Leaders in Energy Sustainability

DALHOUSIE UNIVERSITY

BIOGRAPHICAL SKETCH

ELIZABETH MAYO - PH.D.

Brookfield Renewable | New York, United States

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Dr. Elizabeth Mayo received her M.S. in Science Education from Florida State University in 1999 and her Ph.D. in Chemistry from Caltech in 2004. When Elizabeth Mayo attended Caltech she discovered her passion for renewable energy technology, and in particular, solar cells. While taking her Ph.D. in Chemistry she immersed herself in the characterization of titanium dioxide solar cells. After her Ph.D., she perfected her technical skills as a postdoctoral researcher at the University of Southern California and as a visiting scholar at the University of Michigan before becoming a research scientist at the Global Photonic Energy Corporation. As a research scientist, she oversaw the design and construction of a prototype large area solar cell.

After her experience at the Global Photonic Energy Corporation, Elizabeth Mayo became a calibration and reliability engineer at the Applied Materials engineering firm in California. Her strong technical and communication skills propelled her to always step up to more challenging assignments. After working as a Reliability Engineer and Photovoltaic Technical Specialist for a few years she discovered she wanted to lead. She went on to become the Global Product Manager for Applied Materials. Since then, she has held multiple high-ranking managerial and directorial positions overseeing areas such as product development, independent engineering, and operations at Applied Materials, DNV GL, UL Renewables and finally, Brookfield Renewable. She is currently VP Operations for Brookfield Renewable, a distributed energy resource business, where she manages operations for a fleet of solar plants with 1400 unique sites. She loves working at Brookfield Renewable because of the large breadth of what they are doing and the security of working for such a large company.

Dr. Elizabeth Mayo is now mainly in charge of keeping the solar power plants operating to maximize generation and revenue. Her day-to-day work involves a lot of meetings and data crunching. She mainly works on getting contracts signed, developing internal contracts, and preparing materials for the board of directors. It is all part of the job. Her management philosophy is that she would never ask her team members to do something she would not do. The skills most important to Mayo's success are her decision-making and communication skills. Mayo makes a lot of decisions; it is the most important part of her job. She recognizes the extreme importance of moving forward and finding 'best for now' solutions. When looking back at old decisions, she says it is important to distinguish between decisions that were wrong and decisions that were the best at the time with the current information. When she gets new information, she makes new decisions, and her decisiveness is something that sets her apart

from the rest. For communications, knowing the audience and ways to influence people are skills that Mayo covets. Also, recognizing that something that may be obvious to you is not necessarily obvious to everyone.

The problems that Mayo faces are largely a mixture of technical problems at site and management issues. The technical problems are largely structural and design in nature. It Is important for Mayo to be able to understand if problems in the solar plants are systemic so her team can find cost-effective solutions to fix a fleet. For example, in one solar plant the canopy structure collapsed because of a plugged hole caused by customers trying to prevent the formation of a patch of black ice. It was critical to understand that this was only a location-specific issue to find a cost-effective solution. There is a wide array of technical problems that can arise, like problems with wind loading and blown inverters, and Mayo loves solving them. The management issues that Mayo deals with revolve around keeping everyone happy and successful by understanding her team and their concerns.

Mayo finds people to be the most satisfying part of her job. She enjoys working with people and helping them reach their full potential. She loves when they move on because it feels fulfilling to watch them grow up and blossom. The most challenging part of her job is that problems never seem to end, and she works tirelessly to get them solved. Still, she loves being in solar because of the rapid growth and constantly changing landscape of the industry. There are new technologies emerging every day like larger modules, perovskite solar cells, and inverter and safety improvements. Furthermore, the business model is fundamentally changing for solar, with projects becoming more profitable and requiring less incentives than previously required.

To be successful in operations a technical degree is typically required, and experience and understanding of how energy is made goes a long way. Beyond the technical understanding, a commercial understanding of how energy is made and sold to customers is important. The ability to take a holistic view and connect technical problems in the field to customer problems to company problems is critical. Essentially, progress in the solar field is dependent on the ability to understand the big picture of converting 1 kilowatt hour of sunlight to a dollar figure. To enter the field, Mayo recommends internships, junior engineering roles, design engineering opportunities, and working with start-ups to help get them manufacturing.

Elizabeth Mayo is happy working at Brookfield Renewable. If she could do things all over again, she would take more time in her undergraduate degree (she did it in 3 years) and take more chances on things other than science. Additionally, she would’ve taken more time for self-reflection and more responsibility for how she deals with people. She advises to think about problems from different perspectives, let data speak for itself, understand the market, and don’t be afraid to branch out beyond research.