KAORI 50+
Go For Sustainable Future

KAORI HEAT TREATMENT CO., LTD.

2021 Investor Conference

December, 20th, 2021

www.kaori.com.tw

Innovation、Quality、Responsibility、Honor

Safe Harbor Notice

- KAORI's statements of its current expectations are forward-looking statements subject to significant risks and uncertainties and actual results may differ materially from those contained in the forward-looking statements.
- Information as to those factors that could cause actual results to vary can be found in KAORI's Annual Report.
- 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

- Company Profile
- 2021 Business Results and 2022 Outlook
- Q & A

  Reference: 3Q21 Financial Results

About KAORI

Since 1970, the company's major goal has been to pursue cutting-edge heat treatment technology and to manufacture world-class products.

Key Milestone

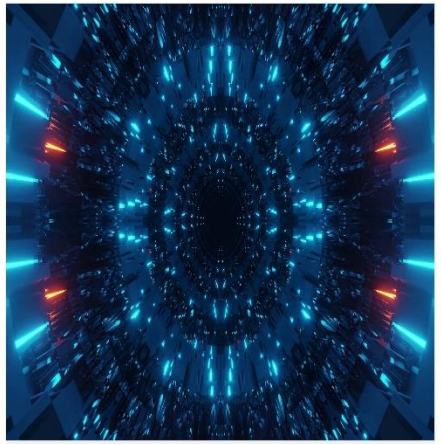
Innovations and Transformations
Continue to innovate and transform to promote the sustainable development of the industry towards net zero carbon emissions.

Key Technologies

Find value from the profession and develop green technologies for low-carbon emission reduction.

Art of Welding/Brazing

Heat Transfer



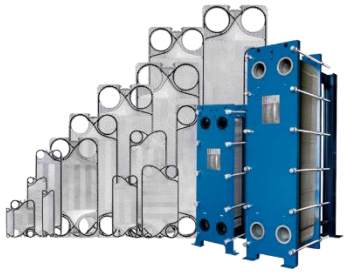
Thermal Management

Hydrogen Applications

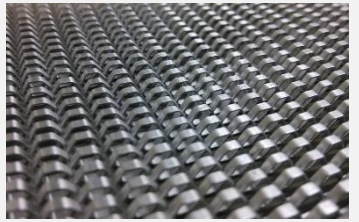
Core Business

Energy Solutions
"Energy Utilization" to "Energy-Saving", and further to today's "Energy Production".

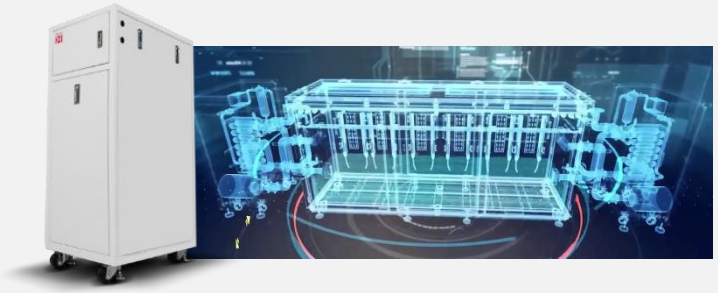
Brazed Plate Heat Exchanger



Gasket Plate Heat Exchanger



Brazing and Welding Technology



Immersion Liquid Cooling

Image: Well-known Data Centers Released

Hydrogen Generation &
Fuel Cell Power Generation

Pyrolytic Cracking of Mixed
Waste Organic Solvents

International Certifications

"Quality First, Customer First"
Build a complete quality and environmental management system

Certificated

ISO 9001
Quality Management System

ISO 14001
Environmental Management System

IATF 16949
Quality Management System
(Automotive Industry)

認證進行

AS 9100
Quality Management System
(Aerospace Industry)
To be certificated by 2022.Q1

ISO14064-1:2018
Environmental Management System
(Greenhouse Gas Emissions)
To be certificated by 2022.Q3

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- **2021 Business Results and 2022 Outlook**

