



The development of grid connected photovoltaic systems (PVS) in Brazil has been steady but slow in the past years, despite the need for the diversification of the electric generation matrix and the good solar radiation in the country, mainly in the northeast region.



The main objective of this article is to show the one year performance of a grid connected 2.2 kW p photovoltaic system installed at the State University of Ceara in the city of Fortaleza a?? Brazil.



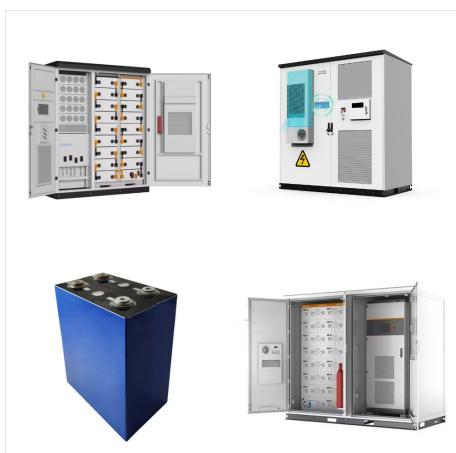
In this paper, a detailed review of the state of the art of PV grid coupling is presented. Modern grid codes are thoroughly examined, and a comparison of the rules of many nations is presented. PV power system architecture, topologies, and control are examined, with current improvements emphasized.



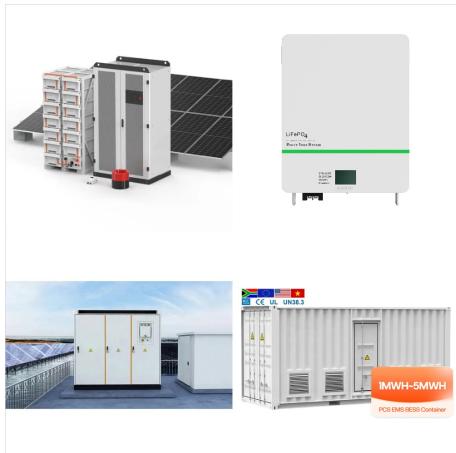
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The market estimate for grid-tie photovoltaic systems for 2019 is positive, not only because of increasing acquisitions by Brazilians - today there are more than 30,000 consumer units with distributed generation - but also because, with the global expansion of a?|



such as Brazil, puts pressure as renewable energy needs to be distributed to achieve a more sustainable transition. PV-grid-tie systems are playing a vital role in this transition to the electricity sector due to its benefits regarding the environment and reduced emissions [1].



The backbone of Brazil's energy transmission is the Sistema Interligado Nacional (SIN), or National Interconnected System, encompassing four regional subsystems: South, Southeast, Midwest, North and Northeast.



Chinese power giant State Grid will build a 1,513-kilometre transmission line and two substations in Brazil's north-east, a region experiencing a boom in wind and solar power plants. (Image: Jose Luis Stephens / Alamy)



A grid-tied electrical system, also called tied to grid or grid tie system, is a semi-autonomous electrical generation or grid energy storage system which links to the mains to feed excess capacity back to the local mains electrical grid.