



雲豹能源
J&V ENERGY TECHNOLOGY

Stock Code
6 8 6 9

J & V Energy Technology

April 2023

J&V Energy is aiming to provides and continually develops sustainable renewable energy, takes corporate social responsibility and creates a sustainable green environment.





Disclaimer



J&V Energy Technology (the Company)'s statements on its current expectations are forward-looking statements subject to significant risks and uncertainties and actual results may differ materially from those contained in prospective statements.

Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events, or otherwise.

AGENDA

1 Company Overview

2 Market Overview

3 Operational Achievements

4 Financial Performance

5 Future Development



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— 1 —

Company Overview



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About Us

Stock Code: 6869.TW

Establish Date: 2016.2.15

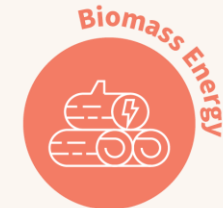
Numbers of employee: 230

Market Cap. (07.04.2023) : US\$363M

Capacity Developed¹ (gross): 1,301 MW

Note1: Contains capacity of solar, offshore wind and BESS projects

J&V Energy is a leading Taiwanese renewable energy development and services platform



Development



Investment and construction



Operation



Company Milestone



2016

- Incorporated in US\$ 36M in capital assets.
- Completed 6.6MW solar projects including the first successful subsidence area project in Taiwan

2017

- Completed Taipei Legislative's Yuan roof –top solar project and Su-Ao port warehouse solar project.

2018

- **BlackRock Real Assets** acquired **70 MW** of solar assets from J&V
- Completed Taiwan's largest floating PV system tender

2019

- **BlackRock Real Assets** acquired another **115 MW** of solar assets from J&V
- Collaborated with **Google** and assisted renewable energy purchase.

2020

- Invested in "**TIENLI Offshore Wind Technology**"
- Completed a fishery & electricity symbiosis demonstration site, collaborating with Institute of Information Industry & Taiyen Green Energy.

2021

- Established Offshore Wind "**Taiwan Team**"
- Acquisition of "**TPE Energy Inc.**" and "**WEISHENG Wastewater Treatment**".
- Established "**GREENET CO.**" renewable energy trading platform
- Invested in "**GRAND GREEN ENERGY**"

2022

- Completed **108MW** fishery & electricity symbiosis project "Beimen"
- Offshore wind "**Taiwan team**" awarded **495MW** capacity¹
- Planned to develop of **two 100MW BESS** sites.
- Signed a commercial power purchase agreement with **Gogoro Inc.** and **Micron Technology Taiwan, Inc.**,

2023

- Listed on the **Taiwan Innovation Board** (6869.TW)

Note1: Formosa 4, wind farm incorporated by offshore wind Taiwan team was awarded 495MW capacity for the first phase of offshore wind power zonal development phase.



Our Vision and Mission



Vision



Expanding Taiwan's renewable ecosystem through cross competencies and vertical integration

Strategy



Recycling capital-light service revenues into long term stable infrastructure investments

