



**S. RAJARATNAM SCHOOL
OF INTERNATIONAL STUDIES**
A Graduate School of Nanyang Technological University

RSIS COMMENTARIES

RSIS Commentaries are intended to provide timely and, where appropriate, policy relevant background and analysis of contemporary developments. The views of the authors are their own and do not represent the official position of the S.Rajaratnam School of International Studies, NTU. These commentaries may be reproduced electronically or in print with prior permission from RSIS. Due recognition must be given to the author or authors and RSIS. Please email: RSISPublication@ntu.edu.sg or call 6790 6982 to speak to the Editor RSIS Commentaries, Yang Razali Kassim.

Environmental Issues: Challenges or Opportunities for Indonesia?

Eric Frécon

5 January 2010

Even before the recent United Nations Climate Change Conference, Indonesia has been one of the world's largest carbon emitters. Green energy business could offer Jakarta new opportunities to clean its reputation as well as sustain its economic growth.

INDONESIA'S GOOD name is today threatened by a statistical polemic relating to its carbon dioxide emissions. According to a 2007 report sponsored by the World Bank, the country is the world's third largest emitter. Although Indonesian experts have asserted that the waters of *Nusantara* (the Indonesian archipelago) absorb more carbon than they release, the country has the highest deforestation rate in the world. According to the Riau Bulletin, about 1.08 million hectares of forest are lost annually to widespread illegal logging (in Riau Islands), farmland conversion and forest fires. In addition, a 2007 report by the World Wide Fund for Nature (WWF) mentioned that the number of fire hotspots tended to increase in Indonesia in the period 2001-2006. Indeed, rainforest cover has steadily declined from 82% in the 1960s to 53% in 1995, and 49% in 2005 according to the *Mongabay* website.

Because of the fires that eliminate the forests and because of the disappearance of 'carbon sinks' like trees and peat-bogs, Indonesia is seen as a major polluting country. Last year, a WWF-Hokkaido University report explained that the Riau province alone accounted for average annual carbon emissions equivalent to 58% of Australia's yearly emissions, or 122 percent of the Netherlands' emissions.

Reconciling Ecology and Economic Development

The puzzle for the Yudhoyono administration is challenging: how to provide energy to 240 million Indonesians as well as investors, without aggravating Indonesia's image as a major polluter.

On the one hand, development requires bringing connectivity to remote areas, which helps address the problems of separatism, criminality as well as regional grievances. The mission of the president is to protect the human security of his fellow citizens and to unify the 17,508 islands by developing both

communication and access to electricity. To meet the president's goal of sustaining the current dynamic economic growth, there also has to be an increase in the national power grid's generation capacity, especially in the Batam-Bintan-Karimun Free Trade Zone. Moreover, to attract foreign investments, Indonesian authorities may have been lax in regulating the activities of the oil, mining, paper and palm oil companies operating in the forests.

On the other hand, Yudhoyono must now proceed carefully. The president has to take into consideration the environmental factor if he is to present Indonesia as a model of development on the international scene. To reconcile these national and international interests, he must explore new ways. The following can be considered:

Towards a 'New Green Deal' in Indonesia?

In the archipelago, there are several opportunities in the field of renewable energy. These may subsequently also create employment and new opportunities and niches for local and foreign companies.

First of all, wind turbines. Generally, these either ruin the landscape or make excessive noise. The trend is now to plant these turbines at sea. Though this may pose a hazard to merchant vessels and fishermen, Indonesia could place the turbines in territorial waters far from the main Sea Lines of Communication. Nusa Tenggara Timur is the windiest area but it would be much better to invest in waters to the south of Java. In parallel to the plans for setting up solar panels in the Sahara to power Europe, wind turbines in this part of the Indian Ocean could provide electricity to the crowded Indonesian islands.

Secondly, as the Indonesian coastline is 54,716 kilometres long with several straits cutting across the archipelago, tide power could also be an interesting option. In the past, companies have already offered to deploy turbines that could turn the Malacca Straits' flow velocity of two metres/second into electricity.

Thirdly, government support for geothermal power projects is relevant. The 'Ring of Fire' regularly demonstrates its 'power' through terrible earthquakes. For example in just one day - 25 October 2009 - six earthquakes with magnitudes ranging from 5.0 to 6.1 hit Indonesia. The Geological Office of the Indonesian Department for Energy lists at least 83 volcanic sites. This geographical context explains why Indonesia has the largest geothermal reserves potential in the world - 40% or 27 GW in sixty fields.

Investment in Geothermal Projects

After the introduction of a Geothermal Law in 2003, the Yudhoyono administration is turning words into action. Following the 10,000 MW power project in 2006, a second 10,000 MW programme has been set up by the state power firm PLN (*PT Perusahaan Listrik Negara*) and independent private power producers. This later programme should generate 48% of its power from geothermal plants, compared to less than 3% (807 MW) of the energy mix in 2008. PT Pertamina Geothermal Energy was scheduled to spend US\$130 million in 2009 to finance development of a number of geothermal power projects.

Foreign countries support these initiatives. Last October, the head for Asia and Oceania of the Japan Bank for International Cooperation said that Japan would invest in sectors like geothermal energy in Indonesia. In 2008, Japan gave US\$200 million to Indonesia to reduce its carbon emissions. In July 2009, for the same purpose, Jakarta received a US\$300 million loan from the French Agency for the Development (AFD) for the second tranche of the Climate Change Programme Loan. The Global Environment Facility also supports the development of geothermal power in Indonesia.

Thirty-six fields were ready for detailed exploration or exploitation in 2008. Nevertheless, such developments must be safe and sustainable for both the surrounding population and for the investors. For that, local authorities must avoid delays in the implementation of regulations and licensing approval.

Recently, Indonesia has had a peaceful general election for some 100 million voters. It has also successfully encouraged economic growth while containing the problem of terrorism. Now it is 'green energy' that is substituting 'green fundamentalism' in the country. In the past, Egypt became a major power by canalising the Nile floods which previously had regularly devastated its banks. Perhaps it could be the same destiny for Indonesia -- if it is able to harness more advantages than troubles from the earth.

Eric Frécon is a post-doctoral fellow at the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University, where he serves on the Indonesia Programme.