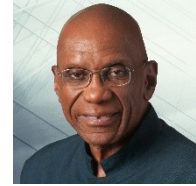




Economic Letter May 2021



Renewable Energy: How Much Progress?

Over several years the Barbados Energy Ministry has benefitted from world-leading expertise in the development of a strategy for the switch to renewable sources of energy. Five years ago, the prospects for the use of renewables looked something like the summary in the following table.

	Installed Capacity, MW				Storage, MWH	Renewables %
	Solar	Wind	Biofuels	WTE*		
2020	65	20	25	5		40
2025	120	85	25	11	5000	75
2030	175	170	25	11	5000	89
2035	219	219	25	11	5000	96

*WTE: waste-to-energy

The projection in the table includes all the proven renewable technologies available to Barbados at reasonable cost. However, there were issues still to be resolved. The wind farms were to be established onshore; establishing offshore wind farms in the deep waters surrounding Barbados would be costly and problematic. Existing wind farms elsewhere are in shallow waters of the continental shelf of mainland countries and nearby islands. Barbadians will need to be convinced that onshore wind farms would enhance the landscape, much as windmills once did.

A second unresolved issue was the biofuels to be used as feedstock for the 25 MW of power that were envisaged from that source. That issue has now been rendered moot by the decision to install the 33 MW Clean Energy Bridge, which uses fossil fuel.

The nature of the energy storage facility, crucial for the stability of the grid, is yet to be determined. Professor Olav Hohmeyer, one of the world's leading experts in renewable energy, has suggested the use of pump storage. Pump storage, which takes advantage of surplus power to pump water to a higher elevation to create hydro power, provides cheap power. However, the up-front costs are very high, and the feasibility and environmental impacts for Barbados have not been assessed. The alternative, grid-scale battery storage, is cheaper and quicker, but more costly in the long run, because of the shorter life of batteries.

The table lays out a scenario that would have achieved a target of generating 96 percent of electricity from renewable sources by 2035. Thanks to the Green Energy Bridge, the best that might be achieved by then has been reduced to about 90 percent.

However, Barbados is currently behind schedule to achieve this less ambitious target. The projection was to have achieved 40 percent use of renewables by now; currently we are lagging, at about 33 percent. What is more, we should by now have installed 20 MW of wind power and 5 MW from waste-to-energy, both now delayed. Action is needed on these projects to get the renewables strategy back on track.

The projections do not incorporate any assumptions about electric mobility. The country continues to import cars, commercial vehicles and machinery fuelled by gasoline and diesel. Most household cooking is done with natural or petroleum gas. These will all be in use for decades to come.