Value



Supply Chain Competence, ESG as a Foundation, Service & Asset Excellence

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Market Overview

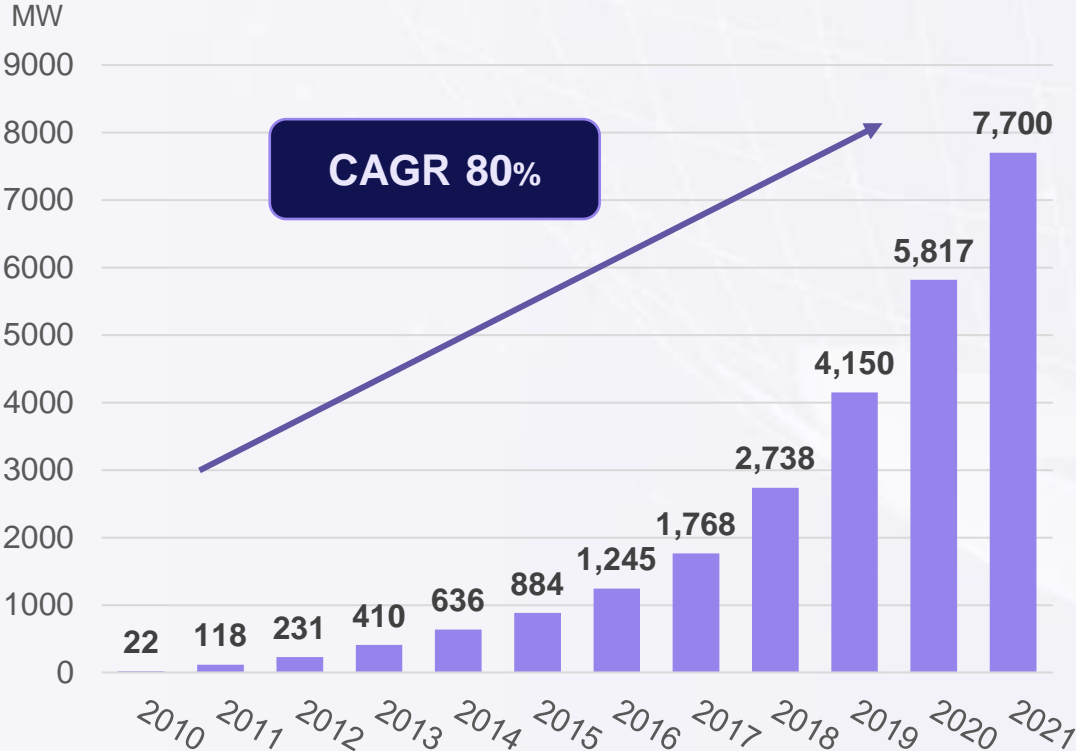


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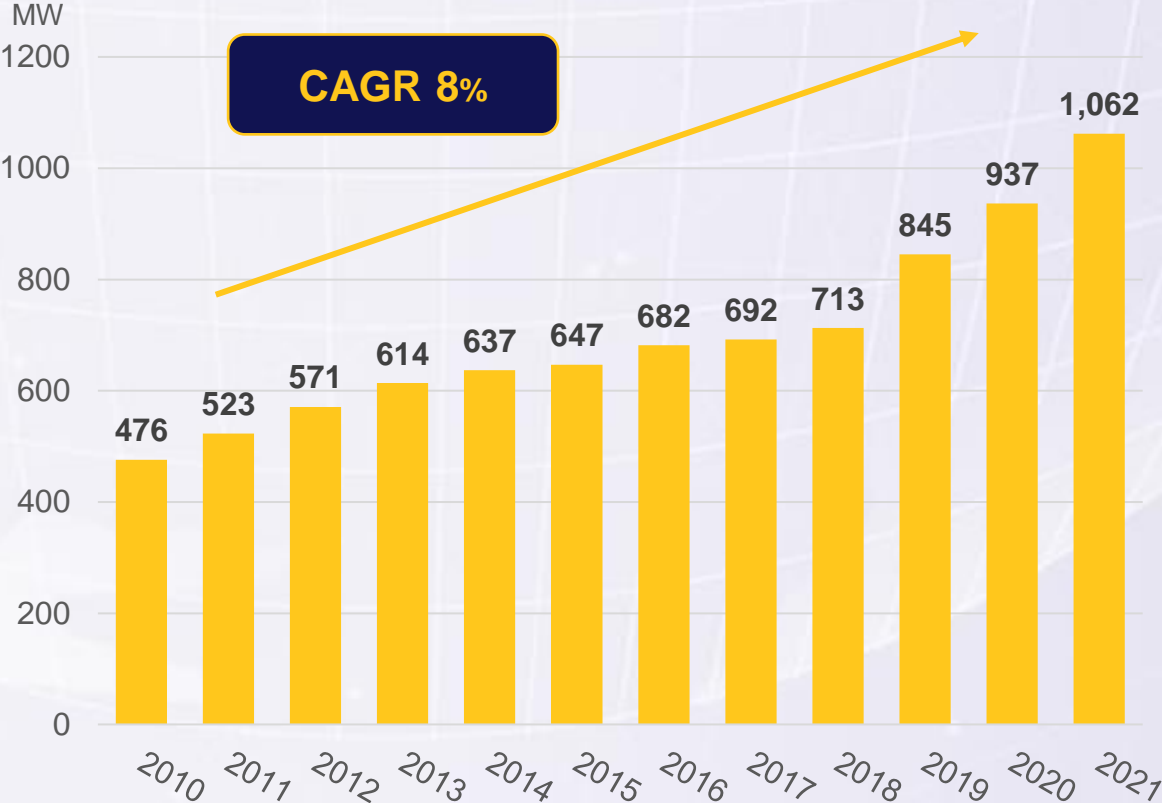
Renewable Energy in Taiwan Has Grown in Recent 10 Years



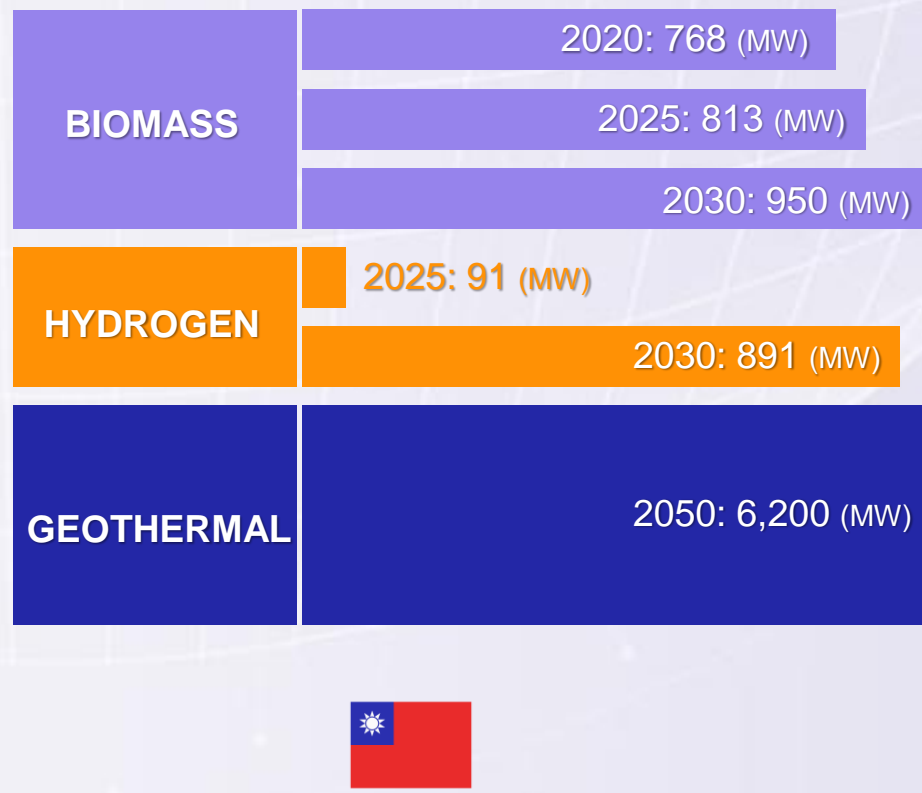
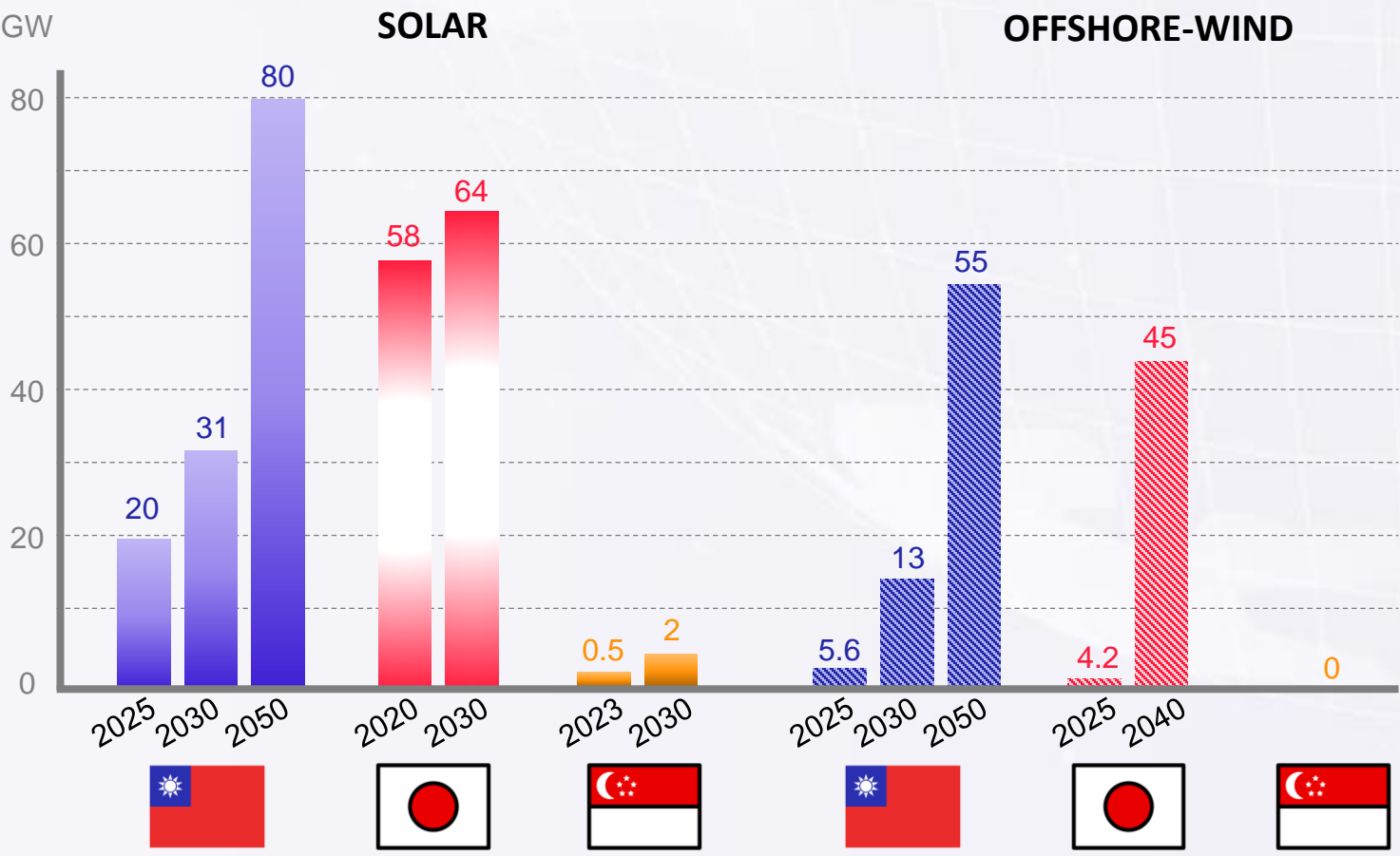
Capacity of solar energy in taiwan from 2010 to 2021



