VIRTUAL POWER PLANT

Drive the low carbon future

VIRTUAL POWER PLANT BROCHURE

enjoyelec

YOU CAN DEPEND ON EnjoyElec

EnjoyElec, a sustainable energy digital services provider based on AI &Cloud, which focus on clean energy application to achieve carbonneutrality.
EnjoyElec excels in the field of home energy management(HEMS), battery storage system(BSS), vehicle to grid (V2G) charger and virtual power plants(VPP) across various clean energy ecosystems, leveraging energy AI, battery AI, IoT and big data to achieve carbonneutrality through the focus of clean energy applications.

Strategy Investors

bp

VOLVO

RENAULT NISSAN MITSUBISHI

PORSCHE VENTURES

BEYOND SUSTAINABILITY INNOVATION AWARDS

KPMG ESG TECHBOLIOGY AWARDS

bP ADVANCING LOW CARBON AWARDS

APAC CLEANTECH TOP25

NEW ENERGY TECH TOP50

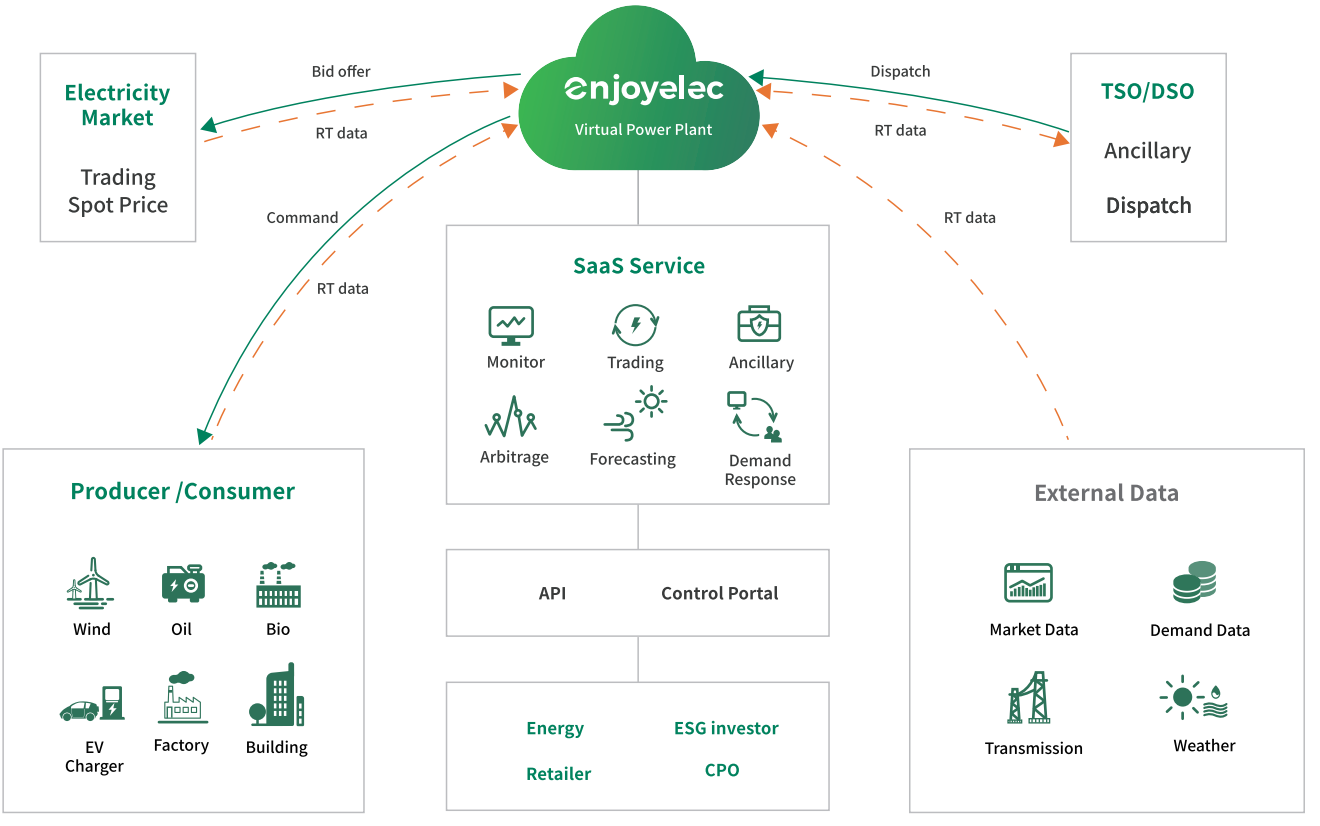
EnjoyElec VIRTUAL POWER PLANT

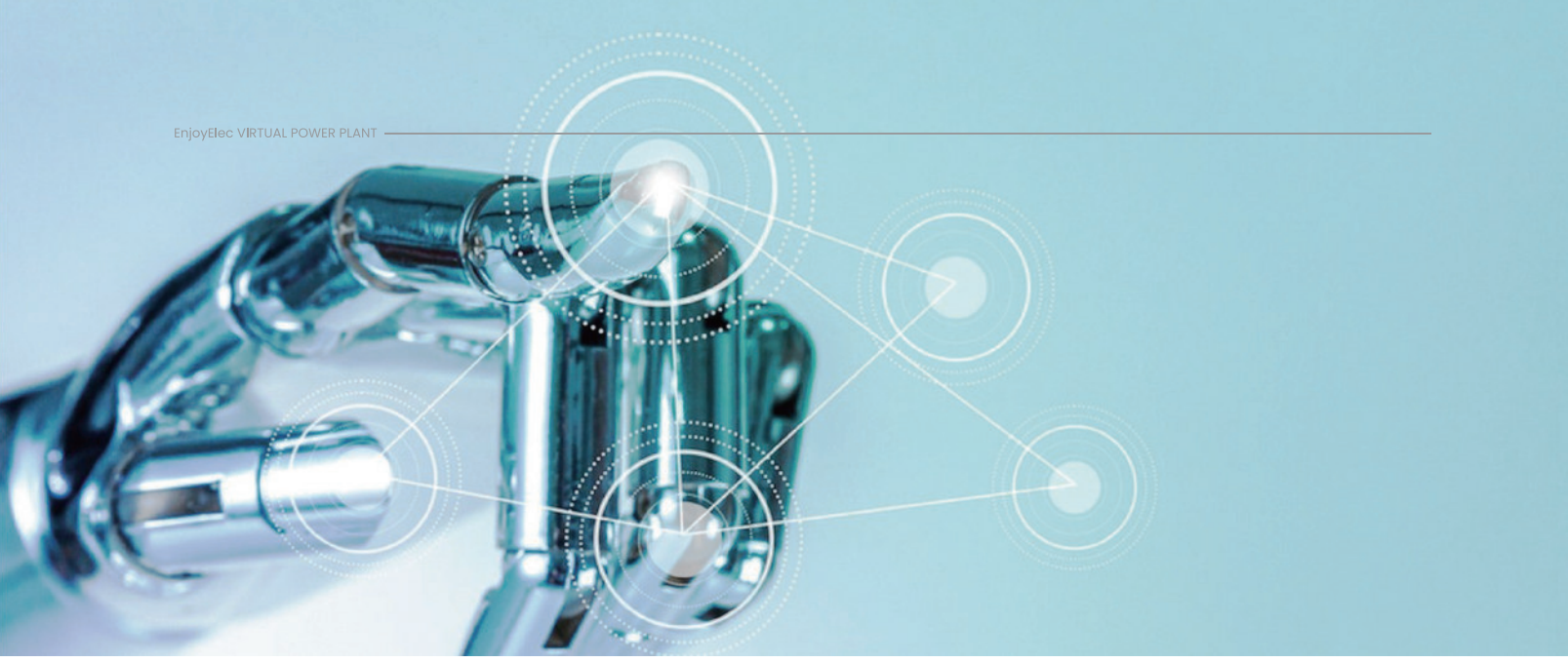
Drive the low carbon future

EnjoyElec's Virtual Power Plant (VPP) connects and aggregates various distributed energy resources, such as generation, battery storage, charging stations, electric vehicles and solar systems, to offer capacity and flexibility to different markets. Based on AI, IoT (Internet of Things) and big data technology, the real-time trading ability of the virtual power plant and the control strategy of edge EMS enable operation strategy maximizing revenue and provide valuebased asset management and portfolio optimization to relevant parties.

