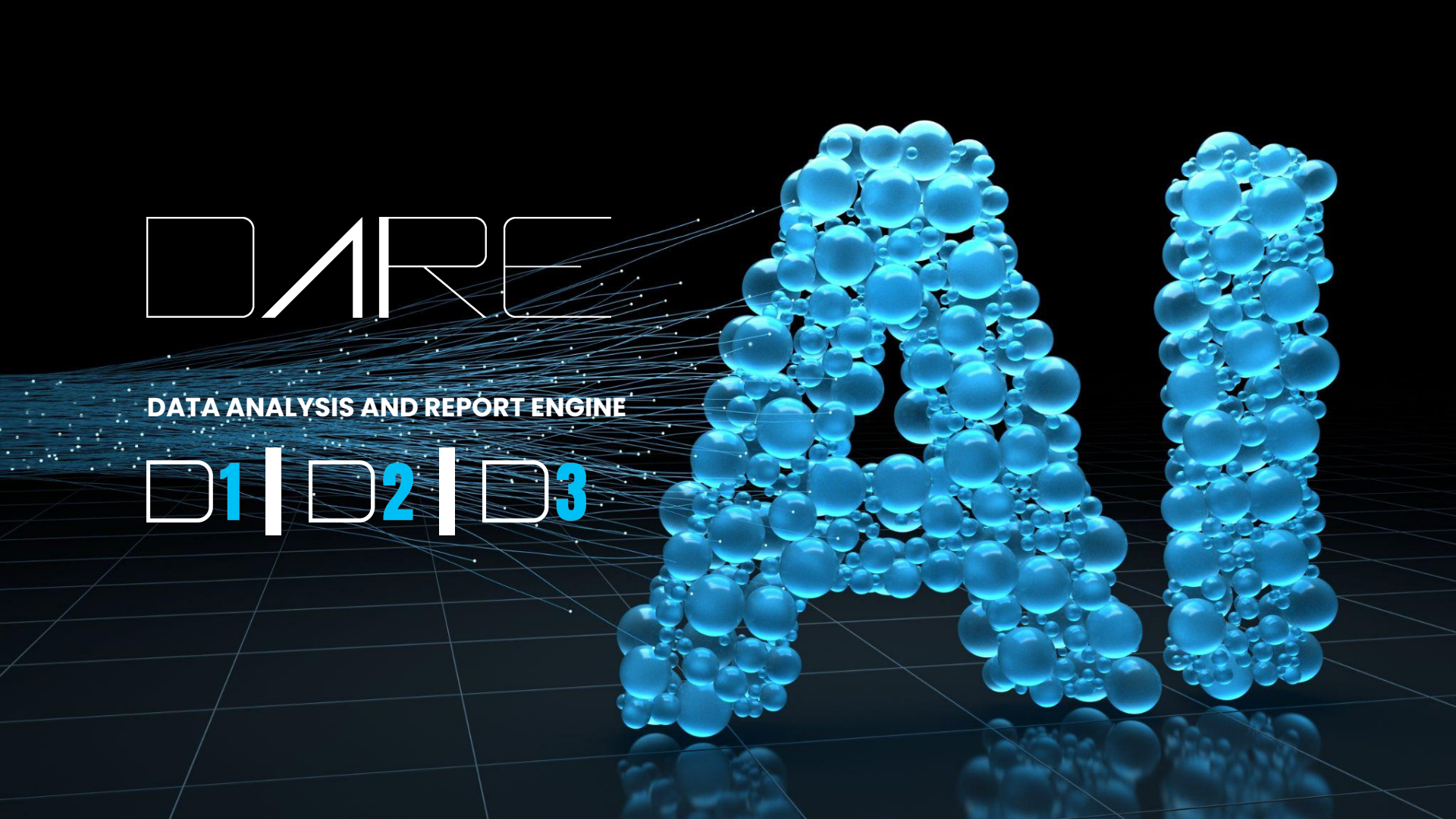




DARE

DATA ANALYSIS AND REPORT ENGINE

D1 | D2 | D3

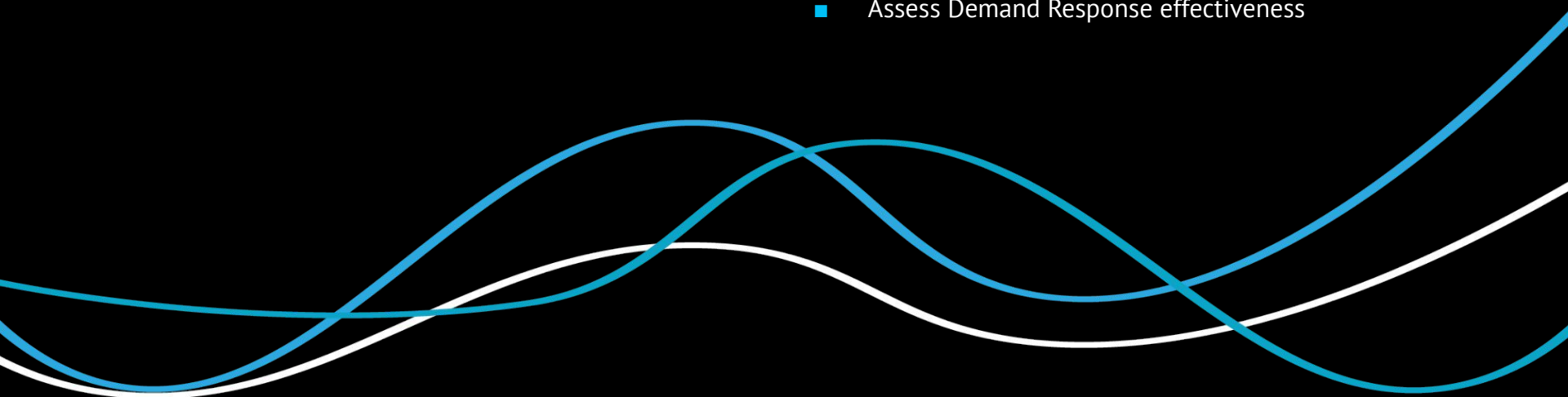


Data Analysis Server | 1

QUICK AND ACCURATE ENERGY DATA ANALYSIS (CBL, RRMSE)

Benefits

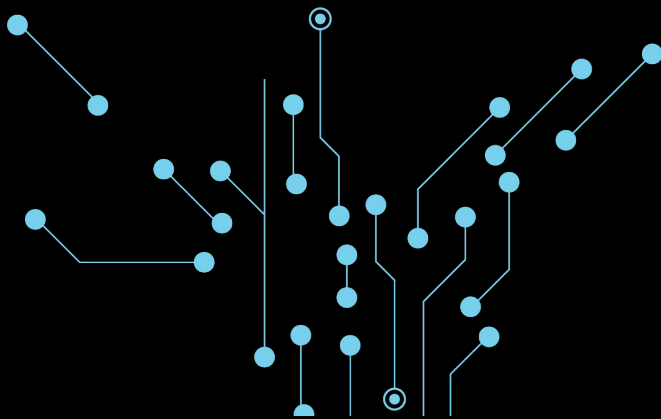
- Validate forecasts with actual power data
- Ensure data integrity and consistency
- Measure energy efficiency initiatives
- Assess Demand Response effectiveness



Decision Dynamics | 2

TIME SERIES FORECASTING

for most optimal and profitable energy decisions



Daily demand power forecasting

- Optimize power generation
- Prevent outages
- Ensure reliable energy delivery for utility companies and grid operators

Solar power generation forecasting

- Optimize grid integration
- Manage variations in solar output
- Maximize the utilization of renewable energy resources



Decision Dynamics | 2

SIMPLE STEPS, MEASURABLE IMPACT.

