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Ref. : S.281 /PPI/M12R/KLN.0/8/2021

Mr. James Grabert
Director, Mitigation division
UNFCCC Secretariat
Email: KCI@unfccc.int

Subject : Indonesia Submission on the Katowice Committee of Experts on the Impacts of the Implenentation of Response Measures

Dear Mr. Grabert,

In respond to your letter Ref. KCI/inputs/extension dated 22 July 2021 regarding the Call for Inputs by the Katowice Committee of Experts on the Impacts of the Implementation of Response Measures – deadline extended, as Indonesia NFP to the UNFCCC, I would like to convey Indonesia Inputs as enclosed.

Indonesia has focused the area on "Anticipating the Impacts of Energy Transition on the Power Sector's Work Force" as concrete example on country-driven strategies and best practices on just transition of the workforce and creation of decent work and quality jobs and on economic diversification and transformation.

I thank you for your attention and continuous support.

Sincerely yours,

Laksmi Dhewanthi
Director General for Climate Change
as Indonesian NFP to the UNFCCC

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SUBMISSION BY THE GOVERNMENT OF INDONESIA

Pursuant to the Decision 4/COP.25, 4/CMP.15 and 4/CMA.2 and message of UNFCCC Secretariat to Parties and Observers Reference: MTP/KCI/Inputs dated on 16 June 2021 on Call for Inputs by the Katowice Committee of Experts on the Impacts of the Implementation of Response Measures, herewith Indonesia submits concrete examples and best practices on: (a) Just transition of the work force and creation of decent work and quality jobs; (b) Economic diversification and transformation as follows:

Anticipating the Impacts of Energy Transition on the Power Sector's Work Force

Introduction

Indonesia is archipelagic country with over 17,000 islands and also home of 15% of all the species on the planet and the largest in marine biodiversity. Indonesia is also enrich with mining, oil and gas. In other words, Indonesia has natural capitals wonder in the world. All of those natural capitals are used for communities' development in Indonesia.

In the term of climate change, Indonesia is committed to strengthening the NDC strategy in order to enhance the resilience to climate change. Indonesia has ambition to reduce GHG emission by achieving the peaking all mitigation sectors in 2030 and explore opportunities from international supports especially in finance and technology transfer to rapidly progress towards net zero emission by 2060 or sooner.

As a country implementing many coal-fired power plants, Indonesia is facing critical challenges especially in new coal power plants' policy and its finance and socio-economic issues such as just transition, economic diversification and transformation. This submission highlights concrete examples of country-driven strategies and best practices on just transition, economic diversification and transformation in Indonesia's power sector.

Executive Summary

Power sector in Indonesia is managed by state own enterprise,. It carries out the mandate of ensuring 100% electricity access for Indonesian people, at an affordable price. Along with the increased concern on global warming, and a stronger commitment of the Government of Indonesian to reduce emissions, the company needs to balance the objective of providing reliable and affordable electricity with the objective of mitigating climate change. Accordingly, the Power Development Plan (PDP) has been updated following the most recent policy on climate change mitigation.

Furthermore, the energy transition poses another challenge for Indonesia in terms of managing the workforce. Indonesia has relied on fossil fuels to generate electricity, and therefore the expertise and competency were developed according to these needs. However, climate change drives the development of new, cleaner technology, which requires Indonesia to shift its expertise development focus. The concrete example will show the expertise development strategy following

the change in the business process, followed by transformation its business strategy to address the challenges and to tap opportunities that arise due to climate change.

I. Concrete examples of country-driven strategies and best practices on just transition of the work force and creation of decent work and quality jobs

Title
Management of Expertise Development Strategy

Key Characteristics

- Indonesia's power sector is on its way to decarbonization.
- The decarbonization roadmap forces Indonesia especially the company to update its expertise development strategy
- Expertise required for energy transition has been identified. Accordingly, an expert pool mechanism has been developed to align with the planned decarbonization

Description on low-GHG-emission strategies or politics

The Government of Indonesia has set an unconditional target of 29% and a conditional target (with international assistance) of up to 41% emissions reduction compared to the business as usual (BAU) scenario in 2030, on its Nationally Determined Contribution (NDC).

The NDC's target is distributed to five sectors, including the energy sector. By 2030, the energy sector has to reduce 314 million tons of CO2 emission (unconditional), 53% of which should be attained by the power sector. The strategies of reducing emissions from the power sector involve: i) increasing renewable capacity, ii) improving energy efficiency, and iii) fuel switching.

