

The Energy Challenge for Pacific Island Countries: Sustainable Development and Energy Security through Bio-fuel Substitution for Remote Populations

MJ Mace

Pacific Island Countries (PICs) face a number of development challenges as a result of their small size and geographically-remote locations. One of the most prominent is access to affordable energy supplies. The high cost of petroleum products affects all sectors, impacting islanders' day to day life and undermining achievement of the Millennium Development Goals (MDGs).

Measures are needed that can support energy security and fair pricing in PICs, through improved regulatory frameworks and the substitution of local energy resources for imported fuels wherever possible. At the macro level, regional bulk procurement contracts offer one option to address the challenge of expensive imported petroleum products. At the micro level, biofuel substitution may offer another opportunity. Coconut biodiesel, produced from locally-harvested coconuts, may enable these remote island populations to develop their own sustainable energy supplies, and provide sustainable livelihoods for their people.

Energy supplies and the Millennium Development Goals (MDGs)

The Asian Development Bank recently reported that the current price of petroleum in the Pacific had reached levels at which those who most depend on it as an energy source for cooking, light and transportation are the least likely to be able to afford it.

Energy is critically important for socio-economic development – for social infrastructure, education, health, communication, transport, small-scale business development, inter-island transportation and power generation. Large portions of the Pacific still lack access to modern energy services, and the remainder find it increasingly difficult to maintain the access they presently have. As remote outer islands also turn to fuel-powered generators as their

primary energy systems, this further increases dependency on imported petroleum products.

Petroleum imports - the challenge of scale

Petroleum is one of the major imports into Pacific Island Countries (PICs) by value. It is largely supplied through monopolistic supply agreements that were originally intended to create economies of scale. There is usually one market-dominant energy supplier in each Pacific Island country that sets the price for petroleum products. The same private sector suppliers (generally Shell, Mobil Exxon or British Petroleum) often control key fossil fuel storage infrastructure. As a result of this industry structure, the petroleum sector in many PICs is now in what has been termed a 'critical' state, with the cost of a barrel of oil in the region almost doubling over the last two years.

In 2005, a Small Island States Bulk Procurement Study estimated the economic benefit of creating a joint purchasing facility for petroleum products at US\$145 million over a 15-year period. In October 2005, Pacific leaders met and adopted The Pacific Plan. Under this plan, sustainable development is acknowledged as a regional priority – to be addressed in part through implementation of the Pacific Islands Energy Policy and associated Strategic Action Plan (PIESAP), in order "to provide available, reliable, affordable, and environmentally sound energy for the sustainable development of all Pacific Island communities". It is also to be addressed through the development of proposals or strategies for the bulk purchasing, storage and distribution of petroleum.

The development of a bulk purchasing agreement and the regulation of multinational petroleum suppliers in the region will help address PICs' lack of bargaining power. But

KEY MESSAGES:

- Access to affordable energy supplies must be provided to meet development needs and goals.
- A reduction in dependency on imported fossil fuels is needed to reduce exposure to increasing petroleum prices and to price fluctuations
- A challenge exists to overcome monopolistic supply to the region and lack of PIC market power
- There is a lack of effective regulation of supply chain for petroleum supplies
- Fostering the uptake of renewable energy technologies is of key importance

there is also great potential to provide reliable, affordable and environmentally-sound energy to rural small scale users – through the replacement of expensive fuel imports with local fuel supplies from coconut oil.

Biofuel substitution for imported fossil fuels

It has been said that many PICs have the potential to replace up to 30-50% of their current diesel imports with biodiesel produced from coconut oil. Coconuts are widely harvested in tropical coastal areas. From this harvest, copra is produced. Oil is typically extracted from copra for use in food products, cosmetics and soap. In recent years, demand for copra has been falling. This has resulted in lower prices, in turn leading to declining incomes for outer islanders who have historically depended on copra production for their livelihoods. At the same time, the price of diesel has been rising in many PICs.