Capacity of wind energy in taiwan from 2010 to 2021



Goals of Capacity of Renewable Energy in Taiwan are Higher than Japan and Singapore



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Operational Achievements

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— 3.1 —

Solar Energy



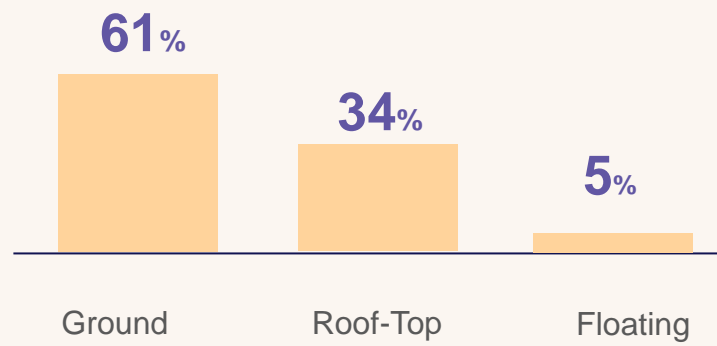
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Solar System Development (Gross)

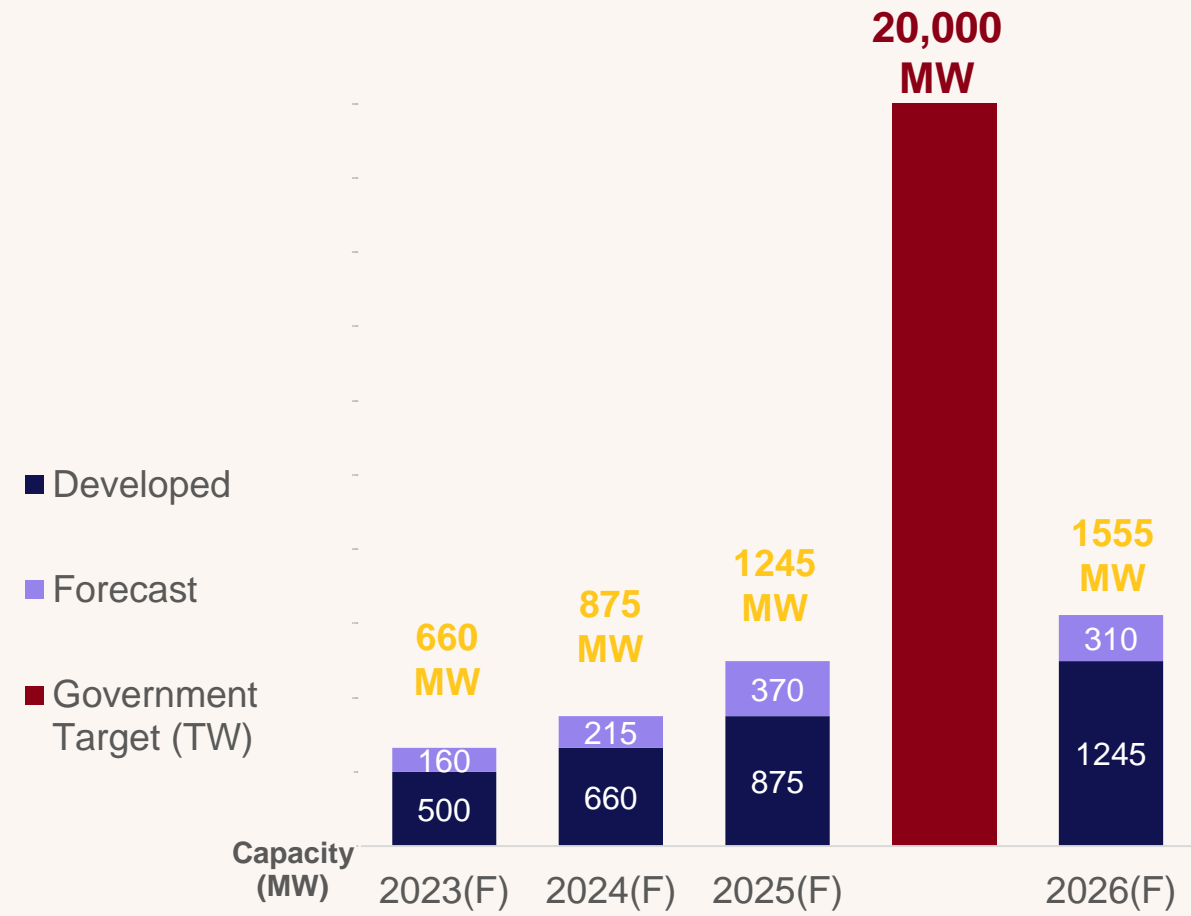
The current cumulative gross development capacity exceeds

500⁺

(MW)



J&V Solar Energy Cumulative Development Forecast Capacity¹ (Gross)



Note1: The target capacity might be adjusted according to the change of government policies.

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— 3.2 —

Offshore Wind Energy



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Offshore Wind Energy

Team Taiwan

Invested in **Tian Li** Offshore Wind Technology, the **only supplier of MW-class wind turbine blades in Taiwan** in 2020. All blades are MHI-Vestas certified, and it's Asia's only supplier of offshore wind blades in cooperate with MHI-Vestas.

