Science, Technology, Research and Innovation for Development (STRIDE)

Analytics Monitoring for Power Systems (AMPS)

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GRANTEE:	Ateneo de Manila University (ADMU)
PRINCIPAL INVESTIGATOR:	Dr. Erees Queen Macabebe
INDUSTRY PARTNER:	Solar Solutions, Inc.
GRANT PERIOD:	September 1, 2016 to August 31, 2017
CONTRACT AMOUNT:	Php1,000,000 (approximately USD21,300)

Keeping track of energy consumption

The cost of electricity in the Philippines has continually increased in the past years. This increase has slowed the momentum of the nation's economy due to its impact on business operations, end-users, and consumers. The middle class and vulnerable sectors in particular feel the repercussions. As a result, investments in renewable energy that would cut cost without sacrificing adequate power supply to commercial and residential structures have gathered significant attention.
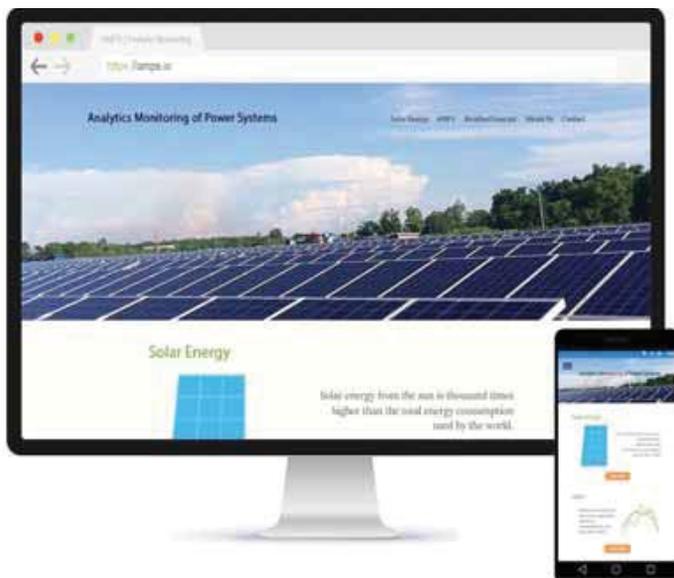
Web application and android application wireframe design of the AMPS

Renewable energy in the Philippines is becoming more widespread. The Department of Energy (DOE) has been promoting various projects that encourage use of renewable energy like the Net-Metering scheme, the first non-fiscal incentive mechanism fully implemented under the Renewable Energy (RE) Act of 2008. Through the installation of solar photovoltaic (PV) panels up to 100 kW, house owners and commercial establishments can partly satisfy their electricity demand by themselves. Excess power generated from the solar PV installation will be delivered to the local distribution grid of the electric distribution utility and will be used to offset the end-user's electricity consumption. Thus, end-users become "prosumers," or producers and consumers of electricity at the same time. In effect, end-users can generate savings on their electricity bill and protect themselves against rising prices.

Energy monitoring systems like Watt Smart, an online energy management platform that calculates real-time consumption of electrical appliances individually and analyzes energy behavior, is another positive development favorable to end-users. With computed data sent and stored into the system's cloud server, end users can access and review their aggregated consumption using an android application. However, since this system is offered with a monthly rental, it does not cater to the majority of Filipinos.

To complement these ongoing initiatives and to address concerns regarding electricity supply, demand, and consumption, ADMU with support from USAID STRIDE, has come up with an innovative research project on the AMPS.

Potential application and benefits

The AMPS is a tool that tracks household solar energy generation and power consumption from anywhere at any given time via mobile or web applications. It works perfectly on solar/PV installations and guides and provides end-users information about electrical consumption and power generation.
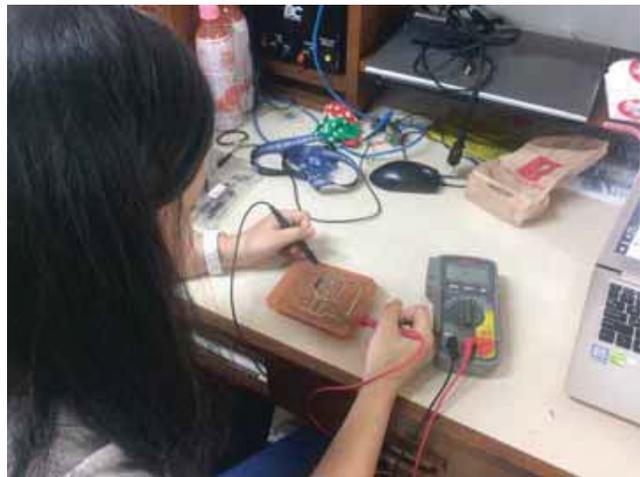
The benefits of the AMPS to consumers are as follows:
- View the daily, weekly, and monthly average consumption with computed cost in an easy-to-read graphics;
- Download the daily, weekly, and monthly energy data report; and
- Help set the monthly budget for electricity to help cut energy consumption.

Providing households, commercial establishments, and industries with meaningful feedback regarding their consumption practices results in significant energy savings and engages them to participate in the energy sustainability solution. In this regard, ADMU, in collaboration with Solar Solutions, Inc., has prepared a blueprint to commercialize the AMPS.

Solar Solutions, Inc., as industry partner, will assist the research team in the deployment of the prototype and the development of the business plan. Considerations include: a) field considerations and testing plan for

Testing of hardware and circuit design

the prototype; b) identifying existing RE installations for prototype deployment; c) preparation of the business plan, business model canvass; and d) exploring together the road to commercialization.