

OUR ENVIRONMENT OUR HERITAGE

THE KYOTO PROTOCOL AND ENERGY SECURITY IN THE PACIFIC ISLAND COUNTRIES



Solar panels
on
Apolima
Island

(INTRODUCTION)

There is little sense in planning for future development, without considering energy security. This fact is well understood by Australia's Pacific island neighbours, where energy remains a major limiting factor for social and economic development. While not a panacea for all the region's problems, renewable energy will help to bolster energy security and provide a sound basis for development.

The clean development mechanism (CDM), established under the Kyoto Protocol, represents an important and thus far under-utilized opportunity to develop renewable energy resources in Pacific islands. This article provides an overview of the CDM and its potential in this region.

(BACKGROUND TO CDM)

The Kyoto Protocol which finally entered into force in January 2005 sets binding greenhouse gas (GHG) reduction targets for developed countries. An important innovation in the Kyoto Protocol is the CDM, which promotes investment in developing countries with the aim of reducing emissions.

The CDM works as follows. An investor (either public or private) funds a project in a developing country, which results in a net reduction in GHG emissions. Each year the project creates carbon credits equal to the tonnes of GHG saved. The investor can sell these credits to buyers looking for cost effective ways of reducing their own emissions.

Ultimately, the carbon credits generated by CDM projects will help developed countries to meet their Kyoto target. For developing countries, including Pacific islands, the CDM helps to attract investment in sustainable development.

A total of 358 CDM projects are currently underway, with more than two-thirds of these in India, Brazil, Mexico and China. These projects are estimated to save more than 90 million tonnes of GHG annually.

While almost half of the current CDM projects are in the energy sector, projects are also underway in other sectors including agriculture, waste disposal and manufacturing. Whatever their focus, CDM projects must achieve the twin objectives of reducing GHG emissions and supporting sustainable development.

(CDM OPPORTUNITIES IN THE PACIFIC)

Big countries such as China and India are attractive for CDM projects because they offer

good economies of scale. Yet with most Pacific islands requiring urgent investment in the energy sector to support economic and social development, there is no reason why CDM cannot be utilised.

CDM projects can support a range of energy sector initiatives, including energy efficiency, generator upgrades, low-emission fuels and renewable energy. While all of these options help to reduce emissions, for Pacific islands priority should be given to expanding renewable energy. Given the expected growth in demand, and the high cost of imported petroleum products, it is essential that these countries take advantage of CDM to wean themselves off energy imports and strengthen domestic energy security.

So far only two Pacific island countries have CDM projects under development. In Papua New Guinea (PNG), geothermal energy will generate 411 GWh of electricity per year, saving about 90 kilo-tonnes of fuel and 279 kilo-tonnes of GHG emissions annually. In Fiji, the Vaturu and Wainikasou Hydro project will produce about 38 GWh of electricity annually, displacing diesel generation on the national grid and reducing emissions by about 25 kilo-tonnes.

These two examples demonstrate how CDM can make renewable energy ventures more economically attractive. In both cases installing diesel generators would have been a cheaper option. However, by selling the carbon credits generated by the project, the investors can offset the additional costs associated with renewable energy. According to the proponents of the Fiji project "without these additional revenues... the projects would not be constructed"

A regional study has found strong potential for further expansion of renewable energy in the Pacific, with hydro-power and bio-diesel showing particular promise. The study found that hydro could be expanded to provide an additional 4500 MW of electricity generation capacity across four countries. Most of these hydro installations would be medium scale, providing good returns for CDM investments. Bio-diesel made from coconut oil is already being used on a small scale in the Pacific and has significant potential for expansion given that most islands have large coconut plantations. Initial studies have suggested that locally produced bio-diesel could be economically competitive with imported diesel. This is a particularly attractive option because it can be used for both electricity generation

and in vehicles, thus providing a number of revenue streams for investors.

Solar, wind and geothermal power also have a role to play in enhancing regional energy security, but technically and economically these options may be less viable in short to medium term.

