

An Interview with Dr. Marsha Atherley-Ikechi on the Role of Renewable Energy in Creating a Resilient Future for Barbados' Energy Sector



August 2022 – In the context of global climate change and the widespread impetus on behalf of governments worldwide to transition their respective energy sectors toward more sustainable generation portfolios, the Government of Barbados is taking significant strides forward to transform its electricity generation profile. The Barbados *National Energy Policy 2019-2030* (BNEP) established a new initiative designed to achieve 100% renewable energy (RE) and carbon neutral transformational goals by 2030. To achieve this target, Barbados recognizes that it must increase the resiliency of its grid so that it can handle the increased integration of RE resources and ensure power quality and reliability is maintained.

Additionally, as some RE resources – such as solar and wind – are intermittent, meaning that they are only available under certain conditions, Barbados' grid will need to be able to store energy efficiently and have access to enough reserve capacity in

the case of an unexpected fault or shortage in energy generation.

With support from the United States Agency for International Development (USAID), the National Association of Regulatory Utility Commissioners (NARUC) is supporting the Barbados Fair Trading Commission (FTC) as it seeks to implement long-term RE integration efforts aligned with the energy reforms mandated in the BNEP. In 2021, NARUC began providing technical assistance to the FTC in developing draft *Reserve Capacity and Resilience Regulations*. Such regulations will provide the framework needed for the FTC to ensure that the utility undertakes measures to ensure system reliability, resilience, and resource adequacy as Barbados works to achieve its energy sector goals.

Opportunities for RE in Barbados' energy sector

Like many of its neighbors in the Caribbean region, the island of Barbados is almost entirely reliant upon imported fossil fuel products for electricity generation (including heavy fuel oil, diesel, and kerosene).¹ This dependency on imported fuels renders it vulnerable to highly fluctuating and uncertain power costs, which the government intends to transform through long-term electricity sector reforms as established by the BNEP. Barbados has plentiful RE resources in the form of good wind speeds and solar irradiance due to its proximity to the equator.² These resources indicate its immense potential to shift from high reliance on costly foreign fossil fuel to 100% domestic renewable energy supply.

To get a better understanding of some of the opportunities for renewable energy in Barbados' energy sector and the progress the FTC has made toward achieving BNEP goals, we spoke with Dr. Marsha Atherley-Ikechi, who is the Chief Executive Officer of the Barbados FTC and responsible for overseeing the development of regulatory frameworks for the Barbados energy sector. She has been employed by the FTC since 2004, starting as a Water Analyst, and has worked her way up to her current position. In 2011, Dr. Atherley-Ikechi participated in the USAID-sponsored Renewable Energy Internship Program, hosted by NARUC. The internship program was designed to pair interns together at U.S. regulatory commissions to help regulators in developing countries advance RE deployment both directly through regulation and gain the skills and knowledge needed to become resources for national policy decisions.

During the internship program, Dr. Atherley-Ikechi interned at the Iowa Utilities Board (IUB) and gained valuable insights related to renewable energy policy and energy efficiency. Marsha reported: “[Barbados is] preparing to enact renewable energy policy, and as the regulator’s representative I was able to take away lessons based on tried and proven experiences. We in Barbados will therefore not be starting from nothing, for we will be building on the experiences of the IUB and others.”

Q&A with Marsha Atherley-Ikechi

Can you tell us about yourself and your work at the FTC? What role(s) have you played within the commission?

I have been involved in all the sectors for utility regulation across the spectrum for Barbados. I came to the commission in 2004 as a water analyst. I then went on to become a telecoms analyst, then electricity analyst, then director of utility regulation, and now I’m the CEO. Regulation is not a degree option at university; it is learnt largely by immersion, and I really did get that immediate immersion because of the human resources constraints of the Commission.

Going into the Utility Regulation division there was an analyst for each sector, so you had to multitask and learn about regulation through just getting into the grind and doing the work alongside the other analysts. The telecom liberalization process really got my feet wet. I remember one of my very first tasks was to review the Reference Interconnection Offer, a very technical and complicated document. That being said, I jumped in and swam, because I had no choice. I was able to quickly overcome the steep learning curve by asking pertinent questions and doing the requisite research outside of the normal workday.

