

More than Dollars and Cents: Why Renewable Energy Technologies have been slow to take off in the Caribbean

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Drivers for Renewable Energy Development

- Climate Change
- Health environmental effects
- Oil prices
- Resource Availability
- Energy Security



Main Research Question



- What are the reasons for the lack of deployment of renewable energy in the Caribbean in spite of the drivers present?

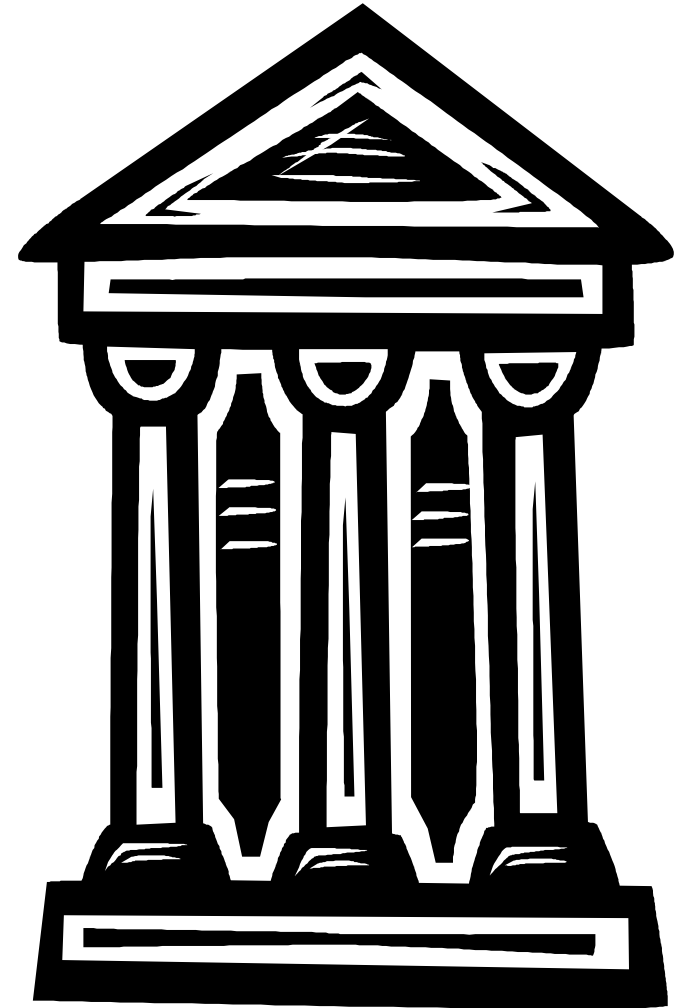


Four Barriers to RE Identified by CREDP

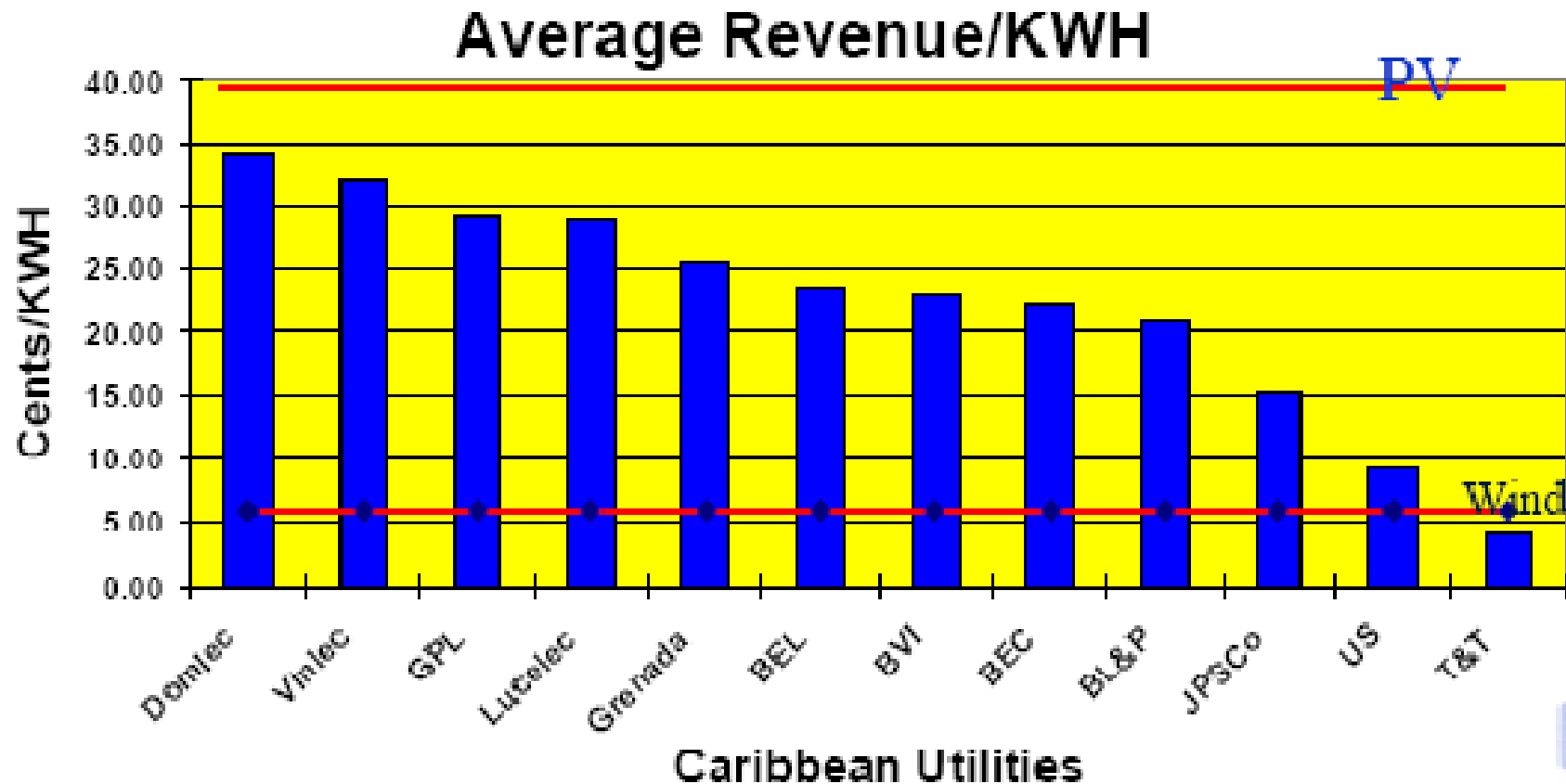
- Policy
- Awareness
- Financing
- Capacity Building



Economics or Institutions?



Caribbean Electricity Prices 2005 (CREDP)



Related Research

- Russo 2003 (Wind in California)
