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Advanced Metering Infrastructure (AMI) Development in Taiwan

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Abstract

Taiwan AMI has been developing since 2010. Taiwan Power Company (Taipower) completed the fully deployment of industrial customers (about 24,000 meters) in 2013. That can support Taipower to monitor about 60% of electricity consumption in Taiwan. Next, Taipower ran a pilot project of 10 thousand low-voltage meters, and upgraded meter structure with latest IEC 62056 and 61968 standards. In 2018, the residential and commercial smart meters began rolling out, and customers in area which has high electricity consumption will have the highest priority to install smart meters. Last year, Taiwan smart meter installation has reached to 3.46 million with 81.6% electricity consumption in Taiwan. According to Taiwan Government zero-carbon policy, Taiwan needs to complete fully deployment of smart meters by 2035. It is challengeable for Taipower due to Taiwan complicated building environment and open communication solution policy. Therefore, Taiwan smart meter is designed with pluggable communication module and easily to fit the local environment. In addition, there are many smart meters in the basement of building, and some customers deny communication repeater installation in their building. In order to overcome this problem, Taipower is going to study new communication technology and SLA contract. In the present, there are 5 qualified smart meter vendors and 8 qualified communication vendors in Taiwan and these vendors are all independent providers. Although that brings complex integration issues, Taipower has successfully prevented vendors lock-in, and saved much money. The highlight of Taiwan AMI system is that Taipower's meter data management system (MDMS) can provide 4 hours ago or more shorter load profile data to Taipower Apps for customers optimizing their electricity usage behavior. After finishing AMI fundamental construction, Taipower formed three AMI data analysis working groups which are leading about 60 projects of AMI big data analysis, such as Demand Manage, Customer Service, AMI Metering, DER Sales, Smart App, NIALM, Outage event notification, service transformer predictive maintenance, feeder visualization, DER Forecast etc.