Indonesia has the world's fourth largest population, right after India, China, and the U.S. It has about the same GDP as Spain. Indonesia ranks in the top dozen carbon emitters. It gets relatively attention in the United States. Yet Indonesia's role in cutting energy emissions is crucial.

As an archipelago, Indonesia is at the prey of sea level rise. Jakarta, a city of ten million, is only two feet above sea level. A quarter of the densely populated city could be under water by 2050, and flooding is already a serious problem. In fact, Indonesia is moving its capital 600 miles away for this reason. Indonesia is also heavily exposed to tropic storms, which are expected to get more severe.

Over three-fourths of Indonesia electricity comes from fossil fuels: 60% from coal and 16% from gas. Jakarta is consistently near the top end of the world's cities with the worst air pollution. Indonesia has the third largest rainforest after Brazil and Congo. Carbon emissions from land use change (mostly logging) are comparable to Brazil's, though Brazil gets a lot more publicity. Economic growth has hovered around a healthy 5% annually, meaning that GDP doubles about every 15 years and that carbon emissions will also surge without vigorous climate action.

Indonesia's 2021 climate pledge under the Paris Agreement was to reduce emissions from 2020-2030 by 29%. The baseline for measuring these cuts is the 2030 business as usual scenario, which would feature hefty increases in emissions. This was an increased unconditional commitment compared to the 2010 pledge of 26%.

In late 2022, Indonesia nudged its goals upward to 32% below BAU, and (41% to 43% below BAU with foreign assistance). Its long-term plan calls for carbon neutrality by 2060. At present, this goal will be more aspirational than actionable.

Indonesia has transitioned to democracy in the past twenty years, but corruption remains a serious problem, as it is in many developing countries and transition economies. The Asian Development Bank has a detailed guide to Indonesia's energy issues. Most of the barriers that ABD identifies relate to institutional issues or deeply embedded policies. For example:

- "Many electricity sector policies awaiting implementing rules and regulations are not aligned with each other, or contradict related non-energy regulations. Several official plans . . . rely on unrealistic data input assumptions, and provide conflicting and unachievable targets."
- "Current policies such as price caps on coal, growth key performance indicators, unrealistic reserve margins, and other domestic obligations have resulted in fossil

fuels such as coal and natural gas to be artificially more financially attractive than lower-emission options."

- "Poorly targeted fuel subsidies remain for highly polluting options such as subgrade fuels, sustaining reliance on these highly polluting options."
- "Many SOEs [State Owned Enterprises] are financially strained. Tariffs do not reflect true energy prices, which makes actions like exploration, planning, and project development more difficult, while private investment is also constrained due to an uncertain political and business environment."
- "[T]he absence of an independent body to transparently recommend tariffs, review investments, oversee PLN procurement and operations, provide policy advice, and evaluate whether the private sector or SOEs should build new infrastructure stunts the sector."

Indonesia has announced plans for a \$20 billion program to expand clean energy. That's all well and good, but the country also needs to address all the things that are holding it back.

It would be easy for a consultant to come in and identify ways to greatly to improve the situation. That, of course, would accomplish nothing whatsoever. The necessary changes can get a boost from the outside, but the real work of making change happen has to come from within Indonesia.

The hard part is not to identify improvements but to implement them, which is enormously difficult. Nevertheless, it's a job that needs to be done, for the benefit of not only Indonesia but the world.