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To

The JETP Indonesia Secretariat
Jl. Medan Merdeka Selatan No.18
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Subject: Feedback on the JETP CIPP

In response to your call for comments from members of the public on proposed enhancements to the Comprehensive Investment and Policy Plan (CIPP), Ember has prepared formal feedback that can help perfect the plan. Ember appreciates the opportunity to provide feedback and values the collaborative approach taken by the JETP Secretariat.

To begin with, we would like to commend the work done by the JETP Secretariat in putting together such an exhaustive plan to decarbonize Indonesia's power sector. This was much required as Indonesia has committed to reach net zero by 2060 or sooner.

Ember recognizes the significance of the CIPP in achieving Indonesia's ambitious climate goals and applauds the transparency in seeking input from the public. Our feedback is structured to provide constructive insights, offer recommendations, and ensure that the CIPP aligns with the Paris Agreement.

Please find below our recommendations:

- **On Captive Power:** It is understandable that the decision to exclude captive power gives the government and the International Partners Group (IPG) more time to map out plans for the captive coal-fired power plants without hampering JETP's progress. But it opens up a few challenges.

In the plan prepared by the JETP Secretariat, on-grid power sector emissions will peak and come down to 250 MT CO₂ by 2030. By using the same parameters used to model the on-grid emissions, Indonesia is likely to see annual emissions of around 153 - 187 MT CO₂ in 2030 from captive coal power generation. This gives the power sector total emissions of at least 402 - 437 MT CO₂. The number may even be an underestimate as it excludes emissions from other fossil-based captive power (e.g. gas power plants) that we don't have data on.

Ultimately, these numbers are way above the target to cap power sector emissions at 290 MT CO₂ by 2030. In addition, the emission trajectory is also not aligned with the 2050 [NZE pathway](#) which caps emissions at 250 MT CO₂ before 2030. This is unexpected considering many expect such a financing scheme can help accelerate Indonesia's energy transition.

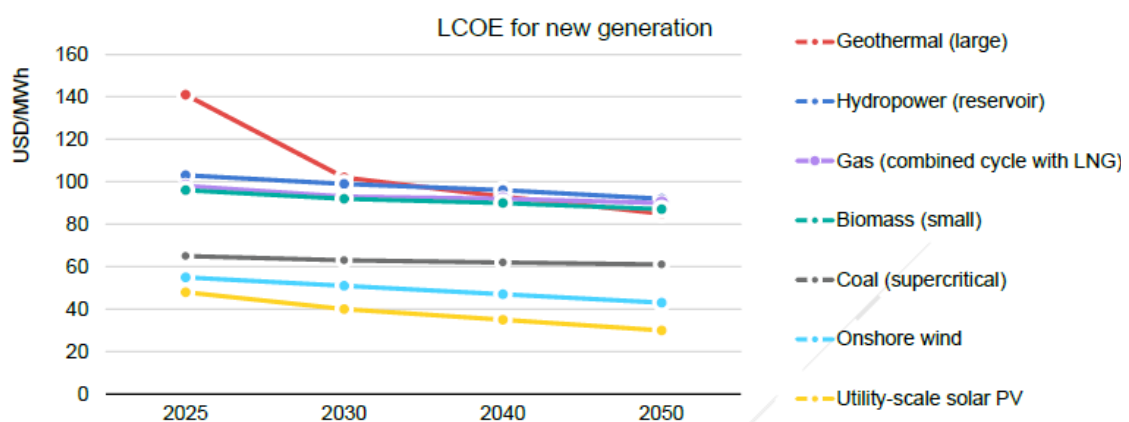
Therefore, in order for the sanctity of the JETP deal to be upheld, it would be important to include captive emissions as soon as possible. Ember recommends a reexamination of the emissions impact of captive power, a reconsideration of the decision to exclude captive power from the plan, and if necessary, a reevaluation of the international financing requirement to achieve the goal of 290 MT CO₂ by 2030.

