustainable development through the control and supervision of the implementation of permits for the direct utilization of renewable energy, such as geothermal energy across regencies/cities and marine areas up to 12 miles from the coastline. This regulation aims to ensure that the utilization of renewable energy is carried out responsibly and without damaging the environment. Although this Regional Regulation has included important plans related to renewable energy

development, it is still necessary to ensure that the implementation and execution are well-coordinated to achieve the target of 100% renewable energy by 2050. Further integration and specific long-term strategies may be needed to ensure that this plan proceeds in line with the overarching goal. Overall, the RTRW Regulation of NTB Province has accommodated various important aspects that support the transition towards 100% renewable energy.

4. Financing Policies to Support RE Development in WNT

Referring to the existing national regulatory framework, several general policies have been formulated to support financing in the development of renewable energy. However, there are no specific provisions that govern financing aspects for the Provincial Government. Some policies support financing for renewable energy, such as **Law Number 1 of 2022**, which provides tax exemptions and transfer fees for vehicles based on renewable energy. Although not directly regulating financing, these incentives can encourage regions to adopt renewable energy-based vehicles. Additionally, **Government Regulation No. 74/2021** provides a 0% tax incentive for PPnBM on electric vehicles, which has the potential to promote the use of renewable energy-based vehicles at the regional level.

To date, there are no specific policies that provide guidance or steps to Provincial Governments regarding access or sources of financing in the development of renewable energy. While some policies provide incentives for the use of environmentally friendly technologies, guidance on accessing financing for renewable energy projects at the regional level remains poorly defined.

This suggests the need for Provincial Governments to develop their own financing strategies or rely on local or regional initiatives to obtain financing sources for renewable energy projects. Further efforts are needed to establish guidelines and provide direct support regarding financing access for regions in supporting the development of renewable energy.

Meanwhile, based on the content of the energy policies of West Nusa Tenggara Province, it is evident that the Provincial Government has implemented a series of policies demonstrating commitment to supporting the transition to more sustainable and environmentally friendly energy. Although these policies emphasize the use of renewable energy and better energy management, they do not directly address specific financing schemes to support energy transition.

The Regional Energy General Plan (RUED) of West Nusa Tenggara Province, emphasized by **Regional Regulation No. 3 of 2019**, and the Regional Electricity General Plan (RUKD) in **Governor Regulation No. 671-951/2016**, indicate the potential use of renewable energy for electricity supply in NTB Province. Meanwhile, gubernatorial instructions supporting the use of electric

vehicles and the installation of solar panels directly encourage the practical use of renewable energy.

From these documents, there is **no explicit policy or initiative seen that specifically regulates financing schemes to support the transition to renewable energy in West Nusa Tenggara Province**. These policies focus more on the regulation, management, and utilization of renewable energy rather than specific financing schemes to support infrastructure or renewable energy projects. Therefore, despite clear commitment from the Provincial Government of West Nusa Tenggara, further policies or strategies are needed that explicitly address financing schemes to support the broader and more comprehensive implementation of renewable energy projects in the region.

5. WNT's Energy Transition Challenges

In the Indonesian context, there are still many challenges in achieving energy transition efforts. During the Science 20 (S20) High Level Policy Webinar on Just Energy Transition on Thursday, March 17, 2022, in his keynote speech, President Jokowi highlighted three key challenges in energy transition: **ensuring access to clean energy for all**, the **importance of adequate funding** for new projects, and the necessity of **research and technology** support to produce efficient and competitive solutions. To achieve universal clean energy access, the primary focus is on electrification and clean cooking without leaving anyone behind. Regarding funding, appropriate mechanisms are needed to create a healthy economy without burdening society. Additionally, research and development of new technologies are crucial to improve efficiency and add value to new renewable energy industry products, while also preparing a skilled workforce to support this transition (KemenSetneg, 2022).

Meanwhile, the implementation of energy transition faces delays due to several factors. Firstly, insufficient political leadership remains a major obstacle. Lack of commitment and action from the government slows down this process. Moreover, the lack of capacity among involved actors, such as institutions or individuals involved in energy change, also complicates the transition (IESR, 2023).

Another factor slowing down energy transition is the burden of past policies. Policies that are less supportive or even contrary to the goals of energy transition hinder rapid change. Furthermore, to accelerate the energy transition process, public budget reforms are needed. Greater allocation of funds to the renewable energy sector and reduction of subsidies for conventional energy could be necessary steps. Reforms also need to be made within PLN (State Electricity Company) to ensure readiness to face challenges and support the shift towards more sustainable energy sources.