- Vredenburg, Espinoza 2010 (Latin America, wind energy) (Costa Rica vs Ecuador)



Institution = rules + norms

Formal Institutions



Informal Institutions



Institutional Isomorphism

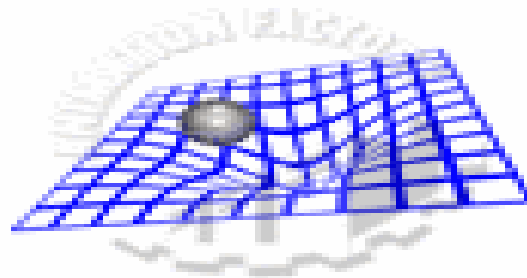
(DiMaggio & Powell, 1983)



- Converge through imitation
- Similar structures
- Similar modes of operation

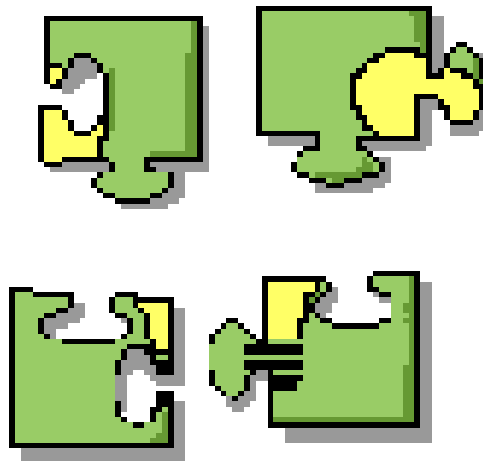
Institutional Isomorphism

- Force constrains decisions
- Legitimacy gained with compliance
- Hinders innovation



Institutions and Innovation : Issue of Legitimacy

- Innovation is favoured by more flexible institutional structures
- Institutional entrepreneurs break down old set up new
- Legitimacy in previous institution



Changing Energy Paradigm (Elliott,2000)