Plate Heat Exchanger

Immersion Liquid Cooling

Hydrogen Clean Energy

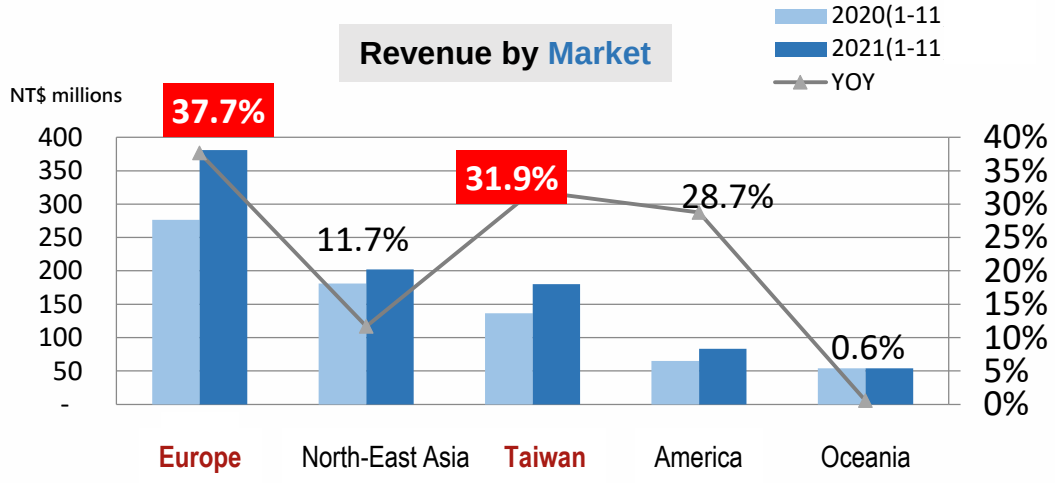
Metal Processing Welding/Brazing

Plate Heat Exchanger Review —

2021 global market size 702 Million,
KAORI market share 5.1%.

Market	Growth Momentum
Europe	• Shortage of natural gas and energy costs are increasing. • Drive the demand for new refrigerants and reduce the amount of refrigerant filled.
Taiwan	• Low-carbon economy, increasing demand for energy efficiency improvement

Industry	Growth Momentum
HVAC	• Greenhouse gas issues, the stage of conversion to natural refrigerants • High efficiency and energy saving, equipment replacement • New construction projects and the demand for thermal management
Hydraulic	• The epidemic adjusted production strategy, and the monthly order volume of key customers was at least 20% higher than last year.
Heat Pump	• Replacing gas water heaters, the original boiler manufacturer was transformed into a heat pump manufacturer.



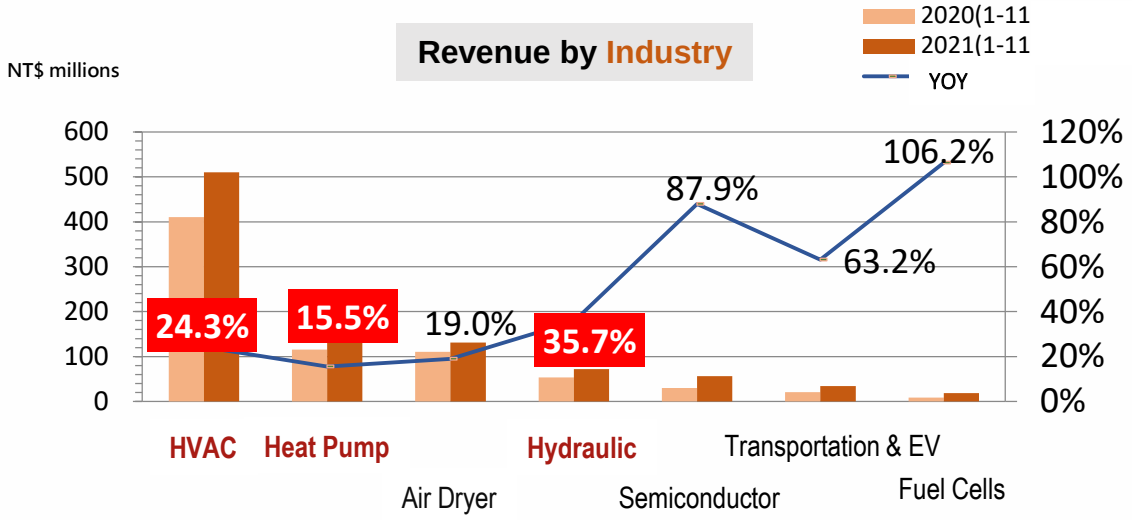


Plate Heat Exchanger

Product Roadmap (2021-2022)

