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By Lennox D. Lampkin

Looking for New Renewable Energy (RE) Solutions:

For more than two years the SVG Chamber of Industry and Commerce has been emphasizing the need to address our energy challenges. In that period, the price of crude has accelerated from US\$70 to US\$111 per barrel. The price at the pumps has also spiraled upwards and it is anticipated that soon consumers could be paying EC\$15 per gallon for gasoline. Many of us were led to believe that the Petro Caribe deal would have brought some relief to this trend.

In the meantime, The Chamber has been lobbying and advocating for some ease on the heavy tax burden on all Renewable Energy components, not necessarily restricted to solar water heating alone. This would include small wind turbines, photo voltaic panels, inverters and storage (batteries etc.). The recent 2008 budget seemed to have addressed some of these concerns (on Photo Voltaic panels). You may be aware that prior to 2008, solar water heating was already free of duties. However this should not be confused with photo Voltaic panels which are used to generate electricity.

My recent participation at the Washington International Renewable Energy Conference (WIREC) helped to broaden our perspective at the Chamber to new global trends in Renewable Energy. The high price of crude has certainly opened up new possibilities that were long considered to be contra arguments, against taking action in reducing our energy costs. Some of these positive measures include, but are not limited to:

- Interconnecting the sub-regional electricity grids
- Implementing legislation to allow Independent Power Production (IPP)
- Passing legislation to allow private grid connected RE applications
- Implementing limited wind farms to supplement fossil fuel plants
- Exploring and investing in Geo Thermal energy production

Interconnection of the Electricity Grid:

Our small economies and ditto relatively low energy requirement results in small scale utility companies. Basic overhead costs are implicit, thus the operational costs of the smallest utility company are therefore relatively high. Connecting the grids would increase the economies of scale as some fixed overheads will remain constant. It is a well known fact that it is cheaper to operate generators on heavy fuel than on refined diesel. This is what Barbados does as their peak energy requirement, though relatively small by international standards (approx 150 Megawatt) is huge by comparison with SVG(19 Megawatt). By interconnecting the grids across the sub region we could therefore implement more efficient generators and share clean energy resources like wind and geo thermal energy.

The Legislative Framework:

Clearly, centralized local energy production is not necessarily practical in our environment. Our vulnerability to seasonal natural disasters begs for a review of decentralized energy production by independent energy producers. Private sector investment should be strongly encouraged in the production of renewable energy. You will therefore agree that no serious investor is going to invest in large wind farms, in the absence of a transparent legal framework. Ad Hoc negotiations on a case to case basis with the political directorate of the day would continue to present serious governance issues.

Renewable Energy - Grid Connection:

It is possible for residential suppliers to produce energy for domestic use and to deliver the excess energy into the National Grid. This category of producers are not really considered Independent Power Producers (IPP's) as the occasional delivery in to the grid will be minimal. However, such arrangements could help to considerably reduce the dependence on imports of fossil fuels. In most deregulated markets this is strongly encouraged by the utility companies and is supported by favorable fiscal measures. The incentive to do this is driven in part by the desire to reduce the production of green house gases and in the process cut a country's carbon footprint. This is evident in Barbados and more recently in Dominica.

Wind Farms:

Studies have shown that there is a potential for wind farms on our islands. The trade winds on the windward side of our islands, particularly at relatively low altitudes have high energy content. These farms could supply a large proportion of our energy requirements and could work in tandem with hydro Electric plants. It may be argued that the implementation of wind energy could lead to voltage quality issues like voltage variation and flicker. However, if the grid is not capable of absorbing the excess energy, wind energy could be used to re-circulate water used by hydro turbines back to a higher storage level, which is then gravity fed back into the hydro plant, thus addressing some or the challenges posed by power flow variation into the grid.

Geo Thermal Energy:

This form of energy generation is best suited to countries with hot springs and involves drilling into the earth and injecting water which flows through other vent(s) in the form of steam that could drive turbines. This has its advantages but has concerns with respect to the land stability. Studies must be conducted before embarking on this type of energy exploration. There is however merit to exploring this form of energy production in the Eastern Caribbean. The low carbon emission relative to diesel plants could deliver us carbon credits while reducing our foreign exchange output and national debt burden associated with the purchase of fossil fuels.

At WIREC, one of the major technological development involved research, development and implementation of new large scale solar electric plants. An example was the recently deployed solar plant by the Spanish firm Abengoa solar. The planned capacity will be in the region of 300 Megawatt by 2013. Many solar plants worldwide are currently in operation with capacities in excess of our local peak usage of 19 Megawatt. They however require relatively large land space.

It is also significant to note that home users can now purchase kits, which could be installed in their backyards and capable of blending solar and wind power to produce sufficient electricity for domestic consumption. These small units (1 to 5Kw) are affordable, have very small footprints and are completely turnkey/user installable. This is a major breakthrough for domestic users.

Conclusion:

Energy impacts on the lives every individual. Like water, this is a resource that is not normally created or destroyed. These natural resources only change their forms. It is empirical that by respecting these resources in keeping with the laws of nature we preserve our environment for future generations. Thus, conservation and protection of the environmental conditions that provide us with energy and water ensures harmonious co-existence with our milieu. Our focus should therefore be on the use of sustainable renewable energy (solar and wind) that we certainly have in abundance.

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