**Model
training**



**Model
serving**



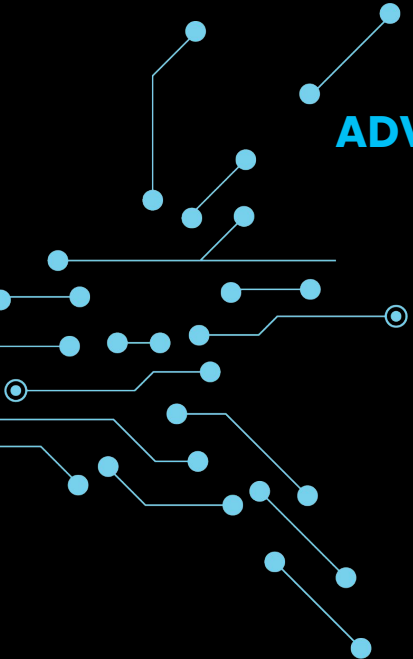
**Insight
leverage**

- Use your **own dataset** or access data directly from **Amazon S3 storage** for seamless integration
- Get a **comprehensive analytics report** for deep insights:
dataset overview | statistical information | visual analysis plots
- Get highly accurate **forecasting visualization** for data-driven decision making





Decision Dynamics | 2



ADVANCED PREDICTIVE AI

No more inaccurate predictions

AI captures complex patterns and relationships, delivering accurate predictions.

No more data handling challenges

The system efficiently processes diverse data sources, incorporating external factors for comprehensive insights.

No more outdated forecasts

With real-time updates, the system quickly adjusts forecasts to changing conditions.

No more delays in processing

AI enables efficient processing of large datasets, ensuring accurate and swift forecasting.

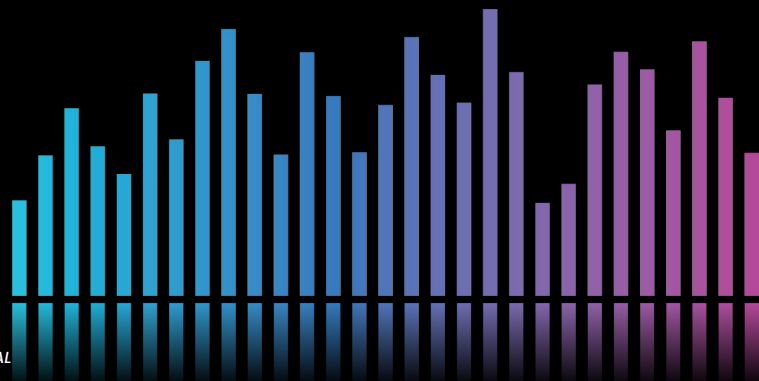
No more static predictions

The system continuously learns from new data, enhancing prediction accuracy over time.



Data Discovery Den | 3

DYNAMIC VISUALIZATION for actionable time series energy insights



Link various **data sources**
(EIP VPP Platform, Amazon S3, CSV files)



Analyze **time series data** of distributed
energy resources



Obtain **meaningful information hidden** in
a large amount of original data



Create and share **interactive data reports**



Data Discovery Den | 3

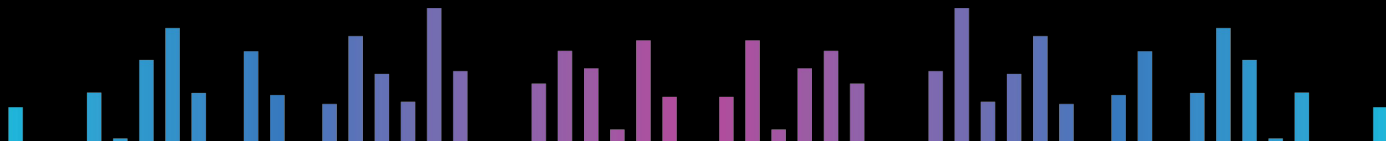
TIME SERIES CHART EDITOR

Versatile chart customization

- Intuitive time series chart editor
- Selection of various chart types (line, column, area, bar, etc.)
- Real-time data interaction (add or delete values)

Efficient data analysis and visualization

- Dynamic data aggregation (total, average, minimum, maximum)
- Seamless data filtering (display specific periods)
- Monthly interactive chart for automatic updates



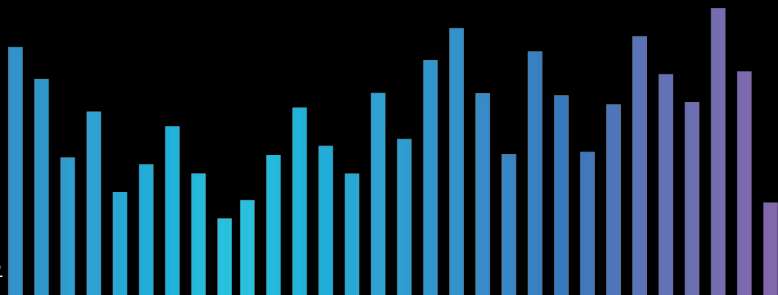


Data Discovery Den | 3

INTERACTIVE MONTHLY REPORTS

“**INTERACTIVE REPORT**” is a report with automatically updated data that guarantees:

