



雲豹能源
J&V ENERGY TECHNOLOGY

Stock Code
6 8 6 9

J & V Energy Technology

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.

A G E N D A

1 Company Overview

2 Market Overview

3 Operational Achievements

4 Strategic Investments

5 Financial Performance

6 Environmental 、 Social 、 Governance

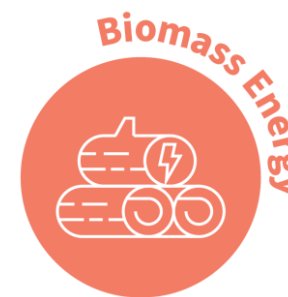


01

Company Overview

About Us

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



Stock Code

6869

Establish Date

2016/2

Numbers of employee

359+

Capital

53M US\$

Market Cap.
(15.01.2023)

368M US\$

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**” 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.**,
- Invested in “**Dong Fang Offshore**”

2023

- Listed on the **Taiwan Innovation Board** (6869.TW)
- Invested in “**Greenhealth Water Resources**”, “**InnoRs Biotechnology**” and **ID Water**
- Completed the rest **20.2MW** of fishery & electricity symbiosis project “Beimen”

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.

Business Models



Development & Gov. Permit



Investment & Fund Raising



Technique



Construction & Operation



Renewable Energy

Energy Storage

- EPC revenue
- Maintenance and operation revenue
- AFC revenue
- Investment income

TPE
台普威能源

Solar Energy

- EPC revenue
- Maintenance and operation revenue
- Energy trading revenue
- Investment income