Meanwhile, several conditions pose challenges to the West Nusa Tenggara Provincial Government in the energy transition agenda and efforts to achieve 100% renewable energy target, including:

1. ***Lack of clarity across multiple guidance in the region about 100% RE***: In the context of regional development policies in West Nusa Tenggara Province, especially concerning the transition towards 100% renewable energy by 2050 and achieving net zero emissions by the same year, several guiding documents are need to be updated due to the target being set long after those documents were developed as references for development of WNT Province, both the Regional Long-Term Development Plan (RPJPD) 2005-2025 and the Regional Medium-Term Development Plan (RPJMD) of West Nusa Tenggara Province 2019-2023 have not integrated these targets and don't provide detailed guidance and integration in achieving them. Although these documents serve as references for development implementation in West Nusa Tenggara Province, they have not yet provided detailed guidance and integration regarding the vision of 100% renewable energy and achieving net zero emissions by 2050. Uncertainty and lack of information in these documents pose a significant barrier to achieving energy transition and renewable energy development in West Nusa Tenggara Province.

2. ***Challenges in spatial planning regulation***: Regional Regulation No. 5 of 2024 regarding the Spatial Planning Plan of West Nusa Tenggara Province for a period of 2024-2044 has provided a legal basis supporting the development of renewable energy, including technologies for solar energy, hydropower, geothermal, micro-hydro, biomass, waste-to-energy and ocean thermal energy, as well as the planning for development of undersea cable infrastructure in Lombok and Sumbawa. However, several technologies, such as green hydrogen and methane, which are crucial for decarbonizing the industry and energy sectors, have not yet been included in the planning. The absence of these technologies could hinder their integration into regional infrastructure planning.

3. ***Local government capacity limitations*****:** The readiness of local government agencies in West Nusa Tenggara Province to implement renewable energy policies indicates that several institutions or departments are not fully prepared, both technically and administratively, to implement these policies. This can include a lack of technical knowledge, limitations in human resources, and insufficient infrastructure required to support the implementation of renewable energy policies.

4. ***Limited provincial involvement in national energy planning:*** The inadequate involvement of provincial governments in national energy planning indicates that West Nusa Tenggara Province is not fully integrated into the national planning framework in the energy sector. This can significantly hamper coordination between agencies and the alignment of regional and national policies. Theis low level of involvement can also affect the province's ability to effectively optimize its renewable energy utilization. An instrument is also needed to ensure that planning to achieve this target is implemented at the city and district levels through spatial planning documents and memos/directives to the relevant departments. Insufficient Local Supportive Regulations: The lack of local

supportive regulations for renewable energy, particularly in West Nusa Tenggara Province, creates serious barriers for industry players and investors in the sector. These challenges include uncertainties or changes in the legal framework regulating renewable energy policies, including issues related to licensing, unstable electricity tariffs, and fiscal policies related to renewable energy. The incomplete regulations are a major hindrance for those seeking legal clarity to support sustainable investments and project development. Specifically, uncertainties related to the issuance of business area permits for renewable energy projects in West Nusa Tenggara Province pose significant challenges, as these permits are often inconsistent or unclear. Therefore, improving and harmonizing supportive regulations for renewable energy is crucial to overcoming these barriers and promoting sustainable renewable energy development in West Nusa Tenggara Province.

5. ***Dependence on national government policies*****:** Additionally, dependence on national government policies in implementing renewable energy at the regional level is a major issue. This indicates that West Nusa Tenggara Province may face challenges in regional autonomy to make decisions regarding renewable energy development. This high dependence could hinder the flexibility of regions to adapt more suitable or specific policies for local conditions, as they are bound to national policies that may not fully align with the needs or potential of renewable energy in theProvince. Therefore, updated regulations that are more aligned between national and regional policies are needed, so that WNT Province has greater flexibility in developing renewable energy potentials optimally according to its local characteristics and needs.

6. ***Lack of detailed regional energy regulations:*** The provincial government has not yet detailed regulations in the regional energy plan into various instruments and measurable schemes. For example, involving the priority allocation of regional finances for renewable energy and imposing specific rules to achieve decarbonization in specific sectors, such as transportation and buildings, at the regional level. In line with the revision process of the National General Energy Plan (RUEN), updating the Regional General Energy Plan (RUED) at the provincial level is necessary to reflect the region's ambitions regarding energy transition and integrate more ambitious renewable energy targets in the future.

