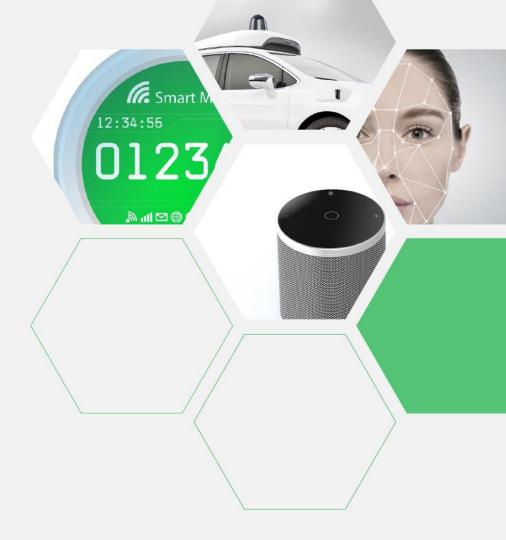


Artificial Intelligence
With Smart Meters
Delivering Value
for Energy Providers





### About Grid4C Ranked #1 predictive analytics solution By GTM Research

- AI-Powered Energy Insights
- Founded 2013 by Dr. Noa Ruschin-Rimini
- **HQ: Austin, TX**
- Israeli start-up with R&D in Israel
- Deployed on 4 continents; billions of predictions every day for millions of meters



#### Grid4C selected as Top Utilities Technology Solution Provider 2018, CIO Review

"We are glad to announce Grid4C in our annual selection of Most Promising Utilities Technology Solution Providers 2018," says Jeevan George, Managing Editor of CIO Review

#### gtm. Leading Vendor Solutions Description Rank Vendor Platform capable of being deployed

- Deployed automated methodology





IoT & Analytics for Utilities

Grid4C



**KEY INNOVATOR IN THE** 

**UTILITY IOT MARKET!** 







# About Grid4C Ranked #1 predictive analytics solution By GTM Research

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## Smart Meter Data Enables

Predictive Operational Analytics

### Predictive Model for Every Meter



- Leverage smart meter and IoT data, along with weather and customer data
- Individual models for every premise are generated at the meter level
- Models predict hourly usage for 31 days in advance



### Granular Load Forecasting



- Meter level models for every premise are aggregated up to transformer / substation / feeder levels
- Generates bottoms up view of forecasting needs





## Optimize and Plan for DERs

**M** Smart Meter Forecast **≥** | | | | | | | Grid4C
Foreseeing Pow Mississaugao O NEW London Hamilton NEW YORK PENNSYLVANIA

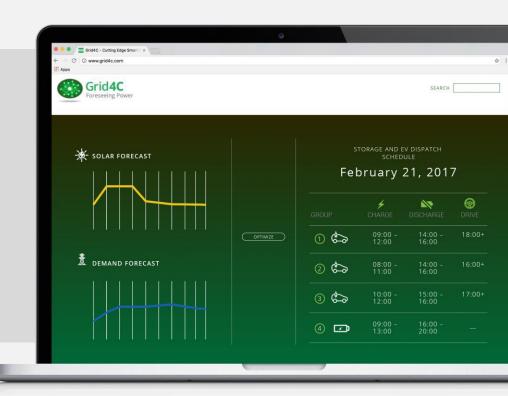
Predict failure of grid assets from Smart Meter data



### Optimize and Plan for DERs

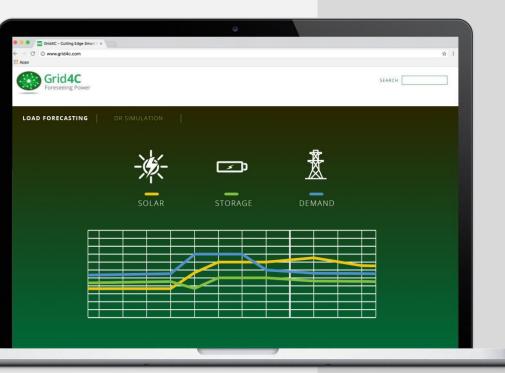


- Forecast and optimize multiple resources, including EVs, solar, storage, etc.
- Predictive models generated from Smart Meter data can predict adoption of solar and other Distributed Energy Resources









# Demand Response Simulations and Optimization

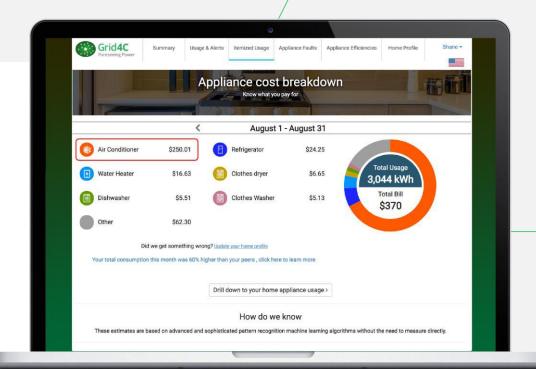
Demand Response can be simulated at the appliance level with models generated for every premise



### Home Appliance Disaggregation



- Usage and Costs for Main Appliances
- Identifies customers with Electric Vehicles and Solar