Energy Trading Platform

- Energy trading revenue

Wind Energy

DFO
東方風能科技股份有限公司
DONG FANG OFFSHORE



REVO
Taiwan Team

Biomass



Sustainable Development

Water Treatment

- EPC Revenue
- Maintenance and Operation Revenue



禾康水資源股份有限公司

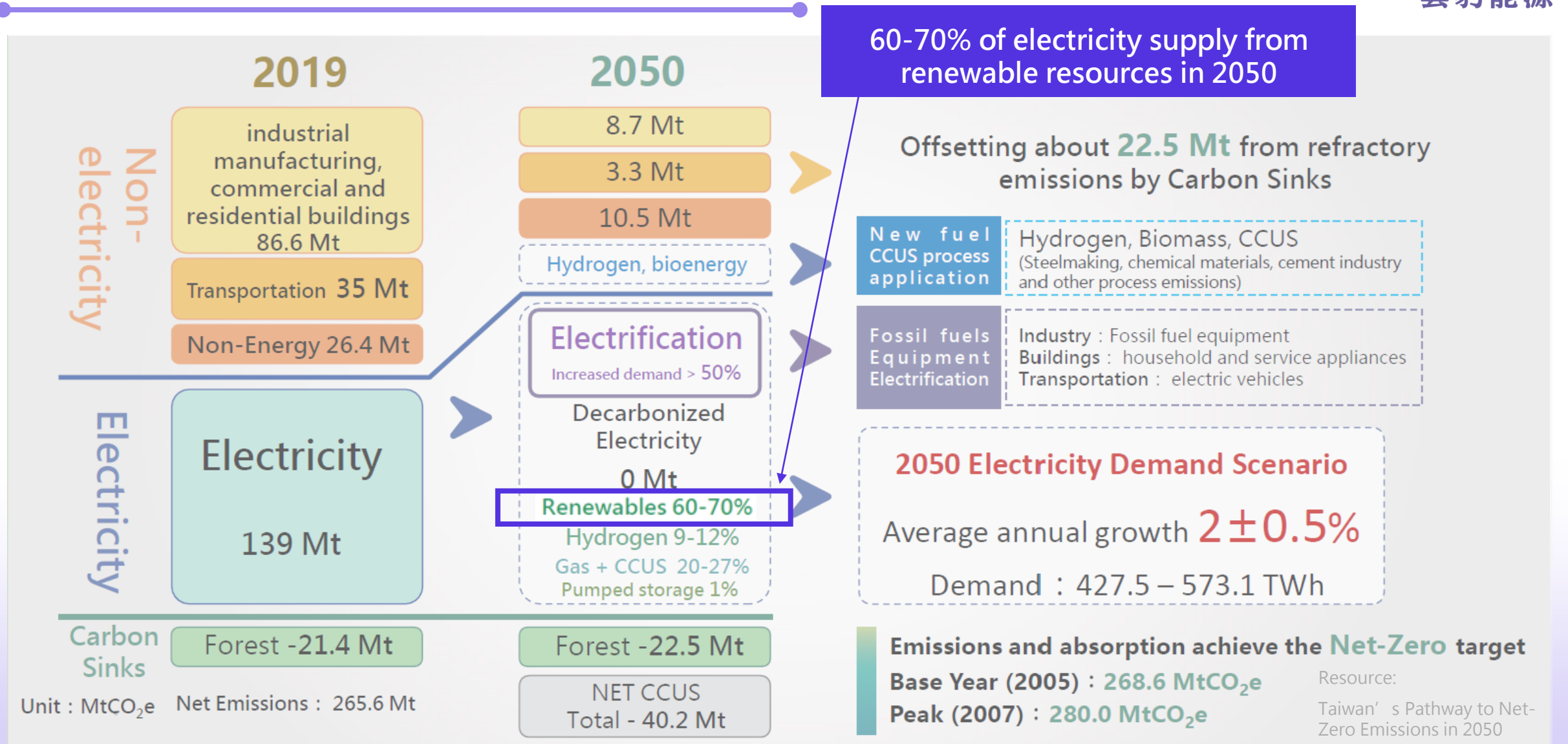
Others



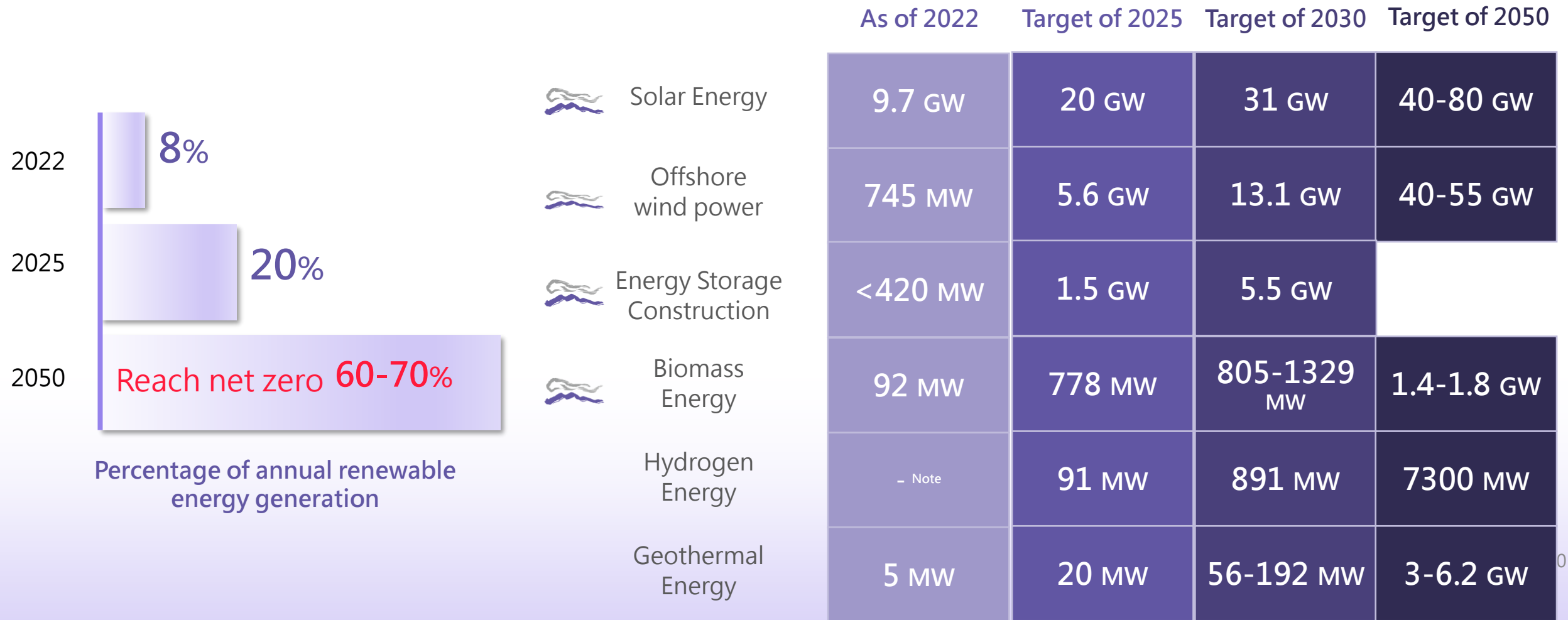
02

Market Overview

Taiwan's Pathway to Net-Zero Emissions in 2050



Government Target in Taiwan

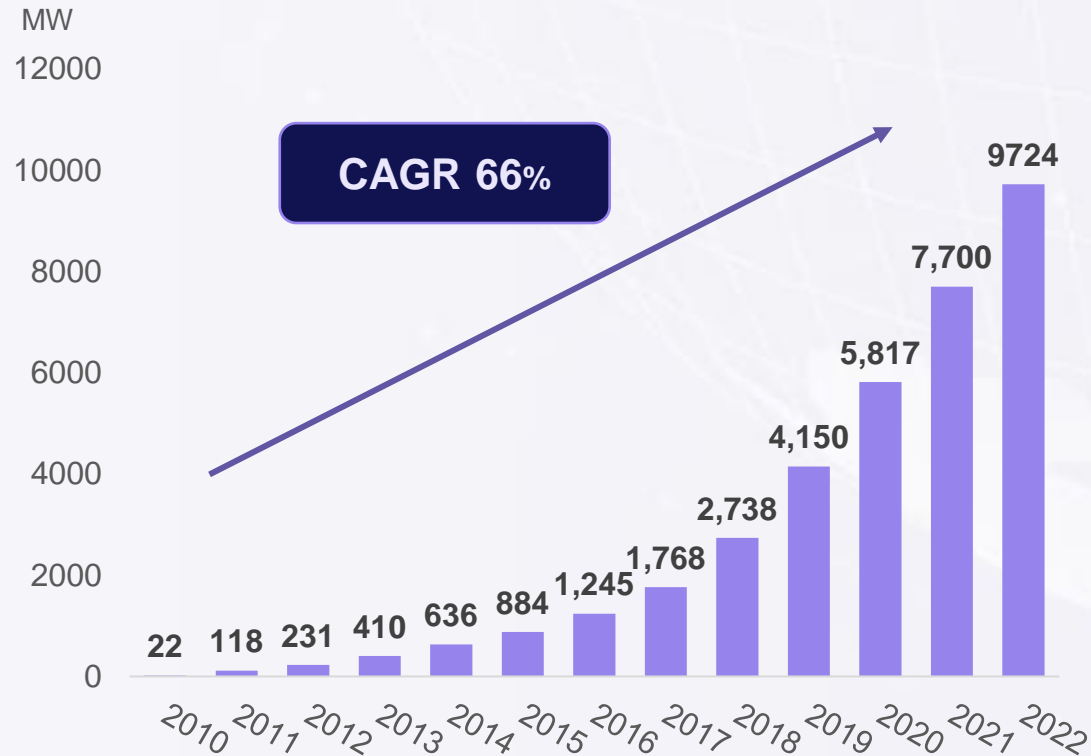


Data resources: NDC 2050 Net Zero Emission Pathway and Strategy General Description and 12 Key Strategies, Energy Administration, Ministry of Economic Affairs, R.O.C

