

ENERGY REPORT

Perspectives
for the Turks and
Caicos Islands

Renewable Energy: Rewiring the Energy Future of the Turks and Caicos Islands

Two of the central issues dominating Caribbean utilities in recent years have been resiliency and the transition to renewable energy. Both, of course, have been influenced by concerns regarding climate change.

In the wake of hurricanes experienced across the region in recent years, governments and utilities have recognized the need for hardened, more resilient systems that can withstand extreme weather events. But resilient, hardened utility systems do not happen without significant investments, and as utilities and grapple with these concerns, the realities of climate change are making the shift to renewable energy a matter of utmost urgency.

Across the Caribbean, renewable energy integration efforts have been gaining momentum, helped by technological advances, and lowering costs in some areas such as solar. Utilities and governments alike are committing to renewable energy targets to diversify the energy generation mix and to include sustainable energy sources such as geothermal, wind, solar and hydro.

The potential for renewable energy does vary by location according to available natural resources, size of the country, size of the grid, and for other reasons, resulting in unique energy profiles for each territory. By way of a few examples, Jamaica has committed to transitioning to 50 percent renewable energy by 2030; Belize is targeting 95 percent renewable energy by 2030; St. Lucia looks to achieve 35 percent renewables by 2025 and the Cayman Islands is targeting 70 percent renewables by 2038. Targets such as these are determined by national energy policies, utility infusion studies, available infrastructural investments and other determinants considered unique to their situations.

Here in the Turks and Caicos Islands (TCI), the development of a Resilient National Energy Transition Strategy (R-NETS) signals that at the national level, the TCI is joining the Caribbean efforts to transition to renewable energy. FortisTCI is pleased to have been a key player in creating the RNETS, together with the TCI Government. The process was facilitated by the Rocky Mountain Institute.

The R-NETS looks at the TCI electricity system over a 22-year period, from 2019 to 2040 and identifies several benefits to electricity stakeholders during this time, including least-cost energy, continued reliability of service, integrating even more renewable energy sources into electricity generation, system resiliency, and reduction in Co2 emissions.

FortisTCI supports this measured approach. Done well and done right, all of the benefits identified in the RNETS can be realized for national development, and for the energy customers of the TCI.

Over the 22-year period, there are opportunities to diversify electricity sources by increasing renewable energy



FortisTCI President & CEO Eddinton Powell shares a moment with owner of Grace Bay Car Rental Todd Foss (center), and Green Revolution's Robin Spruce following installation of Grace Bay Car Rental's solar PV to the grid.

penetration to 33 percent in total energy production. The strategy also calls for incorporating distributed and flexible energy sources, to increase system resilience to external shocks, and a reduction in total emissions, with a 12 percent decrease over the 22 years versus 2018.

The R-NETS also proposes additional utility-scale solar PV projects with the aim of installing up to 7 MW total of distributed solar PV across the three main electricity systems in the TCI within the next four years. Pilot energy storage projects led by the utility also form part of the recommendations.

As the TCI's energy partner, FortisTCI is fully committed to leading in all of these areas. Our vision statement, 'Transforming Energy in the Turks and Caicos Islands', together with our new five-year Strategic and our Integrated Resource Plan, all serve to guide investments and activities in renewable energy integration.

Beginning in 2016, FortisTCI has been integrating solar energy generation to its grid, through two renewable energy solutions – Customer Owned Renewable Energy (CORE) and Utility Owned Renewable Energy (UORE) programs, which focus on rooftop solar installations.

Today, with nine customers in the UORE program, FortisTCI has installed 1 MW of rooftop solar PV, which have helped the company to avoid 1.5 million pounds of Co2 equivalent emissions. The company plans for another 1 MW of solar installations at locations in Providenciales, North Caicos, South Caicos and Grand Turk in 2020.

FortisTCI also recognizes that the electrification of the transportation sector is an imperative for the Caribbean, as another way to reduce dependency on imported fossil fuel and transform the energy sector. In 2018, the company was pleased to launch its electric vehicle (EV) and charging station pilot program, with the acquisition of a 100% electric Nissan Leaf Acenta.

The pilot project has thus far revealed that the zero emissions vehicle offers an estimated annual savings of



A large commercial installation at Carlisle Supplies on Providenciales, one of nine participants in the FortisTCI Utility Owned Renewable Energy (UORE) Program.



FortisTCI has conducted an electric vehicle and charging station pilot project, with the 100% electric Nissan Leaf Acenta EV.

\$600 (or \$50 per month) on fuel, assuming a 25-mile average daily drive. Use of an electric vehicle would realize other savings such as vehicle maintenance, when compared with an internal combustion engine. The total cost of ownership is estimated to be lower for EV; for example, custom duty on imported EVs is 10% plus 7% processing fee, compared to 35-55% plus 7% for internal combustion engine vehicles.

FortisTCI is embarking on another pilot project – in energy storage – to explore the available technologies in this area, and to determine the role they can play in the company's renewable energy programs. The project, which will focus on behind-the-meter energy storage, also answers the call for energy storage investigation contained in the R-NETS.

"These efforts represent significant investments by FortisTCI and an embrace of a changing business model in the utility sector," states FortisTCI President and CEO Eddinton Powell. "The transformations happening in the energy sector require us to act now to ensure resilient energy systems, reliable service to customers, and a diversified energy mix to meet agreed on environmental objectives. At FortisTCI, we are preparing a new energy future for the TCI."