In 2020, the state own enterprise who manage power sector in Indonesia launched its green transformation program aiming to increase the capacity of renewable energy more than doubled by 2025, implementing the NDC strategy of increasing renewable energy share to 23% by 2025.

Impacts of identified strategy or policy on just transition of the work force and creation of decent work and quality jobs

In May 2021, the state own enterprise publicly announced its Net Zero Aspiration by 2060. This aspiration requires shifting from coal-based power generation to renewable-based power generation. Coal power plants will retire gradually and be replaced by renewable energy and it effects to many things, including to the work force.

The ability to plan, develop, operate, and maintain the new technology and renewable energy facilities is an essential role in supporting the company's decarbonization plan which include human capacities. The experts who handle the electricity are having expertise in coal power generation and with the new policy, that expertise will be no longer needed. This transformation also impacts to workforce in coal mining field.

Identified challenges, opportunities and stakeholder involvement

One of the technical challenges is the intermittency characteristics of variable renewable energy (VRE) such as solar PV and win power, which requires the company to improve its capacity both technical and human capital capacities. Another challenge is related with the management of the workforce.

To address these challenges, the company has updated its expertise development strategy by adding new key competencies, among others, smart grid, energy storage, climate and environment. Moreover, an expert career path has been established, which is divided into four structures and nomenclature, i.e. generation and renewable energy; transmission; distribution; engineering and technology, as stipulated in the new company's Board of Directors Directive on Expertise Career Path.

As the number of expert in those new competencies is still limited, it is crucial to build institutional capacity and arrangement (e.g. capacity building, create the business process, certification, guidance, and procedures), setting up research, and collaborate with stakeholders. Therefore, the company strengthens its internal organization and tools as well as collaborates with stakeholders, both bilateral and multilateral. For example, under various cooperation with multi-stakeholders, the employees have benefited from capacity building on new technology, organized both in Indonesia and abroad.

Lesson Learned

Climate change has driven energy transition, which in turn influences the way the power sector manages its expert career development. Indonesia through its state own enterprise addresses the challenges as well as explores opportunities of the energy transition by anticipating the expertise needed for energy transition and strengthen collaboration with multi-stakeholders.

II. Concrete examples of country-driven strategies and best practices on economic diversification and transformation

Title
Transformation of the Indonesian Power Sector

Key Characteristics

- The state own enterprise's (electricity company) strategies and best practices .
- Financial and technical constraints.
- Tapping carbon market opportunities.

Description of low-GHG-emission strategies or policies

The energy sector is currently the second-largest contributor to GHG emissions in Indonesia, below the forestry sector. However, in the next decade, emissions from the energy sector are projected to overshoot those from the forestry sector. Indonesia pledged its commitment to combat climate change in November 2016 by releasing its first NDC document.

The national electricity company supports the Indonesian NDC target by carrying efforts to increasing renewable energy capacity through its green transformation program and carbon neutrality aspiration.

As stated in the Power Development Plan (RUPTL 2019-2028), the company aims to achieve the 23% renewables mix by 2025. Furthermore, the ongoing updated PDP (Draft RUPTL 2021-2030) integrates a higher proportion of renewable energy than that stipulated in the RUPTL 2019-2028. Renewables are expected to reach 48% of the total installed capacity by 2030, as compared to 30% by 2028 in the RUPTL 2019- 2028.

Indonesia is eager to achieve the target by increasing renewable power plants and retiring some diesel power plants. The utilization of biofuel in diesel power plants and biomass in coal power

plants will also be executed as short-term policies. As for the medium- term policy, the h lower-carbon technologies such as supercritical boilers for upcoming coal power plants will be established. Indonesia through it's state own enterprise will start retiring coal power plants in 2026 while continue scaling up the renewable energy plants.

Impacts of identified strategy or policy on economic diversification and transformation

As a step to carbon neutral by 2060, 24 small-scale renewable energy plants began operating commercially in 2020, with a total capacity of 154.37 MW. The operation of those renewable power plants reduces GHG emissions by around 730,500 tons of CO2 annually, meanwhile, the government of Indonesia also needs strategy how to keep the electricity rate is affordable for all people.

Climate change has driven market-based instruments which help the achievement of climate mitigation goal. The electricity company utilized carbon pricing as a measure to mitigate climate change. Up until 2020, it has obtained 8.2 million tons of CO2e GHG emission reduction certificates from Clean Development Mechanism (CDM) program and Verified Carbon Standard (VCS). The GHG reduction from three VCS projects (Musi, Renun, and Sipansihaporas hydropower plants) is more than 1 million CO2e per year. It means Indonesia still need financial support and technology transfers to adjust the progress.