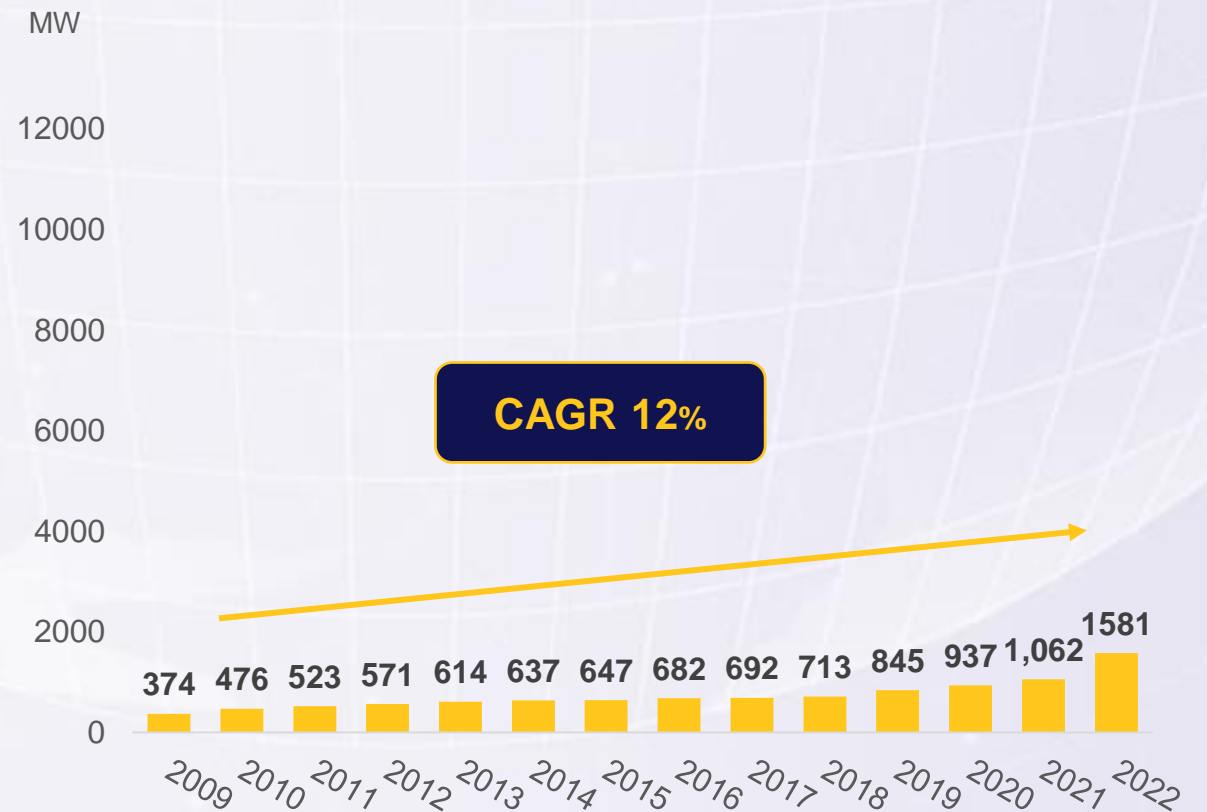
Note: No disclosure.

Renewable Energy in Taiwan Has Been Growing

Capacity of solar energy in Taiwan from 2010 to 2022



Capacity of wind energy in Taiwan from 2009 to 2022



Strong Demand of Water Treatment Construction in Taiwan

🌀 In 2022, **39** government tenders for water treatment in Taiwan. Totaled up to **US\$882M**

🌀 Budget for Taiwan Sewage Construction Plan - Sixth Stage (2021-2026) : **US\$3.36B**

Plan of Reclaimed Water Construction in 2031

Budget for reclaimed water construction

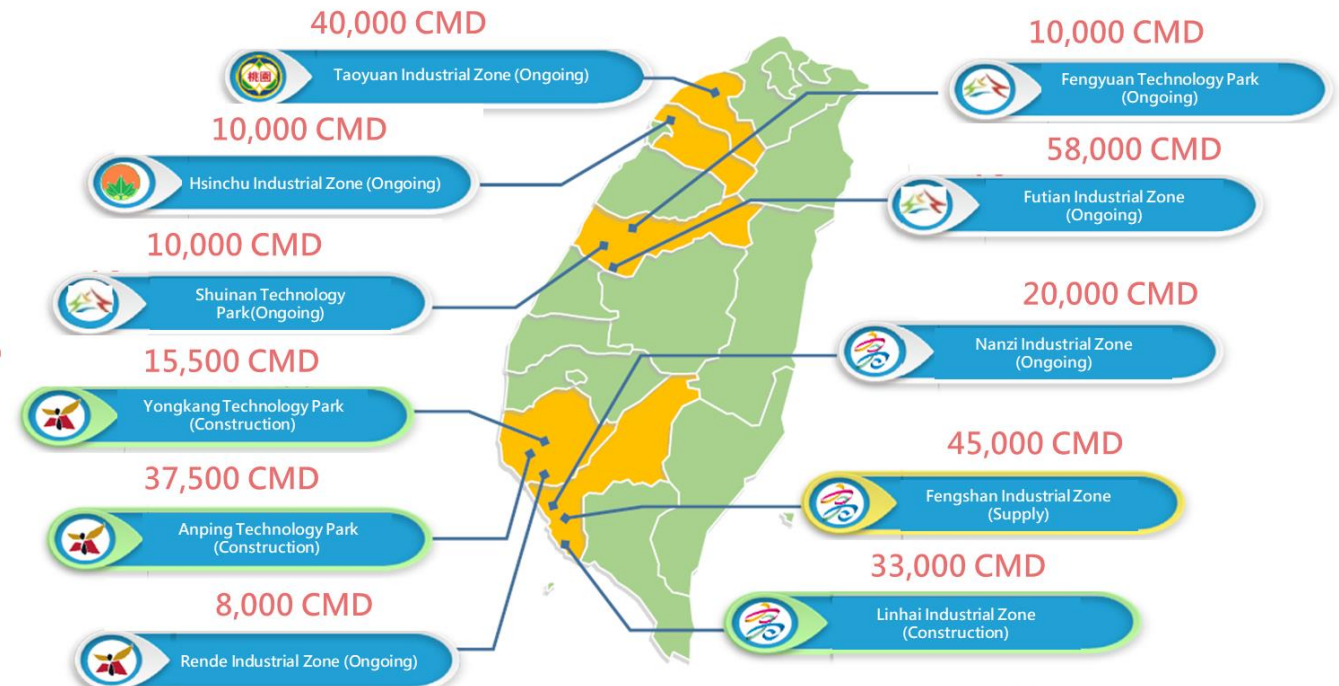
US\$ **501M**

Production of reclaimed water in 2031(E)