7. ***Absence of financing schemes for renewable energy projects:*** There are no policies or initiatives explicitly regulating financing schemes to support infrastructure or renewable energy projects. Despite clear commitments, further policies or strategies are still needed that explicitly address financing schemes to support the broader and more comprehensive implementation of renewable energy projects in WNT Province.

6. Recommendations

Several national-level policies already provide spaces for energy transition in the regions. However, active participation from regional governments is crucial to ensure that local policies, both practically and strategically, allow for energy development, especially when regional targets are set to outpace national ones. Some recommendations that can be implemented include:

Recommendation 01. Translating the Vision of 100% Renewable Energy (RE) for West Nusa Tenggara Province into Regional Development Plans
Description
The Government of West Nusa Tenggara Province needs to integrate the vision of "**West Nusa Tenggara Province Towards 100% Renewable Energy**" and the target of "Net Zero Emission (NZE) by 2050" into several development planning documents, namely the Regional Development Plan for 2024-2026, the Regional Long-Term Development Plan (RPJPD) for 2025-2045, and the Regional Medium-Term Development Plan (RPJMD) for 2024-2029. This is to ensure that all policies and programs to be implemented are aligned with the established vision and targets.
Justification
Incorporating the renewable energy vision and targets into development planning documents is essential for creating a clear framework for the energy sector's development. With this integration, the government can more easily allocate resources, set priorities, and measure progress in achieving the desired targets. Additionally, it will strengthen the region's commitment to addressing climate change challenges and enhance energy resilience in WNT Province.
Stakeholder responsible

The responsibility for implementing these recommendations will involve various stakeholders, including:

1. **Governor**: As the regional head, the governor is responsible for setting policy direction, providing strategic guidance, and ensuring that the renewable energy vision and the 2050 Net Zero Emission target become part of the region's development priorities. The governor also leads communication and coordination with the national government, the private sector, and other stakeholders.
2. **Regional Secretariat (Sekda)**: The Regional Secretariat plays a coordinating role between various provincial government agencies. The Sekda's role is to synchronize and coordinate activities between departments to ensure that renewable energy policies and programs are implemented according to the governor's directives.
3. **Related Agencies**: The WNT Provincial Government includes technical agencies that play a direct role in the planning and implementation of renewable energy programs. Some relevant agencies include:
    - **Regional Development Planning Agency (Bappeda)**: Ensures the integration of the renewable energy vision into various development planning documents, such as RPJMD and RPJPD, and aligns them with long-term development targets.
    - **Energy and Mineral Resources Office (DESDM)**: Responsible for the implementation of technical policies in the energy sector, including the development of renewable energy and energy resource management.
    - **Environmental Office**: Oversees the environmental impact of renewable energy projects and ensures their sustainability according to environmental protection policies.
    - **Other relevant agencies**: For example, the Department of Transportation for clean transportation initiatives and the Department of Industry and Trade to encourage industrial involvement in clean energy.
4. **Civil Society and NGOs**: They play a role in providing input and supporting initiatives and programs oriented towards renewable energy.

Timeline

- **2024**: Preparation of the Regional Development Plan for 2024-2026, and the RPJMD for 2024-2029, including the renewable energy vision and targets.
- **2025**: Finalization of the RPJPD for 2025-2045, with a focus on policies and strategies to achieve 100% RE.
- **2026**: Launch of initial programs supporting the achievement of renewable energy and NZE targets, accompanied by regular monitoring and evaluation.

Recommendation 02: Development of Policies and Technical Regulations to Support the Vision of 100% RE for WNT Province

Description

The Government of West Nusa Tenggara Province needs to develop more detailed policies and regulations to support the implementation of renewable energy, in line with the roadmap toward achieving 100% renewable energy by 2050. These policies should include clear directions regarding the appropriate locations for RE development, the use of renewable energy in regional assets and activities, the integration of renewable energy in spatial planning, and support for the development of RE programs in local communities. Thus, it is expected that there will be clear mandates and directions for the Provincial Government and the District/City Governments, as well as ease in investment and an increase in private sector involvement.