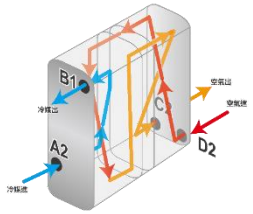
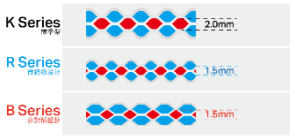
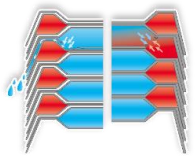
Product Series	Applications	The Purpose of Development	Features	Launch in
 A300	3 In 1 Air Dryer	Replace large shell and tube heat exchanger, small size, easy to install	Large Air Flow	2022.Q1
 B Series	Asymmetric	Meet the characteristics of R290 new generation refrigerant and improve system performance	Low Pressure Drop	2022.Q3
 D Series	Double Wall	Avoid the intercommunication fluid contacting the human body and meet the regulations and specifications	Prevent Fluid Contamination	2022.Q2

Plate Heat Exchanger

2022 Outlook—

Focus in the development of carbon reduction technology, enhance energy transformation in the industry.

Brazed Plate Heat Exchanger

EV Industry

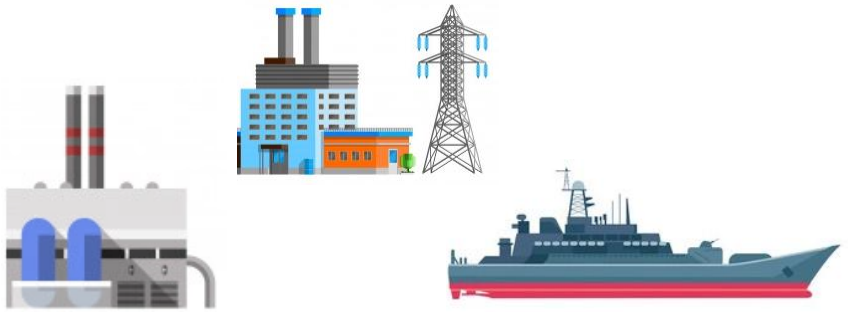
- E-Bus AC, Heat Pump and battery thermal management
- Fuel Cell truck heat recovery
- Battery cooling for E-Fleet refrigeration logistics
- EV Powertrain oil cooling

Brand Competitiveness

- Intelligent production management MES
- Netherland warehouse
- Digital Marketing-LinkedIn

Gasket Plate Heat Exchanger

New Materials/Products



- Shell and tube type: special material 316H, copper-aluminum-nickel alloy
- Plate type all welded type & plate type module type
- Open a new four-inch plate mold

New Market/Channels

- The International Maritime Organization formulates the use of low-sulfur fuel oil on marines
- Distributors across different industries