VPP SOLUTIONS BENEFITS

- Balance supply and demand to reduce peak load
- Improve overall energy efficiency
- Boost customer enrollment and retention





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VIRTUAL POWER PLANT WITH ENERGY AI

Power Trading

Provide real-time access to day-ahead and intraday markets

Price Forecasting

Provide wholesale market forecasting services to reduce the risk caused by price fluctuations

VPP

Auto Bid

Automatically use different strategies to sell or buy electricity and maximize profits

Dispatch Algorithm

Optimize power dispatch schemes among different distributed energy resources

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Accurate electricity price and quantity prediction

Reduce the difficulty of power scheduling

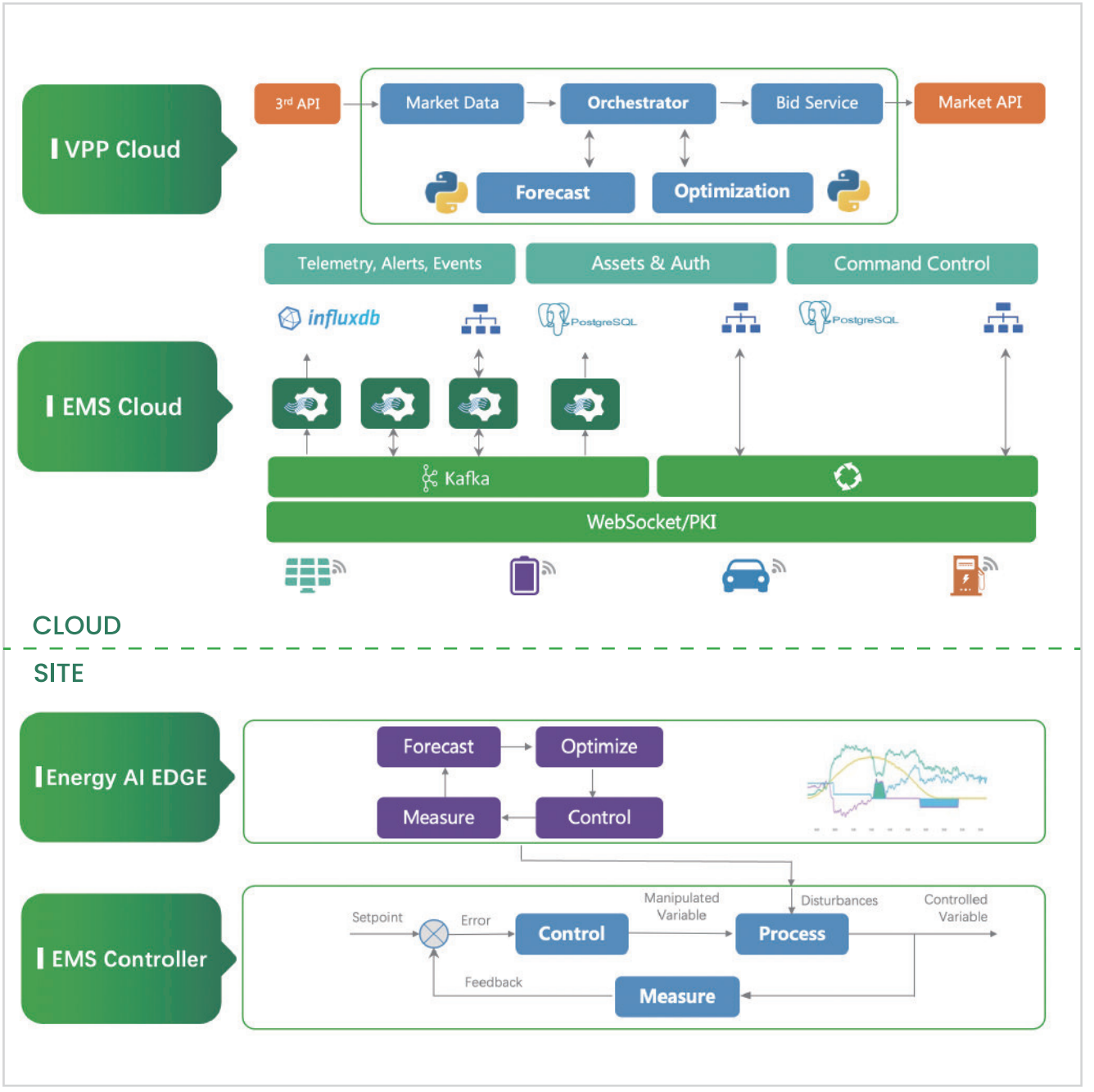
Maximize the portfolio management

Meet the diversified demands

EnjoyElec

VIRTUAL POWER PLANT

From End-to-End technology architecture



IOT | Big Data | Digital Twin | AI

EnjoyElec Home EMS

Optimize your carbon footprint in real time

EnjoyElec Home EMS integrates solar, battery storage, EV chargers and household appliances by controller into a single interface that can be monitored via a smartphone application, helping you optimize home energy costs , maximize green power consumption and connect your home to the grid.

Vehicle-to-Grid (V2G) Chargers

AC&DC
ISO15118-20
Plug&Charge

Electricity flows in
two
directions

Helps stabilize
fluctuating power
in the grid

Enables EV owners