Justification

The development of more detailed policies and regulations is crucial to creating a legal framework that supports the transition to renewable energy. Clear policies will provide guidance for local governments in decision-making and resource allocation, as well as reduce uncertainty for investors. Additionally, with support for local communities, the public will be more engaged in renewable energy development, which in turn will increase awareness and acceptance of renewable energy at the local level.

Stakeholders responsible

The responsibility for the development and implementation of this recommendation will involve various stakeholders, including:

1. **Governor**: As the leader of the local government, the governor plays a role in setting the strategic vision and key policies related to renewable energy. The governor is responsible for ensuring that the proposed policies align with the region's long-term goals, such as achieving 100% renewable energy by 2050.
2. **Regional Secretariat (Sekda)**: The Sekda plays a role in coordinating and overseeing the implementation of cross-sector and agency policies. The Sekda also ensures that the policies developed comply with applicable regulations and are aligned with national government policies.
3. **Related Agencies**: The primary responsibility for the development and implementation of renewable energy policies lies with agencies related to the energy sector and regional planning, including:
    - **Regional Development Planning Agency (Bappeda)**: Responsible for integrating renewable energy policies into development and spatial planning documents, such as the RPJMD and RTRW. This is important to ensure that renewable energy policies

align with other development policies.
   - **Energy and Mineral Resources Office (DESDM)**: Acts as the main technical executor in developing policies and regulations related to renewable energy. The ESDM Office will draft technical regulations, monitor implementation, and oversee developments in the renewable energy sector.
   - **Spatial Planning Office**: Responsible for coordinating suitable land use for renewable energy projects and ensuring there is no overlap with protected areas or incompatible uses.
   - **Cooperatives and SMEs Office**: Involved in supporting the development of renewable energy programs in local communities, including initiatives to support clean energy-based small and medium enterprises.
4. **Private Investors**: To participate in the development of renewable energy projects.

Timeline

- **2024**: Drafting of renewable energy policies and regulations, including location directives, asset usage, and integration into spatial planning.
- **2025**: Public consultations and revisions of the policy draft based on input from the community and stakeholders.
- **2026**: Approval of policies and regulations by the Provincial Government, as well as the launch of support programs for local communities and the private sector.

Recommendation 3: Strengthening Renewable Energy Infrastructure in WNT Province

Description

The WNT Government needs to strengthen renewable energy infrastructure by building adequate and synergistic facilities, such as the construction of Public Electric Vehicle Charging Stations (SPKLU) in strategic locations supported by PLN or the private sector. Additionally, the government should facilitate the installation of solar panels on public buildings and provide incentives for community participation. Integrating RE projects into the Regional Spatial Planning (RTRW) and implementing green building policies are also crucial for promoting energy efficiency. Project site selection must be conducted carefully to protect conservation areas and utilize degraded land. Establishing stakeholder forums and public-private partnerships should be enhanced, accompanied by annual policy evaluations and streamlining the permitting process. Furthermore, raising public awareness through public campaigns, education, and training on renewable energy is essential to support this transition.

Justification

Strengthening renewable energy infrastructure is vital for supporting the transition to cleaner and more sustainable energy sources. By building SPKLU and facilitating solar panel usage, the government can encourage the adoption of renewable energy among the community and public sector. Integration into RTRW and implementation of green building policies will enhance energy efficiency and minimize negative environmental impacts. Through stakeholder forums and public-private partnerships, more effective collaboration can be created, easing the implementation of renewable energy projects. Public awareness campaigns will strengthen public support for these initiatives, making the transition to renewable energy smoother and more sustainable.

Stakeholders responsible

The responsibility for implementing this recommendation will involve various stakeholders, including:

1. **Governor**: As the regional leader, the governor is responsible for setting strategic policy directions, making key decisions regarding resource allocation, and overseeing the implementation of renewable energy projects. The governor also leads collaboration with the national government, the private sector, and the community.
2. **Regional Secretariat (Sekda)**: The Sekda coordinates various departments and

government agencies to ensure that policies related to renewable energy align with the governor's directives. The Sekda also helps ensure synchronization between regional and national policies.