287k CMD

Trading value of reclaimed water in 2031(E)

US\$ **67-102M**



Note: : calculation assumption unit price \$0.65-0.98/CMD

Data source: CPAMI營建署、Government e-Procurement System政府電子採購網

03

Operational Achievements

3.1

Solar Energy



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Taiwan Largest Fishery & Electricity Symbiosis Project

128 MW

Completion in 2023 H1

Beimen Project successfully arouse the willingness of local fisherman, and promote the development of Fishery & Electricity Symbiosis Project.

Area

170 hectare

Capacity

128.2 MW

Est. Electricity Output (Annual)

180M MWh

(Provide over 50,000 households electricity annually)

Est. Carbon Reduction (Annual)

95,000 metric tons

2021

November
Start

2022

December
Completed
108MW

2023

Q2
Completed
20.2MW

Solar Iconic Projects

J&V dominates in variety types of PV projects all over Taiwan

THE LARGEST Floating PV Project



THE LARGEST WenShan Landfill PV Project



THE LARGEST Rooftop PV Project



THE FIRST Indoor AI Fishery PV Project



THE LARGEST Fishery PV Project



The World's Third Green Energy Congress



The International Green Energy Port



Solar Iconic Projects

J&V dominates in variety types of PV projects all over Taiwan

Floating PV Project



Ground-Mounted PV Project



Rooftop PV Project



Rooftop PV Project



Rooftop PV Project



Ground-Mounted PV Project



Rooftop PV Project



Layout for Solar Energy Businesses Overseas



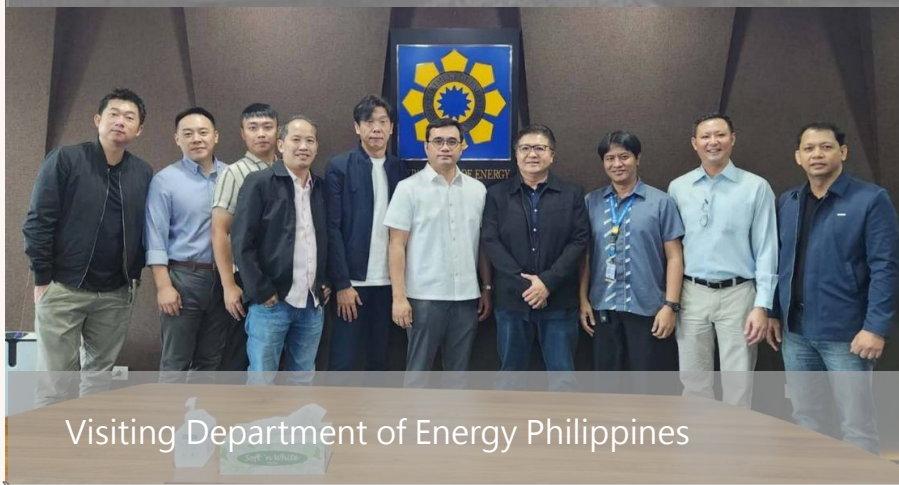
Developing solar businesses in
Japan and Southeast Asia



Visiting local substation in Indonesia



Representatives from APO Thailand
visited J&V office



Visiting Department of Energy Philippines



Representatives from Gwangju Free
Economic Zone Authority and Incell Co.
visited J&V office

3.2

Energy Storage

Energy Storage Acquisition - TPE Energy Inc.



Established

2019

- The **only SI** that has cooperated with **multiple Tier1 BESS brands**.



- Providing **7/24/365** O&M service with **Tier 1 BESS suppliers certification**.
- Operating branches in Taipei, Taoyuan, Kaohsiung and warehouse in both northern and southern Taiwan.



Energy Storage Acquisition - TPE Energy Inc.



Industry leader with achievements in Taiwan

1. Awarded **TPC's 1st AFC TENDER** in 2020
2. Awarded **TPC's 1st ESS TENDER** which was **THE LARGEST** and finished in **THE FASTEST TIME** in 2021
3. Awarded **1st PV+BESS PROJECT** in 2022
4. On construction of **2** of the **PRIVATE LARGEST 100MW BESS SITES** in Taiwan in 2022
5. **1st SMALL BESS DEMO SITE** cooperation with convenience store in Taiwan in 2023
6. SPM of project site has achieved **99.92%** since 2021



ESS Iconic Projects



Zhongli Project

Capacity	2MW/ 3MWh
Application	dReg0.5

TPC' s FIRST AFC TENDER



Beimen Project

Capacity	6.2 MW/ 22.3 MWh
Application	Peak shaving

First PV+BESS project



Luyuan Project

Capacity	20MW/ 33MWh
Application	AFC service

TPC 's FIRST ESS TENDER



A Project

Capacity	100MW/ 215MWh
Application	dReg0.25

Largest BESS sites



B Project

Capacity	100MW/ 120MWh
Application	dReg0.25

Largest BESS sites



Guanyin A Project

Capacity	4.6MW/ 6.4MWh
Application	dReg0.25

Guanyin B Project

Capacity	4.6 MW/ 9.6MWh
Application	dReg0.25



Family Mart Hsinchu

Capacity	10kW/ 30kWh
Application	emergency power supply

First small BESS demo site

3.3

Water Treatment

Water Treatment Acquisition- Weisheng Envirotech Co., Ltd

Water resources in Taiwan are limited, in order to create a high-quality investment environment and provide industrial water, meeting the needs of businesses, there is no time to delay. Next development will focus on the **reuse of industrial wastewater, domestic wastewater, seawater desalination and reclaim water.**



