



**NPC incorporated**

# **Business Plan and Potential for Growth**

**December 2024**

**NPC Incorporated  
(TSE:6255)**

1. Business Model
2. Market Environment
3. Competitiveness
4. Business Plan
5. Risk Information

## Company Policy

We, through creation of products,  
aim to be a company needed by nature, society, and people.

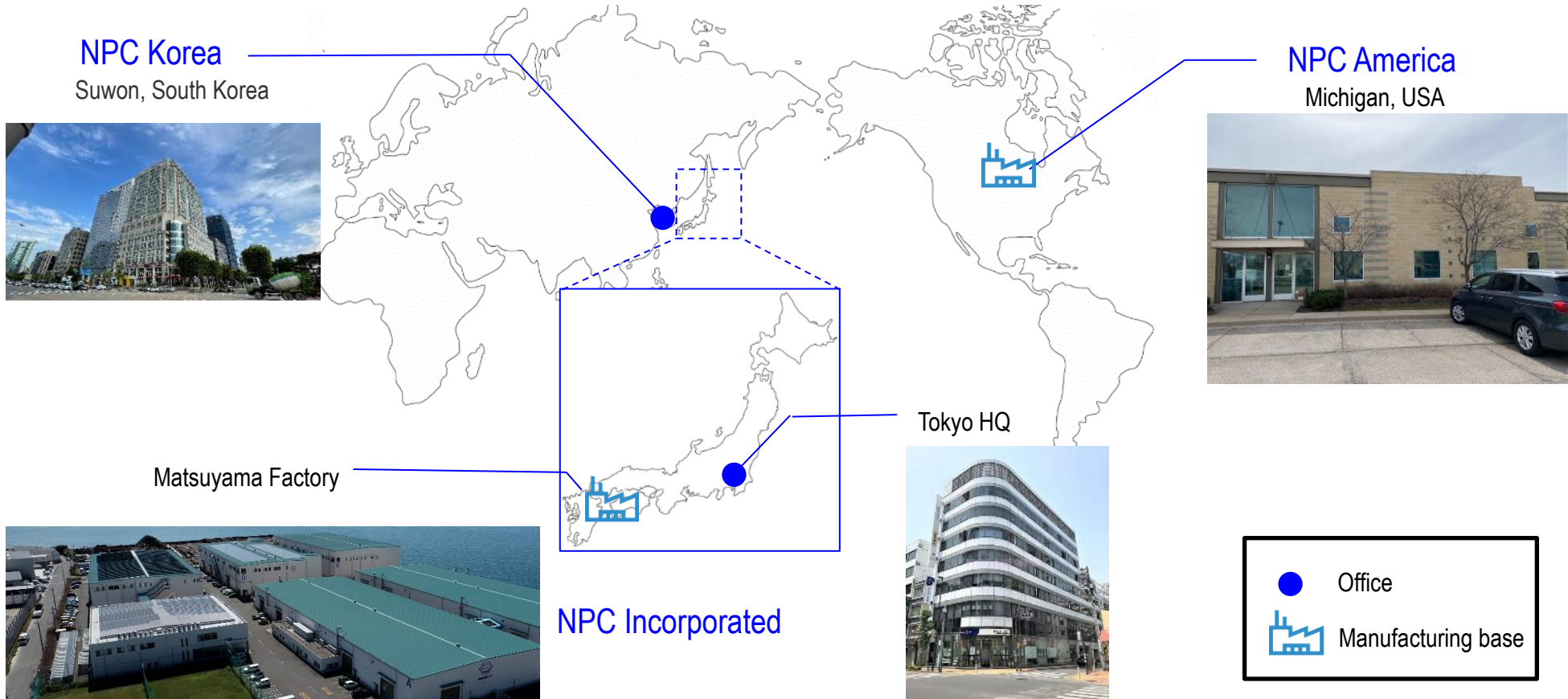


Matsuyama  
Factory

Company Name	: NPC Incorporated
Establishment	: December 1992
Activity Bases	: Tokyo Headquarters/ 1-7-15 Higashi-ueno, Taito-ku, Tokyo Matsuyama Factory/ 2889 Nishihabu-machi, Matsuyama-shi, Ehime
Capital	: 2,812 million yen (as of August 2024)
Employee	: 171 (consolidated) (as of August 2024)
Fiscal year end	: August 31
Stock Market	: TSE Growth
Stock code	: 6255

# Group Network

Name	Function	Employee
NPC Incorporated	Sales, Procurement, R&D, Design, Manufacturing, O&M	167
NPC America Automation Inc. (consolidated subsidiary)	Sales, Design, Manufacturing, O&M	4
NPC Korea Co., Ltd. (non-consolidated subsidiary)	Sales, Procurement	1





