

## Port-au-prince energy storage for electric vehicles

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Roumeen Islam: About one third of Haitian households have some access to electricity. The main provider is the national utility, which is struggling to supply even urban households with at least eight hours of electricity a day. Historically, the electricity grids have been powered by diesel, which is expensive and polluting. Yet, today when the sun sets on the Port Au Prince, Haiti, lights blink on at the Sean De Mar Plaza, where 350 solar panels cover the roofs of buildings around the area.

Children play football. Locals and visitors take evening walks. This glowing area stands like an oasis on an island ravaged by natural disaster and poverty. Let's find out how this came about. Good morning and welcome! I'm Roumeen Islam, the host of Tell Me How. And, today I have as my guest, Chandra Govindarajulu, expert in energy who will speak to us about battery storage and its role in the energy transition.

Chandrasekar Govindarajulu: Thank you, Roumeen. It's my pleasure to be discussing this interesting topic today with you.

Roumeen Islam: It's lovely to have you here. So, Chandra, let me begin by asking you about the fast-rising capacity of solar and wind sources of energy. Are we ready today to let renewables be our main source of energy?

Chandrasekar Govindarajulu: Yes. I would say we're getting ready for renewables to be our main source of energy. Hydropower is the largest source of renewable electricity today. But the main driver of growth is solar. You have seen massive drops in cost of wind and solar energy, like 82% in the case of solar and 40% in the case of wind since 2020. The solar projects are offering some of the lowest cost electricity ever seen by us so far.

Roumeen Islam: I would never have guessed that the drops in cost were that large. It's amazing. But what is driving this phenomenal decrease in the cost of solar and wind energy.



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Chandrasekar Govindarajulu: These cost reductions are due to a number of factors, improved technology of solar cells, economies of scale by doing larger projects, supply chain competitiveness in the manufacturing sector, and also the growing experience of the developers who build these projects. Currently, large scale solar can compete well with coal or gas generation during daytime hours in most parts of the world.

Chandrasekar Govindarajulu: That's because wind and solar power output is variable and uncertain as one can imagine. For example, output of a solar PV changes in seconds when a cloud passes by - wind also changes its power and direction. So, that's the issue.

Roumeen Islam: They vary a lot. And I guess there are some parts of the world where you get very few hours of sunshine, especially during the winter. So, I guess then you need stability and supply. Otherwise you'd have flickering lights, televisions turning on and off. So, that's the main issue right now, right?

Chandrasekar Govindarajulu: That''s right. For a stable operation of the grid, the power system needs to match electricity supply and demand at every instant. And the conventional power systems are already designed to accommodate changes in electricity demand during day and seasons. So, in many countries, coal and gas power plants are providing this flexibility, and therefore are needed.

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