

ElectronVibe Case Study Series

MODERNIZED GRID AND CONSUMER MANAGEMENT PILOT

WITH VILLAGE ENERGY AND APSPDCL



ABOUT VILLAGE ENERGY

Village Energy aims to digitize the electricity network in emerging markets and uses artificial intelligence to make grid-based power cheaper, cleaner, and more reliable.

SERVICES

Village Energy's solution includes:

- A single integrated 'smart' smart meter that has a rich software processing power and flexibility
- Provides a data analytics app for customers to measure and track consumption
- A platform that processes energy data through AI/ML to bring together demand response, voltage management, DERMs
- An integrated payment app with real-time contracting, reconciliation, validation and settlement engine

VALUE PROPOSITION

Village Energy offers some critical points of differentiation when compared with the pure-play smart meter, including:

- High resolution advanced metering
- Flexible revenue and billing features
- Automated and granular (sub-household) demand response
- Peak load management
- Theft detection and intervention
- Distributed Energy Resources management (solar and energy storage), etc



Founded in 2018
Founders: B. Hamilton, Y. Power, W. Liubinskis



Domain
Smart Grid



Program Winner
ElectronVibe 2021



Headquartered in
Perth, Australia



Website
www.village.energy

THE PILOT

ESTIMATED IMPACT

1,00,000

Consumers connected under the full rollout of the pilot* with all available features enabled



Rs. 3929**

Average savings per consumer per system installed in the first year



Rs. 39.2 Crore**

in increased profit for APSPDCL in the first year due to Village Energy's solution



*Additional rollout to all 100,000 consumers pending
**Assuming a CAPEX investment business model

GREATER IMPACT

for APSPDCL

Approx.

68 Lakh

LT connections in the APSPDCL network



Approx.

2656 Cr

Potential Savings for APSPDCL in the first year



South AP State (118,119 sq. km)

12.6 million consumers

Units sold per annum: 35,159 MU

CHALLENGES

- APSPDCL faced challenges in meeting the demand (mainly seasonal peak demand) this led to significant dissatisfaction among customers
- Infrequent billing due to limitation of resources has led to poor collection efficiency, customers, mainly the low-income customers cannot afford accumulated bills of multiple months leading to low revenues

SOLUTIONS

- Village Energy's first pilot demonstration was executed in APSPDCL's supply area, at Pagidiroy village, Kurnool district.
- The components of the solution included a low-cost IOT device called the Village Energy Data Acquisition Device (VEDA), installed at each supply and demand point
- Village Energy installed its hardware solution to all connections under one low-voltage distribution transformer (about 135 connections)
- The cost of hardware would be Rs. 4500 with separate software cost (depending on features requested - charged on a monthly basis) with annual savings at an average of Rs. 7000 to 13,040 per year depending on services availed

OUTCOMES

The results after few months of commissioning of Village Energy pilot are shown below:

1

Peak load reduction by 13%, limiting the demand during peak times to ensure electricity supply is maintained within network capacity limits using automated demand response

2

75% reduction in power outages, owing to demand management and supplementary backup supply (backup diesel generator supplying for a duration of the project, it was consequently decommissioned)

3

100% billing and collection efficiency, all customers were billed digitally and shifted to prepaid billing, to help them manage their monthly energy budgets and ensure recovery for the DISCOM

4

30% reduction in cost to supply for APSPDCL with supply from low-cost solar energy to meet demand locally

5

Increase in consumption by 6% in first 2-3 months of commissioning of the project with 15% increase in households consuming 10-50 units per month and zero households consuming less than 10 units per month

6

50% of daytime demand met from solar rooftop sources thanks to the DERMS solution

APSPDCL is currently evaluating the proposal to expand Village Energy's solution beyond Pagidiroy to a minimum of 1,00,000 customers