How did you come to participate in the USAID and NARUC 2011 Renewable Energy Internship, and how has it helped shape your career path?

The internship came about because of an interaction at an Organization of Caribbean Utility Regulators (OOCUR) conference. I met one of the NARUC officials there. She indicated that this was something they were looking to roll out, and I indicated my interest. Obviously at that point I was already in the energy space wanting to understand and wanting to put the Commission – and by extension my country – at the forefront and to be able to absorb any knowledge that could be helpful in executing what I was tasked with. In terms of how it has helped, it definitely has because it facilitated an in-depth understanding of what should be considered when setting rates, for example. I gained exposure to various energy markets, how they operate, and an appreciation of the challenges associated with transitioning to renewable energy.

Women are underrepresented within the energy sector on a worldwide basis. With this in mind, do you see the energy transition from traditional fossil fuels to renewable generation as an opportunity for women to get more involved in the industry and attain leadership roles?

From a Barbadian perspective, there is really very little that would prevent a female from getting involved in the industry, whether it be conventional fossil fuel or renewables. I think it is largely driven by a background in science, math, and technology. We are beginning to more consciously push that but knowing full well that there is really no disparity in how we instruct boys vs. girls at the primary and secondary school level, the foundation to a path to a science-based career.

I certainly did not feel as though I would be disadvantaged going into a male-dominated sphere. But again, it has a lot to do with how you are raised, the culture of your home environment. If you give a girl the same assurances that you would give a boy – that you can do anything you put your mind to; that is a powerful mindset to have, one that allows one to routinely view obstacles and surmountable pitstops. We are not to the point where it is an even keel, but we are getting there. So, as I would say to my daughter, you can do anything. What limits you is yourself. I will provide the opportunity to ensure that you are exposed to as much as possible. Beyond that, it is up to you to determine what direction to take.

Gender does not determine whether you will or will not have an opportunity in this space in Barbados. We have a very able leader, and I think this is a prime opportunity as Barbadian females to showcase her to the younger next generation and indicate that there is nothing stopping them from ascending to these heights as well. I believe the Barbadian society is welcoming of good leadership regardless of sex. Attitude and amplitude will determine your impact.

As a woman leader in this field, what advice would you give to young women seeking to follow in your footsteps in the energy sector?

For me, it is about never limiting yourself and doing something that you are passionate about. It will never be easy; just because you are passionate about something does not necessarily mean it will be easy. But look for something that will offer you opportunities, that is going to allow your country to grow as a whole so you're giving back. The reality is the recipients of your hard work might not really understand the implications of what you are doing. In my point of view, if they don't understand it in the same way that I do at this point, that is OK. This does not negate the need for me to produce at a high level so as to ensure that I am not shortchanging the next generation. Because by shortchanging the next generation I invariably shortchange myself and my children.

How has Barbados promoted the use of RE?

In terms of energy, there was the recognition that we were moving to a space where renewables would play a significant part in repositioning the Barbadian economy. At that time, we were 100% reliant on fossil fuels, and understanding the volatility of the oil and gas sector, it meant that one could not reasonably predict what that expense would be at the national level with any accuracy. That is really unsustainable for a small economy, and we had to look for alternatives. Even prior to the government institution of national energy policy, in 2010 the Commission determined that it would allow for distributed energy generators to sell their electricity to the grid. And that was really the start of the transformation of the sector as we know it now.

In 2018, the government made a conscious decision to move from complete reliance on fossil fuels to 100% renewable energy use by 2030. That is in and of itself a very ambitious target, but a target that we are working toward, nonetheless. We have reached a point where on Sundays, in particular, upward of 90% of the demand is routinely supported by renewables. There is still a very long way to go. Incorporating renewable energy in the transportation sector is unfolding. We are in fact the leaders of electric vehicle (EV) transport in the region; with a fleet of over 49 public buses and over 1000 private electric cars and vans.