Established

1984

Achievement

14 cases

domestic/foreign corporate
and public projects

25 cases

commissioned operating
or maintenance projects

- Awarded Taoyuan International Airport T3 Wastewater Treatment Projects (US\$ 59M) in 2021-2022
- Awarded Di Hua Wastewater Treatment Plan – Phase I~III in 2023 (US\$ 118M)

Water Treatment Iconic Projects

Domestic Sewage

Taoyuan City – Yisheng Water Resources Recycling Center



Kinmen County – Yangshan Water Purification Plant



Industrial Sewage

Taichung City - Science Park Sewage Treatment Plant



Taichung City – Zhonggang Sewage Treatment Plant



Water Resources Reservation

New Taipei City– Zhitan Sewage Treatment Plant




New Taipei City– Wulai Sewage Treatment Plant



Water Treatment Investment- Greenhealth Water Resources Co. LTD



	Project Type	Contract Duration
	BOT	2013~2048 (Total 35 years)

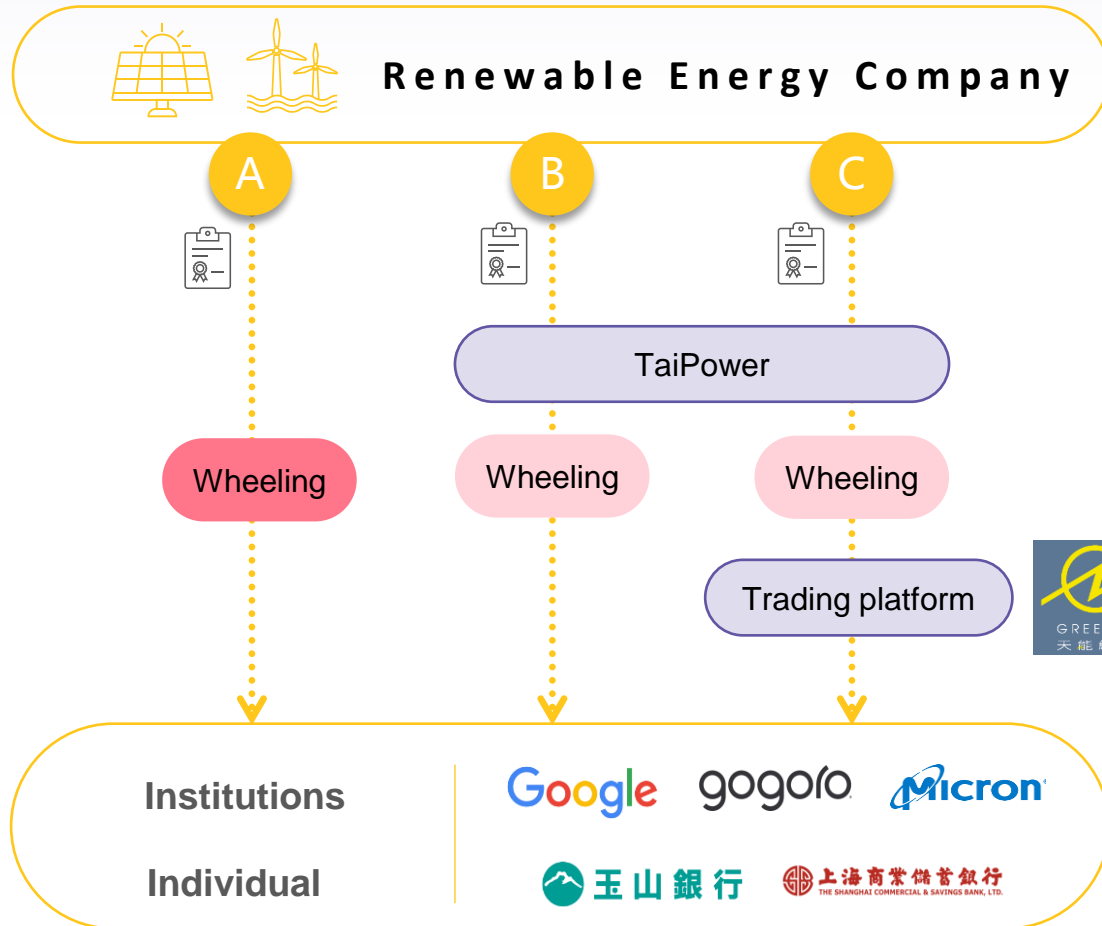
- GREENHEALTH has consistently collected income from **sewage treatment fees** from the construction period to the subsequent operation period, resulting in a **stable income stream**.

- 2017** —● The Phase I "Annan Water Resources Recycling Center" has been completed and opened, with an average daily sewage treatment capacity of about **13,500 tons**.
- 2027** —● The Phase II expansion is expected to be completed by 2027. The estimated daily sewage treatment capacity is **27,000 metric tons**, and it is expected to be a significant increase from the current 27,000 metric tons, and target users will support approximately 39,000 households, with an average wastewater treatment capacity of approximately 13,500 metric tonnes per day.

3.4

Renewable Energy Trading Platform

Trading Platform - Greenet Co., LTD.

