Microgrid applications belize

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Semantic Scholar is a free, AI-powered research tool for scientific literature, based at Ai2.

REYKJAVIK, JULY 6 - On the 28thof May,Jordan Grant, MSc in Sustainable Energy Engineering, successfully defended his master"s thesis research in which he used MATLAB/Simulink and HOMER to design, simulate and assess individual components of a proposed DC microgrid run on solar and wind for a small island in Belize. Jordan"s work was supervised by Ragnar Kristj?nsson from H?sk?linn ? Reykjav?k and advised by C?sar A. Camacho from UNAM.

Jordan described how he coded the perturb and observe (P& O) algorithm into MATLAB to deduce the maximum power point tracker (MPPT). MPPT is used to extract the maximum power from the given sunlight. Using predicted load files of the island, he modeled the solar and wind resources. He then analyzed the economics of the different proposed systems using the HOMER software.

Ultimately, Jordan deduced a DC microgrid required 20% less power generation to meet the islands load needs as compared to an AC microgrid by eliminating conversion losses that occur when switching between AC-DC, decreasing corona discharges due to a lack of the skin effect. On top of being more technically efficient, the costs would also be reduced and would be lower than an all diesel AC system and an AC hybrid microgrid.

The methodology of Jordan"s study would be applicable to other small islands looking to optimize their power production by eliminating the need for AC power conversion within their power system. To read more about Jordan"s work, click on the following link.

Congratulations, Jordan on an excellent thesis!

By bringing together the best from industry and academia, Iceland School of Energy provides a unique, and comprehensive training for its students. A wide range of courses taught by the very best in their field open a broad spectrum of possibilities for students and allow for individual study designs. Focus is put on close collaboration with industry experts while maintaining high academic quality of the work.

Turtle Island Beach Resort added a Battery Energy Storage System (BESS) and Energy Management System (EMS) in a microgrid in Belize.

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The new system will make it possible for Turtle Island Beach Resort to operate entirely on renewable energy sources and reduce its carbon footprint significantly. Located off the coast of Belize near San Pedro, the resort will switch from a diesel backup generation to a battery-powered clean energy system.

On.Energy was awarded the deployment and operation for an application for Solar Axiom at the resort.

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