- **Enhanced user engagement**
Keep stakeholders engaged with dynamic charts
- **Timely decision-making**
Empower decision-makers with the latest data, enabling timely choices based on latest information.
- **Tailored visual insights**
Customize report elements like titles, subtitles, and descriptions to fit unique requirements, enhancing visual appeal and understanding.
- **Safe sharing and collaboration**
Share web-based reports with others, promoting seamless collaboration and facilitating data-driven discussions





DARE CASE STUDIES

ENHANCING UTILITY EFFICIENCY WITH GRID-CONNECTED ESS ALGORITHM

CUSTOMER PROFILE:

Utility company in Korea

CHALLENGE:

Maintaining power reserve over 20 MW while maximizing revenue from discharging when reserve forecast falls below the threshold.

GOAL:

Optimize ESS operation for profitability using AI.

SOLUTION:

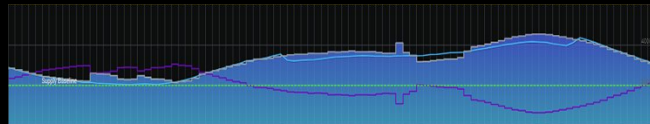
DARE Data Analysis to design cutting-edge grid-connected ESS algorithm

ALGORITHM APPLICATIONS:

1. TPCP (Trading Period Capacity Payment)

Algorithm: Applied during November to February for efficient capacity management and revenue optimization.

2. Arbitrage vs Peak Cut Analysis: Identifying the best revenue-maximizing option by analyzing peak forecasts and tariff data.



RESULTS:

Enhanced Revenue Generation: Previously, the ESS remained underutilized with manual arbitrage. Now, our algorithm empowers the utility to optimize operations and generate substantial revenue.

Efficient ESS Management: Ensuring the power reserve stays above the desired 20 MW while capitalizing on additional revenue opportunities.

Data-Driven Decision-Making: Accurate insights lead to better-informed decisions for increased profitability.

UNLOCKING PROFIT POTENTIAL: AI-POWERED VPP INTERWORKING PV-ESS ALGORITHM

CUSTOMER PROFILE:

PV owners and aggregators

CHALLENGE:

- excess PV generation leads to curtailment.
- day-ahead bidding carries penalties if actual generation falls short of the bid.

GOAL:

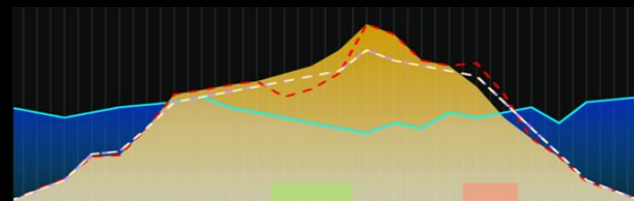
Achieve precise PV generation forecast to secure winning bids.

SOLUTION:

DARE Market Analysis and Forecast for Revenue-Driven PV-ESS Management

ALGORITHM APPLICATIONS:

1. **AI-powered optimal PV operation:** Empowering informed bidding decisions through precise generation forecasting.
2. **ESS integration:** Interconnecting PV and ESS for smart bidding strategies. ESS seamlessly matches bids when PV generation is insufficient, earning extra revenue. Excess power efficiently stored in the battery during surplus generation.



RESULTS:

Precise Generation Forecasting: Allows to win bids more effectively and avoid penalties to significantly boost revenue and profitability.

Smart Bidding: PV owners and aggregators are enabled to tailor their bids to match actual generation and stay ahead of the competition.

Enhanced Revenue Generation: Increased profitability due to optimized PV management by matching ESS usage to bid requirements during low PV generation and storing excess power during surplus.



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CONSULTATION**

contact@eipgrid.com