Established **“Taiwan Team”** with **Stonepeak¹**, **Tien Li Offshore Wind Technology** and **Yeong Guan Group** in 2021. Project **“Formosa 4”** was **awarded 495MW²** in 2022, with grid connection in **2027**.



Note1: Stonepeak subsidiary: Synera Renewable Energy
 Note2: Formosa 4, incorporated by offshore wind Taiwan team was awarded 495MW capacity for the first phase of offshore wind power zonal development phase.



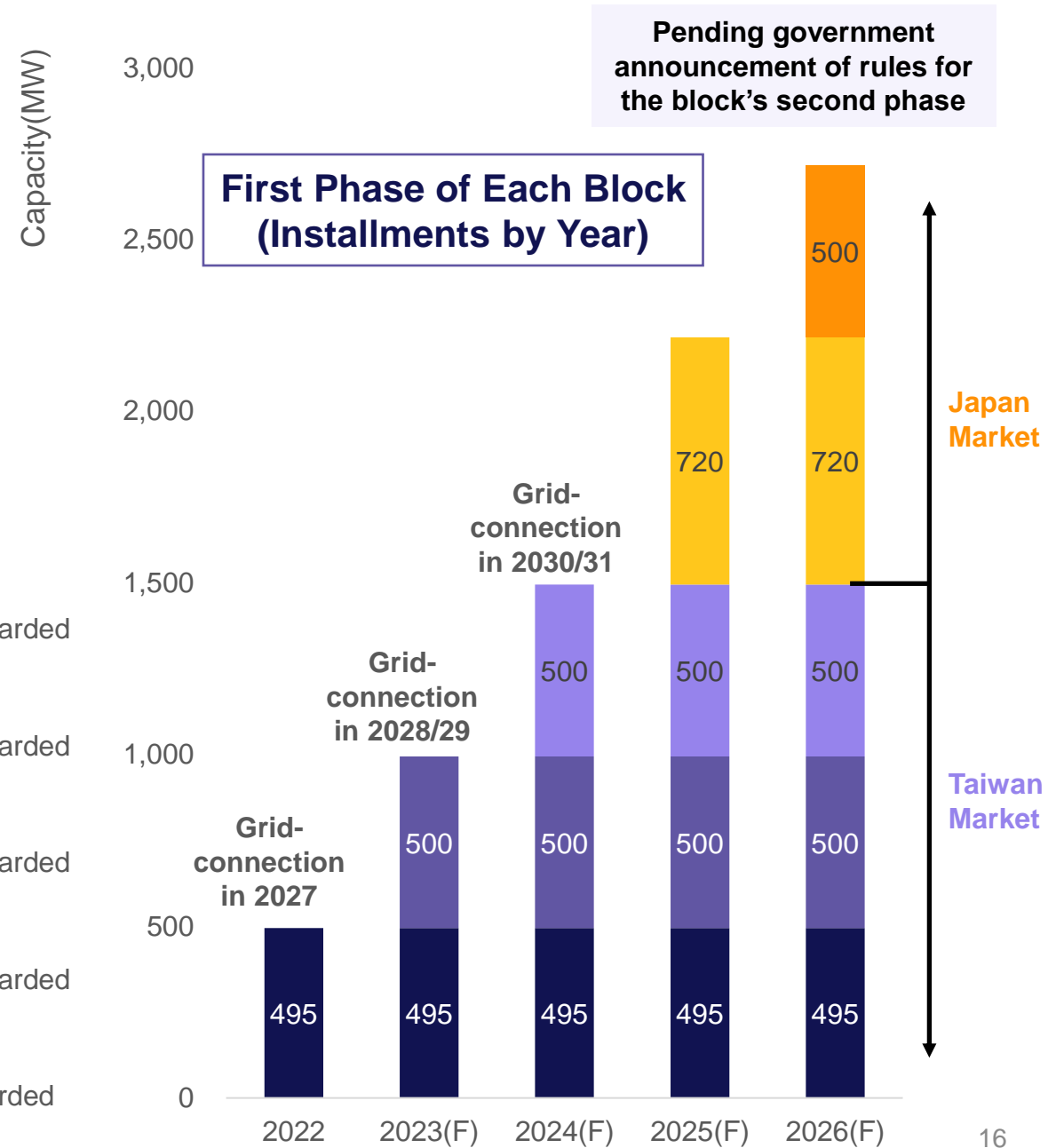
Taiwan Team¹

Offshore Wind Energy Project Awarded Forecast Capacity²



Note1: J&V has invested in Taiwan Team since 2021.
Note2: The target capacity might be adjusted according to the change of government policies.

- 2026 Estimated Awarded Capacity
- 2025 Estimated Awarded Capacity
- 2024 Estimated Awarded Capacity
- 2023 Estimated Awarded Capacity
- 2022 Capacity Awarded



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Energy Storage



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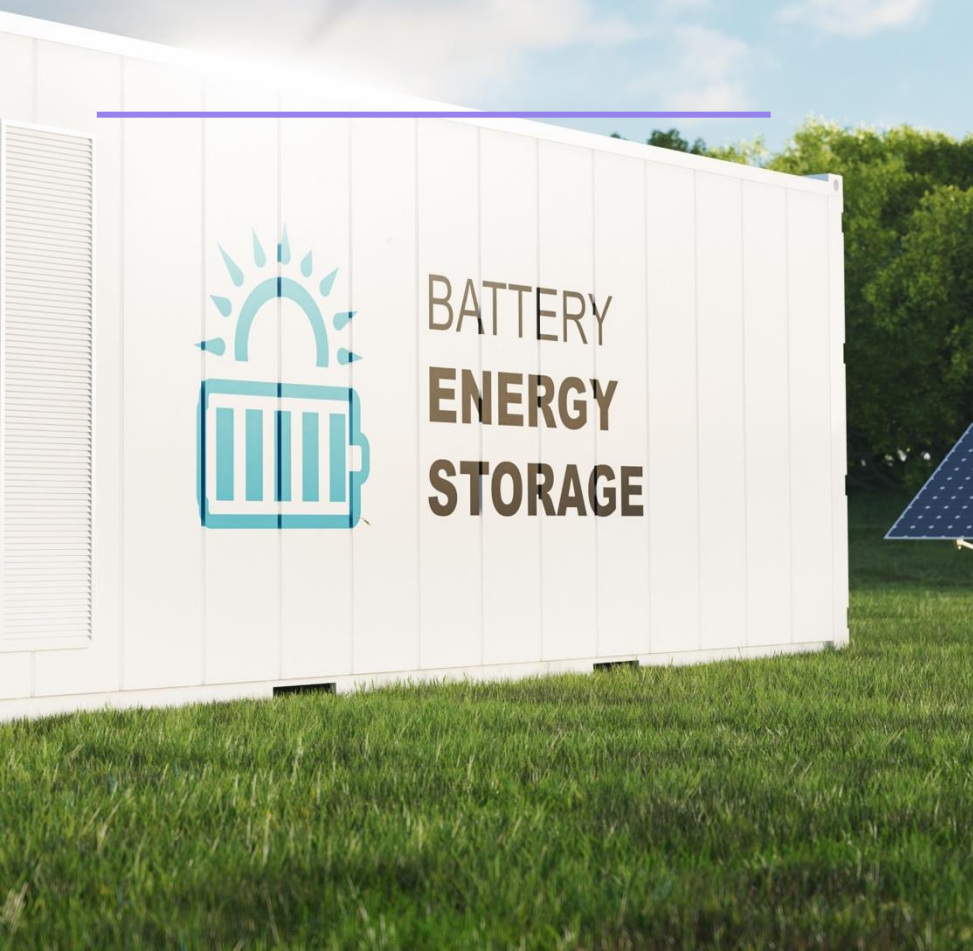