	Conventional Paradigm	New Paradigm
Fuel Resources	Finite Stocks	Renewable Flows
Energy Type	Concentrated	Diffuse
Technology	Large Scale	Smaller Scale
Generation	Centralized	Decentralized
Environmental Market	Large Global	Small Local
Market	Monopoly	Liberalized

Background Interviews June/July 2009

- 21 interviews
- Barbados, St. Lucia, Guyana
- Electricity Utilities
- Government energy ministries
- Regional organisations
- Petroleum companies
- Renewable Energy Companies

Preliminary Meetings General Comments

- Institutional Arrangements and access to finance main barriers
- Clear written policies are needed
- Interest in RE closely linked to oil prices
- Lots of training but not always effective
- Consumers motivated by short term economics

Preliminary Meetings General Comments

- No Convergence between policy and entrepreneurial interest
- Securing land for development
- Lack of coordination (utility, regulator, government)
- Lack of government capacity (energy department is sometimes one person !)

Economics versus Institutions- Economic Aspect

- *“The utility is only a mechanism for providing energy and its objectives are not necessarily consistent with those of government. The utility has to justify, for example, why it would put in generating plant at a cost of 80 cents per/kWh, when a conventional generation plant could produce energy for about 30 or 40 cents.” (Electricity Utility Representative)*

Economics versus Institutions cont'd-

Institutional Aspect

- *“The utility is expected to account to the regulator only for known and measurable changes relying to a large extent on historical prices or test years. The utility therefore will ultimately not be penalized if conventional fuels suddenly increase to unexpected levels.”
(Electricity Utility Representative)*

Comments Formal Institutions

- *“Policies here generally tend to be done ad hoc. Swiftiness is built in with this approach to government policy but if you move quickly you might not have thought things through.”*
(Energy Ministry Representative)
- *“Nevis appears to have benefitted from waiting until activities in the geothermal are imminent to structure its strategy and policy accordingly.”* (Regional Representative)

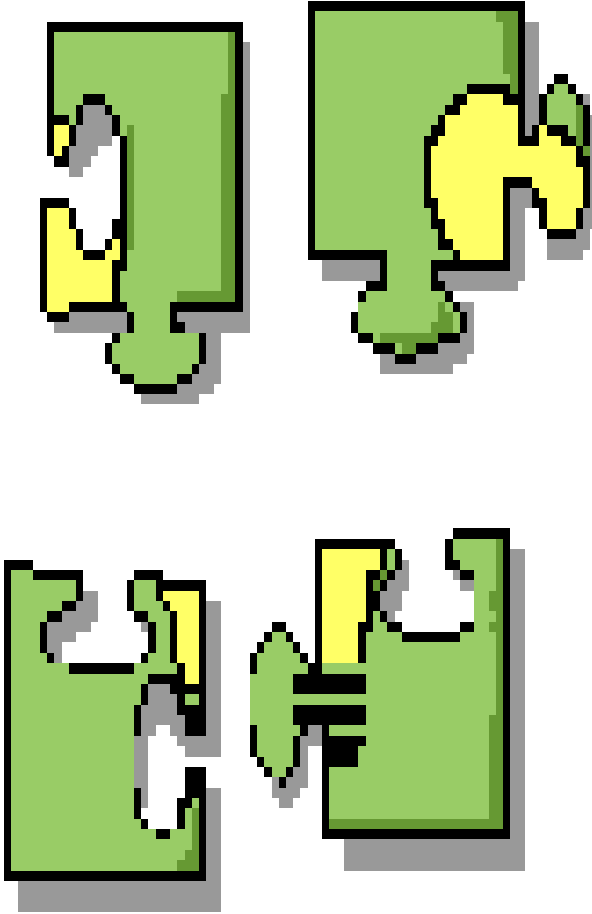
Comment Informal Institution

- *“People know what fossil fuel generation is like, there is a level of uncertainty when it comes to wind.....writing something on paper is one thing, there is nothing like seeing something operating and being able to touch and feel. That fear that is there is difficult to overcome.” (Electricity Utility Representative)*

Concluding Remarks

- Emphasis on policy development seems to be placed on establishing formal institutions, informal needs to be addressed
- Flexibility in institutions is needed in order to facilitate innovation and renewable energy development
- New institution will mean removing aspects of institution that support fossil fuel development.

Institutional Change



Thank you !