■ PV module manufacturing equipment



■ Automation machines



■ Vacuum related equipment



■ Solar panel disassembly equipment



■ Inspection service for solar power plants



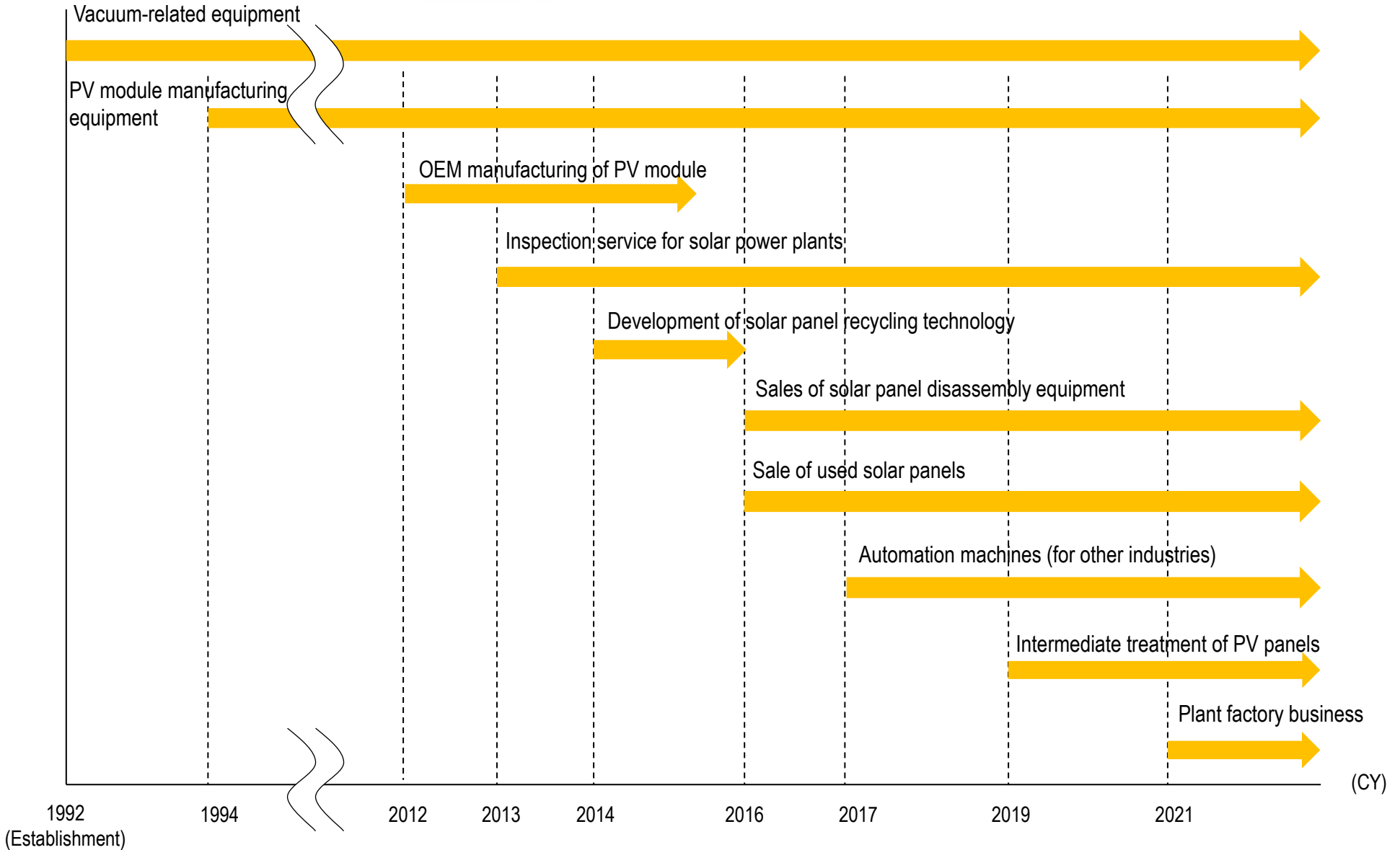
■ Reuse/recycling of solar panels



■ Plant factory business



# History of Business Expansion

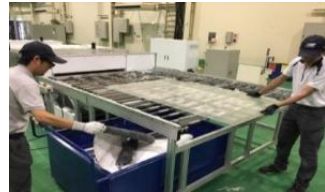


# Target of Each Business

## NPC Incorporated



Manufacturing of equipment



Solar panel recycling



Plant factory

PV module manufacturing equipment



Automation machines,  
Vacuum-related machines



Solar panel disassembly equipment



Inspection service for solar power plants



Collection and reuse sale of used  
solar panes



Glass, aluminum, copper wire, etc.

## Companies

PV module manufacturers

Electronic parts companies  
Automobile-related  
companies  
Display-related companies  
Food companies