J&V acquired Taiwan's leading energy storage systems company, TPE Energy Inc., in 2021

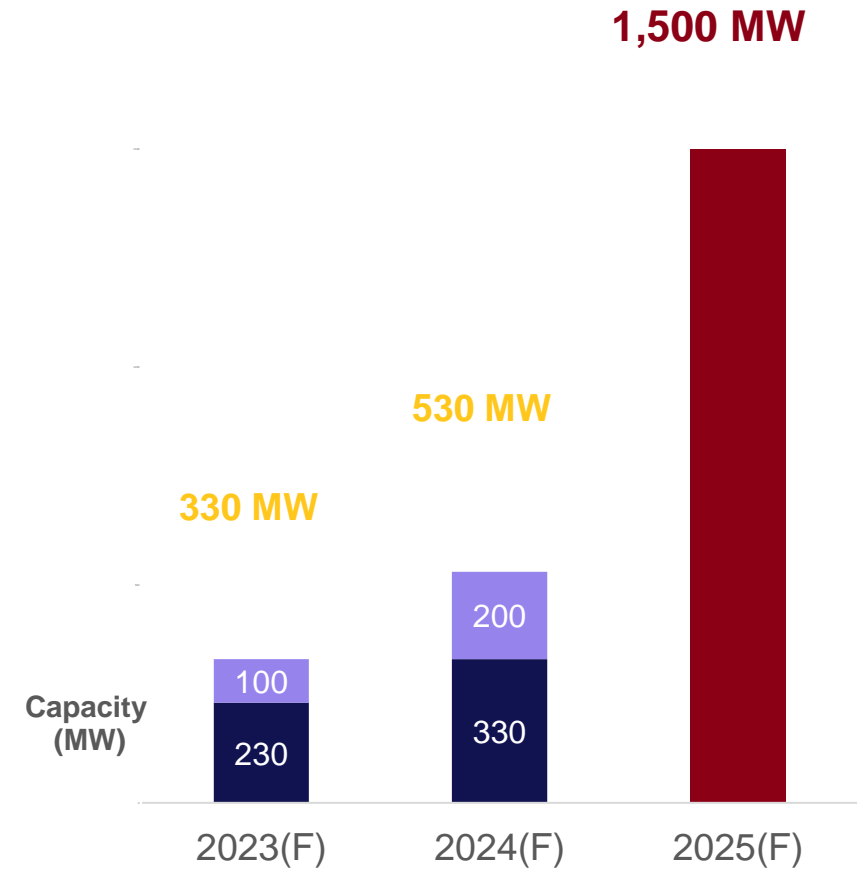
- Established in 2019, TPE Energy Inc. was awarded the second place in the "Automatic Frequency Control (AFC) FM Standby Service" in 2020 and had an average delivery rate of **99.96%**.
- Awarded for the 20 MW Taipower Luyuan substation in 2021, and completed in 2022. The **first energy storage system completed within Taipower substation in Taiwan.**
- On-going BESS projects: **300MW+**
- Cooperate with a convenience store to create **the first small energy storage demonstration site** for emergency power supply purposes in Taiwan. Provide backup lighting and power for basic operations in the event of a power outage.

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J&V Energy Storage Sites Cumulative Development Forecast Capacity¹



- Develop
- Forecast
- Government Target (TW)



Note1: The target capacity might be adjusted according to the change of government policies. ¹⁹

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Renewable Energy Trading Platform



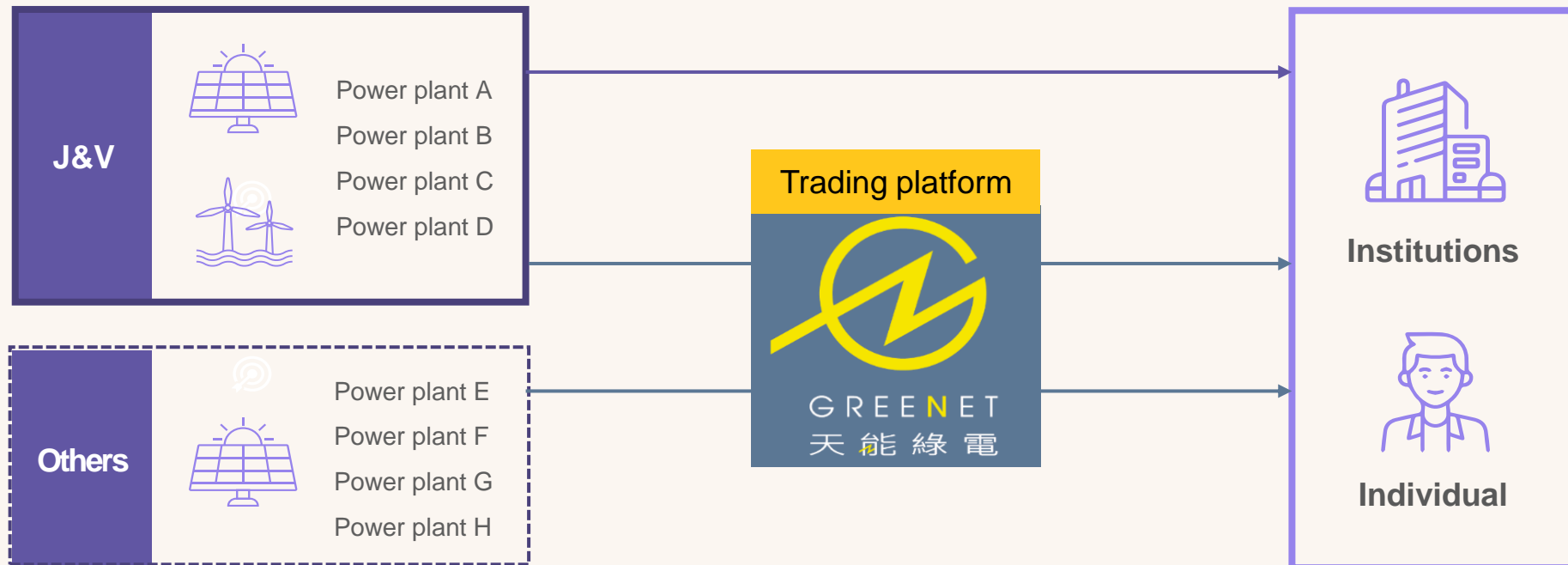
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Trading Platform