- **2022 Outlook, Strategy & Opportunity**

Plate Heat Exchanger

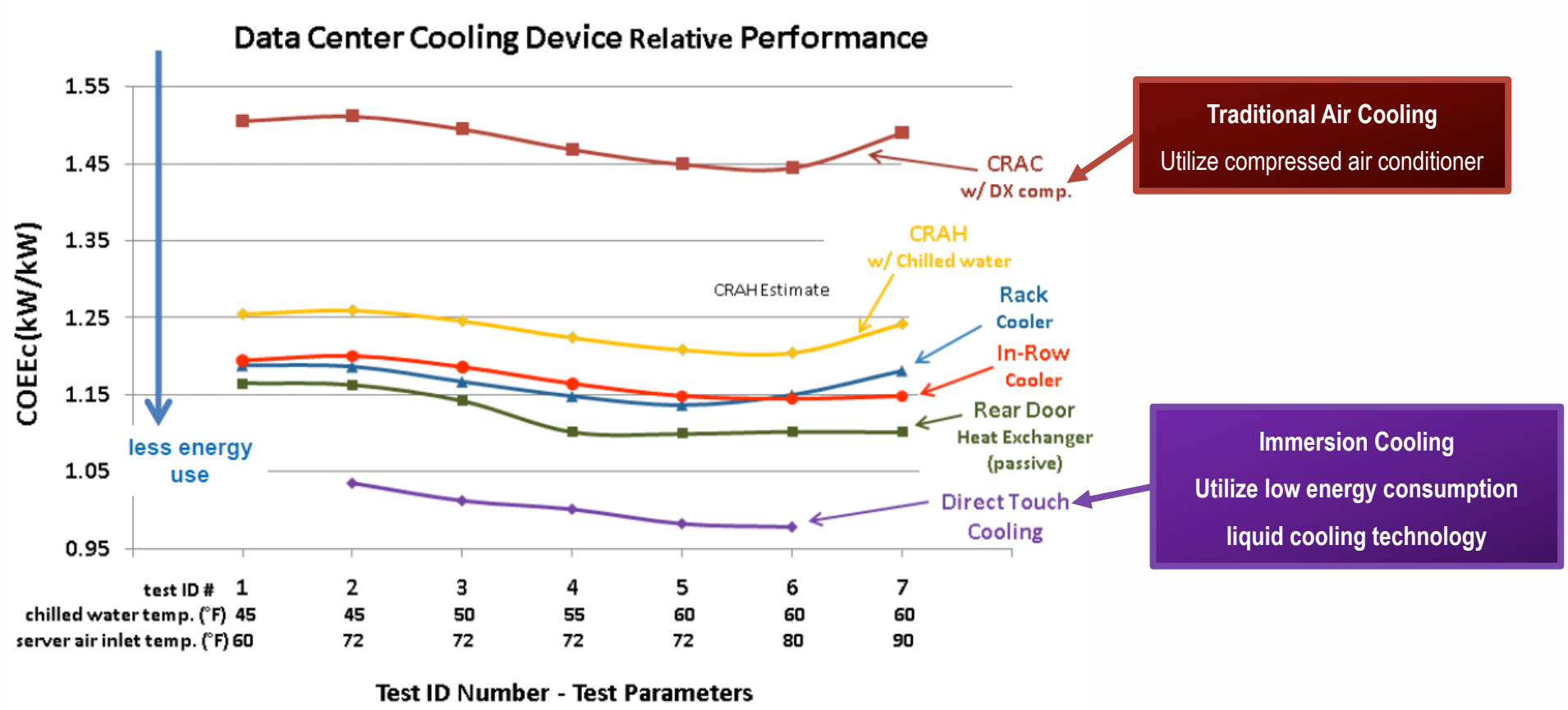
Immersion Liquid Cooling

Hydrogen Clean Energy

Metal Processing Welding/Brazing

Immersion Liquid Cooling

Server Cooling Technology Evolution



Traditional Air Cooling

Utilize compressed air conditioner

Immersion Cooling

Utilize low energy consumption liquid cooling technology

Source: Tests by Lawrence Berkeley National Laboratory (LBNL)

Immersion Liquid Cooling

The Benefits of Working with KAORI

High Efficiency	High Reliability	Low Noise	Zero Water	High Density	High Utilization	Low Cost
PUE < 1.09 Power saving < 40%	Parts Failure Rate < 50%	< 50%	No need for water chiller 0	Compared with air cooling, it supports a single cabinet 100kW > 10 times	Infrastructure (Electricity & Land) > 50%	no air-conditioning > 70%

Source: 2019 Well-known Data Centers Owner Released

Immersion Liquid Cooling

Low-Carbon Benefits

Take Chunghwa Telecom's newly built data center as an example, if the **Server Liquid Cooling Technology** is adopted