Waste management  
companies

solar power plants  
EPC  
Constructors

Recycling companies

## General consumers (within Ehime pref.)

(Retail business)  
Supermarkets  
Delicatessens

(Food service)  
Restaurants  
Hotels

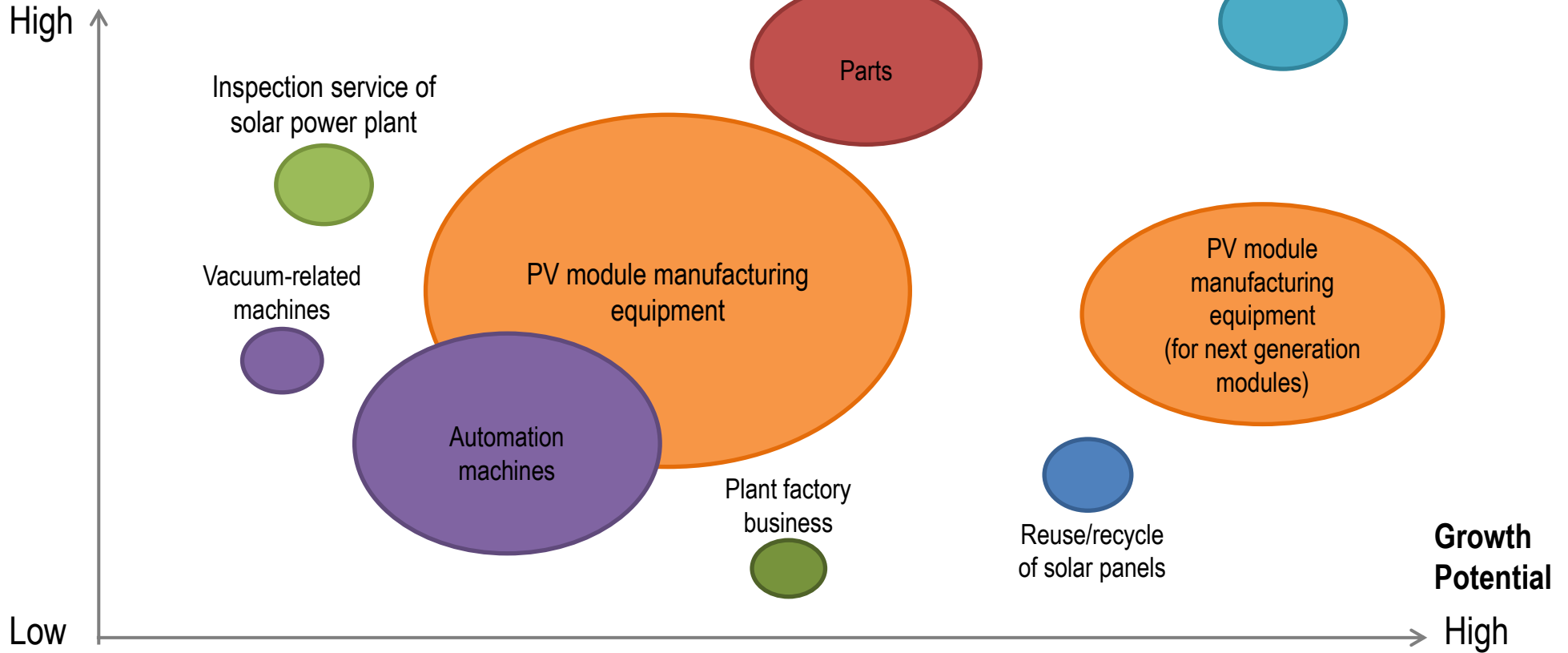
Food processing  
companies



Vegetables

# Business scale, growth potential, and profitability of our products and services

Profitability

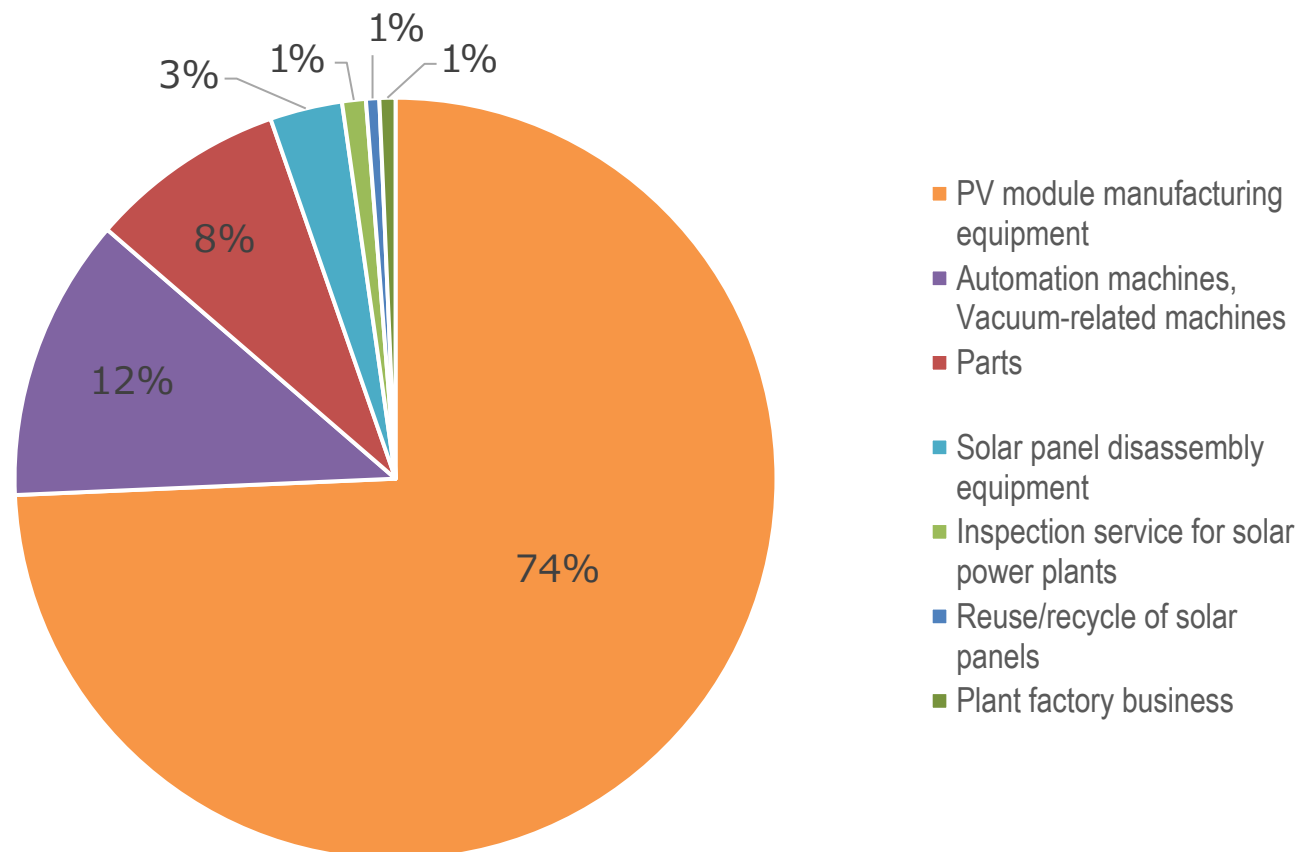


- The weighted average gross profit margin for past 5 years: 27.9%.
- PV module manufacturing equipment is stably profitable as we can take advantage of our 30 years' experience in the industry.
  - PV module manufacturing equipment business consists of new equipment and upgrading & expansion of existing equipment.
  - Profitability of upgrading & expansion is higher than new equipment as they are implemented on our own equipment installed in customers' facilities.
- Automation machines are less profitable than PV module manufacturing equipment as there are many competitors.
- Solar panel disassembly equipment has high profit margin as it is equipped with our proprietary technology.
- Solar panel inspection service also has a high profit margin due to our original technology for detailed inspections.
- Benchmark of overall gross profit margin: 25%



# Sales Composition

Sales breakdown of past 3 years



**【Notes】**

- The numbers related to sales in the above graphs are based on the accumulated sales amount from FY2022 to FY2024 (JPY 24,284 million).

