Chile microgrid applications

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Display Omitted A novel method for generating daily load profiles for isolated communities is proposed.The social characteristics and lifestyles of isolated communities are considered in the methodology by means of surveys.Family types are identified ...

This paper addresses the issue of planning and management of a so-called smart microgrid, namely a group of interconnected loads and distributed energy resources DER with clearly defined electrical boundaries that acts as a single controllable entity ...

Buildings account for over 75% of the electricity consumption in the United States. To reduce electricity usage and peak demand, many utilities are introducing market-based time-of-use (TOU) pricing models. In parallel, government programs that increase ...

Amigo Solar, a Chilean microgrid provider, announced yesterday its collaboration with a digitized billing system that will help it to alter the utility landscape in the Latin American country. The case shows how solar and IT change the electricity market structures.

Chile"s government has begun a two year-long plan to introduce electricity market legislation that will eventually liberalize the B2C market.Image: Cantus / Wikimedia Commons

Amigo Solar will typically sign a contract with a customer to install microgrid infrastructure, including PV solar panels, smart meters, energy harvesting equipment and energy storage batteries, at the customer"s premises (this can be a household, business, a shopping mall, a cinema etc). A second contract will then be signed off where the customer allows Amigo Solar to operate the microgrid system.

How the system worksFollowing the signing of the contracts, Amigo Solar will install smart meters at both generation and consumption points at the customer"s premises. This allows Amigo Solar to aggregate the demand so that the company can buy electricity at the B2B regulated rate from the incumbent electricity supplier and resell the electricity to the customer at the regulated B2C rate over the microgrid.

Amigo Solar will also install rooftop PV and energy storage systems at the customer"s premises. The characteristics of the solar-plus-storage system change according to the customer"s electricity consumption

profile, so that the installed system together with the digitized platform offered by Amigo Solar can optimize the margins of the customer"s investment.

Specifically, Amigo Solar"s chief business development officer Yuri Sylvester told pv magazine that in Northern Chile, where the solar radiation is very high, "some microgrids will be more profitable by oversizing a rooftop PV system to inject excess energy back in to the grid." In other cases, Sylvester added, "due to difference in self-consumption vs injected energy prices, [customers] would benefit more from having all the energy generated by the rooftop PV system be consumed locally in the microgrid. Still, other microgrids, due to their high peak-demand and low consumption curves, may not benefit at all from a rooftop PV system and instead shaving the peak-demand with a storage system would create better margins to our investors."