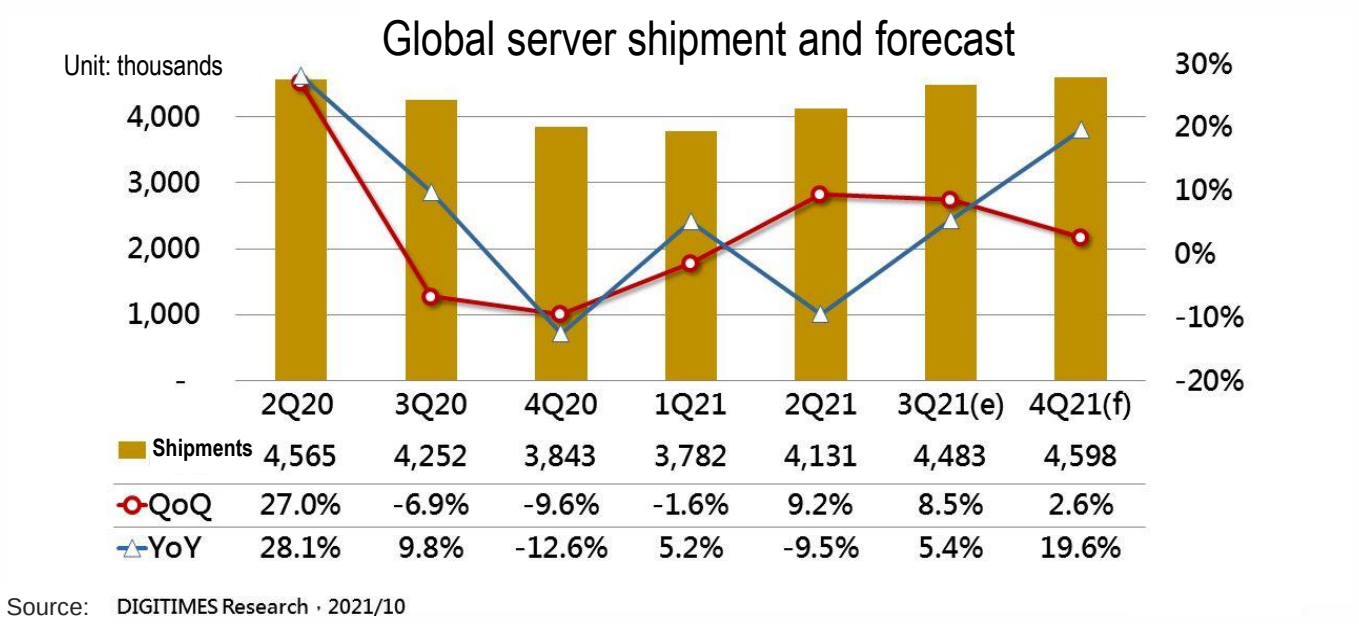
PUE	Power saving	Saving	Reduce	Equivalent to	Saving
1.1	27%	11,440 Household	22,467 Ton CO2e	57.8 Parks	20%
Original PUE 1.5*1		Average annual electricity consumption of households*2	Greenhouse gas emissions*3	Da-An Forest Park carbon uptake throughout the year*4	Water Consumption

*1: Chunghwa Telecom's 2020 Corporate Social Responsibility Report
*2: Taipower 2020/6/1 press release: In 2019, the average monthly electricity consumption per household is estimated to be about 326 kWh
*3: Energy Bureau's 2020 carbon emission coefficient of electricity
*4: Energy Bureau: Da-An Forest Park has a CO2 absorption of 389 metric tons per year.

Immersion Liquid Cooling

Market Size

- According to the latest report of DIGITIMES, a market research agency, server shipments in 2021 are expected to reach 16,994 thousand units, an increase of 19.6% over last year.
- As CPUs and GPUs increase high performance and power consumption continues to increase, the traditional air-cooled design is expected to use liquid cooling in the future 30%.