3. **Relevant Departments** involved in the implementation of renewable energy infrastructure policies, including:
   - **Regional Development Planning Agency (Bappeda)**: Responsible for ensuring that renewable energy projects are integrated into the RTRW and other regional development policies, such as green building policies.
   - **Energy and Mineral Resources Agency (DESDM)**: This agency has technical and operational responsibilities for managing and implementing renewable energy infrastructure projects, including SPKLU and solar panel installations.
   - **Housing and Settlement Office**: Ensures policies related to green buildings, including incentives for solar panel installations on public buildings and residential areas.
4. **Private Sector**: Invited to collaborate in development and investment, such as in SPKLU construction and solar panel provision. They play a vital role as partners in providing technology and funding.
5. **Civil Society Organizations (CSOs)**: They play a role in supporting public awareness campaigns, providing education, and engaging the community in renewable energy projects.

Timeline

- **2024**: Preparation of the renewable energy infrastructure development plan, including SPKLU locations and solar panel installations on public buildings.
- **2025**: Implementation of SPKLU construction and incentive programs for community solar panel installations, along with project integration into the RTRW.
- **2026**: Formation of stakeholder forums, streamlining the permitting process, and launching public campaigns to raise awareness about renewable energy.

Recommendation 4: Establishment of a Regional Renewable Energy Coordination Team

Description

To enhance the involvement of the WNT Provincial Government in national energy planning, it is necessary to establish a Regional Renewable Energy Coordination Team. This team will involve relevant departments, such as Bappeda, the Energy and Mineral Resources Agency (DESDM), and the Environmental Agency (DLH), to ensure that regional energy policies align with national policies. Additionally, aligning the Medium-Term Regional Development Plan (RPJMD) and the Regional Energy General Plan (RUED) with national targets is an essential part of this initiative. Regular coordination meetings between the provincial and national governments will be held to discuss policy implementation, necessary support, and performance evaluations. Capacity building for regional officials through training and workshops on national energy policy will also be a focus. A multistakeholder dialogue forum involving the national and regional governments, the private sector, and academics needs to be initiated to strengthen policy synergy and ensure that renewable energy projects are implemented as planned.

Justification

The establishment of a Regional Renewable Energy Coordination Team is essential to ensure the active role of local governments in national energy planning. A stronger synergy between regional and national policies will accelerate the implementation of renewable energy projects, ultimately helping to achieve clean energy targets more effectively. Through the alignment of RPJMD and RUED, and regular coordination meetings, local governments can more easily adjust policies and strategies to meet local needs while still fulfilling national targets. Training for regional officials will enhance their capacity to understand and implement national energy policies. The multistakeholder dialogue forum will help ensure that all stakeholders have a clear understanding and role in supporting renewable energy projects.

Stakeholders responsible

The responsibility for implementing this recommendation will involve various stakeholders, including:

1. **Governor**: As the regional leader, the governor acts as the main guide and strategic policy maker. The governor plays a role in initiating the formation of the Regional Renewable Energy Coordination Team and ensuring that the policies align with national targets.
2. **Regional Secretariat (Sekda)**: The Sekda is responsible for coordinating the

implementation of energy policies across relevant departments. The Sekda's role is vital in ensuring that each department involved works according to the governor's directives and national energy policies.

3. **Relevant Departments**: The formation of this Coordination Team will involve several departments related to renewable energy programs, including:
    - **Energy and Mineral Resources Agency (DESDM)**: As the main agency responsible for planning, implementing, and supervising renewable energy policies at the regional level.
    - **Environmental Agency (DLH)**: Responsible for ensuring that the development of renewable energy in the region aligns with environmental sustainability principles.
    - **Regional Development Planning Agency (Bappeda)**: Functions to integrate renewable energy programs and policies into the Medium-Term Regional Development Plan (RPJMD) and ensure synchronization with national policies.
    - **All Relevant Departments in WNT Province** with technical authority in the implementation of renewable energy.
4. **National Government**: Functions to support regional policies through alignment with national targets.
5. **Private Sector**: Involved in implementing renewable energy projects on the ground.
6. **Academics and NGOs**: They provide policy input and enhance public participation in renewable energy projects.

Timeline

- **2024**: Formation of the Regional Renewable Energy Coordination Team and alignment of RPJMD and RUED with national energy targets.
- **2025**: Conducting regular coordination meetings between regional and national governments to evaluate policies and support renewable energy projects.
- **2026**: Training and workshops for regional officials and initiation of a multistakeholder dialogue forum to strengthen policy synergy.