to sell back excess energy

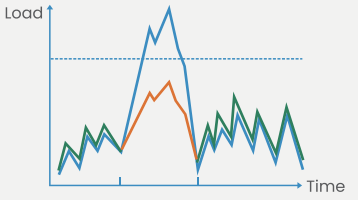
V2G technology unlocks the energy stored in your electric vehicle batteries so that you can support the grid when demand peaks, reduce your energy costs and support a low carbon future with the EnjoyElec bi-directional chargers.

EnjoyElec C&I EMS

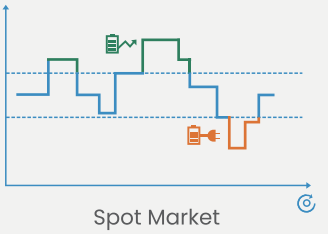
Maximize energy asset value and minimize the operation cost

Leveraging advanced AI, IoT and big data technologies, EnjoyElec EMS expertly manages commercial and industrial customers' microgrid systems, delivering value-added benefits through a variety of strategic approaches.

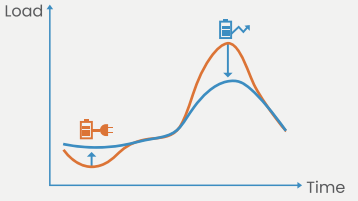
Multi functions and different control strategies to leverage up ROI



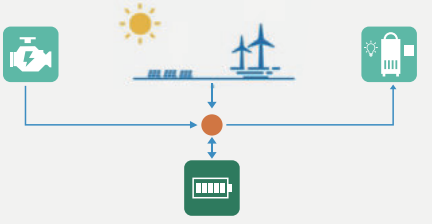
Demand Charge Management



Spot Market



Peaking Shaving



Micro Grid management system

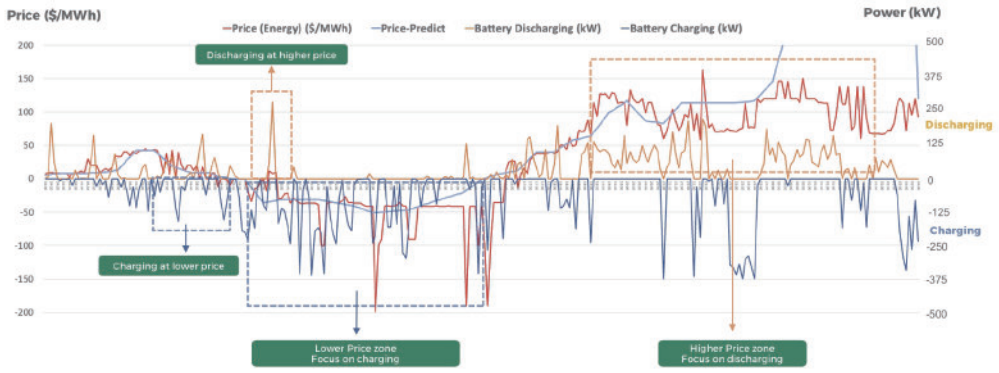
Demand Charge	Optimize behind-the-meter storage, generation and consumption to reduce demand charge. Optimize against electric tariff structure.
EV Charging and V2G	Integrate and optimize electric vehicle charging stations, introduce the smart charging and V2G to load balance and lower price charge , and demand response.
Combined Solar & BSS	Explore the value of combined Solar and battery storage, balance the clean energy 100% consumption and spot price response, and demand response.
Increase Resilience	Improve resiliency to supply power during extended outages, reduce the fossil generator CO2 emission.