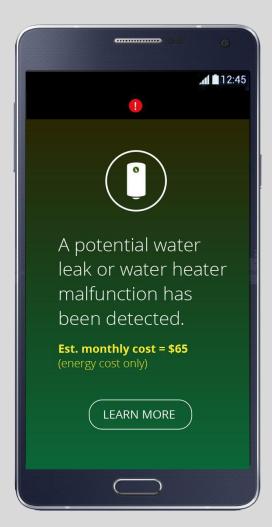


Anomaly Detection



Personalized usage patterns uncover highly granular anomalies at the appliance level







## **Fault** Detection and Diagnostics

Alert customers about
 malfunctions and costs that
 matter to customers

Value-add service to generate revenues or provide customer value

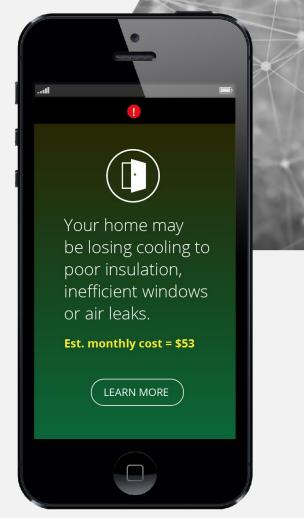




## Fault Detection and Diagnostics

- Alert customers
   before appliances break
   or need repairs
- Show estimated costs

## Insights for **Home Envelope**





- Valuable insights to help customers save money and energy
- Estimate energy costs to customer

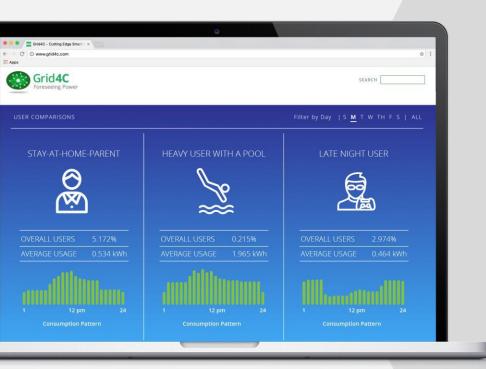




Smart Meter Data Enables

Predictive Customer Analytics





### Customer Segmentation for Targeted Marketing

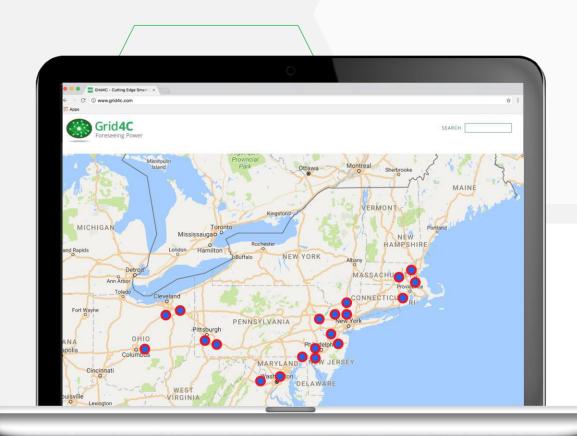
Models generated by clustering customers with similar load profiles and appliance ownership can be used for Targeted Marketing



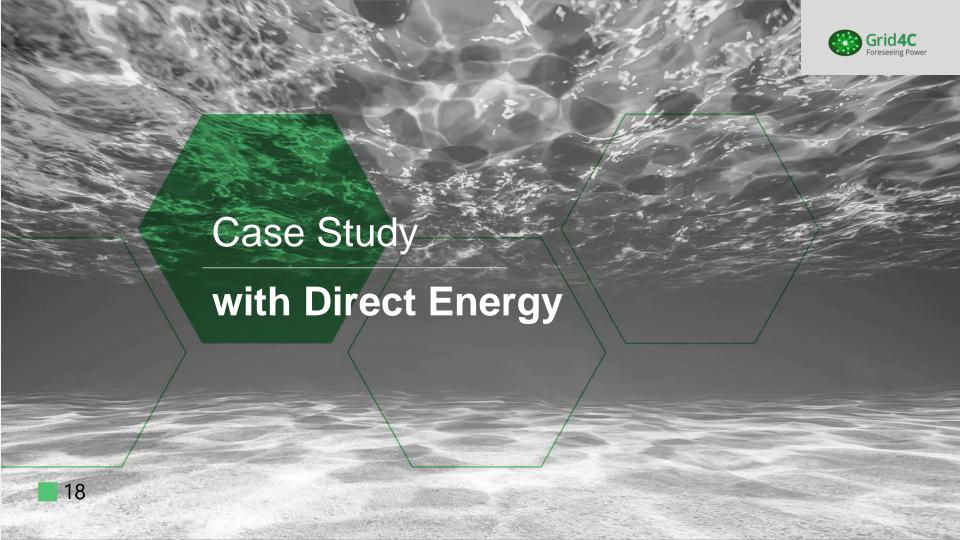


Customer
Segmentation for
Targeted
Marketing

Predict customer trends for planning and targeting







### Case Study—Direct Energy

- Selected by Direct Energy to deliver insights and analytics for "Bill of the Future"
- Launched in April 2015; over 1.5M customers
- 70% of customers engaging with mobile app







### Case Study—Direct Energy

- Shows actual costs and energy use of every household appliance
- Detects faults and anomalies for major appliances
- Delivering new revenue streams by selling leads to trusted repair company