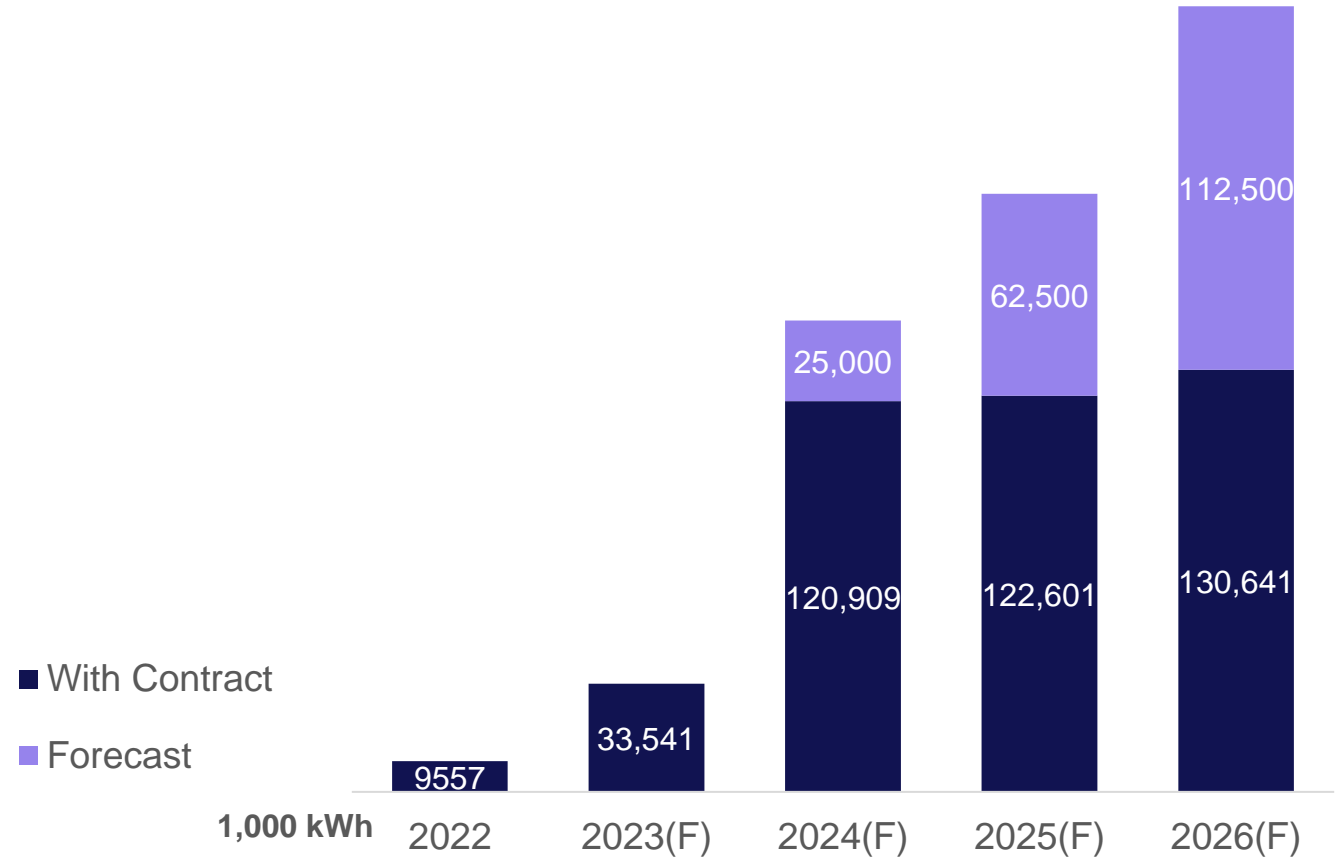
- With **500MW+** of solar power plants and sufficient green energy, J&V has established the “GREENET” energy trading platform.
- We offer customized renewable energy buying and selling services to help customers find the best combination of renewable energy solutions.
- Customers contain in the financial, semiconductor, electronics, textiles and chemical industries, including **Google, Micron**, E. Sun Bank, gogoro...etc.

800M kWh commercial power purchase agreements have been signed





Green Energy Demand Estimation (Annually)





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Water Treatment



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WATER TREATMENT INVESTMENT

With its strong on natural resource recycling and optimism about the water treatment market, the company acquired WAISHENG Wastewater Treatment Co., Ltd., **in July 2021, the first company in Taiwan dedicated to water resources.**

WEISHENG's main business focus is **industrial wastewater, reuse of wastewater for everyday use**, and **desalination treatment.**



煒盛環科股份有限公司

WEISHENG ENVIROTECH CO., LTD.

- Date of Incorporation : 1984
- Paid-in Capital : US\$ 7.5M
- Has completed **14 domestic/foreign corporate and public projects, and 25 commissioned operating or maintenance projects.**
- One of the few domestic engineering companies with experience in sewage treatment, sludge digestion and sludge drying and can provide a total package of support services.
- After acquisition by J&V in 2021, WEISHENG had awarded Taoyuan International Airport T3 Wastewater Treatment Projects (total contract value US\$59M) and Taipei City Sewage System Equipment Rehabilitation Projects (total contract value US\$8.2M) in the same year