EnjoyElec Virtual Power Plant

Based on Energy AI and Battery AI, EnjoyElec Auto bid provides value-based asset management and portfolio optimization, enabling owners and operators to configure operational strategies that maximize revenue according to their business objectives and risk preferences.

Participant:

☑ Day-ahead markets ☑ Intraday markets ☑ Balancing Markets



Quantites(MW) / Price($/MWh)	Interval	4:05	4:10	4:15	4:20	4:25	4:30	4:35	4:40	4:45	4:50	4:55	5:00	5:05	5:10	5:15	5:20	5:25	5:30	5:35	5:40	5:45
BAND10	15198.5	5	4	27	5	27	10	24	0	0	0	15	0	11	0	15	27	14	27	0	27	0
BAND9	999	18	16	13	0	13	0	16	17	13	27	12	10	10	10	0	13	15	0	16	13	20
BAND8	750.45	0	0	0	10	0	0	0	0	0	13	0	0	0	0	10	0	0	13	0	0	0
BAND7	415.32	12	20	0	25	0	15	0	23	17	0	0	10	10	10	15	0	0	0	20	0	11
BAND6	214.34	5	0	0	0	0	15	0	0	0	0	13	20	20	20	0	0	11	0	0	0	9
BAND5	110.32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0
BAND4	20.91	0	0	0	0	0	0	0	0	0	0	0	10	0	0	7	0	0	5	0	4	10
BAND3	-64.01	5	0	0	0	0	0	0	2	10	0	0	0	9	0	0	0	0	0	8	10	0
BAND2	-383.43	12	0	1	0	0	0	1	0	0	16	19	7	0	0	5	12	0	10	0	0	24
BAND1	-920.17	12	0	7	2	0	0	1	10	0	0	0	2	5	0	7	13	0	23	17	21	0
BANDAVAIL MAX(MW)		69	40	48	42	40	40	42	52	40	56	59	59	65	40	59	65	40	78	71	75	74
CHARGE(MW)		0	12	0	0	3	26	0	0	15	0	0	0	0	11	0	0	4	0	0	0	0

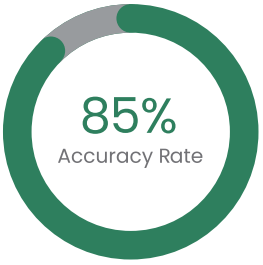
BASED ON ENERGY AI AND BATTERY AI, EnjoyElec PROVIDE GREEN ENERGY BUSINESS FOR ZERO CARBON.

- Market Prediction (Supply/Demand/Price/Volume)
- Supply&Demand Prediction (Solar/Wind/Weather/Season)
- Battery Optimization Strategy
- Intelligent Bid Strategy
- Scheduling optimization

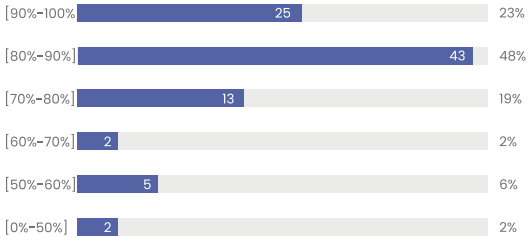
Based on the sustained exploration of massive data in the energy field, and the integration of technologies such as artificial intelligence, we aim to provide customers with more value by continuously optimizing our algorithms and promoting market dispatch behaviors.

85%

Multi-algorithm fusion intelligent optimization algorithm is used to achieve real-time monitoring of EnjoyElec algorithm accuracy. In the past 3 months, an 85% prediction accuarcy has been achieved, and 71% of predicted events are more than 80% accurate.



