bidgely AI-Powered Energy Disaggregation to Streamline Non-Wires Solutions

FIVE STEPS
TO LEVERAGE DISAGGREGATION TO REDUCE PEAK LOAD

1 IDENTIFY   **2** ASSESS   **3** PROGRAM
4 TARGET   **5** COMMUNICATE

1 IDENTIFY GRID SECTORS IN NEED OF A NON-WIRES SOLUTION

Utilities are regularly engaged in assessing grid function to determine which sectors are coming under strain and can evaluate a non-wires solution to shed load.
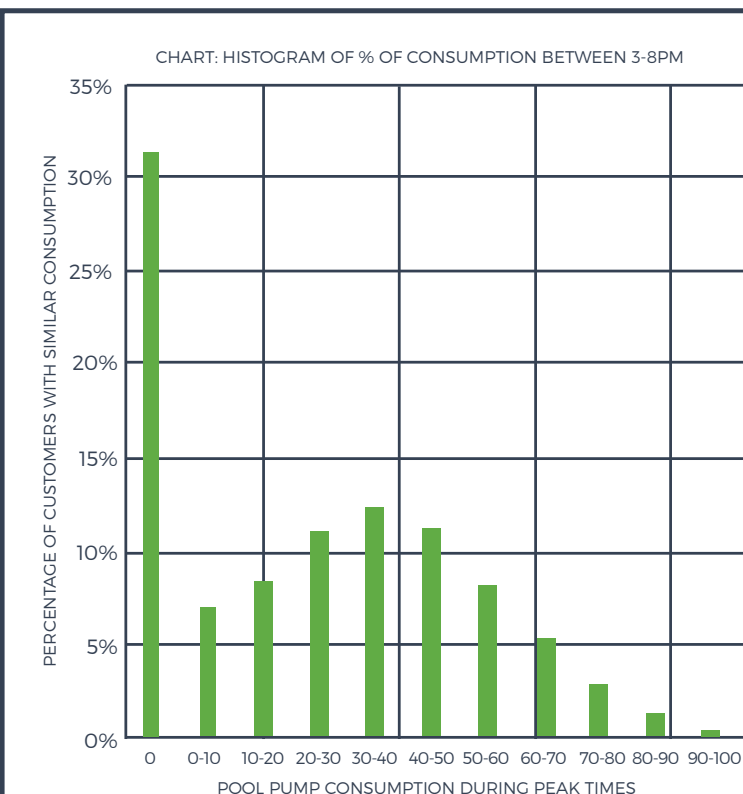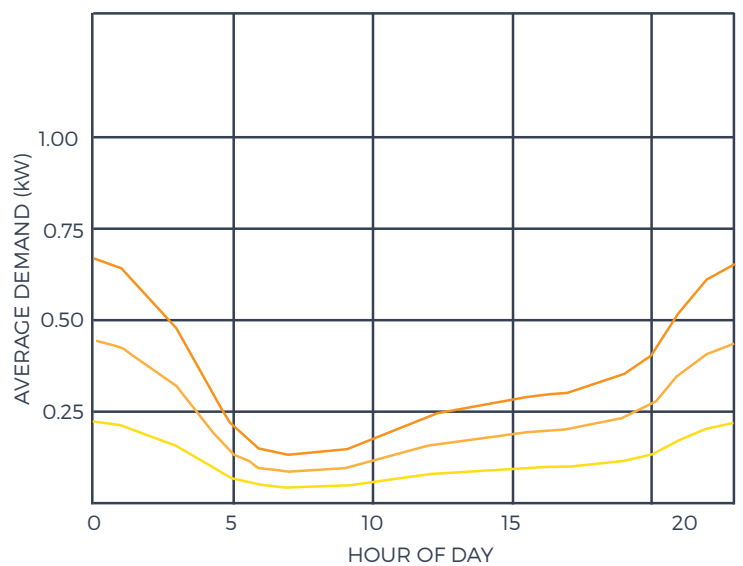

APPLIANCE	NWS REGION	OVERALL REGION
ELECTRIC SPACE HEATING	12% ownership	16% ownership
AIR CONDITIONING	79%, of which: • 30% window A/C • 70% central A/C	57%, of which: • 45% window A/C • 55% central A/C
WATER HEATING	7% ownership	19% ownership
EV CHARGING	2.5% ownership	0.7% ownership
POOL PUMP	15%, of which: • 73% single speed • 27% variable speed	6%, of which: • 89% single speed • 11% variable speed

2 ASSESS APPLIANCE OWNERSHIP BY REGION

With grid requirements identified, the next step is to leverage AI-powered disaggregation to quantify appliance ownership across a specific geographic area. This insight reveals which programs have the greatest energy saving potential and how such programs can be optimally targeted.

3 DEVELOP YOUR LOAD SHIFTING PROGRAM

Using AI to analyze aggregate customer behavior over a geographic area, utilities are able to fine tune load shifting programs to optimize outcomes. For example, by examining lower 10%, upper 90% and average EV charging per hour in a given region, a utility can determine how much EV charging is occurring during peak times and whether an EV charging load shifting program is a wise investment.

4 TARGET PRECISELY THE RIGHT CUSTOMERS

With AI-informed disaggregation, utilities can pinpoint what time each customer is powering an appliance or activity. Knowing when a customer runs a pool pump, for example, and for how long, reveals a highly targeted list of customers who run their pumps during peak times and who are therefore ideally suited for load shifting programs. Customers who demonstrate greater than 40% of pool pump consumption during peak times would be the ideal customers to target with pool pump load shifting programs.

CHART: HISTOGRAM OF % OF CONSUMPTION BETWEEN 3-8PM

5 COLLECT CUSTOMER FEEDBACK AND REINFORCE LOAD SHIFTING VIA ONGOING TWO-WAY COMMUNICATION

Disaggregation allows for the delivery of a 100 percent itemized bill, allowing customers to understand how much energy is used by each of their appliances and activities and how to use that knowledge to reduce energy consumption and costs. They can also see the impact of load shifting behaviors to provide consistent reinforcement of good behaviors and course correction when additional behavioral changes are required.

Your appliance breakdown

Always On — €30
Entertainment [High >] — €13
Cooling — €9
Laundry — €6
Lighting — €5
Other — €4
Refrigeration — €2

EXPLORE USAGE

For more information about using AI-powered disaggregation to streamline non-wires solutions, visit:

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