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BIOMASS



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BIOMASS INVESTMENT



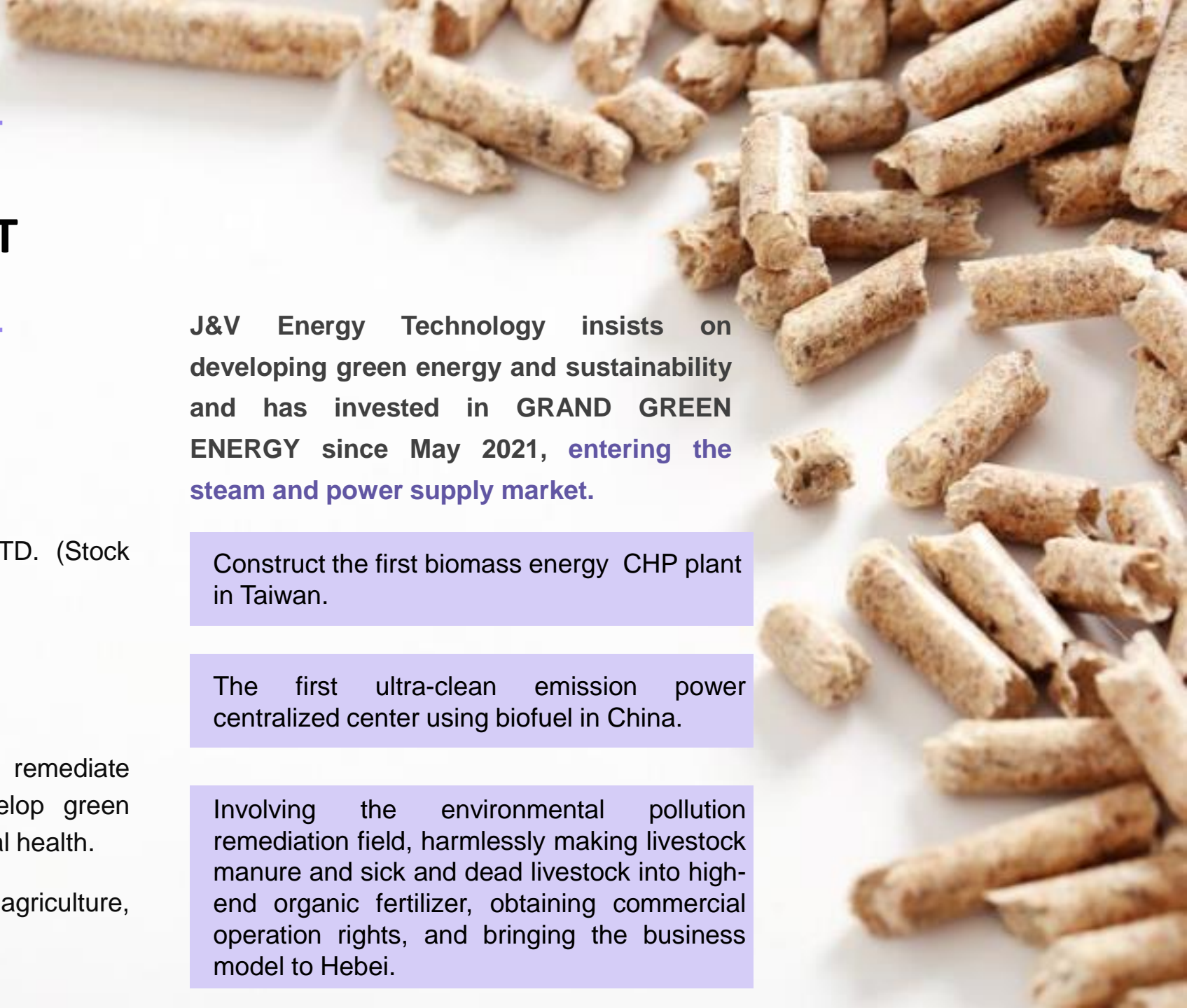
- Name : GRAND GREEN ENERGY CO., LTD. (Stock Code : 6639)
- Date of Incorporation : 2008
- Paid-in Capital : US\$ 15.7M
- The core value of the company is to remediate environmental pollution and aims to develop green energy, resource recycling, and environmental health.
- The business includes CHP plants, organic agriculture, organic fertilizer, and so on.

J&V Energy Technology insists on developing green energy and sustainability and has invested in GRAND GREEN ENERGY since May 2021, **entering the steam and power supply market.**

Construct the first biomass energy CHP plant in Taiwan.

The first ultra-clean emission power centralized center using biofuel in China.

Involving the environmental pollution remediation field, harmlessly making livestock manure and sick and dead livestock into high-end organic fertilizer, obtaining commercial operation rights, and bringing the business model to Hebei.



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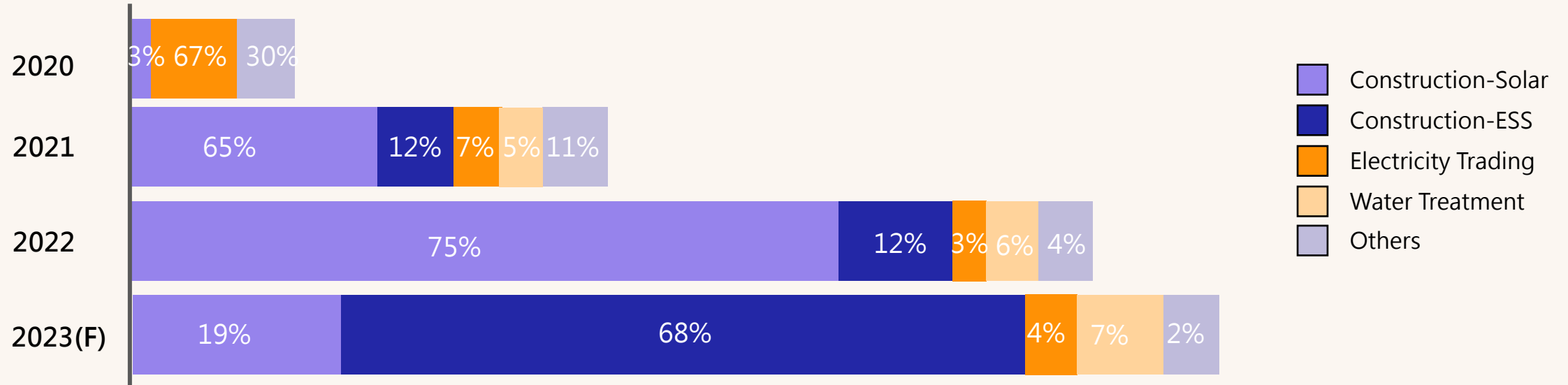
— 4 —

Financial Performance



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The Components of Revenue Have Changed Since 2021



	Construction-Solar	Construction-ESS	Electricity Trading	Others	Total
2020	US\$ 0.17M	US\$ -	US\$ 4.7M	US\$ 2.1M	US\$ 6.9M
2021	46.23M	8.8M	4.9M	10.7M	70.7M
2022	154.2M	24.3M	5.8M	22.3M	206.6M

Under-Construction Projects – Solar and BESS



Solar Energy Projects

Project Name	Capacity	Contract Price
BEIMEN	128.02¹ MW	US\$ 196-260M
YONGGUAN	7.87 MW	US\$ 9.8M-16.4M
ZHANGHUA	4.11 MW	US\$ 0.7M-1M
KAOHSIUNG	2.00 MW	US\$ 0.3M-0.7M
LINGJU	1.91 MW	US\$ 0.3M-0.7M
YONGDA	1.50 MW	US\$ 0.1M-0.5M