- **On Solar and Wind:** The increase in renewable energy share in power mix to 44% under the CIPP is appreciated. Under the JETP secretariat, solar and wind power only contribute to 14% of total power generation in 2030 with the rest coming from dispatchable renewable energy such as hydropower and geothermal. However, it is not entirely clear why Indonesia shouldn't aim to develop more solar and wind capacity along with storage, especially as solar (and wind) power LCOEs are projected to be lower than other types of energy as per CIPP's projections seen in Figure 5.2-10. It appears that the model prefers dispatchable renewables rather than variable renewable energy.

This, however, raises questions about:

- The assumptions on prices (Levelized Cost of Storage - LCOS) of the energy storage system used in the model, preventing the model from integrating more solar (and wind) into the power system.
- Inter-island interconnection which appears very limited.

The lack of solar (and wind) power generation also goes against the fact that solar (and wind) energy projects are typically easier to deploy than other renewable energy projects such as hydropower and geothermal which have longer lead times.



Source: Adaptation from (Ministry of Energy and Mineral Resources, 2023)

Notes: solar PV and wind cost estimates exclude battery storage.

Figure 5.2-10 Levelized cost of electricity (LCOE) for new generation in the JETP scenario

Under the JETP plan, solar and wind power will account for 8% and 6% of total electricity generation by 2030, respectively, a significant increase from less than 1% today. While increased utilization of wind power is recommended, it is advisable that the JETP secretariat revisits the model assumptions, considering studies indicating the relatively limited distribution of wind energy in Indonesia, which is concentrated in a few parts of Indonesia such as South Sulawesi, Maluku, and NTT, compared to the widespread availability of solar energy across the archipelago.

It's also worth noting that the priority wind projects listed by the JETP Secretariat are mainly located in Java-Madura-Bali (JAMALI) despite the fact that most wind potential is not located in these areas. The decision to prioritize wind projects in these areas might be counterintuitive as wind power prices in these locations are likely higher than in wind-rich areas.

Ember recommends increasing the solar target, considering its considerable potential in Indonesia, as well as reassessing the focus areas for wind deployment. This aligns with cost-effectiveness, facilitates scalable deployment, and can make a substantial contribution to emissions reduction by decreasing reliance on fossil fuels.

Moreover, further emphasis on rooftop solar PV incentives and policy implications is necessary to encourage households, commercial entities, and industries to participate as prosumers and financially engage in the renewable energy sector. For instance, a portion of the JETP funding could be designated for rooftop PV incentives.

- **On Bioenergy:** Under the JETP scenario, bioenergy will play an increasingly significant role throughout the transition process with its share in the power mix reaching 8% in 2030 and 17% in 2050. The CIPP assumes that stand-alone and co-firing bioenergy plants will replace and repurpose the early-retired coal plants. While this may offer a stopgap solution, high reliance on bioenergy for power generation will open up Indonesia's power sector risks and questions around:
 - **Sustainability** of feedstock used for these plants
 - **Technical feasibility** of fully running coal plants on bioenergy as using biomass as fuel in a plant designed to burn coal may produce problems which can seriously compromise the boiler efficiency
 - **Economic viability** of bioenergy power plants as bioenergy power is projected to be more expensive than solar and wind as well as solar plus storage

Ember calls for a deeper investigation into the sustainability, technical feasibility, and economic viability of bioenergy, providing more context and consideration on potential challenges and risks.

- **On Coal Retirement:** Under the CIPP, coal power will continue to play a significant role up until 2040 before it is phased out by 2050. The coal retirement program, which many see as a necessary step to accelerate Indonesia's energy transition, will only start after 2035 by relying on funding from ADB through its Energy Transition Mechanism (ETM). It means no funding from IPG will be used to retire coal-fired power plants under the JETP scenario. This deviates from the initial intent of JETP, which aimed to support Indonesia in executing its coal retirement program.

Additionally, the plan to retire only 1.7 GW by 2040 through ETM, in contrast to the Indonesian government's plan of retiring 5.2 GW by 2030 and an additional 2.3 GW by 2040 through ADB (full ETM), will be seen as a key weakness of the plan by many stakeholders. It is also worth noting that the JETP scenario is not aligned with the IEA's 1.5 degree scenario which requires Indonesia to reach a net zero power sector by 2045.