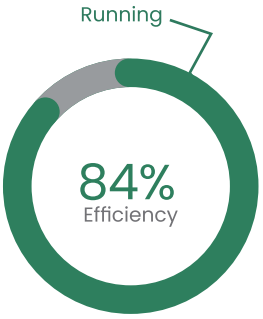
Price Vs Forecast Price



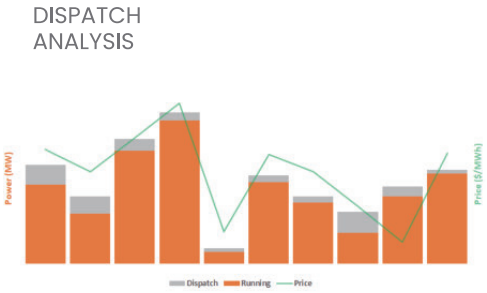
*EnjoyElec platform data for three consecutive months

84%

By utilizing intelligent optimization algorithms to continuously adjust price predictions and trading strategies, a bidding strategy has been developed to achieve an average execution efficiency of 84% and maximize profits.



Dispatch Tracking



*EnjoyElec platform data for three consecutive months

CASE STUDY

Based on the 100MW capacity participating in the electricity market, intelligentoptimization of the investment portfolio is achieved through multi-algorithmcomparison and intelligent optimization of trading strategies, maximizing revenue. Currently, the daily average revenue is maintained at $534.86.

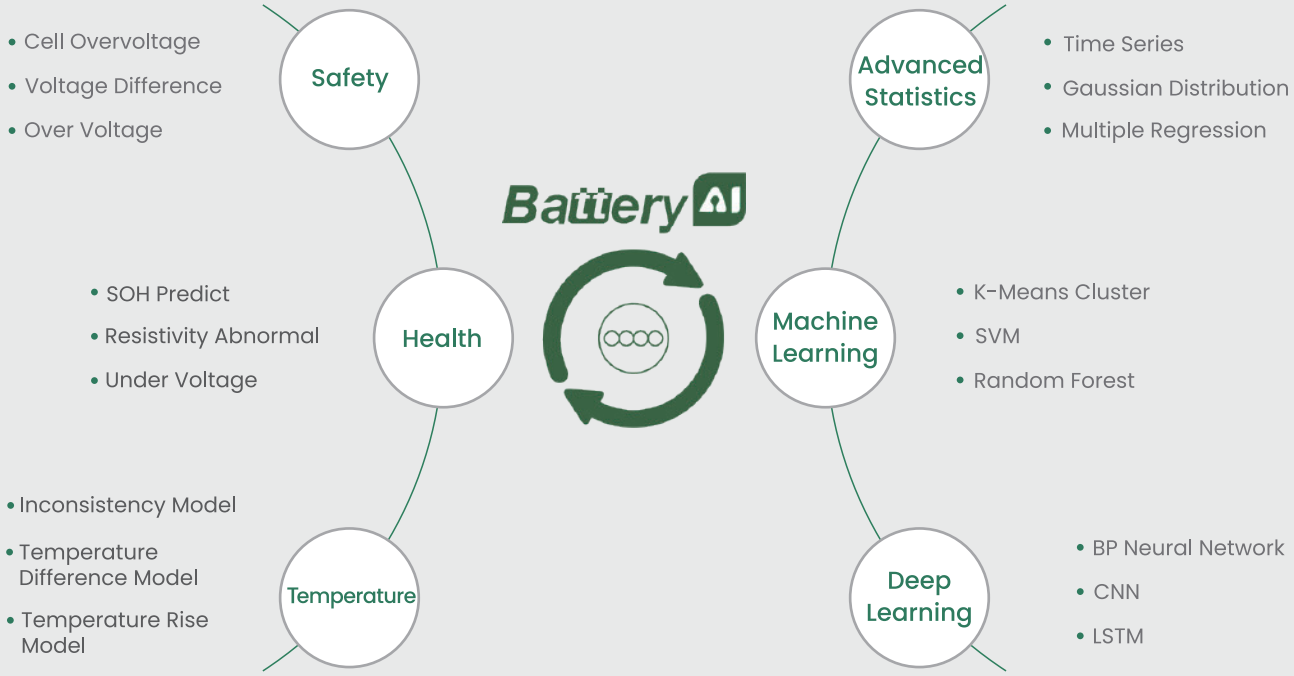
CAPACITY
100MW

ENERGY
200MWH

AVERAGE PROFIT
$ 534.86 PER DAY PER MW

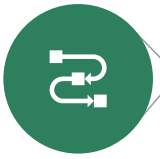
STABILITY AND SAFETY ENHANCED WITH AI

Combine with advanced statistics, machine learning, Deep Learning, Optimization Algorithm to support the stability and safety of the VPP system with battery storage.



