

Is the Colombian power system flexible?

The assessment of the Colombian power system flexibility becomes essential. However, limited studies have focused on it , . What is more, other unique characteristics such as the high dependence on hydrology conditions make it necessary to develop a fresh approach.

Will the Colombian power system experience a curtailment in renewable power generation?

Simulations show that the Colombian power system will not experience curtailments in renewable power generation until 2030. However,our analysis for 2050 indicates a potential for substantial curtailment,underscoring the need for careful planning and adaptation.

How is energy used in Colombia?

Total energy supply (TES) includes all the energy produced in or imported to a country, minus that which is exported or stored. It represents all the energy required to supply end users in the country.

Will Colombian power system be flexible in 2030?

As Colombian generation matrix is mainly composed by hydro park,we conclude that increasing ramp requirements does not impose significant challenges for the Colombian power system under normal hydrology conditions. However,for low hydrology conditions,the system may not be flexiblein 2030.

How much solar power will Colombia have by 2030?

Colombia expects more than 10 GWof solar and wind power capacity by 2030. We quantify the flexibility requirements for the net load and ramps. Conventional reserves must be doubled at noon. Conventional generators must provide 7%-10% of additional ramps. Multiple factors drive the energy transition toward power systems based on renewable energies.

When does the net load turn negative in the Colombian power system?

Limits of integration for the renewable sources into the Colombian power system The net load turns negative when the power production capacity surpasses the power consumption capacity,particularly in the absence of energy storage.



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