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# PV Module Manufacturing Equipment (1)

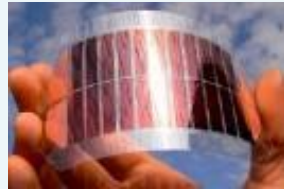
PV modules to which our manufacturing equipment is targeted

## Thin-film PV modules

NPC's target

## Crystalline PV modules

Next-generation PV modules such as perovskite

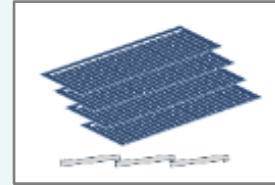


Thin-film (CdTe) PV modules



PV modules for special use

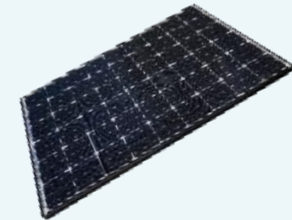
Building-integrated modules



Module for satellites



General crystalline modules



We offer custom-made high-end manufacturing equipment, which is required to manufacture thin film modules and special-purpose crystalline modules (such as BIPV modules and satellite solar modules). As an equipment manufacturer in this field, we have no specific competitor.

Our main customers are PV module manufacturers in the US and Japan. Among other companies, we have done business with our largest customer, US-based First Solar (listed on NASDAQ), for nearly 20 years.

We also target next-generation PV modules such as perovskite PV. Perovskite stands for a name of a crystal structure. Using this structure, PV modules can be manufactured with coating technology at low-cost. As this technology enables soft and light-weight PV modules which can be installed where crystalline modules cannot be installed, it is regarded as a key technology in energy transition. Researches are underway for mass production.

Crystalline modules account for approximately 90% of PV module market.

They are used for purposes such as mega solar power plants or general in-house power generation and mainly manufactured by Chinese and Korean PV module manufacturers.

In addition, the manufacturing process for general panels is standardized and Chinese equipment manufacturers provide manufacturing equipment. We do not offer manufacturing equipment for these modules.

# PV Module Manufacturing Equipment (2)

## US PV market

US PV market is the second largest in the world.

(Source: *National Renewable Energy Laboratory*, Spring 2024 Solar Industry Update, May 14, 2024)

- Minimum generation cost of solar power generation in US is \$24/MWh, which is lower than \$68/MWh of fossil fuel generation. (Source: *LAZARD*, 2023 Levelized Cost of Energy+, April 2023)
- Actions regarding solar power generation are taken not only as a federation, but also on a state and regional basis. 12 states and 3 districts have legislated to transit to 100% clean energy by 2050 at the latest (includes 5 states and districts that will transit to 100% renewable energy), and many of the major corporations in the US invests or own solar power plants or place PV panels on their properties.

## US major customer

First Solar:

-No. 10 shipment in the world (2023)

(Source: *Infolink Consulting* "Global module shipment ranking 2023, February 8, 2024")

\*No. 1 production & shipment as a thin-film (CdTe) PV manufacturer

- NPC has provided equipment for all the factories that are in operation. Other than sales of equipment for new factories, there is also continuous business such as upgrading of equipment in operation and parts sales.
- First Solar has abundant order backlog (75.9GW) backed by the favorable market environment. Capital expenditure for capacity expansion to increase the production of standard products and R&D for new products is expected to continue in response to the strong demand.
- R&D of silicone and thin-film tandem module and perovskite module are in progress.

Location	Production capacity (GW)	Start operation
Ohio, Malaysia, Vietnam	9.8	In operation
Ohio	3.3	In operation
India	3.3	In operation
Ohio	0.9	In operation
Alabama	3.5	In operation
Ohio	Silicone and thin-film tandem module R&D line	In operation
Ohio	Perovskite development equipment	2025
Louisiana	3.5	2026

(Prepared by NPC based on First Solar's Earnings Call)

## Perovskite PV module market

Market has not yet established since perovskite is a new technology, still under R&D.

It is predicted that in 2040, market size in Japan will be 23.3 billion yen, and in worldwide will be 2,400 billion yen

(Source: *Fuji Economic Research Institute*, 2024 New and Next-Generation Photovoltaic Cells Development Trend and Future Market Prospects, April 26, 2024)

### Trends in Japanese Government

The “Basic Policies for Economic and Fiscal Management and Reform 2024” approved by the Cabinet on June 21, 2024, states support for perovskite PV module.

- Support for development: Increase of METI development budget through 2030 (approx. 65 billion yen)
  - Support for production: A budget of 77.7 billion yen has been drafted to support the establishment of a GX supply chain which includes perovskite PV module.
  - Support for installation: Subsidies to local governments for installation, preferential purchase price for FIT, etc.
- Targeting power generation costs of 10-14/KWh in 2040, almost the same level as the panels currently used, through support for development and production.  
Aiming to introduce 20 GW by 2040 through support for installation.