The one thing that has prevented renewable energy sources from being fully exploited in the Pacific has been the lack of investment. CDM may help to overcome this problem, but with an expected lead time of four to five years, the sooner Pacific islands enter the CDM market the better.

(The Way Forward)

Where to from here for CDM in the Pacific? Firstly, national governments need to establish appropriate institutional structures and approval procedures. As well as fulfilling international requirements, this will ensure projects meet local planning and environmental regulations.

Secondly, Pacific islands need a clear strategy for CDM. As well as confirming which renewable energy options to target, governments need to consider the various pros and cons of each CDM proposal. While foreign investment may be attractive, domestic investors should also be encouraged, possibly in partnership with overseas companies. To a certain extent the market will decide what type of CDM projects will go ahead, but it is vital that Pacific island governments negotiate the best possible outcome, with minimum risk and maximum local benefits.

Finally, governments and existing energy providers need to start promoting CDM opportunities to potential investors. While private investors have shown a keen interest in CDM to date, discussions should also be initiated with other governments, including New Zealand, Japan and other countries with strong development links to the region. Unfortunately, Australia and Australian companies are not eligible to participate directly in CDM projects as we are not a party to the Kyoto Protocol.

(Conclusion)

Energy security is a key ingredient for Pacific islands to achieve their economic and social development objectives. CDM offers a new avenue for attracting much needed investment in renewable energy in the region. In order to take advantage of this opportunity, it is vital that Pacific island governments take proactive steps by building the institutional structures to approve CDM projects, identifying renewable energy options and marketing CDM opportunities to potential investors. The popularity of CDM projects internationally, and increasing interest from public and private investors regionally, suggests a bright future for renewable energy in the Pacific. The challenge for Pacific island leaders is to turn this potential into reality.

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- Climate Change Section -
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OUR ENVIRONMENT OUR HERITAGE

CHILDREN'S CORNER

Children aged 9-14 are invited to answer the following corner. The name of 3 students with top scores at the end of every month will be posted under the "Children's Corner" for special prizes. "Children's Environment Awareness 2007 Awards will be given to 10 students with top total scores in November during the 2007 National Environment Week".

MATCHING

Match the word with its definition.

- ___ biomass
- ___ renewable energy
- ___ fossil fuels
- ___ solar
- ___ energy

- a. Energy from the sun.
- b. Energy from plants and trees.
- c. Energy constantly being replaced.
- d. Energy from coal and oil.

Unscramble the words

- | | |
|--------------|-------------|
| 1. ykoto | 6. apcific |
| 2. sloar | 7. poewr |
| 3. eneryg | 8. widn |
| 4. reenwabel | 9. socures |
| 5. ssutain | 10. bimoass |

Mr. Renewable Energy Says :

- Energy is the capacity to do work or the ability to make things move. It comes in different forms like mechanical, chemical, heat, light and sound.
- Most of the energy we use today comes from fossil fuels-coal, oil and natural gas.
- Renewable energy comes from energy sources that are constantly being replaced and are usually less polluting than energy from fossil fuels. Examples of renewable energy include solar, wind, biomass, geothermal and hydro.
- Solar energy comes from the sun. It is used to heat homes and water. It can also be made directly into electricity.
- Wind is used to generate electricity.
- Biomass energy comes from plants and trees. Wood is the largest source of biomass energy. We also use corn, sugarcane wastes and other farming byproducts to produce biomass energy. It can be used in three ways - burned to produce heat and electricity - changed to a gas-like fuel - changed to a liquid fuel.
- There are other sources of renewable energy including trash, water and geothermal. One day much of the energy used may come from renewable sources. As scientists find better ways to develop renewable energy, we may no longer have to depend upon fossil fuel energy. This will help us keep the environment cleaner.



CONGRATULATIONS

To our last month's winners - please come down to our office at Matautu (old MOT building) to collect your prizes!

- Palepua Solaese
- Fritz Krause
- Magelene Roberts

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