



Renewable Energy

In London on 25th June, I attended a one-day conference entitled “Towards a Low Carbon Global Economy” organized by the UK Trade and Industry Department, and encompassing delegates from over 30 countries.

THIS WELL-ATTENDED EVENT STARTED WITH HIGH-profile speakers dealing with financing, how to make a sustainable future and building a high growth, low carbon economy.

These formal presentations were followed by break-out sessions and one-to-one meetings.

I was pleased to see that Indonesia was duly represented, including the presence of state power utility PLN. Naturally an important part of the discussion was centred round clean or renewable forms of energy to provide an increasing base load for world energy requirements. An interesting presentation was made by the

Brazilian electricity authority, where hydro forms an important part of their base load, and their studies to map where they could make best use of their potential for wind and biomass energy.

Another session dealt with application of the Clean Development Mechanism. Green Energy has been described as the modern gold rush with a projection that this market could reach \$600 billion by 2020.

Mapping needed

AN OVERRIDING MESSAGE AT THE CONFERENCE WAS THAT EACH country should clearly map out its own potential energy resources,

especially renewable ones, and set out a master plan to maximize their use. This would seem an essential element in the foundation to achieve Indonesia's goal of 17% reduction in activity-generated carbon emissions by 2025, as recently pronounced by the minister for the environment, which has to be separated from that derived from naturally occurring climate change.

Indonesia is blessed with renewable forms of energy in various parts of the archipelago, although it is clear that the only way of fulfilling the urgent backlog of energy for the industrial heartland of Java is by way of strategically placed coal-fired plants, making use of the plentiful supply of coal that exists.

The only key and important question is whether, in the construction of these plants, scrubbers are going to be needed to minimize the carbon emissions, although much of the coal available from Kalimantan, for example, is low sulfur.

Scrubbers involve additional capital cost but, if they are required, this may be a small price to pay in terms of contributing towards annual carbon reduction and the environment minister's target. Besides, it could earn some carbon credits, if additionality can be proved! Indonesia has very significant hydro potential, of which only about 7% is currently harnessed. Several of these renewable clean energy schemes have already been identified.

Some are at least subject to preliminary investigation, whether main reservoir projects with water supply combined, for instance as required in Java, or run-of-river arrangements, which would be useful in several locations off-Java, often as mini or micro schemes serving communities remote from main grids.

It is pleasing to note a more flexible attitude from PLN towards renewables and a more commercial approach to IPPs and renewable-based power tariffs. Wind power, whether offshore or onshore, is receiving much attention in many countries, and there is ongoing improvement in the technology for turbines, which are becoming larger, and supporting components.

This is especially so in high wind areas, such as experienced in coastal Europe. While it is generally accepted that this form of clean energy cannot provide adequate power for large demands, they can, where wind is a factor, serve a role for smaller more isolated communities, with partial replacement of subsidized, high-cost diesel, for example in eastern Indonesia, where old inefficient diesel generators provide the only current form of power.

There are significant quantities of geothermal energy in Indonesia, associated with volcanic areas, and PLN has identified a number of projects that could be brought on stream.

A problem in the past concerning conflicting jurisdictions between PLN and Pertamina of ownership over the steam power source has been resolved, and potential investors and developers should find it easier to pursue projects based on this renewable

resource. Another renewable opportunity relates to tapping hot springs, especially for small communities, although this is very new technology and large volumes are required.

Power from solar sources on a worldwide basis could be deemed limitless, but in reality tapping into the energy from the sun is very difficult, although easiest in equatorial situations.

At this juncture, while there has been some use of solar power in Indonesia, it has been limited. In the short to medium term, there could be wider use for smaller communities, new town developments and on an individual basis. Cost has been and is an issue, but wider use could be expected to start bringing this down.

Methane power

THE FIRST PROJECTS OF WASTE TO ENERGY HAVE NOW BEEN constructed in Indonesia, and the issues of collecting the methane for use are being resolved.

It is absolutely essential, as part of cleaning up the unsightly and unhealthy waste around cities, that the program of waste to energy be expanded. In parallel vein, there are ongoing endeavours in the suburban districts of Java's main cities to get households to separate organic waste, comprising about 70% of total household waste, from inorganic and turn the former into useful compost.

There are also various forms of biomass as a means of providing small-scale power, but beyond the scope of this cursory update. One of the important ways in which the many millions of people living in rural communities can assist in improving the environment with clean energy is through local empowerment with understanding of the issues that can contribute to the cause of reducing fossil fuel usage, including burning forests.

Indeed, it is important that raising the profile of Clean Energy is pursued vigorously through education at all levels. However, it is also the case that the major towns and cities of the world are the polluting hotspots, responsible for some three-quarters of all emissions, not helped by traffic jams!

While it is interesting that China is developing a city that is to be eco-friendly for 1 million people, and perhaps important things will be learned from this for the future, this does not gain-say the need to make a major effort for existing cities, such as Jakarta and the other major centers of Indonesia.

Indonesia has the potential to be energy efficient with an important contribution from renewable sources. The question is whether it will exercise this, and be a world leader in addressing the issue of reducing carbon emissions and contributing positively to the controllable elements of climate change. GA

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■ *Scott Younger is the president commissioner of Glendale Partners and Nusantara Infrastructure.*