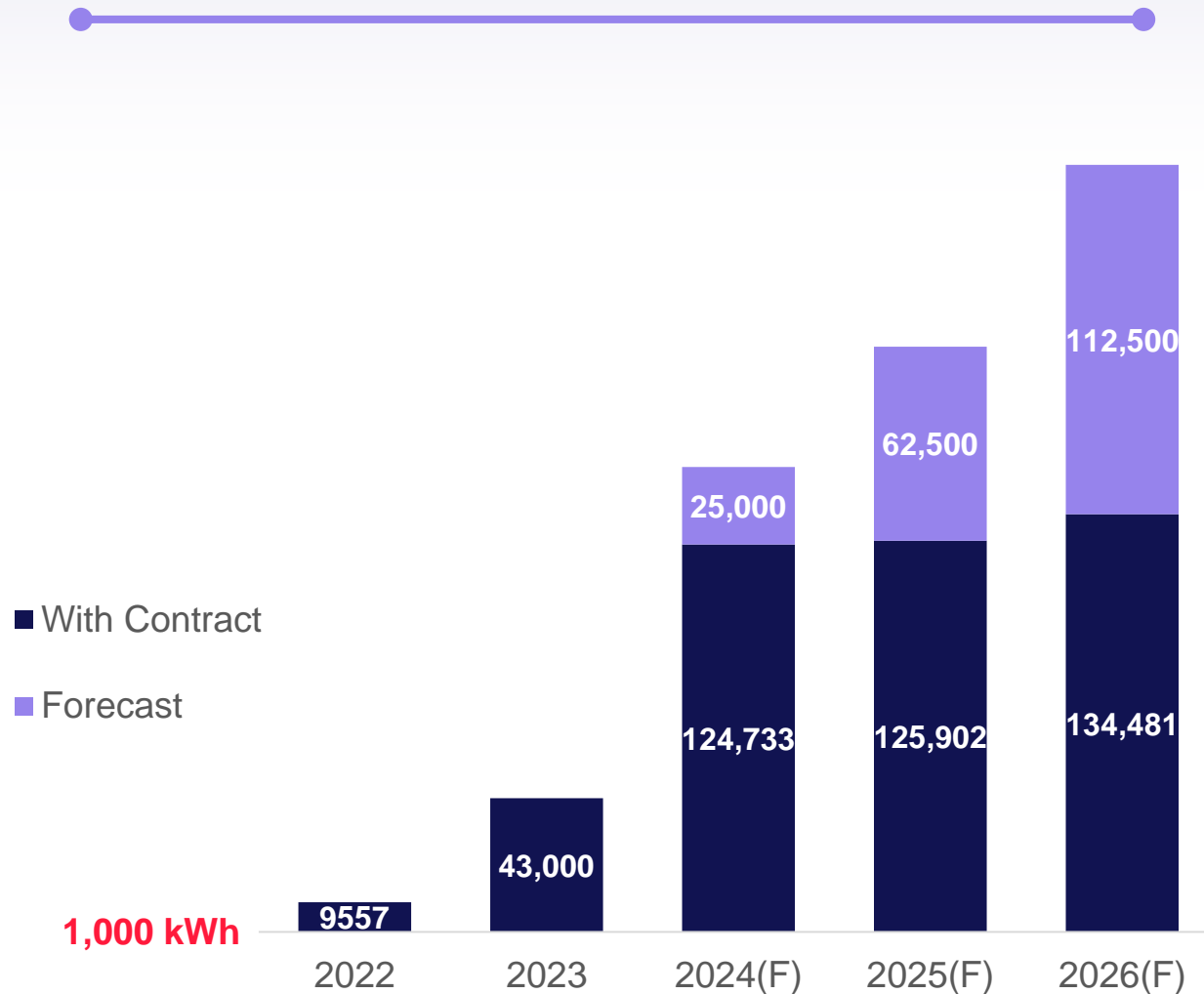


Established

2021

- 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.

Green Energy Demand Estimation (Annually)



3.5

Wind Energy

Offshore Wind Market in Taiwan

- As of 2022, 0.7GW of offshore wind power is installed.
- The third stage focuses on human capital localization, scaling up the sites, and planning for long-term stability.



Taiwan Offshore Wind Installed Capacity Goal: 5.6GW in 2025

Three Stages		Capacity Goal	Grid Connection
Stage 1	→ Pilot Sites	238 MW	2019 - 2021
Stage 2	→ Potential Sites	5.5 GW	2021 - 2025
Stage 3	→ Zonal Development	15 GW	2026 – 2035 (1.5GW/year)

Offshore Wind Energy Team Taiwan



**Invested in Tian Li Offshore
Wind Technology**

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"

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.

Marine Engineering Investment- Done Fang Offshore



Established

2019

DFO was incorporated as an affiliated company of Hung Hua Construction (HHC), the head of marine engineering with **large-scale fleet of vessels**.

**Largest offshore wind vessels team in Asia,
total investment over US\$13M**



Construction Support Vessel

- Amount : 2
- proven track record across multiple projects, including in subsea scopes
- Operating day/annual : 325



Crew Transfer Vessel

- Amount : 5
- **Transfer crew** back and forth
- Operating day/annual : 300~345



Anchor Handling Tug Vessel

- Amount : 3
- Anchor Handling Tug
- Operating day/annual : 220



Barge

- Amount : 1
- transport technical, e.g., piling 、 rack
- Operating day/annual : 300

Onshore Wind Energy Acquisition- Revo Power Co., LTD.



Established

2023

Paid-in Capital

US\$ **0.5M**

Services

- Wind Monitoring Analysis
- Wind Farm Overall Development
- Environmental Impact Analysis
- Wind Farm Design

