

GLOBAL MEET ON CLIMATE CHANGES AND SUSTAINABILITY



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Success and challenge for the use of renewable energy in Brazil

Abstract: Brazil is one of the world leaders when it comes to the diversity of its renewable energy sources. Hydroelectric, solar, wind and bioenergy are the main sources, which correspond to 86,4% of the total centralized power, with hydropower representing 55% of this percentage. According to the National Electric Energy Agency (ANEEL), the potential of renewable energy is increasing rapidly, in contrasting to the decrease in demand for oil and thermal energy in the country. Thus, in this work we analyse the precipitation regime over past years and for the future, in order to determine the impact of water regime on electric energy production in hydropower enterprises in Brazil, by using observed precipitation data and CMIP6 model products. The computed precipitation and vulnerability indexes indicate that some regions will be affected in the next decades until 2100, but other renewable energy sources can partially compensate the consequences of reduced rainfall and decrease of river levels.

Biography: Reinaldo Silveira has a Ph.D. in Applied Mathematics, University of Essex, UK and Bachelor and Master degrees in Atmospheric Sciences from the University of São Paulo. Currently is a researcher of climate and numerical weather prediction working for the Brazilian Meteorological Institute and is the Co-chair of WMO Expert Team on Climate Data Development and Stewardship, ET-DDS. He has published more than 100 papers in reputed journals and conferences.