



OPINION

By Fitrian Ardiansyah

Climate and sustainability specialist, a doctoral candidate at the Australian National University, and the recipient of Australian Leadership Award and Allison Sudradjat Award. fitrian.ardiansyah@anu.edu.au

Difficult policy choices in Indonesia's energy development

As an emerging economy and fast growing consumer of energy, Indonesia faces a difficult decision when it wants to continue its economic growth while at the same time ensuring that its greenhouse gas (GHG) emissions are reduced.

Currently, along with the growth in Indonesia's economy, the energy demand of the country increases significantly, as the transport and industrial sectors grow, households become more affluent and commercial area development expands rapidly.

According to a 2009 report by the Finance Ministry and a 2011 analysis by PricewaterhouseCoopers, Indonesia's steady economic growth of more than 6%, even during the recent global recession, was accompanied by a 9% growth in electricity demand and a 7% growth in the country's total energy demand each year.

Should the country search for an easy answer for its energy supply, the most probable path is likely to be heavily relying on its fossil fuels, particularly coal and gas reserves.

Indonesia cannot any longer depend on oil to sustain its energy development. Since 2004, as reported by many studies, the country has already been a net importer of both crude oil and refined products.

With the relatively high global oil prices, the dependency on imported oil has placed considerable strain on the Indonesian economy and will create

further burden, particularly since the country still has significant oil and electricity subsidies.

Hence, the country may see an option to maximize the use of coal and gas as one of the optimal solutions to meet its energy demand.

To boost the use of coal for power generation, for instance, the government launched a 'crash program' as mandated by the Presidential Regulation No. 71 of 2006, instructing the state-owned electricity company (Perusahaan Listrik Negara [PLN]) to accelerate the development of 10,000 MW (Megawatts) coal-fired plants.

With regard to the use of gas for power generation, the president issued the President Regulation No. 4 of 2010 that instructs PLN to develop gas-fired power station, along with the development of power plants that use renewable energy and more coals (known as the 'second crash program' of another 10,000 MW).

Such option in utilizing coal and gas, however, is not without unwanted consequences.

The first consequence is the likelihood of resources depletion risk. With pressures on production mounting to meet the export demand for coal and gas as well as rising domestic consumption, coal and natural gas shortages may eventually happen.

If Indonesia is not careful in managing its two important non-renewable resources, a similar situation to what the country has

experienced with oil can recur, hitting back its economy.

If coal is heavily exploited and the rate of use for power generation is high, Indonesia will also likely to have another immediate negative consequence, which is a significant increase in its GHG emissions, especially CO₂.

If electricity generation is dominated by coal, for instance, some experts predict increased CO₂ emissions from the power sector by 2030, reaching 810 million metric tons of carbon dioxide equivalent (MtCO₂e), or nearly seven times the amount in 2005.

In fact, the continuous increase in the use of fossil fuels may lead to an increase in the overall country's GHG emissions by fourfold in 2030.

This projected growth in emissions is in contradiction with Indonesia's pledge on climate change actions, as announced by its president, to reduce GHG emission by 26% by 2020 and to increase the use of renewable energy so that it accounts for 25% of total energy production by 2025. Such pledge has been further legally stipulated, among others, in the Presidential Regulation No. 61 of 2011 regarding the National Action Plan to Reduce GHG.

In addition, the high CO₂ emissions resulting from a significant increase in fossil fuel consumption are likely to exacerbate global climate change impacts, in which Indonesia as an archipelagic nation is already vulnerable to.

With the current situation, the country has already experienced weather and climate-related disasters related. Data from the National Disaster Management Agency reveal that in the period of 1815-2013, the occurrence of disasters in this country has been dominated by this type of disasters, consisting of flooding (38%), land-sliding (18%), typhoons (18%), droughts (13%), flooding and land-sliding (3%), tidal waves or coastal erosion (2%) and forest/land fires (1%).

Against these backdrops of a dilemma in further using fossil fuels, renewable and new energy resources appear to be well positioned to play a critical role in Indonesia's energy policy.

To accelerate the use of renewable and new energy, however, is also not without difficulties.

If Indonesia is merely endeavoring towards climate change mitigation goals, for instance, the country may formulate a package of policies which totally promote and accelerate renewable energy development and radical reduction of fossil fuel subsidies.

Of various renewable energy sources (e.g. hydro, solar, biomass, geothermal)

available in the country, unfortunately, not all can be considered as the 'preferred solution' to meet an ever increasing energy demand of Indonesia.

Geothermal power in particular appears to be the most appropriate and preferred solution. This is understandable because first, the country holds approximately 40% of the world's geothermal reserves, which are still underutilized. It has also the potential to replace coal-fired power plants as a baseload electricity source with virtually no emissions.

Even with the attractiveness of geothermal and the push to develop this energy, an abrupt limitation to fossil-based energy consumption, as part of such environmentally-friendly policy, will likely have an adverse impact on the Indonesian economy.

This could happen particularly where rapid industrialization and economic development have been fueled mostly by fossil-based energy sources over so many decades, and rapid transformation means rapid changes required in the government's and society's sides. These include policy, programmatic and budgeting changes,

as well as changes in public perception and support (especially when the price of energy may need to be adjusted).

Physical changes are also required in a bigger scale. The government needs to push for new infrastructure development, particularly in the forms of power plant, and grid transmission and distribution. This, for sure, will entail huge investment, human capacity and other support coming not only from outside the country but also domestically.

Such gigantic development programs cannot be carried out overnight.

Hence, there is a need for creative and balanced but firm solutions so that the country can achieve its goal to continue its economic growth while reducing its GHG emissions.

To start with, strong leadership and clear guidance from the top level of the government is key, especially to tailor different efforts and different technological development so that Indonesia has an optimal energy mix policy and reasonable but effective implementation programs.

The 2014 presidential and parliamentary elections may present such opportunity. The public need to scrutinize the candidates and ensure that they only elect those who have clear platforms to equitably balance economic and environmental goals.

Other immediate actions required to achieve such balanced solutions are mobilizing financial support and building human resource capacity. Close collaboration with the private sector is crucial in this case, especially when the government would like to attract huge investments for the future energy development.

The overall endeavor is a herculean task for a developing country like Indonesia. Nevertheless, the country has to take it on to ensure that its future is as bright as it aspires. 



CA | Khalsa