The replacement of diesel imports with biodiesel from coconuts offers a range of benefits, including socio-economic benefits through job creation, reduced local air pollution, reduced CO₂ emissions (meeting climate change objectives), and greater energy security. Vegetable oils are among the few renewable energy sources that are practical for replacing fossil fuels used for land and marine transport, and that are also close to being economically competitive with imported fuels.

Conclusion

PICs are among the countries that will be most directly impacted by climate change – resulting from the increase in fossil fuel use by industrialized countries. Ironically, PICs themselves are increasingly dependent on fossil fuels, and suffering greater air pollution and marine pollution as a result.

PICs are Parties to a number of multilateral environmental agreements designed to help protect their natural environments, while addressing energy-related challenges to their sustainable development. These include the UN Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and the Convention on Biological Diversity. PICs have also recently become Parties to a series of regional trade and economic agreements, including the Pacific Island Countries Trade Agreement (PICTA), and the Pacific Agreement on Closer Economic Relations (PACER) between PICTA signatories and Australia and New Zealand.

These frameworks may provide practical opportunities to provide support to coconut biodiesel production in the Pacific, improving the local environment, increasing energy security and independence, providing cleaner transport options, and creating employment for outer-islanders.

The Case of the Marshall Islands:

The Republic of the Marshall Islands (RMI) consists of approximately 1225 islands, grouped in 29 atolls, spread across 750,000 square miles of the Pacific. The total population is approximately 57,000. The Marshalls' average yearly copra production is 3,870 metric tonnes. This is sufficient to produce 2.5 million litres of coconut oil, replacing 2.35 million litres of diesel. – UNDP

“Marshall Islands Fuel Prices Soar”

Kaselehlle Press, July 5-18, 2006, citing Marianas Variety, 16 June 2006

Gas prices at the pump broke the \$4 mark for the first time ever in the Marshall Islands, prompting a doubling of the fares for taxis – the main public transportation - in the nation's capital this week.

In response to increasing world market diesel fuel prices, the power utility company in Majuro also announced Wednesday that effective 1st July 2006, electric rates would rise between nine and 12 percent, Marianas Variety reports.

Mobil Oil Micronesia, a subsidiary of ExxonMobil, and sole supplier of gasoline to the Marshall Islands, raised its wholesale price to dealers this past week to US\$3.82, and in response, the four local gas stations bumped their pump prices, which had been hovering just below US\$4 a gallon, to as high as US\$4.10.

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The escalating cost of fuel is hitting hard in a country with an unemployment rate estimated at 34%.

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There is no public transport system in Majuro, which has a population of nearly 30,000 people.

Privately owned taxis provide the main means of transportation for students and workers, and have done so without a fare increase since the late 1980s, despite the dramatic rise in fuel prices since 2004.

Sources:

1. Pacific Studies Series: An Asian Development Bank---Commonwealth Secretariat Joint Report to the Pacific Islands Forum Secretariat, Working Paper No. 13, Small Island States Bulk Procurement of Petroleum Products: Feasibility Study, Jared Morris, Pacific Islands Forum Secretariat, Suva, Fiji Islands.
2. Secretary General Opening Statement, Small Island State Seminar on Bulk Purchasing of Petroleum, Smaller Island States Seminar on Bulk Purchasing of Petroleum, 5 October 2006, Suva, Fiji.
3. “Marshall Islands Fuel Prices Soar”, Kaselehlle Press, July 5-18, 2006.
4. “Pacific Islands Reel from rising fuel costs”, Kaselehlle Press, June 21- July 4, 2006.
5. Pacific Plan Energy Summary (May, 2005).
6. PIREP: Pacific Regional Energy Assessment Report, Regional Overview Report, Volume I (2004)
7. UNDP: Patrick Tuimaleiali'ifano, Query: Fiji / Biofuel initiatives – experiences and consultant referral (2006)

CONTACT:

MJ Mace, FIELD

email: mj.mace@field.org.uk

3 Endsleigh Street, London WC1H 0DD, UK

Tel: +44 (0)20 7388 2117 Fax: +44 (0)20 7388 2826

Website: www.iied.org / www.field.org.uk