Identified challenges, opportunities and stakeholder involvement

The government of Indonesia must ensure the safety and reliability of the power supply, transition to low-carbon electricity while keeping electricity at an affordable price. This is a major challenge since the least-cost yet emission-intensive coal power plants are still being the backbone of Indonesia's electricity system. Therefore, the capital cost of renewable energy and other low carbon technologies as well as intermittent characteristics of VRE, which entails additional storage technologies, adds a dilemma which the company has to sell the electricity at an affordable price with an average of USD 0.08/kWh.

The decarbonization plan requires support from multi-stakeholders, for example through the state investment, the adjustment of electricity tariff based on customers' economy level, as well as the subsidy and compensation that considering the foreseeable allowed cost. The electricity company needs to continue to make more efforts to buy renewable-powered electricity at competitive prices by increasing the competence of its procurement through collaboration with international financial institutions to ensure the most economical renewable energy cost structure.

Concerning the complexity of the power sector challenges, the government of Indonesia needs to encourage the participation of the private sector and investors both national and international as well as collaborating with various parties to developing environmentally friendly technology in the power sector.

The new market mechanism that would be agreed by UNFCCC parties might provide broader opportunities for Indonesia to add financing for renewable energy. Furthermore, global companies have pledged carbon neutrality, which requires carbon credits for offsetting their carbon footprint. Meanwhile, the domestic market is also emerging. The national emission trading system that was released in March 2021 creates a domestic carbon market. Therefore, Indonesia can extend the carbon offset service to the broader markets, including domestic markets.

Lessons learned

Irrefutably, Indonesia, especially in power sector faces some challenges in achieving the GHG reduction target. Indonesa needs support from multi-stakeholders to overcoma those challenges

and to address the three pillars of the energy trilemma: affordability, security, and environmental sustainability.

III. Synthesis of country-driven strategies and best practices

Indonesia is developing countries who still depends on coal for power energy. The government of Indonesia has to ensure all people can have access to the power energy. The transition to renewable energy will affect to the workforce and national economy. The career path has been established into new structures and nomenclature. Transition to low-carbon electricity will need big efforts in order to keep electricity at an affordable price. The achievement of of climate mitigation goal by utilizing carbon pricing as a measure to mitigate climate change still needs support in financial and technology from multi-stakeholders..

IV. Conclusion and Recommendation

1. Indonesia has ambition to reduce GHG emission by achieving the peaking all mitigation sectors in 2030 and explore opportunities from international supports especially in finance and technology transfers to rapidly progress towards net zero emission by 2060 or sooner.
2. As a country implementing many coal-fired power plants, Indonesia is facing critical challenges especially in new coal power plants' policy and its finance and socio-economic issues such as just transition of the workforce and creation of decent work and quality jobs, economic diversification and transformation.
3. Indonesia has relied on fossil fuels to generate electricity, and therefore the expertise and competency were developed according to these needs. However, climate change drives the development of new, cleaner technology, which requires Indonesia to shift its expertise development focus.
4. Indonesia has established career path for the future expertise but still need support from multi-stakeholder to enhancing the human capacities.
5. The government of Indonesia must ensure the safety and reliability of the power supply, transition to low-carbon electricity while keeping electricity at an affordable price and need investment for these efforts.
6. Concerning the complexity of the power sector challenges, the government of Indonesia needs to encourage the participation of the private sector and investors both national and international as well as collaborating with various parties to developing environmentally friendly technology in the power sector.

V. References

- The Constitution of The Republic of Indonesia Number 16/2016 about the Ratification of Paris Agreement to the United Natons Framework Convetion on Climate Change.
- Indonesia Long-Term Strategy for Low Carbon and Climate Resilience 2050.
- Updated Nationally Determined Contribution of The Republic of Indonesia.
- The Power Development Plan (RUPTL 2019-2028) of National Electricity Company.

VI. Acknowledgement

- The Coordinating Ministry for Maritime Affairs and Investment of The Republic of Indonesia.
- The Ministry of Environment and Forestry of The Republic of Indonesia.
- The Ministry of Energy and Mineral Resources of The Republic of Indonesia.
- The Ministry of State Own Enterprise of The Republic of Indonesia.
- The National Electricity Company of The Republic of Indonesia.