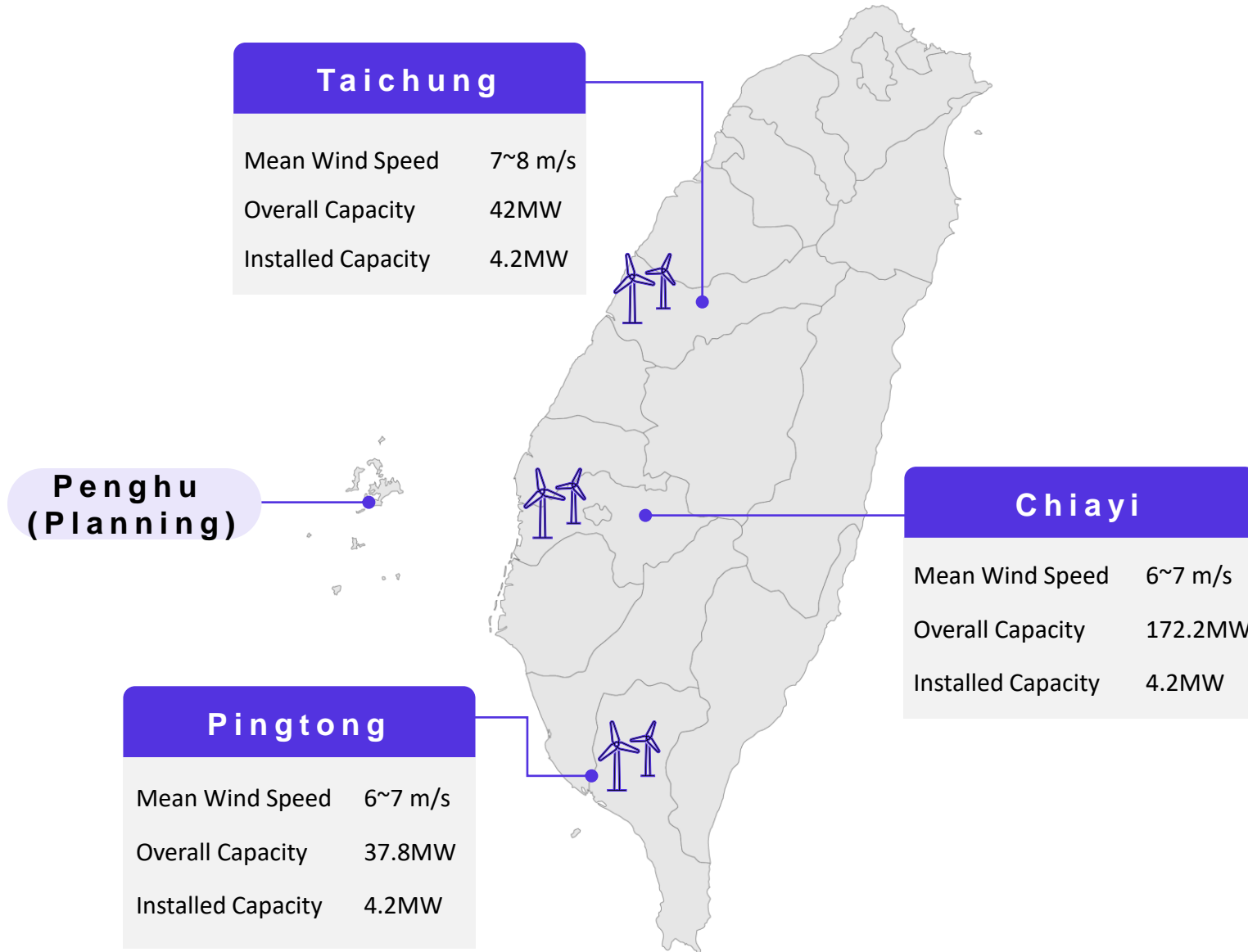


As of 2022, accumulated capacity of onshore wind in Taiwan: 0.8GW

Taiwan Government Goal of Onshore Wind in 2025 : **1.2GW**

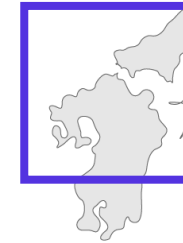
WIND ENERGY

Development Zones for Onshore Wind Farms



Offshore Wind in Japan's Market Planning in 3 Stages

Three Stages	Numbers	Grid Time
Stage 1	2	bid in 2025, public in 2026.
Stage 2	1	bid in 2026, public in 2027.
Stage 3	2	bid in 2027, public in 2028.



Cooperation Partner



Fields

Wind,
Solar PV,
Small Hydro

Registration Place

Fukuoka City,
Japan

Employees

197

Achievment

Shizen Energy has made remarkable achievements in developing and constructing renewable energy power facilities in Japan, with a cumulative installation capacity of approximately 1GW, and projects covering solar, onshore and offshore wind power, hydropower and biomass energy.



WIND ENERGY

3.6

Plastic Bag Recycling

Plastic Bag Recycling Acquisition- Nexus Materials Inc.



Established

2005

Paid-in Capital

US\$ **1.8M**

J&V plans to invest in Nexus to expand to **green circular economy market**.

- The **only 100% Green Mark manufacturer** in Taiwan.
- The **only** one with the certification of **100% recycled plastic bag**.
- **OMRI listed** for organic use according to USDA National Organic Program Rule.
- Won the golden of resources recycling enterprise in 2022.



100% Recycled Plastic Bag



Recycled Material

廢棄膜料



Process & Filter

膜料破碎及過濾



Heating Dissolve
(100% recycling of waste gas)

加熱溶解
(廢棄100%循環再利用)



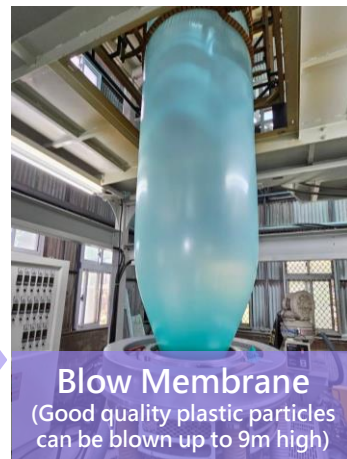
Injection Molding
(Nearly new material grade)

射出造粒
(接近全新料等級)



Cleaning & Cooling
(100% wastewater recycling)

洗淨冷卻
(汙水100%循環再利用)



Blow Membrane
(Good quality plastic particles
can be blown up to 9m high)

熱熔吹膜
(粒子品質良好可吹至9米高)



Process

製袋



Printing

印刷



Finished Product

成品

Clients



3.7

Biomass

Biomass Project -Power Station

- Biomass thermal power plant by using **agricultural waste** and **wood waste** for fuel.
- Expected power generation efficiency to reach **25%**



04

Strategic Investments

4.1

Biomass

Biomass Investment- Grand Green Energy Co., LTD.



