



WHAT WILL IT TAKE TO DEVELOP MORE **RENEWABLE** **ENERGY** IN THE CARIBBEAN?

— By Robert Blenker, President and CEO of WRB Energy —

With the abundance of clean energy resources in the Caribbean—sun, wind, water, and geothermal—it's a natural environment for more renewable energy generation. Undoubtedly over time, renewable energy projects developed appropriately can stabilize electricity costs, reduce dependence on fuel imports, combat climate change, and foster energy independence for small island nations throughout the Caribbean.

FIVE-YEAR UPDATE

WRB ENERGY's 28MWp Content Solar Plant, Jamaica

- *44 GWh of Electricity Produced Annually*
- *3 Million Gallons of Imported Fuel and 34,000 tons of CO₂ Displaced Annually*



WRB Energy developed the 28 MWp Content Solar site in Clarendon, Jamaica.

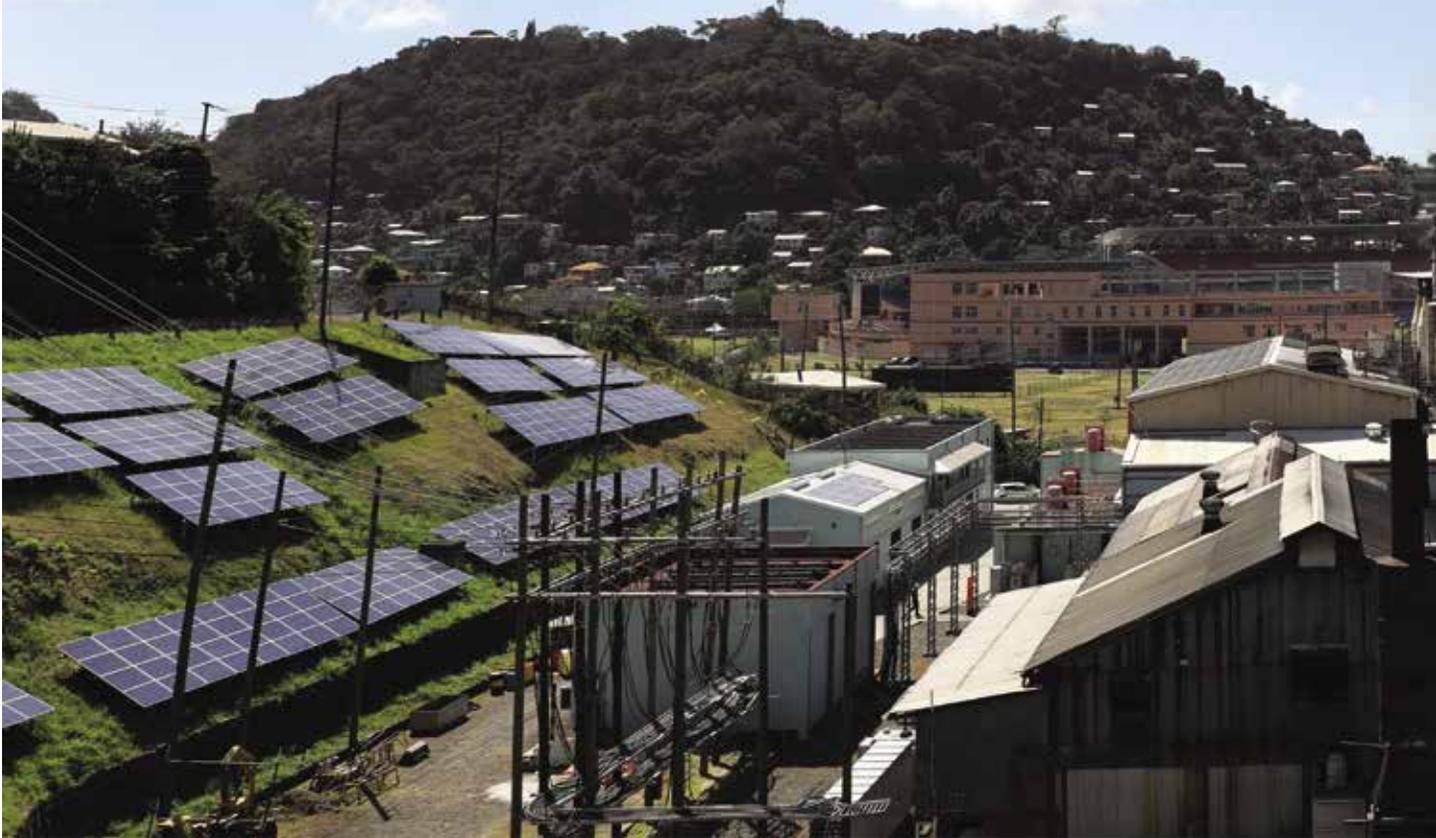
SO WHY ISN'T THERE MORE RENEWABLE ENERGY PRODUCED IN THE CARIBBEAN ENERGY SECTOR, AND WHY AREN'T THERE MORE RENEWABLE ENERGY PROJECTS IN THE PIPELINE?

Having worked in the region for more than three decades developing renewable energy resources and operating utilities in Grenada, Jamaica, Dominica, and Turks and Caicos, as well as in Latin America, WRB Energy has a perspective on the challenges that hinder increased renewable energy generation in the Caribbean. Our first-hand knowledge and experience on the ground can help shed some light on overcoming the obstacles to increasing sustainable clean energy production.

