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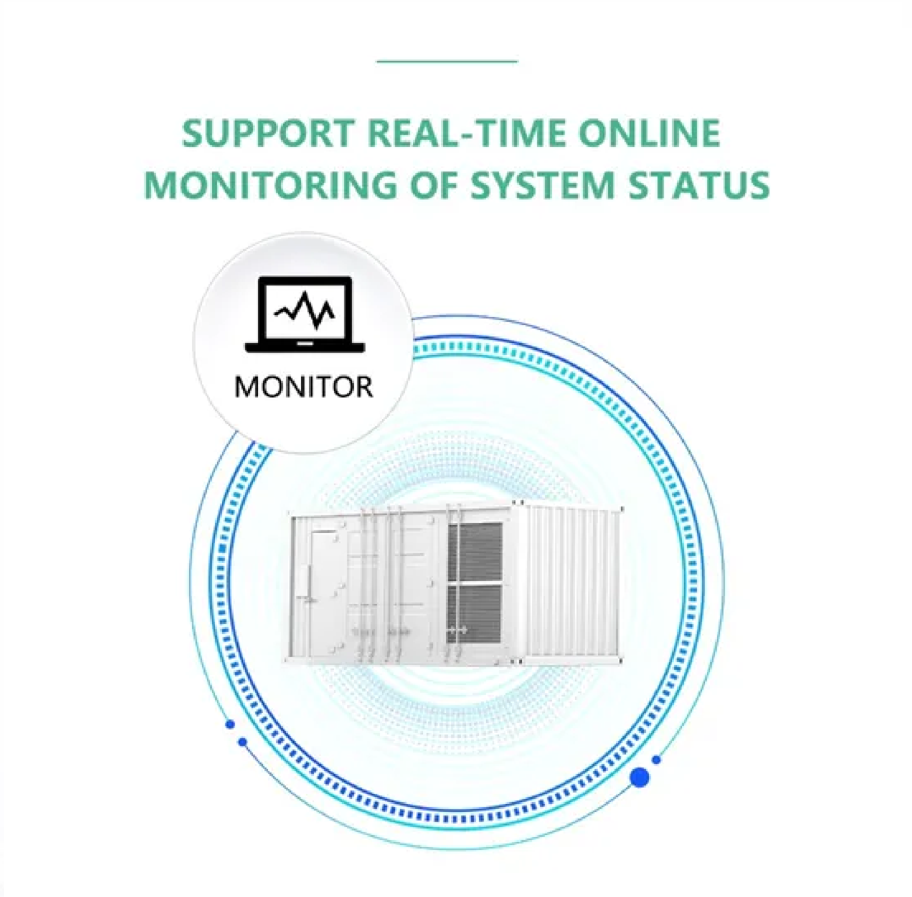
Energy storage costs for the Guatemalan power plant



Overview

Many countries have taken on ambitious but potentially costly renewable energy development goals to combat climate change. The government of Guatemala has introduced a plan to increase renewable gen.

How much do people spend on energy in Guatemala?

In the urban area around Guatemala City, households spend on average 10–15% of monthly income on energy expenses (including electricity, kerosene, propane, coal, batteries, firewood, and candles). Only in a select few municipalities near Guatemala City center is the Energy Poverty Indicator below 10%.

Are renewables cheaper in Guatemala than fossil fuels?

Thus, it is possible that if coal costs are at the higher end of the Lazard (2017) distribution, and renewable technology costs are close to regional default values, renewables would be cheaper on average in Guatemala than fossil fuels (Fig. C2).

How much electricity does Guatemala need?

We estimate future electricity demand based on Guatemala's residential electricity demand in year 2018 and its historical growth in total electricity demand. Specifically, residential electricity consumption was an estimated 3.7 TWh per year in 2018 (IEA, 2021), or roughly one-third of the country's total electricity demand.

Could energy poverty be impacted by energy development goals in Guatemala?

These are costs that could further burden electricity consumers if not managed efficiently. The government of Guatemala – as well as other governments of transitioning economies – can use frameworks like the one introduced here to better understand how electric sector development goals could impact energy poverty in their countries. 6.1.

What impact will energy stress have on Guatemala's economy?

More importantly, we find that the distribution of impacts will not be equal everywhere: households in the western, rural part of Guatemala that are already energy stressed will likely experience the greatest cost burdens because natural resource availability is low while overall poverty is already high.

How are capital costs for renewable technologies calculated in Guatemala?

The northern municipalities of Guatemala are more sparsely populated and make up a large part of the off-grid generation in our analysis. As described in Section 3.1, capital costs for renewable technologies are calculated in SEERE from the electricity demand requirements and natural resource (wind, solar, hydro) availability of a region.

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