Recommendation 5: Building Systemic Partnerships for Renewable Energy Policy

Description

The WNT Provincial Government needs to build more systemic partnerships with stakeholders, including the private sector, academia, and civil society, to enhance the effectiveness of planning and implementing renewable energy policies. This partnership aims to promote local research and innovation as well as develop research-based solutions to address energy challenges at the local level. Community participation in renewable energy projects should also be encouraged through training and active involvement. Additionally, strategic partnerships with financial institutions and the private sector are necessary to increase investment and create attractive financing models, supported by innovative policies such as incentives, tax exemptions, and financial instruments. A clear financing plan will provide directed guidance in supporting renewable energy infrastructure in the region.

Justification

Building partnerships involving various stakeholders is key to accelerating RE development in WNT. Through collaboration with the private sector, academia, and civil society, local research and innovation can be enhanced, resulting in more relevant and efficient solutions to local energy challenges. Engaging communities in implementing renewable energy projects through training will also enhance community capacity and acceptance of these programs. Partnerships with financial institutions and the private sector will help create innovative and attractive financing models, thereby accelerating investment in renewable energy projects. With incentives, tax exemptions, and other financial instruments, the government can encourage greater participation from the private sector.

Stakeholders responsible

The responsibility for implementing this recommendation will involve various stakeholders, including:

1. **Governor**: As the regional leader, the governor has primary responsibility for providing policy direction, making strategic decisions, and ensuring that renewable energy programs are prioritized in regional policy. The governor is also responsible for communicating with the national government and various other stakeholders.
2. **Regional Secretariat (Sekda)**: The Secretariat has a cross-departmental coordination function and ensures that policy implementation proceeds according to the governor's directives. The Sekda will play a crucial role in coordinating cross-sectoral programs and relevant departments.
3. **Relevant Departments** related to renewable energy, including:
    - **Regional Development Planning Agency (Bappeda)**: Responsible for formulating and aligning renewable energy policies with regional development plans (RPJMD, RUED).
    - **Energy and Mineral Resources Agency (DESDM)**: Has technical responsibilities in the implementation of renewable energy policies, including infrastructure development, regulation, and project implementation.
    - **Environmental Agency**: Ensures that renewable energy policies align with environmental protection and sustainable environmental governance.
    - **Transportation Agency**: Plays a role in developing renewable energy in the transportation sector, such as the development of electric vehicle infrastructure.
    - **Industry and Trade Agency**: Promotes private sector participation and investment in the renewable

Timeline

- **2024**: Establishment of systemic partnerships among the government, private sector, academics, and civil society, along with the development of a framework for local research and renewable energy innovation.
- **2025**: Launching community training programs and active participation in renewable energy projects, as well as implementing financing models supported by partnerships with financial institutions.
- **2026**: Implementation of incentive policies, tax exemptions, and financial instruments to increase private sector investment in renewable energy infrastructure.

Recommendation 6: Strengthening Cooperation with External Parties for the 100% Renewable Energy Program in WNT Province

Description

The Provincial Government of WNT Province needs to strengthen cooperation with external parties such as other provinces, third parties, and national and international organizations to enhance the effectiveness of renewable energy programs. This cooperation can open new opportunities and improve the efficiency of renewable energy project implementation in the region. In utilizing this cooperation, the government should formulate clear funding policies, including the development of specific financing schemes, establishment of funds or financial incentives, public-private investment partnerships, and facilitation of access to financing for renewable energy infrastructure.

Justification

Collaboration with external parties, both at the national and international levels, is crucial for supporting renewable energy development. This collaboration can help WNT acquire the knowledge, technology, and capital needed to accelerate the energy transition. Moreover, inter-provincial cooperation allows for the exchange of best practices and learning from other regions that are more advanced in clean energy development. With clear funding policies and effective partnerships, the government can attract more investors, create new opportunities for renewable energy infrastructure, and enhance access to financing for renewable energy projects. This will accelerate the achievement of renewable energy targets and enhance regional competitiveness.

Stakeholder responsible

The main stakeholders responsible for implementing this recommendation include:

- The Governor as the primary leader providing strategic direction and general policy.
- The Regional Secretary who acts as the administrative coordinator at the provincial government level.
- The Energy and Mineral Resources Agency (DESDM) responsible for identifying cooperation opportunities and ensuring renewable energy projects are implemented as planned.
- The Regional Development Planning Agency (Bappeda) responsible for integrating external cooperation policies into regional development plans.
- Investors and Private Partners, as parties involved in financing and implementing renewable energy projects through public-private partnerships.
- National and International Organizations, including donor agencies and NGOs that can

provide technical support and funding.
- The National Government and Other Provinces, which function to share experiences and support renewable energy programs in NTB Province.

