



Case Study: Residential Community

South African Community Saved Electricity and Labor Costs with Billion Smart Energy Solution

Residential Community, a medium size residential community equipped with more than 108 households, often experiences high penalties from going over the contracted electrical capacity. To separate the peak demands and customize a reasonable electricity contract, Residential Community adopted the Billion Smart Energy Management Solution to monitor the residents' electrical activities and calculate the maximum of power that would need to supply the whole community. By this way, Residential Community was not only able to negotiate a fare contracted demand with its utility company at an excellent discount, but also to reduce the labor spent on reading the metering data from old meters.

Location: South Africa

Date: 2015

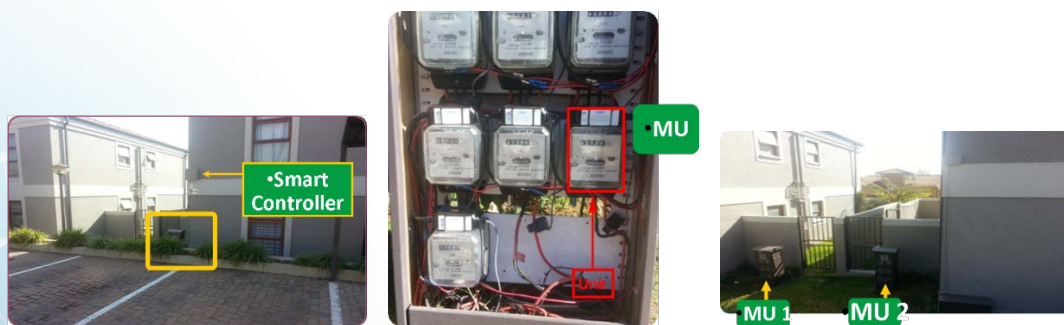
Challenges

In South Africa, most local utility companies are only responsible for distributing electricity to residential communities instead of to individual households; and the Residential Community is one of the examples. Residential Community receives the voltage delivered from its local utility company and managed to distribute this power to its following residents. The case is that the utility company charged Residential Community at a monthly electricity fee, and Residential Community split the cost with its households based on how much energy each one of the households has consumed. Since it was impossible to predict the electrical activities of every household, Residential Community often went over the contracted electrical demand and was billed with heavy penalties by its utility company. Another pain is

that Residential Community paid workers to read the metering information and convert the amount of electricity into money. The process was time-consuming and expensive. Residential Community was in search of an energy management system that could effectively solve the above problems without retrofitting the entire electricity delivery system.

Our Solutions

We provided our Smart Energy Management Solution to assist the community to gain timely insight into real-time energy consumption. Combining metering devices, Internet gateways, and a cloud-based platform, Residential Community was able to calculate and estimate the total amount of electricity which would need to meet the demand of its residents. Smart Energy Management Solution also allowed the community to self-schedule a buffer to control the demands during peak hours. When the electrical usage almost reached the capacity, the system automatically sent out urgent emails to prevent the community from going over the contracted demands.



Description:

Two-meter units that contained 18-24 traditional electrical meters were placed inside of the Kearsney Community. Smart controllers/Internet gateways were deployed right next to the meter units and could support the data transmission up to 30 electrical meters through the wireless signal. The internet gateways sent the energy consumption data collected by the smart meters to the cloud-computing platform.

In the project with the Residential Community, Billion offered the Smart Energy Management Solution:

- Controlled the peak demands to help the community avoid penalties issued by its utility company.

- Reduced the labor costs spent on generating monthly electricity bills from the residential households.
- Allowed the community to negotiate a suitable electrical capacity at a more cost effective rate.
- Reduced the monthly fixed fees and prevented potential power outages resulted from concentrated peak time demands.

Benefits

The Residential Community was able to customize a contracted capacity with its utility company and re-adjust it to become 10% lower, saving up almost 200KW of electricity every month. Knowing when the peak time for electrical demands was, Residential Community strategically set a suitable electrical capacity level during the peak hours and avoided \$5000 USD of heavy penalties. Overall, Residential Community saved a vast amount of money spent on electricity and labors, as well as conserved the community by minimizing energy wastes.