BESS Projects

Project Name	Capacity	Contract Price
YUGUANG	4.5 MW	US\$ 3.3M-16.4M
BEIMEN	6.2 MW	US\$ 16.3M-49.2M
YILAN 1	100 MW	US\$ 82M-147M
YILAN 2	100 MW	US\$ 82M-147M
YILAN 3	100 MW	US\$ 82M-147M

Sales Revenue, Gross Margin and NI Have Kept Growing



+ 919%

Sales Revenue
(USD in thousands)



Gross Margin
(USD in thousands)



Net Income
(USD in thousands)



EPS(NTD)



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Future Development



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Future Planning and Development



Current Business Expansion

Ground-Base Solar Energy Projects

Fishery solar coexistence Projects

Offshore Wind Energy Projects in Japan

Solar and Storage System

Small-Scale Energy Storage Projects

New Business Development

Biomass Market in China and Australia

Implement Multiple Renewable Energy Service
in Southeast Asia Industrial Areas

Electric Vehicles and Charging Station
Commercial Development

Small Hydro Power

Geothermal Energy

Hydrogen Energy

Carbon Management





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Thank you

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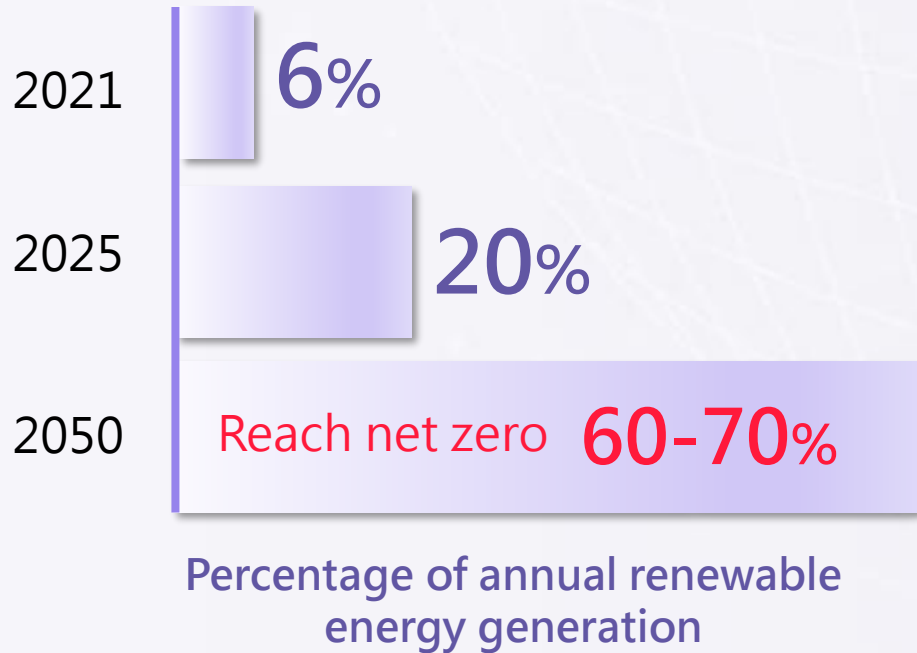
Appendix

Market Overview



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Government Target in Taiwan



	Target of 2025	Target of 2030	Target of 2050
Solar Energy	20 GW	31 GW	40-80 GW
Offshore wind power	5.6 GW	13.1 GW	40-55 GW
Biomass Energy	778 MW	805-1329 MW	1.4-1.8 GW
Hydrogen Energy	91 MW	891 MW	7300 MW
Geothermal Energy	20 MW	56-192 MW	3-6.2 GW
Energy Storage Construction	1.5 GW	5.5 GW	



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Appendix

Solar Energy



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Solar Energy in Taiwan

Taiwan's 2025 solar photovoltaic construction target: **20GW**

8 GW

Roof-top

12 GW

Ground

- 🎯 **7.65GW** has been built as of 2021.
- 🎯 The government plans to set a target of **4GW** for fishery solar coexistence in 2025
- 🎯 A total of **12,000 hectares** of land have been announced in six counties in as fishery solar coexistence zones.

The Largest Fishery & Electricity Symbiosis Project “Beimen” in Taiwan



Location : Tainan

Area : 170 hectare



Start : November 2021

Completion : **108.0MW completed** in Dec. 2022 ;
20.2MW completed in Q2 2023 (est.)



Capacity : 128.2MW

**Est. Electricity Output
(Annual)** : 180M MWh



Est. Carbon Reduction (Annual) : 95,000 metric tons



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Offshore Wind Energy



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Taiwan Offshore Wind Installed Capacity Goal: **5.6GW in 2025**



Offshore Wind Market in Taiwan

📍 As of 2021, **0.2GW** of offshore wind power is installed.

📍 The third stage focuses on **human capital localization**, scaling up the sites, and planning for long-term stability.

Three Stages	Capacity Goal	Grid Connection
Stage 1 → Pilot Sites	238 MW	2019 – 2021
Stage 2 → Potential Sites	5.6 GW	2021 – 2025
Stage 3 → Zonal Development	15 GW	2026 – 2035 (1.5GW/year)

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— Appendix —

Water Treatment



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On-Construction Water Treatment Projects



Project Name	Contract Price	Expected Completion Year
Expansion Construction: Reclaimed Water Treatment System of the Central Taiwan Science Park in Erling	US\$ 2.6M	2023(E)
The second phase project of Zhubei Water Resources Recycling Center	US\$ 14.8M	2023(E)
Taipei City Sewage and Sewer Station Revamping Project	US\$ 8.2M	2023(E)
New Project for Western Wastewater Treatment Plant in Taoyuan International Airport	US\$ 59.0M	2024(E)
Contract of Construction Work for West Water Storage and Pumping Station	US\$ 27.9M	2024(E)

The total amount of the contract price of the completed bids in 2023-2024 is about **US\$ 112.5M.**

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Financial Performance



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Income Statement (Consolidated)



Unit: USD in thousand

2017

2018

2019

2020

2021

2022

Sales Revenue	\$ 3,657	\$ 5,469	\$ 5,764	\$ 6,932	\$ 70,653	\$ 206,582
Gross Profit	1,660	2,882	2,638	3,165	15,826	42,836
Gross Margin	45.39%	52.70%	45.76%	45.66%	22.40%	20.74%
Operating Expense	1,320	2,406	2,427	3,290	8,148	14,112
Operating Expense Ratio	36.11%	43.99%	42.10%	47.45%	11.53%	6.83%
Operating Income(Loss)	339	477	211	(124)	7,678	28,732
Non-Operating Income	(287)	2,661	500	7,191	478	(7,189)
Income before Taxes	53	3,137	710	7,067	8,156	21,534
Net Income	23	3,053	608	5,976	7,557	15,448

Unit: TWD

EPS	0.04	1.33	0.33	2.54	2.3	4.03
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