Ember hopes that the IPG is fully committed to helping Indonesia decarbonize its energy system and not to "exclude financial compensation associated with the early retirement of coal power plants" in the system cost modeling.

Lastly, considering that flexible coal-fired power plants can help the country reduce its reliance on coal, Ember encourages the JETP Secretariat to consider combining the full coal retirement scenario with a flexible coal fleet under one new scenario to help stakeholders understand the consequences of such a scenario.

- **On financing:** The IPG countries have yet fulfilled their commitments to finance coal retirement, leaving uncertainty regarding the necessary financial support for phasing out coal power. This uncertainty raises concerns about the timing and effectiveness of transitioning to cleaner and more sustainable energy sources as originally pledged by the IPG countries. It not only creates challenges in meeting emissions reduction targets but also potentially hinders the development of alternative energy infrastructure and the just transition of coal-dependent communities.

Moreover, the CIPP has not yet provided comprehensive details regarding the financing scenario from the Glasgow Financial Alliance for Net Zero (GFANZ). This lack of transparency in the financing strategy presents a significant challenge in terms of understanding how resources will be mobilized and allocated to support the ambitious objectives of decarbonizing Indonesia's power sector. Furthermore, it can hinder stakeholders' ability to assess the feasibility and effectiveness of GFANZ's initiatives. Ember encourages the JETP secretariat to reveal details on GFANZ as access to this critical information can help promote accountability, ensure that commitments are met, and foster confidence in the collective efforts both from the public and private sectors to combat climate change.

Lastly, in light of the upcoming US general elections next year, Ember recommends conducting a comprehensive risk assessment. This assessment should evaluate the potential risks associated with the US pulling out of the JETP deal, which could potentially introduce significant funding uncertainties into the agreement's long-term prospects. The outcome of the election and the subsequent administration's stance on environmental policies will play a crucial role in determining the US's continued commitment to the JETP and its associated objectives. Therefore, Ember suggests the JETP Secretariat to address these risks, including other geopolitical risks, through some mitigation measures.

- **On Policy Reform:** Providing financial support alone is insufficient. The success of the clean energy transition in Indonesia hinges on the Indonesian government's willingness to enact the necessary policy reforms.

To date, the only reform that has been implemented is the relaxation of local content requirements for solar panels. There are proposed changes outlined in the policy document, such as enhancing the bankability of power purchase agreements and strengthening financing policies for renewable energy, but they have not yet been put into effect. Therefore, it is important to implement the necessary reforms to foster competitiveness in renewable energy, including improving energy procurement processes and discontinuing policies that effectively subsidize coal power.

Moreover, a critical policy reform is warranted in the industrial sector, where the national industrial development plan for 2015-2035 considers metal processing as "added value to natural resources", and the development of coal-fired power plants is still permitted if it can increase the "added value of natural resources". The government should change the policy and make sure that no new coal fleet will be built in the future, including coal-fired power plants that will serve off-grid industrial complexes.

Lastly, to ensure the implementation of the JETP scenario, it is important for PLN to be convinced to incorporate renewable energy projects identified in the CIPP into its business plan (RUPTL), particularly projects that have not been in the RUPTL yet.

- **On Just Energy Transition:** Proper mechanisms for the collection, recycling, and safe disposal of e-waste, including dedicated local recycling facilities for PV panels should be incorporated in the CIPP. Consideration should be given to local communities living in close proximity to these facilities. Notably, the inclusion of local communities in mitigation efforts will reduce the long-term risks posed by energy transition.

On page 203, a recommendation was made for the passage of a specific regulation allowing the early retirement of CFPP to be considered a “lawful act”. The planning, processing and enactment of such regulation should prioritize transparency, involving the general public through open consultations.

Lastly, while the CIPP currently focuses on safeguards for communities, social justice, and the environment, it should also elaborate on safeguarding the funding disbursement mechanism, selection processes (if projects are selected by tenders or bids) and the monitoring and implementation of accounting and financial reporting.

Once again, thank you for the opportunity to comment on CIPP, which Ember believes has the potential to become a template for other countries looking to transition to clean energy. We would be more than happy to be contacted for any clarification or further discussion.

Sincerely,
Ember

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