Lighting with more viable microgrids

pratiti TECHNOLOGIES

Case Study

IESA India Energy Storage Alliance

The Customer

The India Energy Storage Alliance (IESA) a not-for-profit initiative was launched in 2012 by Customized Energy Solutions to promote Energy Storage and Micro grid technologies, along with their applications, in India

IESA has a vision to promote Electric Energy Storage (EES) technologies and related applications in India by creating awareness among various stakeholders, to make the power sector more competitive and efficient and in turn improve industry productivity. IESA provide insights to technology developers and system integrators on the policy landscape and business opportunities in India through interactions with key stakeholders.

IESA encourages stakeholder meetings with key financial institutions, microgrid project developers and technology suppliers. IESA evaluates current financing mechanisms available for such innovative and emerging products, and proposes any alternate financial models that can accelerate adoption of these technologies in India.

Background

The role of energy access in socioeconomic development of individuals and communities has been well established. But In remote parts of India anomalies are startling, today people in remote villages in India have access to mobile phones, but still nearly 300 million people, almost one-fourth of India's total population, lack reliable access to electricity.

In the remote parts of India where electric transmission lines have not reached, microgrids are transforming millions of lives by providing reliable access to energy, exploiting locally available resources. A microgrid deployment harnesses clean power generation like wind, solar etc. instead of polluting fossil fuel based generation. A microgrid can give residences enough power to run motors, process agricultural products and power freezers, rejuvenating their lives.

Business Challenge

Adopting and successfully running a microgrid project is a big technological and social challenge. A single micro grid project involves generation unit, storage unit, control centre and distribution grid. A typical microgrid project will have multiple stakeholders like developers, financers, equipment manufacturers, maintenance agencies, end users etc. Now imagine hundreds of such projects, located in inaccessible parts, across geographically diverse and vast country like India.

Moreover, a Micro grid project is not deemed successful by mere installation and commissioning. Maintaining and generating desired level of electricity 24*7 for years together is essential to make a project economically viable.

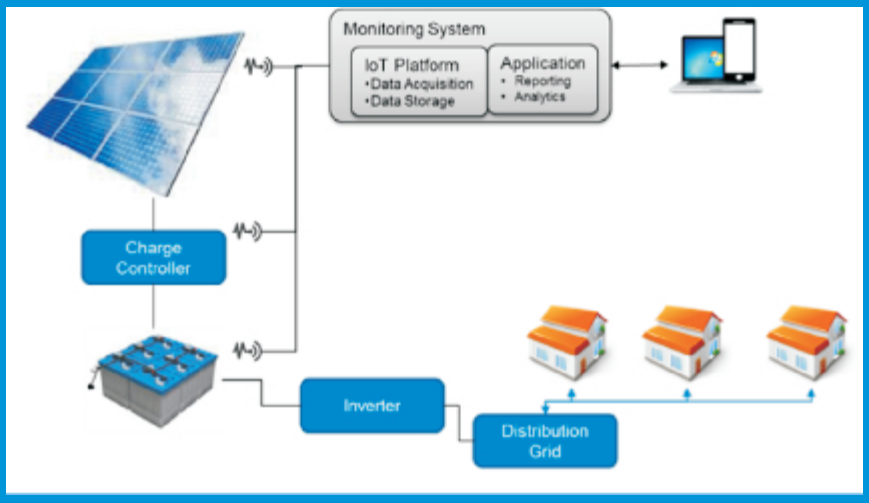
IESA observed that remotely scattered microgrids were facing many technological, social and adoption related challenges.

E.g. 1) During billing cycle, there is no data available about uptime, generation and consumption of electricity from the microgrid. This made pinning accountability difficult, creating disputes between the financer, project executor and end customer.

2) A project financer and project developer sitting far away from the site had no visibility of demand/supply, thus right product options in terms of batteries, variable tariffs etc. could not be made available to end users, making the overall project inefficient.

IESA also found that technology developers, investors, equipment suppliers and system integrators were scattered making collaboration between them difficult.

The Solution



Pratiti Technologies and Customized Energy Solutions (ww.ces-ltd.com) partnered to develop technology to support this MICRO initiative. A Cloud based IoT Solution developed to connect all Microgrids across India. Solution leverages think BizIoT platform from Pratiti Technologies. This enables MICRO interoperability to connect with different types of invertors used in microgrids.

Cloud based system provides access to various stakeholders right from proposed sites to operational sites from anywhere and anytime. Data captured from microgrid is transmitted at regular intervals and various value added analytics is provided. This solution provides on-going reporting of required information as well as on-demand reporting.

Technical Specifications:

- Web based front end (HTML5)
- J2EE based business server
- Data acquisition is done via industry standard protocols like MQTT, FTP, HTTPS

Benefits

MICRO initiative resulted in significant business benefits for all stake holders. As overall efficiency of the microgrids increased and the projects became more viable. The biggest benefit has been in the lives of the end customers. We take pleasure in seeing happiness when we see households using electricity for the first time, we feel blessed that children no longer burn their eyes from kerosene when they are studying.

We routinely see people starting new businesses, carpenter now use power tools. The mill which earlier used to run on expensive diesel generators have been able to drastically reduce their power bills.

At Pratiti we were proud to do our bit for the local community, as access to reliable and quality energy boosted life (especially rural communities) and accelerated socio-economic development.
Technologically, real time monitoring systems made monitoring power generation, grid operation and observing usage patterns possible. Data gathered is assisting in improving design and performance of equipment like battery, solar panel etc. The archived data is now used to build analytics, for predicting failures in advance and optimize the life of installed equipment.

As the power generation and supply was monitored real-time, consumption could be monitored, corrective actions taken on time, avoiding disputes at the time of billing. Carbon credits could now be earned from energy generated by micro grids, as it was possible to calculate CO_2 averted due to solar usage.

MICRO also made collaborations between stakeholders, thus helping sharing of guidelines, best practices for grid design, installation and operation possible.

Services We offer

Connected Services

Enhanced Customer Experience

Digital Corporate

Product Development (PLM)

pratiti TECHNOLOGIES

Global Headquarters

100, NCL Innovation Park,
Dr. Homi Bhabha Road,
Pune 411008, India
contact@pratititech.com
+91 90960 03210

United States

Cupertino, CA
contact-americas@pratititech.com
+1 (214) 714 0750