FIRST AND FOREMOST, CONTAIN COSTS

The reality is that most small Caribbean island nations lack economies of scale to absorb the high costs and complexities of developing relatively small renewable installations as compared to those in larger, more developed countries. With relatively smaller populations, economies, and electricity demand, there are simply fewer kilowatt-hours produced over which to amortize the up-front investment expenses cost-effectively. However, as the prices for renewable energy equipment continue to decrease and technologies advance, solar (in particular), along with battery energy storage, wind, and geothermal are increasingly more viable, least-cost options for diversified energy portfolios.

We believe that governments with a stable long-term vision and implementation plans for increased renewable energy create the best opportunities for project development. By working collaboratively and transparently, Caribbean utilities, government, and regulators can help flatten the learning curve for first-of-a-kind projects.



Using available land: hillside solar installation at Grenada Electricity Services (Grenlec), Grenada.



FLATTEN THE LEARNING CURVE

We believe that governments with a stable long-term vision and implementation plans for increased renewable energy create the best opportunities for project development. By working collaboratively and transparently, Caribbean utilities, government, and regulators can help flatten the learning curve for first-of-a-kind projects. As energy providers, regulatory bodies and ministries get up to speed on the process and requirements (in particular, those imposed by lenders), more renewable energy will be incorporated to meet the aggressive renewable energy targets set by many Caribbean nations.

As an example, in 2016, WRB Energy found Jamaica to be well-organized and applying industry best practices via its public tender process to help realize the benefits of solar and wind. WRB Energy's 28 MWp Content Solar site developed in Clarendon, Jamaica, followed very structured and rigorous tender and contract procedures. This helped to facilitate a successful project completion for all parties involved, including the Jamaica Public Service Company, government ministries, regulatory bodies, project neighbors and investors. All participants worked collaboratively to execute, develop and deliver the project, on-time and on-budget.

LAND IS PRECIOUS

Securing appropriate land for project siting poses significant challenges. In the Caribbean, there is tremendous pride in land ownership, with small parcels of land being passed from generation to generation. Sadly, there is also a history of very informal and murky land dealings, which leads to clouded property titles. Consequently, title issues combined with a well-deserved skepticism can create local owner resistance to land transactions and long-term lease agreements for fear of not being compensated or paid fairly. Also, if available land is inhabited, the added expense of relocating people and buildings is a factor negatively impacting project capital costs.

Additionally, rugged or volcanic terrain can cause higher transportation and construction costs. It is difficult to find large, flat parcels of land conducive to renewable energy development. Mountains, hills, and rocky, uneven roadways trigger higher costs for transporting large equipment and project site preparation.

Also, most, if not all port facilities in the Caribbean have significant limitations on the size and amount of equipment they can handle. The volume of photovoltaic panels, but perhaps more importantly, the sheer size of wind towers, transformers, and blades, being imported for a site can exceed the limits of what many ports can accommodate.

SIMPLIFY PERMITTING

Project permitting crosses the jurisdictional areas of overlapping ministries and parishes, including departments of energy, utilities, environment, and labor. Few countries boast of a “one-stop shop” to permit a project. Multiple government and regulatory offices are involved, each with their individual timeframes and requirements that often overlap. Coordinating with several ministries to review, process and approve renewable site permits, designs and licenses adds more time, administration, and expense to the projects. Streamlining procedures would help improve efficiency immensely.

CLARIFY INVESTMENT REQUIREMENTS

Banks, investors, and multilateral organizations have universally-required mandates, terms, securities and covenants that can be misunderstood in negotiations with governments, utilities and regulators. For example, the “waiver of sovereign immunity” is sometimes interpreted as an insult to Caribbean sovereignty, rather than seen as a standard commercial contracting convention. Again, the policies and processes need to be clearly defined and as transparent as possible to avoid misunderstanding of project terms and requirements.

INVEST IN SKILLED LABOR AND TRAINING

In the Caribbean, there is limited (but growing) local renewable energy technical expertise and experience. It's difficult to find local EPC and O&M contractors to construct and oversee operations of a renewable site. Bringing in contractors from other countries can be expensive. WRB Energy has invested substantially in hiring and training local resources to develop and manage projects, relying on overseas technical experts for only specialized or unique, one-off inputs.

HARNESS A SUSTAINABLE FUTURE

We foresee a bright future for renewables in the Caribbean. We believe in thoughtful, respectful policy and regulatory reform based on facts and economic analysis. We applaud nations that are sharing and learning best practices from each other,

as well as developers, utilities and policymakers who understand that renewable energy is intermittent. The existing electricity infrastructure needs to be maintained while more renewable energy is brought online through large-scale installations, distributed generation, microgrids, and energy storage. And, it is critically important to get the economics of this transformation “right.” Otherwise, it becomes a simple wealth transfer without meaningful or equitable advancement of creating aligned market forces resulting in lasting change.

Accommodating and integrating more renewable systems reliably, safely, and affordably requires due diligence and prudence to avoid electricity rate increases. It's a long-term strategy requiring cooperation between stable government policies, flexible utilities, competent regulatory bodies, thoughtful and well-informed electricity consumers, responsible investors, and credible development partners to design, develop and deliver renewable energy projects as promised.

ABOUT WRB ENERGY



Robert Blenker
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Energy. WRB
Energy develops
renewable energy
projects to help
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prices and reduce

dependence on imported fuels to drive economic growth and sustainability in Latin America and the Caribbean. WRB Energy manages the entire project lifecycle including site selection, design, permitting, financing, construction and operation. WRB Energy's parent company, WRB Enterprises, has more than a half-century of operational experience in the energy, utilities and financial sectors. For more information about WRB Energy, please visit wrbenergy.com.

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