Names



(Stock Code : 6639)

Established

2008

- J&V Energy invested in GRAND GREEN ENERGY to enter the steam and power supply market.
- The business includes CHP plants, organic agriculture, organic fertilizer, and so on.



Jiang Su Xing Hua Project

江蘇興化脫水果蔬產業園區生
物質集中供應特許項目



4.2

Biodegradation

Biodegradation Investment - InnoRs Biotechnology Co., Ltd.



- J&V invested in 2023 · assisting the cooperation with **Kuang Chuan Dairy Co., Ltd**, one of the largest dairy provider in Taiwan, and the factory expansion in Yunlin.



Established

2019

- The only automatic feeding invention patent in Taiwan.
- Full-artificial environment BSF mating system, more eco-friendly, and create highly value of circular economy.



Black Soldier Fly (BSF)

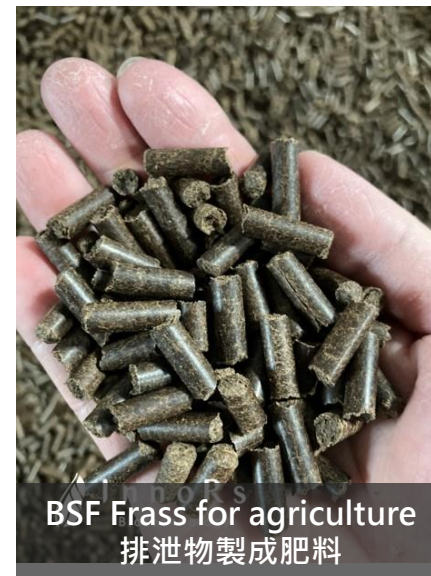
No disease contagion record

Use larva stage to intake and reduce various organic wastes

Capable of processing a wide variety of organic waste.

Exceptionally fast processing speed.

High economic value of byproducts after processing.



4.3

Electric Bicycle



Electric Bicycle Investment - eQuick Technology Pte. LTD.

eQuick

Established

2019



- The **FIRST** application of bluetooth sensor chips in the bicycle industry.
- **Lightweight design** (-20% weight than other e-bike products), **wireless integration**, and modularity product.
- Providing ESG solutions for major manufacturers.

Industry-leading high-tech bicycle product



Rechargeable Battery

- Run Time: 100 km
- Type C charger



AI automatic transmission



Rechargeable Battery

- Run Time: 60 km
- Type C charger

4.4

Intelligent Aquaculture

Intelligent Aquaculture Investment- ID WATER Co., Ltd.



Established

2017

- Combining water quality monitoring and **AIoT smart shrimp farming technology**, with a focus on the shrimp-electronics symbiosis market.
- Business expansion plans in **Southeast Asia** with **large-scale mangrove reforestation programs around 20,000 hectares** in Vietnam, Palau, Middle East which will provide **carbon credits**.

Industry
Exclusive



Automatic feeding system.



AI image recognition technology



Shrimp-electronics symbiosis in Yilan

Industry
Exclusive



24HR photovoltaic water quality monitoring system



Self-own brand



05

Financial Performance

Income Statement (Consolidated)

Unit: USD in thousand

	2020	2021	2022	2023 H1
Sales Revenue	\$ 6,932	\$ 70,653	\$ 206,582	\$ 97,019
Gross Profit	3,165	15,826	42,836	20,556
Gross Margin	45.66%	22.40%	20.74%	21.19%
Operating Expense	3,290	8,148	14,112	7,204
Operating Expense Ratio	47.45%	11.53%	6.83%	7.43%
Operating Income(Loss)	(124)	7,678	28,732	13,352
Non-Operating Income	7,191	478	(7,189)	3,003
Income before Taxes	7,067	8,156	21,534	16,355
Net Income	5,976	7,557	15,448	13,491

Unit: TWD

EPS	2.54	2.3	4.03	3.55
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06

Environmental, Social, Governance

Social Responsibilities

Rural Areas Sponsorship of Solar Energy Charity in Taiwan

Visited

6 cities

Capacity

26 kW

Est. Electricity
Output (Annual)

30k MWh

Est. Carbon
Reduction (Annual)

16 tons



Social Responsibilities

Sponsorship in Sports



Hearing Impairment Baseball Club Sponsorship



Holder of basketball team in Professional League



Luge National Athlete Sponsorship



Taiwan National Mini-Football Tournaments Sponsorship



Support the development of Young Children's Football in Rural Areas.



FS1 League Title Sponsorship of Taipei Futsal Club

Social Responsibilities

Here comes
Taiwan Beer Leopards!



Social Responsibilities

Establishment of CountryEDU Charity Foundation



財團法人鄉育教育基金會
CountryEDU Charity Foundation



J&V Energy has identified issues related to the lack of educational resources and the inadequacy of living function in rural communities as businesses grow across the country.

In order to offer children in rural areas equitable educational opportunities and to direct them towards positive and correct developmental opportunities, CountryEDU charity foundation has been established and public welfare education programs were set up.

J&V Energy's small milestone calls for more charitable enterprises to support the development of education and sustainable talent culture in Taiwan.



Achievements of CountryEDU Charity Foundation (As of 2023)

Served Students

5561+

Counseled Schools

24

Located on Site Service

11 cities

Courses Developed

45 series





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The Low Carbon and Sustainable Home



Carbon Management

Biomass

Energy Storage

Electric Bicycle

Energy Trading Platform

Floating Solar Energy

Solar Energy

Plastic Bag Recycling

Biodegradation

Offshore Wind

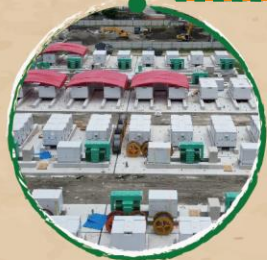
Onshore Wind

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Marine Engineering



TPE
台普威能源



GREENET
天能綠電



WEISHENG
煒盛環科

WEISHENG
禾康水資源股份有限公司



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Thank you

J&V ENERGY TECHNOLOGY