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Solar parking infrastructure for Paraguay: Technical, economic and environmental preliminary assessment

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Paraguay presents a very large hydroelectric capacity and a great solar energy potential, however energy demand is sustained mostly by imported hydrocarbons, especially in the transport field. At present, the country has fiscal incentives for the purchase of electric vehicles but the lack of charging infrastructure avoids the massive penetration of them. Increasing availability and accessibility of charging stations is predicted to increase acquisition of electric vehicles. Currently, a great concern in the country is related to power distribution system; therefore, introduction of electric vehicle charging points into the power system would represent an additional load. In this context, distributed generation throughout the use of solar energy may represent an interesting solution for the introduction of electric vehicles in the urban transport sector in the short time. The proposal analyzed in this paper is the installation of public solar parking lots in different points in *Ciudad del Este,* around the main green park (*Parque de la República*) of the city. For this purpose was used some tools like as Geographic Information Systems and simulation software of solar power to identify more adequate sites and sizing the stations. Finally, technical and economic assessment was performed. Additionally, emission avoided in terms of CO_2 was estimated.

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Recent advances of predictive big data analytics and cyber physical systems for smart wind turbine systems

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In today's competitive wind energy business environment, companies are facing challenges in dealing with big data issues for rapid decision making for improved performance and asset management. Many wind turbine systems arenot ready to manage big data due to the lack of smart analytics tools. U.S. has been driving the Cyber Physical Systems (CPS) and Industrial Internet to advance future industry. It is clear that as more predictive analytics software and embedded IoT are integrated in today's industrial products and systems, predictive technologies can further intertwine intelligent algorithms to predict windturbine performance degradation and autonomously manage and optimize service needs. The presentation will address the trends of predictive big data analytics as well as the readiness of smart predictive tools to manage wind turbine big data to achieve resilient life cycle management with improved service value.

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