Timeline

- **Short Term (1-2 years)**: Identify cooperation opportunities and formulate funding policies involving external parties.
- **Medium Term (3-5 years)**: Implement cooperation with other provinces, third parties, and national and international organizations, as well as develop financing schemes and public-private partnerships.
- **Long Term (5+ years)**: Strengthen ongoing collaboration with external parties and evaluate and refine funding policies and renewable energy infrastructure

Recommendation 7: Regular Evaluation and Consultation for the 100% Renewable Energy Policy in WNT Province

Description

The WNT Provincial Government needs to conduct regular evaluations and consultations involving various stakeholders to ensure joint ownership, responsiveness, and effectiveness of financing policies to achieve the target of 100% renewable energy by 2050. This consultation can be carried out through existing forums, such as local energy discussions or development planning meetings (Musrenbang). Additionally, new guidelines can be developed to regulate the evaluation and consultation processes, such as setting evaluation frequency (every 2-3 years) and utilizing consultation platforms, including virtual meetings or open sessions for the public. Evaluation reports published openly will enhance accountability and transparency regarding progress and challenges faced in implementing renewable energy policies.

Justification

Regular evaluation and consultation are necessary to ensure that renewable energy policies in WNT are effective and aligned with local needs and national targets. By involving various stakeholders, including the community, local government, private sector, and international institutions, this process can strengthen collaboration, enhance a sense of joint ownership, and accelerate the achievement of renewable energy targets. The periodic publication of evaluation reports will also provide a clear picture of policy developments and areas requiring

improvement, thereby increasing government accountability and strengthening public support.

Stakeholders responsible

- The Governor, as a leader in WNT Province, has the primary responsibility for setting policy direction and ensuring that these evaluations and consultations are conducted effectively.
- The Regional Secretary, who acts as a liaison between the Governor and relevant departments, ensuring that the resulting policies can be implemented effectively.
- The Energy and Mineral Resources Agency (DESDM) is responsible for managing and evaluating renewable energy policies.
- The Regional Development Planning Agency (Bappeda), which integrates evaluation results into regional development plans. This shows that not only the Governor is involved, but also all relevant departments that have specific responsibilities in renewable energy programs.
- The Private Sector and Investors, to provide input on challenges and opportunities in financing renewable energy projects.
- The Community and Civil Society Organizations, to participate in open consultation sessions and provide feedback.
- The National Government, to provide policy support and ensure synergy with national energy targets.

Timeline

- **Short Term (1 year)**: Develop evaluation and consultation guidelines, including setting frequency and consultation platforms.
- **Medium Term (2-3 years)**: Conduct the first evaluation and consultation, and publish the first report.
- **Long Term (Every 2-3 years)**: Conduct regular evaluations and consultations, as well as adjust policies based on evaluation results.

7. Future Paths

To ensure an effective regional policy for renewable energy transition, the regional government must prioritize integrating renewable energy goals into long-term development plans, such as the RPJMD and RPJPD. This integration should include the 100% renewable energy (RE) and net-zero emissions (NZE) targets by 2050. Key steps include establishing a clear regulatory framework that encourages investment, strengthening energy infrastructure (solar, wind, hydro), and developing supportive financial mechanisms for renewable projects

The Regional government should prioritize updating national and local (City/regency) development plans to integrate 100% renewable energy (RE) and net-zero emissions (NZE) goals. This involves strengthening regulatory frameworks, enacting policies that support renewable energy projects, and providing incentives for public-private partnerships. Collaboration between local governments, the private sector, international organizations, and civil society is key to a cohesive energy transition. Additionally, financing strategies should focus on creating investment incentives and facilitating access to funding. Regular evaluations every 2-3 years will ensure transparency and allow for necessary policy adjustments.

The timeline includes the short term (1-3 years), during which renewable energy goals should be incorporated into regional development plans, regulatory frameworks finalized, and initial renewable energy projects launched. In the medium term (4-10 years), efforts will focus on strengthening energy infrastructure and expanding financing models to support large-scale renewable energy integration. In the long term (11+ years), the goal is to ensure full implementation of 100% renewable energy policies across all sectors, while continuously adapting to technological advancements and evolving policy needs.

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