BUILD A SECURE VIRTUAL POWER PLANT FORSMART GRID

Multiple aspects are considered to guarantee cybersecurity and privacy, including authority management, IT infrastructure, technical architecture design, internal testing, data protection, and personal privacy protection.



Development Process

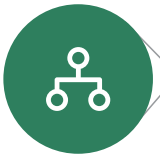
- Agile development with different roles in DevOps andCI/CD process to guarantee the security at scale
- Automatic code security scanning and risk detection

Privacy Protection

- Compliance with GDPR
- Customer has the right to object or to demandrestriction of the processing and prohibit the direct marketing

Authority Governance

- Standard SOP Application for different environment authority (DEV/UAT/PRD)
- Organizational security measures in the form ofaccess restriction and authorization contro

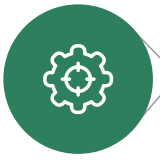


IT Architecture Design

- AWS cyber security service powered in IT infraSpring Cloud micro services architecture design withspring security components in service level
- HTTPS/Oath 2.0 with secret key and encryptedchannel in communication level

Data Protection

- Sensitive date encryption
- Customer data isolation

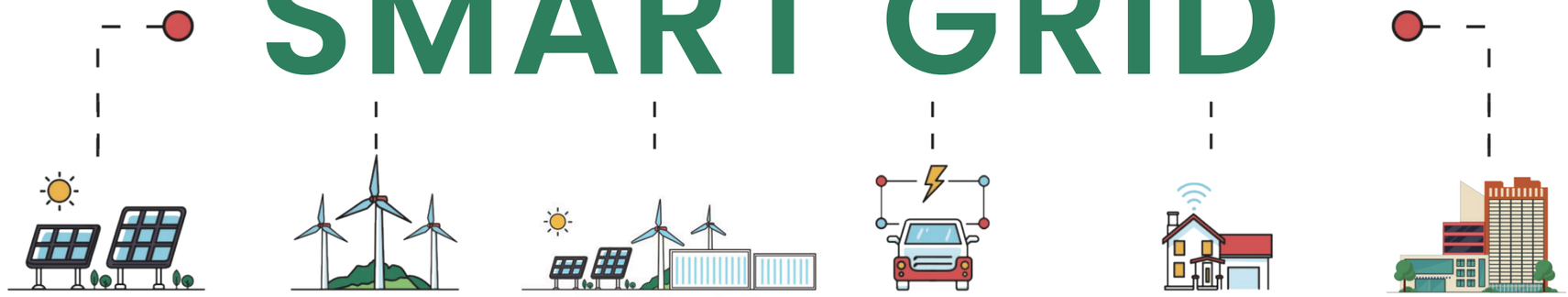


Penetration Testing

- Third party testing
- Security validation

EnjoyElec VIRTUAL POWER PLANT

SMART GRID



Solar Power | Wind Power | Battery Storage | Electric Vehicle | Smart Home | Commercial and Industrial

ENERGY DIGITALIZATION AI DRIVE THE LOW CARBON FUTURE

The future of energy is decarbonized and decentralized. We have built the most powerful platform and products for decentralized and digital green energy.

To achieve ESG goals of sustainable development, and guide to transitioning to Net Zero Carbon

For the global energy sector move from fossil fuel-based to zero carbon to limit climate change.

To build a stability and secure power system, to make every one enjoy clean and affordable electricity.

For humans live on a sustainable planet with renewable energy sources.

DRIVE THE LOW CARBON FUTURE

Our mission is to drive the clean and low carbon future that everyone can enjoy affordable electricity and a sustainable community.

Enjoyelec

DRIVE
THE LOW CARBON
FUTURE

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