### Trends in Japanese Manufacturers

- Companies that have not manufactured solar cells before have announced their intention to enter the market, R&D is being conducted by various manufacturers.
- Various types of panels being developed differ depending on the company, such as flexible film type and building material-integrated type.
- Many manufacturers have announced the start of commercialization or test sales in 2025 and 2026, and mass production is expected to begin in a few years.



Example of a film type  
(Source: *Sekisui Chemical homepage*)



Example of a building material-integrated type  
(Source: *Panasonic HD homepage*)

## Our situation

**Japan:** Received orders and booked sales of development equipment and pilot line in FY2024.

**Overseas:** Scheduled to book sales of development equipment for First Solar. Plan to sell additional equipment in the future.

Our competitors in the domestic perovskite PV module market are automation machine manufacturers. However, we have nearly 30 years of experience in thin-film PV module manufacturing equipment, and that makes us able to respond to various requests using our accumulated technology, which is our advantage. We will leverage this strength to capture future demand.



# Automation Machines, Vacuum-related Equipment (1)

Strong area of Japanese rival manufacturers and NPC

Custom-made



Type



Standardized

Small and mid-sized rival manufacturers

Flexible and cost-competitive. However, they tend to offer mainly custom-made standalone machines due to limited engineering specialty area and production capacity (small factory space).

NPC

Able to support a wide range of technological areas and has been good at manufacturing custom-made equipment. Regarding the production capacity, its spacious. Matsuyama Factory enables assembly of large-scale, custom-made manufacturing lines in an integrated way. Able to comply with safety standards in each country and handle controllers from overseas manufacturers utilizing its experience with overseas customers including US companies. Technical support such as maintenance is available from its Michigan base. Also provides standard equipment such as laminator and solar panel disassembly equipment.

Major rival manufacturers


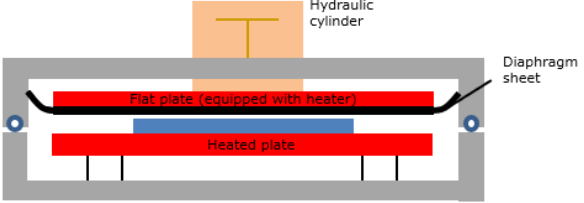

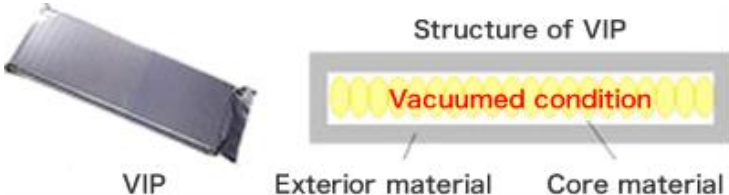
Have a wide lineup of standardized products. Good at providing both stand-alone equipment and compound line by themselves in specific area. However, custom-made machines can be costly.

Small  
(stand-alone)

Scale

Large (line)

## Lineups of vacuum-related equipment

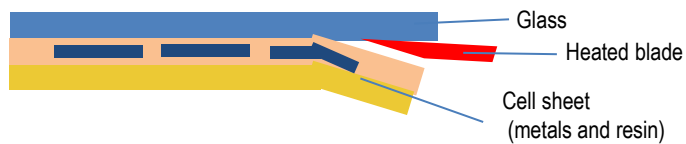
<p>Vacuum laminator</p> 	<p>Equipped with an original laminating technology that combines diaphragm and flat plate press technology</p> 	<p>Application -PV module -Electric parts -Laminated glass etc.</p>
<p>VIP sealing machine</p> 	<p>The vacuum insulation panel (VIP) is applied to energy saving refrigerators and vending machines, helping to reduce environmental load. Research on using the material for buildings is progressing.</p> 	<p>Application -VIP sealing</p>

-Vacuum-related machines are used for product development as they have wide application such as layering, laminating, sealing, and forming.  
There are some manufacturers in Japan and overseas that manufacture similar products.  
-Easy to secure profits as it is standard products with NPC's core technology.

# Solar Panel Disassembly Equipment (1)

## Examples of recycling methods

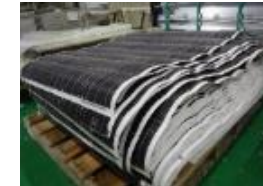
Method	Processing method and other details	Main equipment manufacturers
<b>Heated blade separation method</b>	Method to separate glass and cell sheet, which contains silicon and other metals, using a blade heated to about 300°C. Glass is collected as sheet glass.	<b>NPC Incorporated</b>
Crushing	Method to physically crush solar panel glass using a tool such as hammer or roller and remove the glass part.	Kankyo Hozen Service Co., Ltd., Tiger-Chiyoda Machinery Co., Ltd., Kinki Industrial Co., Ltd., and Donico Inter Co., Ltd.
Blasting	Method to fix the solar panel, spray abrasive to crush glass, and scrape it away.	Mirai Sozo K.K.
Heat treatment	Method to put the solar panel in the furnace, pyrolyze the sealer (resin) at a high temperature of several hundred degrees and remove glass and metal.	Shinryo Corporation and Niimi Solar Company



Glass



Glass from broken solar panel



Cell sheet

(Source: Research by NPC)



