



Applied Hope: Building Resilient Communities

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☀ Call to Action

Learn more about green infrastructure, remote electrification, green community education, and RMI: rmi.org.

☀ Values

- Optimistic
- Creative
- Socially
- Mindfulness
- Innovative
- Environmentalist

☀ Lessons Learned

When faced with the opportunity to see the world from a different point of view, embrace it. You will learn about different cultures—and yourself.

Go outside! Enjoy and appreciate the world around you. Learn to appreciate nature, and use your talents to protect it.

When looking for inspiration, focus on what is possible, not what is popular.

Ana Sophia always knew she wanted to work at a mission-driven organization that had an outlook as positive and hopeful as hers is--particularly when it came to developing technical solutions to fight climate change that also lifted up communities economically.

After college, she began working at RMI, where she was introduced to the concept of Applied Hope—a mantra that she had unwittingly been living, and aspiring toward, all her life. According to Amory Lovins, RMI's cofounder, "Applied hope is not about some vague, far-off future, but is expressed and created moment by moment through our choices." In 2017, after Hurricane Maria ravaged Puerto Rico, Ana Sophia helped install microgrids in 10 public schools – giving more than 4,000 students and faculty access to clean, resilient power. "I can't tell you what it was like when the students could see firsthand what is possible. This is what Applied Hope fosters, in its purest form.

☀ Language Arts

What is microgrid technology? Write a research essay on the science of microgrids, their applications, and the environmental benefits they offer.

Ana Sophia talks about how important Applied Hope was in helping the people in Puerto Rico recover from the trauma of Hurricane Maria. Based on Ana Sophia's experiences, how can we apply this concept to facing the climate crisis in the world? Create a series of Tik Tok videos designed to bring positive messages that motivate people to get involved in finding solutions. Your videos should address a wide variety of age groups, from preteens to adults.

Create a presentation on differences in the lifestyle of people in Central America versus South Florida. What environ-

mental, social, and economic challenges do these regions face? Do they share any challenges? Are there ways they could help each other? Next, write a reflection paper in which you explain the most surprising fact you learned in your research.

STEM Activities

As the world shifts to renewable energy sources, electricity has become one of the main focuses of attention. When assessing the energy powering a home, microgrids and solar panels are two of the innovations that are used. What is the difference between solar microgrids and solar panels? What innovation would you like to include in your house, and why?

In addition to technological innovations, Ana Sophia's goals for youth are to go outside and spend more time in nature. Students today can be overly reliant on technology and lack the interaction with nature like other generations. What are three benefits of being outside in nature, why are they important to our future? Potential options:

- Vitamin D3/Sunlight
- Understanding the factors affecting air quality
- Learning about farming/agriculture

In response to Hurricane Maria's damages to Puerto Rico, Ana Sophia helped install microgrids in schools to keep them operating during rolling blackouts. Schools with resilient energy are invaluable to communities, and can serve as a safe haven in times of crisis. In this activity, students learn about resilient energy systems and explore the impact of loss of power in two different cities, one with a centralized energy system, and the other with decentralized energy systems. [Activity link](#)¹.

Ana Sophia currently works at RMI, where her goal is to get businesses and homes to eliminate combustion in their buildings. Combustion is a reaction where a substance reacts with oxygen gas to produce energy in the form of light and heat. Have students use this [online guide](#)² to learn about hydrocarbons, the primary component of fossil fuels, and compare the products of combustion of different hydrocarbons. Using the results, students will explain how combustion produces and releases greenhouse gases such as carbon dioxide, contributing to climate change.

Sustainability Innovations

As the world strives to collaborate on addressing global sustainability issues, conferences and conventions continue to expand and develop. The [Microgrid Innovation Convention](#)³ highlights advancements in technologies and real-world case studies of uses and developments.

Collaboration is often required in order to make systemic changes to improve sustainability. [Resilient Power Puerto Rico](#)⁴ is a 501(c)3 organization that focuses on increasing resources and knowledge to improve the innovation and distribution of renewable energy across the region.

Ana Sophia's work has been amplified by her work as an associate with RMI. [RMI](#)⁵ has become a leader in transforming the mindset of "Whole of Government" to a "Whole of Society" National Climate Strategy. What are these two different approaches? Why is this transition so important?

Sustainability Career Pathways

Renewable Energy Engineer. Improving the design of batteries, solar panels, and wind turbines will be essential in the transition to

a sustainable future; and that will require renewable energy engineers. Want to learn more? [Start here](#)⁶.

Microgrid Design Engineer. Perhaps like Ana Sophia, you want to help build microgrids, increasing community energy independence and resilience. Start by understanding [what a microgrid is](#)⁷. Then, if this is for you, learn more about the industry and [job opportunities here](#)⁸.

Renewable Energy Advocate. Renewable energy is a rapidly growing field and will make up an ever-larger percentage of the world's energy mix in decades to come. [Becoming part of a renewable energy company](#)⁹ --as a manager, salesperson⁸, or support staff--is a way you can help with this transition. Or, by joining one of the many nonprofit organizations researching, promoting, or lobbying for the transition to renewable energy, you can help draw attention and investments to renewable energy.

1 <https://www.cci.washington.edu/drupal/node/81>

2 https://topicsu.org/wp-content/uploads/2018/12/Lesson_Plan_Chem_Env_Sci_Hydrocarbons-and-Climate-Change.pdf

3 <http://www.microgridinnovation.com/EMEA/>

4 <https://resilientpowerpr.org/>

5 <https://rmi.org/moving-from-a-whole-of-government-to-a-whole-of-society-national-climate-strategy/>

6 <https://engineeringonline.ucr.edu/blog/career-spotlight-renewable-energy-engineers/>

7 <https://www.energy.gov/articles/how-microgrids-work>

8 <https://microgridknowledge.com/distributed-energy-jobs-microgrid-knowledge/>

9 <https://www.greentechmedia.com/articles/read/cleantech-careers-solar-sales-at-a-residential-installer>

10 <https://www.microgridinnovation.com/North-America/>

