Alberto Coronado-Mendoza, J Fundam Renewable Energy Appl 2018, Volume 8
DOI: 10.4172/2090-4541-C3-056

Virtual microgrid based on 499 KWp PV-System and real time energy monitoring

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The energy reforms that have been developed in recent years in several countries as Mexico, have allowed the installation of renewable energy in the buildings of end users. However, this measure has not been enough to stop the climate change because the energy consumption is still increasing. Therefore, it is necessary to raise awareness and empower the end user about renewable generation and the efficient use of energy. This work proposes an energy management model through a virtual microgrid based on real-time monitoring of energy consumption and photovoltaic generation. Thus, the University Center of Tonalá, which is one of the 16 campuses of the University of Guadalajara, as part of the Integral University Program of Energy Transition has installed a first photovoltaic solar farm of 499 KWp, and through the Institute of Renewable Energies is developing a project for energy monitoring in real time of all its buildings, with the installation of more than 200 current sensors. With this approach, the university community is involved to evaluate their energy indexes and have an active control of their demand that allows them to make decisions about the energy management of each area, so that users are active clients of the microgrid , seeking to maximize virtual gains, which can be reflected in some kind of profits. This proposal can be replicated in other university centers and in public buildings that generate their own electricity.

Biography

Alberto Coronado-Mendoza has completed his PhD at the age of 34 years from University of Zaragoza, Spain. He is a professor-researcher of the University of Guadalajara, Mexico. Colaborates with the Renewable Energy Institute of the same institution. He belongs to the National Institute of Researchers since 2015. He has published more than 7 papers in reputed journals and has been serving as an editorial board member of repute.

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