## Features and advantages of the heated blade separation method

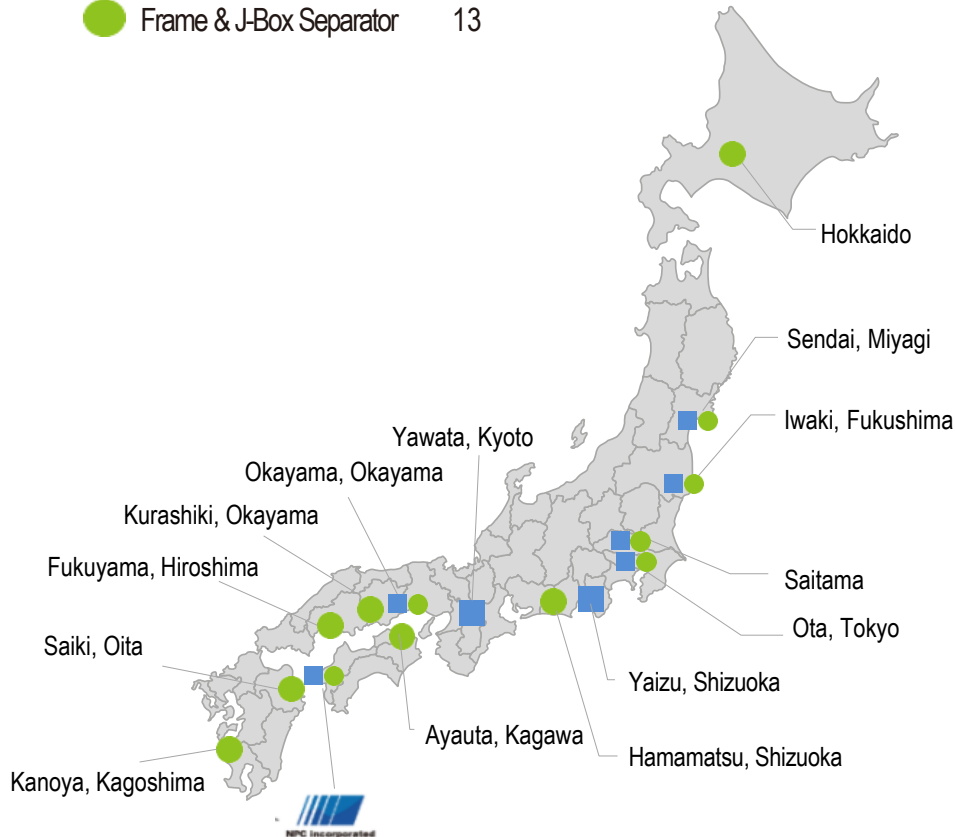
- NPC proprietary treatment method with 4 patents. No competitors with the same technology.
- High recyclability as glass can be collected as sheet glass and metals do not mix in.
- Energy-saving and rapid treatment (a solar panel is processed in 60 seconds).

# Solar Panel Disassembly Equipment (2)





## Achievements as of FY2024

### Locations and quantities of our equipment installed in Japan

	Glass Separator	8
	Frame & J-Box Separator	13



### Locations and quantities of our equipment installed overseas

	France (1 company)	
	Glass Separator	1
	Frame & J-Box Separator	2
	(Additionally installed 1 Frame & J-Box Separator in FY2025)	
	Australia (1 company)	
	Glass Separator	1
	Frame & J-Box Separator	1
	USA (1 company)	
	Frame & J-Box Separator	1
	Czech Republic (1 company) (installation scheduled in FY2025)	
	Glass Separator	1
	Frame & J-Box Separator	1

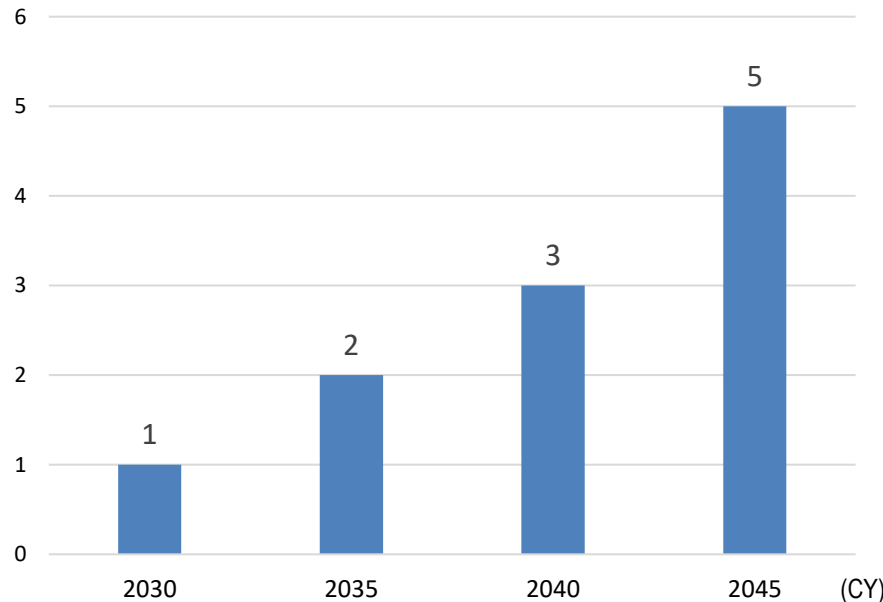
The evaluation of the use of glass separated by our equipment as recycled glass (sheet glass) by a major European sheet glass manufacturer has been favorable.