The government has made provisions for the importation and purchase of EVs at a significantly reduced tax point, moving from something like 45% to 10 percent. It is also providing interest-free loans for public sector officers to purchase them, so I expect to see an exponential increase in renewable energy EVs within the next two years or so. At the end of the day, it comes down to the price point. If we set rates that are viable and attractive, then we will get the uptick that we expect.

How is the FTC supporting the transition to RE?

We have amended legislation that allows access to the financial and operational data of the independent power producers (IPP). This local data is critical for the setting of cost reflective tariffs, tariffs that are reflective of the local industry context. Our costs will be very different to U.S. costs, largely because of economies of scale and the fact that much of the hardware is imported.

We have also embraced Integrated Resource and Resilience Planning (IRRP), recognizing that we have a 2030 target, so we must transform what would have been an integrated resource plan into an IRRP with an understanding of the impact of climate change. Energy storage is another critical component. The Ministry just completed a storage framework that will be used to inform how Barbados transitions based on the different uses of storage technology. We also have to turn our attention to formulating a tariff structure for EV charging. Transitioning the generation assets to renewables and modernizing

the grid are also vital. We are also at the point of consultation on standards of service and have incorporated some standards that relate to renewable energy for the first time.

How will the reserve capacity and resiliency regulations help the FTC provide stable electricity service?

With reserve capacity, we need to understand – especially when you are dealing with non-dispatchable assets – what capacity is needed to backstop. At this point, referring to reserve capacity, we have a total capacity of 276 MW. When we move to renewables, we recognize that that capacity has to be increased significantly. The most recent IRRP put it around 800 MW, when the transportation fleet is taken into account. The expectation is that the pending reserve capacity regulations will provide the sector with firm guidance on how the issue is to be addressed over the mid- to long-term.

In terms of resilience, Barbadians are accustomed to a pretty high level of service. When that is interrupted, there is a significant outcry. In 2019, there were island-wide outages on two consecutive days; there was massive outcry as a result. The utility is keenly aware that it will be held accountable should it not provide adequately. At the same time, we are conscious of the government’s mandate to transition to renewable energy. This amplifies the need to put additional measures in place to ensure that service is accessible and provided at all times. Doing so does not only go toward the comfort of individual customers, but to the productivity of the nation as a whole. Energy supply disruption means lost revenue. This has to be addressed, recognizing too that the grid has, to date, not been modernized to the extent that is required.

Further, when we have a disturbance – an environmentally caused disturbance or otherwise – we need to be able to quickly recover and deliver service. For the first time in many years, Barbados was impacted by a hurricane last year and there was significant disruption of service. This event acted to contextualize and elucidate our peculiar circumstances and placed the hard questions of what protections are possible for our exposed solar PV systems; how do we harden those resources and ensure that they can withstand category 3, category 4, and category 5 winds so that we can allow for continuity of service? We know that the safest option is to use underground transmission and distribution. However, the cost of that at this point is prohibitive. We have to ensure that what we put above-ground based on the technology that we have is designed to be able to withstand the elements as best as it can.

When and how will the regulations be implemented?

We are in the early stages of development. We are hoping to have something to go to consultation quite soon, I would say by the end of the year. We want to have the regulations in place as soon as possible, because it is just part of the puzzle for the transformation.

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Photo Caption: Dr. Marsha Atherley-Ikechi, CEO of the Barbados Fair Trading Commission

¹ “Barbados to boost renewable energy and energy efficiency with IDB support.” Inter-American Development Bank. 2019. <https://www.iadb.org/en/news/barbados-boost-renewable-energy-and-energy-efficiency-idb-support#:~:text=Barbados%20is%20currently%20dependent%20on,%2C%20biomass%2C%20and%20solar%20energy.>

² “4 Facts About Renewable Energy in Barbados.” The Borgen Project. <https://borgenproject.org/renewable-energy-in-barbados/>