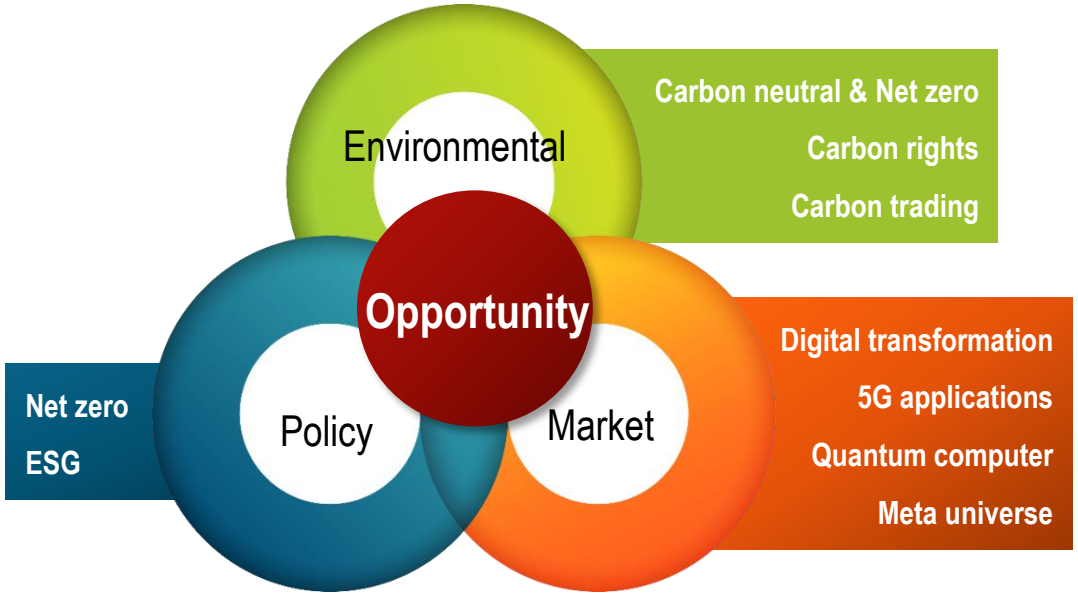


Source: DIGITIMES Research, 2021/10

Immersion Liquid Cooling

2022 Outlook

Strategy	
Market Leadership	**R&D Power**
	
• In-depth cooperation with key component CPU/GPU partners • PoC with server partners • Master heat exchanger technology • Publish white paper	• Diversified industrial applications • Modularization of product specifications



- **2021 Business Results and 2022 Outlook**

Plate Heat Exchanger

Immersion Liquid Cooling

Hydrogen Clean Energy

Metal Processing Welding/Brazing

Hydrogen Clean Energy

2022 Outlook—

Deepen cooperation with Bloomenergy® (BE)
Expand and establish the leading position of Taiwan's hydrogen energy economy

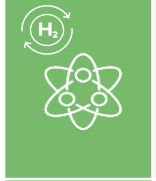
Product	Advantages	Growth Momentum
SOFC (Natural Gas) Solid Oxide Fuel Cells	Has been verified by well-known customers for a long time and large-scale commercial transfer.	BE and SK sign a three-year 500MW contract (2021/10/25)
SOFC (Biogas) Solid Oxide Fuel Cells	Turn waste into treasure and effectively reduce methane emissions.	BE signs a farm biogas 1MW project (2021/11/08)
SOFC (Hydrogen) Solid Oxide Fuel Cells	An important power generation system for Taiwan's hydrogen economy.	BE and SK will build hydrogen energy innovation centers in the U.S. and South Korea (2021/10/25)
SOEC (Electrolyze) Solid Oxide Electrolyzer cells	An important hydrogen manufacturing system for Taiwan's hydrogen economy.	BE and Heliogen set up a low-cost green hydrogen manufacturing plant (2021/11/16)
Marine Application Solid Oxide Fuel Cells	Obtained international maritime classification approval and U.S. Bureau of Shipping application verification	BE and Samsung Heavy Industries are jointly developing fuel cells for freighters (2021/7/30)
Carbon Capture Solid Oxide Fuel Cells	Carbon dioxide and other exhaust gas are emitted separately, resulting in high-efficiency carbon separation. Reduce the carbon emissions of power generation, and can achieve negative carbon emissions when combined with biogas power generation.	Help customers to achieve low carbon, zero carbon or negative carbon emissions

Source: Bloom Energy Press Release, 2021

Hydrogen Clean Energy

2022 Outlook—

Process waste and residual hydrogen
Recycle and reuse to achieve a **Circular Economy**

