conferenceseries.com SciTechnol

Expert Opin Environ Biol 2017, 6:4
DOI: 10.4172/2325-9655-C1-018

4th International Conference on
GREEN ENERGY & EXPO
&
6th International Conference on
RECYCLING: REDUCE, REUSE & RECYCLE November 06-08, 2017 | Las Vegas, USA

Technology development on renewable energy generation and applications: Smart tree a future innovative solution

Pedram Asef
Polytechnic University of Catalonia, Spain

Influence of technology development on engineering in which it combines up with use of wind and solar energies. The objective of the discussion relies on a future renewable energy based project. Smart tree uses an innovative solution to provide a number of services through wind and solar energy harvesting, in which the construction materials are up to 60% cycled building materials. A multi-objective design optimization is deeply studied on the wind generator in order to achieve maximum efficiency based on a low speed operation (city application) and generates 5 (kWp) as rated output power with a lightest reachable weight due to generator's position (at the top of tree). One on the other hand, solar panels (PVs) are located on the tree's branches to generate up to 6 (kWp), where losses and related shading analysis are carried out. The next challenge is how to provide the harvested power into the applications. The main power consumption is an electric vehicle charging station (EVSE) which offers DC fast charging for maximum charging rate of 7.2 (kW). Likewise, commercial and environmental issues of the project have been highly considered to reduce CO_2 emissions as a part of green power generation development. In addition, a 3-D video will be presented the whole design technical functions of the project during the conference.

Pedram.asef@estudiant.upc.edu