# Solar Panel Disassembly Equipment (3)

## Market

-Estimation of global waste solar panel volume (for each year)

(Million tons)



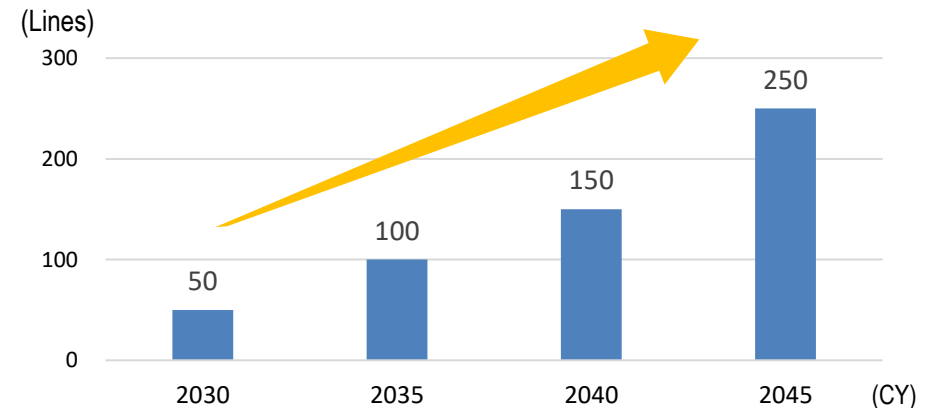
(Prepared by NPC based on "Status-of-PV-Module-Recycling", IEA PVSP, 2022)

-Capacity of glass separator

144 thousand panels per year  
(8 hours x 300 days)  
= 2,500t per year



Number of equipment required based on the of global waste solar panel volume  
(Assuming 50% of end-of-life panel collected, NPC to have 25% market share)



Japan: Equipment installation continues to be subsidized by the Ministry of the Environment, the Ministry of Economy, Trade and Industry, and local governments.

A bill is expected to be submitted to the Diet in 2025 to make solar panel recycling mandatory.

Europe: Consortiums which private companies and universities in several countries have been formed for the purpose of recycling solar panels.

An increasing number of countries are collecting solar panels in accordance with the WEEE Directive.

USA: Demand for frame separator is expected to lead the way.

Australia: Victoria state has banned the landfill of used panels, and recycling of solar panels is drawing increasing attention.



## Market size of inspection service

	Existing market	New market
Type of inspection	Projects approved under FIT	Non-FIT projects
Pre-operation self-inspection	Projects to be built Approx. 15GW	Non-FIT projects such as PPA projects by companies and local governments increase.
Pre-operation self-check	Pre-operation inspection will be implemented when they start operation	Pre-operation self-check (inspection) is obligated to small-sized(10kW to 50kW) solar systems by new law in March 2023.
Regular inspection for projects in operation	Projects in operation Approx. 50GW  Inspections increase as power plants increase.	Inspections increase as power plants increase.

## Inspections implemented

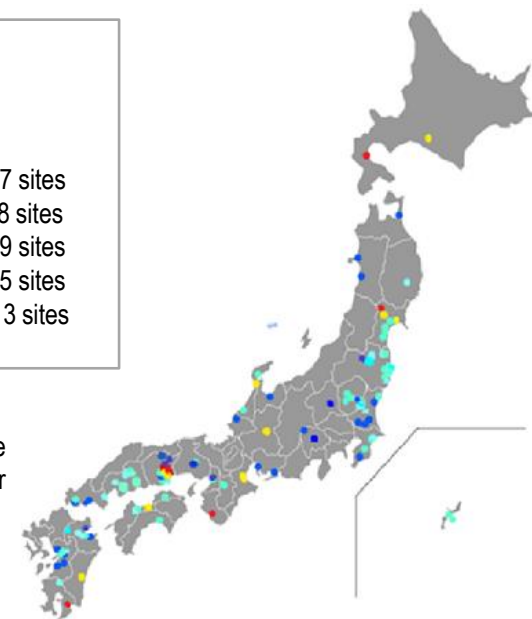
### Inspected power plants: 342

(As of FY2024)

< 2MW	197 sites
● 2MW-10MW	38 sites
● 10MW-50MW	79 sites
● 50MW-100MW	15 sites
● > 100MW	13 sites

<Reference>

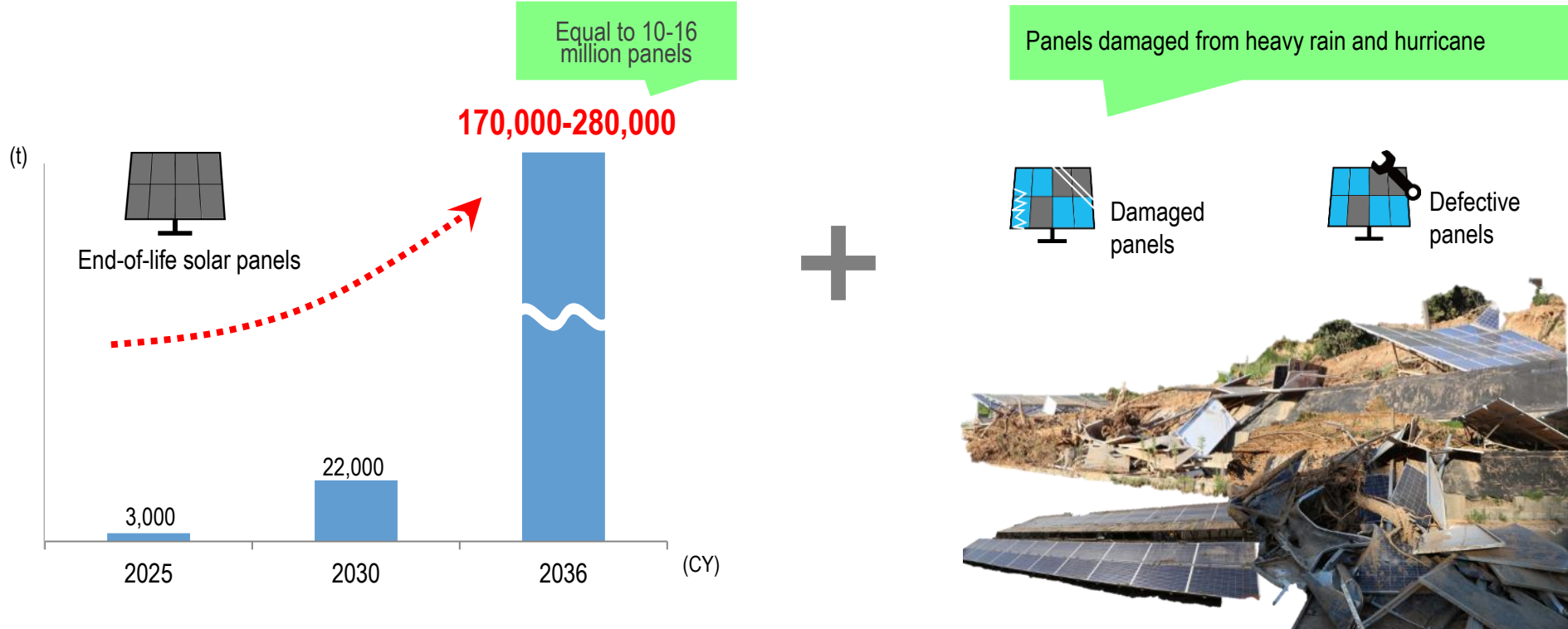
Large-sized solar power plants for which we implemented inspections: Bizen Mega Solar (Okayama) 111MW Onikoube solar power plant (Miyagi) 146MW



