Prospects of Renewable Energy on Agalega Islands

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Overview

- Introducing OIDC
- Potential of Renewable Energy at Agalega
- Biofuel Potential on the Islands

Introducing OIDC

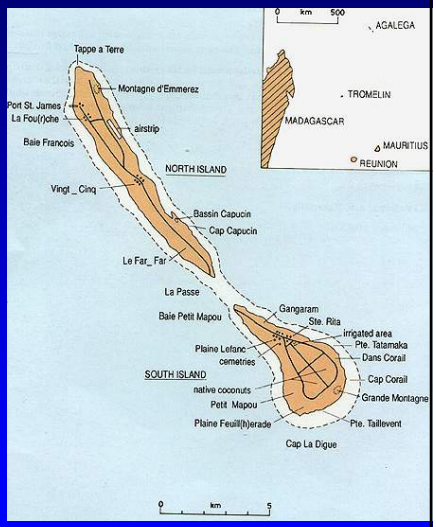
OIDC is a corporate body under the aegis of the Ministry of Rodrigues and Outer Islands, Prime Minister's Office that is mandated to manage the Agalega Islands and the St Brandon Group of Islands

The Atoll of Agalega

• Located at about 1000 km North of Mauritius and consists of two islands – the North and the South – separated by a shallow 1 km-long bank;

• Total surface area of both islands is 2600 hectares where 800 hectares are occupied by coconut cultivation

• Agalega has 3 villages (La Fourche, Vingt Cinq & Ste Rita)



The St Brandon Group of Islands

- Situated at about 450 km North-East of Mauritius;
- Regroups 28 islands covering an area of 1000 sq. km;
- On lease to a private company;

Potential of RE at Agalega

Sources of RE on Agalega

- biomass
- wind
- solar
- Biofuel
- Wave (to be studied)

Feasibility studies have shown that the best sources of RE are solar and potentially biofuel (currently being investigated)

Photovoltaic System at Agalega

- In 1999, a hybrid system comprising of PV panels was installed to supply electricity in the North and South Islands (not currently operational);
- Further, 30 PV street lighting systems were installed;
- Purpose was to electrify the residential buildings in all 3 villages on a round-the-clock basis;

Street Lighting Using PV

- Street lighting systems have proven to be successful & fully accepted by the inhabitants;
- In 1999, introduced 10 stand-alone systems were introduced followed by another 20 sets in 2000;
- The OIDC does not have qualified PV technicians available to maintain systems. Technicians are hired from the Electrical Service Division of the Ministry of Public Utilities for servicing.

Light House Project

- The Corporation is envisaging to set up a light house for shipping facilities both in Agalega & St Brandon;
- Light house are planned to be powered by solar energy;
- A technical committee comprising of the MPA, NCG, MPI and OIDC is looking into the matter;

Dependence on Fossil Fuel

- Fossil fuels are shipped to islands for fuel to diesel generators to electrify the 3 villages, the administrative block and other buildings;
- During past 6 years, a total of 344,000 litres of diesel has been shipped to Agalega, amounting to Rs 5,162,495;
- Dependence on fossil fuel imposes economic, environmental and social costs on islands;

Prospects of Biofuel

Coconut Oil Production

1. Current coconut oil production is 100 drums per year (plantation of 800 hectares)
2. Yield is well below expected yields because of (1) low oil extraction efficiency (poor mechanization); (2) lack of scientific management of plantations; (3) poor access to fields for picking nuts (less than 50% of nuts are recovered); (4) lack of adequate labour (planning to increase mechanization); (5) sub-optimal density of palms
3. Planning to increase area under cultivation to 1500 ha
4. Preliminary studies have shown that Agalega islands can become biofuel self-sufficient within 5 –7 years

Study on Coconut Biofuel

1. Based on success stories from other countries (pacific region), OIDC approached MRC to undertake a feasibility study on the use of coconut biofuel in Agalega
2. The main objectives of this study are to estimate: (1) the quantity of biofuel that can be produced; (2) the cost of producing biofuel from coconut oil; (3) cost/benefits analysis (environment, human health and society); (4) the energy balance of producing biodiesel; (5) to evaluate the impact of biofuel on engine emissions and performance; (6) prepare a technological feasibility of biofuel production and its likely barriers.

Conclusion

The prospects of both solar energy and coconut biofuel are promising for Agalega and St Brandon

THANK YOU