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Indonesia joins leading countries with net-zero emission Long-Term Strategy

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Indonesia has today submitted its Long-Term Strategy (LTS) to the United Nations Climate Convention, following an invitation codified in the Paris Climate Agreement. In its most ambitious pathway, this strategy describes options for peaking national greenhouse gas emissions in 2030 and reaching 540 MtCO₂e in 2050 (equivalent to 1.61 tCO₂/cap), with the possibility of achieving carbon neutrality in 2060 or sooner. This submission demonstrates a firm commitment to the Paris Agreement of a country of utmost importance for the global ambition—the 4th largest in terms of population, 16th largest economy and 8th largest greenhouse gas emitter in the world. It is particularly noteworthy as it comes from a developing country with severe development challenges—ranked 107 in the Human Development Index—and brutally affected by the COVID-19 crisis, demonstrating that ambitious climate action and socio-economic development can go hand-in-hand. The carbon neutrality end point follows similar engagements, notably by other G20 countries. The detailed strategic visions supporting the emission pathways reveal the required efforts for the national low-carbon transition and highlight the key domestic and international enablers. This LTS is a concrete guide to support implementation at sector and national level and to inform global cooperation priorities, which decisively contribute to the global momentum on ambitious climate action in the lead-up to COP26 and increased trust among countries and stakeholders alike.

The authors of this blog post represent the research team that has developed the scenarios and the analytical work underpinning the Indonesian LTS as part of the IDDRI-led international research collaboration of the Deep Decarbonisation Pathways Initiative (ddpinitiative.org), with the financial support from the International Climate Initiative (IKI).

Indonesia's Long-Term Strategy has been developed through an in-depth participatory process led by the Government of Indonesia and guided by detailed research analysis of transition pathways exploring different technical and socio-economic trajectories from the present to mid-century. More specifically, the LTS considers three pathways: the Current Policy Scenario (CPOS), which reflects an extended version of Indonesia NDC's unconditional scenario; the Transition Scenario (TRNS), with a more diversified energy sector; and the Low-Carbon Compatible with Paris Scenario (LCCP), which shows national emissions peaking in 2030 and reaching 540 MtCO₂e in 2050, at a rate that, if maintained in post-2050, would lead to carbon neutrality in 2060 or sooner.

Carbon neutrality made possible: systemic changes in agriculture, forest, energy and industrial sectors

In the LCCP “carbon neutrality” scenario, emissions from the agriculture and land-use sector reaches net-zero in 2030 and become an important net sink afterwards. This result requires a pro-active systemic action on the forest sector, combining a massive cut of both legal and illegal deforestation, forest conservation from degradation, peat ecosystem restoration and carbon sink enhancement. It also requires, in the agriculture sector, a massive improvement of productivity and cropping intensity, the adoption of efficient technology to reduce food loss and changes in diets and behaviors. Sectoral policies and institutional innovations at the national and sub-national levels are presented to achieve these objectives.

The LCCP scenario also entails a major shift in the energy sector, the second largest source of carbon emissions, to ensure emission reductions in parallel with the increase of energy demand triggered by economic growth. Notably, the use of coal in power is drastically reduced, renewable energy will be the main source of energy by 2050 thanks to a doubling of production compared to the current policy scenario. Also, technologies of carbon capture and storage are deployed at large scale, noting the conditions that would need further investigation.

Transformations are also considered in the key industrial sectors, such as cement, basic chemicals, iron and steel making, and metal smelters, which are highly reliant on coal and natural gas as an energy source. These include both process and technological changes.

In facilitating this transformation, Indonesia is in the process of developing a climate change financing strategy formulated with assumptions that financing needs are met through the optimization of the climate finance system, starting from sources of finance, financing institutions and their mechanisms as well as financing recipient institutions to implement programs/activities to achieve targets that have been set. The Indonesian Government has made various policies that open opportunities to increase the diversification of sources of financing from both national and international—public and private. At the national level, opportunities to optimize the state budget are explored, such as using green sukuk (Islamic bonds) instruments or green bonds, and regulations set out in the draft Presidential Regulation on Carbon Pricing Instruments such as fees and carbon levy; instruments of intergovernmental fiscal transfer; instruments of Local Resource Revenue (PAD) and other sources of incomes. Indonesia continues to mobilize international financial resources through bilateral, regional, and multilateral channels, including results-based payments for nature-based solutions under the Paris Agreement (REDD+), grants, and other potential sources and mechanisms.

Carbon neutrality can be compatible with national socio-economic priorities

The LCCP scenario considers innovative policies and structural reform in order to enable the low-carbon and climate-resilient transformation while ensuring continued and inclusive economic growth and addressing critical development priorities for the country. These include reforms to enhance a conducive business ecosystem, gender and intergenerational equity, including with a focus on vulnerable groups and local forest communities or *Masyarakat Hukum Adat*.

The growth of investments is a critical driver of a carbon neutral scenario. A supportive environment is therefore required to ensure trust from investors, including supportive policies, political stability, improved infrastructure, and efficient financial markets. The Environmental Fund Management Agency (BPD LH) and the Presidential Regulation on Management of Carbon Economy are two concrete examples.

Key interventions are also identified to support an inclusive transition, i.e. ensure a decent future for workers who are affected by the transition, promote quality jobs in the low-carbon and sustainable economic activities, enhance the capacity of the workforces while ensuring gender and inter-generational equalities and the needs of the vulnerable groups, and increase employment rates, adequate social protection, labor standards, and workers wellbeing.

National carbon neutrality enabled by key international developments

As a country that mainly exports land-based products (palm oil, rubber, cacao, etc.), international trade associations need to be strengthened in a way to achieve a fair deal between stable exports and the country's efforts to transform forest products into low-carbon products.

In addition, the energy transition requires a diversification of energy sources for energy supply, conditioned by the availability of investment in renewable energy and low-carbon fuels under a supportive business ecosystem with less barriers to trade renewable energy goods. Successful deployment of BECCS and solar energy technologies will play a critical role in achieving carbon neutrality by 2060 or sooner.

In addition, the carbon neutrality is dependent on the large-scale deployment at competitive costs of new technologies, such as carbon capture and storage. Such technological innovation would require targeted

international cooperation in order to accelerate the innovation process and bring the costs down.

Some concrete steps have already been taken to advance these cooperation agendas. For example, Indonesia has signed the Regional Comprehensive Economic Partnership (RCEP) between ASEAN (Association of Southeast Asian Nations) countries and important trade partners such as Australia, Japan, South Korea, and New Zealand. The Government of Indonesia is also committed to create a business environment that promotes a sustainable supply chain and certified products to address unsustainable production practices. However, although these cooperation efforts certainly go in the right direction, they are not enough to support the full implementation of the carbon neutral path. This in turn points to the need for strengthened international cooperation, which should definitely be the focus of international conversation in the lead-up to the 2023 Global Stocktake when countries should expect concrete solutions that support the progressive enhancement of their short- and long-term commitments.

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