Solutions		Status	Growth Momentum
	Purification of industrial waste hydrogen	Complete the test verification, match the fuel cell power generation system, and apply for the green power certificate.	2021: 50 Nm3/h ; 2022: 300~600 Nm3/h expected to be processed
	Hydrogen generated by pyrolytic cracking of mixed waste organic solvents	Completed delivery, verifying	Organic process waste liquid from semiconductor, circuit board, and panel manufacturing process. This year's processing capacity is 15 tons/month, next year's 30 tons/month
	Hydrogen Generator (30 Nm3/h)	Customer locked, verifying	Go for mass production scale
	Reformed Methanol Fuel Cell (8~30kw)	Overseas market, bidding in progress	Through the world's largest manufacturer of diesel generators, to verify and expand channels.
	Weather Ball Project	Complete delivery, in operation	• Replace helium with hydrogen, saving 90% of the cost and solving the problem of helium shortage. • There are more than two thousand weather ball stations in the world

- **2022 Outlook**

Plate Heat Exchanger

Immersion Liquid Cooling

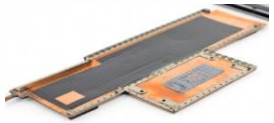
Hydrogen Clean Energy

Metal Processing Welding/Brazing

Welding/Brazing

2022 Outlook

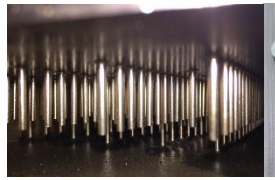
Uniform temperature board VC
Electric vehicle battery cooling module
Server water cooling module
Key components of hydrogen fuel cell
Key Aerospace Components



Product

Market

5G mobile communications
Semiconductor equipment
Hydrogen energy industry
Military industry
Low orbit satellite



Metal Processing

Heat transfer
Vacuum welding
Dissimilar welding

Technology

Service

Customized service
Mass production
Assembly test
Quality verification

Key Performance

- Purchase team centralize and refine structure of the business group.
- The growing use of automation in manufacturing
- Ziqiang Factory will operate by Q1, 2022.
- Strengthen personnel functions and enhance the competitive of the organization.
- Build ESG committee to plan carbon reduction goals (2021/11/24)

ESG
Sustainability

Y2022 - Y2024 Roadmap

2022

Key Results

- Issue the first sustainability report
- Issue climate risk assessment report
- Establish a carbon management system
- Establish a sustainable supply chain system

2023

Improvement & Refinement

- Carbon reduction goals roadmap
- Promote human rights due diligence and improvement
- Supplier sustainability risk evaluation and tracking system

2024

Long-term Development Goals

- Set low-carbon emission reduction targets
- Set corporate social participation goals
- Promote supply chain inventory and carbon reduction programs

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Unit：NT$ in thousands，EPS：NT$

Items	Y2017	Y2018	Y2019	Y2020	Y2021Q3
Revenue	1,779,318	1,931,586	2,083,280	2,076,359	1,649,611
Gross Profit	492,039	566,945	575,456	528,382	445,373
Net Income before Tax	73,932	283,852	199,080	154,671	152,438
Net Income after Tax	56,138	229,734	158,138	112,524	118,663
EPS	0.63	2.57	1.77	1.26	1.33

Reference: 3Q21 Financial Results

Unit：NT$ in thousands，EPS：NT$

Items	Y2021Q3	Y2021Q2	QoQ	Y2020Q3	YoY
Revenue	557,942	587,912	-5.10%	439,738	26.88%
Gross Profit	159,639	166,806	-4.30%	112,862	41.45%
Net Income before Tax	61,402	61,370	0.05%	21,815	181.47%
Net Income after Tax	46,795	53,590	-12.68%	20,024	133.69%
EPS	0.52	0.6	-13.33%	0.22	136.36%

Reference: 3Q21 Financial Results

Financial Ratio

Unit：NT$ in thousands，EPS：NT$

Items	Y2017	Y2018	Y2019	Y2020	Y2021Q3
Current Ratio (%)	148	224	181	164	138
Quick Ratio(%)	116	134	110	101	89
Average Collection Days	112	67	48	60	71
Average Inventory Turnover Days	162	152	148	148	144
Debt Ratio(%)	50.14	32.77	34.28	44.70	47.62
Return on Total Stockholders' Equity (%)	2.96	12.63	8.61	6.01	8.40
Net Income to sales(%)	3.16	11.89	7.59	5.42	7.19

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THANK YOU

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