# bidgely ENTERPRISE ANALYTICS

LEVERAGING ENERGY LOAD DISAGGREGATION FOR GRID PLANNING, MANAGEMENT AND OPERATIONS

Bidgely's patented Load Disaggregation technology provides both customers and utilities with visibility into home energy consumption down to the appliance level. This technology can be applied to grid management with highest accuracy, reducing manual efforts to analyze energy demand, improving cost to serve, and increasing grid reliability. Learn more about the core technology <u>here</u>.

# Gain Visibility Into Distributed Energy Resources (DER)

Bidgely's patented disaggregation technology allows for upwards of 90% accurate detection and estimation of Distributed Solar Generation as well as EV Charging Loads and Batteries (that are on net metering). Operations technology systems such as ADMS or DERMS will receive accurate forecasting and estimation of aggregated consumer loads and resources (gen, batteries, EV) from AWB, enabling accurate real time or future studies of the grid for security and energy balancing as well as for maintenance scheduling.

## ΕV

Bidgely provides EV home charging usage (Lvl 1,2,3) for each customer down to the sampling rate level. Overall ownership, as well as the size of chargers and geographic distribution ownership can be detailed and aggregated to substation/feeder/transformer levels.

- Better plan for EV charging infrastructure by seeing the current total EV charging demand
- Promote EV program adoption among accurately detected EV owners
- EV Charging Load For One Customer



#### Solar

Bidgely is able to detect homes with solar panels for their distinct data signature over the course of the year and estimate their solar energy production without a separate meter feed or real time telemetry.

- Improve rate planning and rate making, and supporting PV solar rate cases
- Provide grid stability during outages and maintenance, understanding the flow of solar energy onto the grid
- Manage peak load planning, by understanding the effects of solar down to the feeder or transformer level to inform semi-annual peak load planning sessions and necessary capital upgrades





# Optimize Grid Asset Utilization

Bidgely provides information based on consumption data that is scalable to every home in the service territory, and can therefore be applied with high confidence to non-wire alternative (NWA) programs. Utilities are provided with over 10+ key appliance energy consumption curves (such as electric heating, air conditioning, water heating, EV charging, pool pumps, etc.).

- Identity shiftable and non-shiftable peaks & energy loads down to the customer level
- Accurately identify potential grid hotspots including by the substation, feeder, geographical region allowing for dynamic reallocation reducing cost to serve
- Determine if NWA is possible or if a bump in infrastructure is needed



Energy loads aggregated by substation & region

### High Accuracy, On-Demand Load Research

Bidgely's level of disaggregation accuracy enables the use of meter-based analytics to provide a thorough & reliable knowledge of trends, and general behaviour of the load characteristics of the customers serviced. Filter by geography, time, weekdays or weekends, as well as customer segment filters like rate plans, or house ownership, including ad hoc queries

- Improve your forecasting models for short term and long term reducing potential energy cost
- Improve rate design by considering appliance loads in use



Hourly usage analysis of a single appliance

- Target program enrollment/ recruitment efforts based on detected appliance inefficiencies
- Run soft M&V evaluations of energy efficiency or peak demand response events to measure the impact in real-time

Frequently Asked Questions

- 2. What other utilities utilize this? Duke Energy, NV Energy, Portland General Electric, Avista, Ameren, PSEG Long Island, PNM, Fortis BC, New Hampshire Electric Co-op and more
- 3. Can your solution handle large amounts of meter data? Yes, Bidgely currently handles over 25 million meters of residential and SMB customers.
- 4. Why can't my data scientists already do this? Accurate energy load disaggregation is difficult to replicate, it would be akin to trying to build voice recognition. Bidgely removes this hurdle allowing your data scientists to do what they do best analyze large amounts of data for specific business cases but now with exponentially more power behind them, making them highly efficient and accomplish more than before. With years of experience in load disaggregation and applying artificial intelligence to household consumption data, no other company is better equipped than Bidgely to help utilities unlock the full potential benefits of analyzing AMI data.

<sup>1.</sup> What data is required? AMI data, 15mins, 30mins, or 1hr intervals