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Solar power towers

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With the seemingly insurmountable foothold that China has on the solar pv industry, the demise of once promising companies like Solyndra in the Bay Area, and the resulting skepticism about the practicality of solar, the industry is undoubtedly in need of new, disruptive tech that can level the playing field and provide more scalable solutions. Luckily in this day and age, innovation seems to always be just around the corner. There are various exciting renewable energy technologies that offer an alternate approach to achieving a similar result: one such technology is the solar power tower.Solar power towers generate power by obtaining energy from the sun and concentrating this solar energy into thousands of mirrors situated on the ground near a large solar power tower. These thousands of mirrors on the ground are called Heliostats. A great deal of energy arriving on Earth from the sun concentrates at a temperature range of between 500 degrees Celsius to 1500 degrees. This acquired thermal energy is used for various purposes, including heating water and the molten salt, which can ultimately be stored for later use. The problem of energy storage can ultimately be targeted using these towers.

Energy efficiency is one of the more important benefits of these solar power towers: the towers offer the lowest-cost electricity for large-scale power generation. With a higher working fluid temperature, this allows for greater efficiencies within the system. Further improvements in the materials for working fluids and the temperatures of these systems, even utilizing two tank designs instead of a single tank will improve the energy efficiency capabilities of solar power towers. The scope of these towers is vast: various countries can collaborate with each other to build these towers. Spain currently leads the efforts in building these towers internationally, the largest company being Abengoa.

Some challenges in these efforts include the costs vs. benefits of building these towers; simply said, the task is daunting and expensive. It may take some time to overcome these cost challenges, even if the benefits outweigh the costs. There are certain areas where these costs can be optimized and cut back, as the principal costs for the solar turbine are reduced, operations costs are reduced as well since the staff is only responsible for the solar -specific portion of the plant, and there are fewer daily startup losses.Despite the challenges, current opportunities undoubtedly lie within the United States for solar power towers. Currently, global players such as Spain have been experimenting with building these technological advancements even in the United States. They have been wildly successful as well. The United States can take advantage of these roles and certainly attempt to take a stab at this innovation challenge. It would be nice to see these towers sprinkled across the United States in the near future.

Poornima Muralidhar is a junior energy engineer at Mass Energy Lab, Cambridge, Mass.