- FIT (feed-in tariff) is a system to purchase electricity at fixed prices that began in Japan in 2012, under which utility solar power plants are being installed for the purposes of selling electricity. When the plants are installed, many different voluntary inspections may be conducted as pre-operation inspections in addition to statutory inspections.
- The targeted market of inspection is expanding due to an increase in solar installation for self-consumption by PPA in factories, public facilities, etc., and due to pre-operation self-check, that has become an obligation to small solar systems, the size of which is common to the abovementioned self-consumption projects.
- NPC can provide not only legal inspection service, but also various voluntary inspection services. We have many competitors in statutory inspections and quality improvement services such as weeding and panel cleaning, and drone IR inspections, and they are small- and medium-sized electric companies and local construction companies. On the other hand, for I-V and EL inspections, which require more precise technologies among voluntary inspections, there is little competition as we possess our original inspection technologies (technology that speeds up I-V inspection (patented), technology that enables to perform inspections equivalent to pre-shipment inspections (EL inspection), in outdoor environment).
- Although many competitors offer statutory inspections and simple inspections, NPC can inspect power plants across Japan with the same quality through our nationwide inspection network, Solar Wellness. We also provide customers with a report that contains our proprietary expertise after inspection to differentiate us from our competitors.

# Reuse and Recycling of Solar Panels (Disassembly Service)

## Estimation of the number of panels to be discarded in Japan



(Source: *Disposal of Solar Power-Generating Facilities*, Agency for Natural Resources and Energy, November 21, 2018)

- The figure on the left shows the estimation made by the Ministry of Economy, Trade and Industry (Agency for Natural Resources and Energy). For this estimation, only the panels to be discarded after the 20-year purchase period in FIT projects on lease land are counted. In Japan, the number of discarded panels is expected to rapidly increase after around 2030 when FIT starts to expire.

- The figure on the left does not include panels damaged by disasters and defective panels. Therefore, in reality, a large number of panels can actually be discarded at an earlier date.

## Demand trends and past results of reused solar panels

### Needs of sellers

- Dismantlement after the power generation business is discontinued
- Disposal as a result of replacing solar panels
- Spare solar panels in stock
- solar panels submerged by a disaster, etc.

Matching of needs

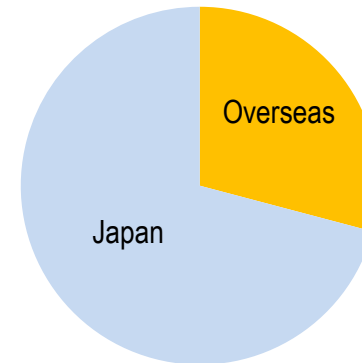


### Needs of buyers

- Solar panels distributed in the Japanese market that are evaluated to be of high quality
- Affordable panels for in-house solar power generation



### Destinations of reused panels



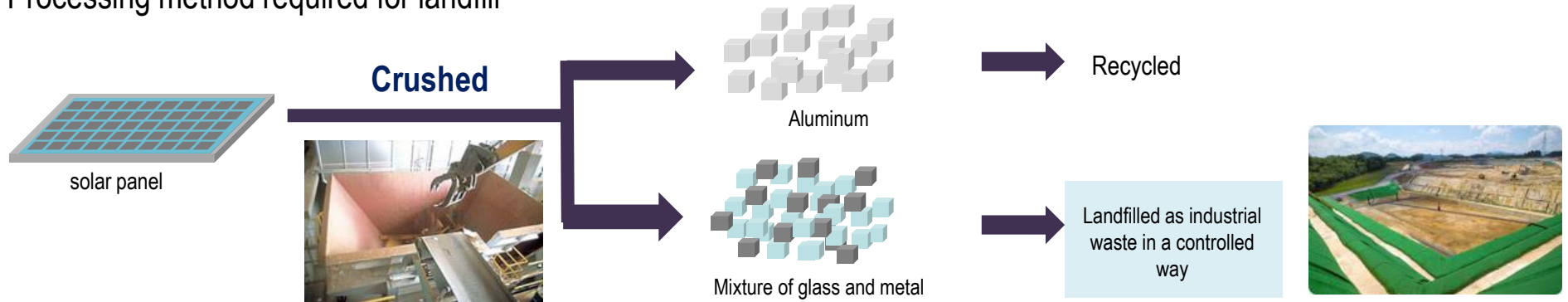
- Our advantages over competitors are as follows.

- (1) Best cost deals (minimum safety inspection, no warranty in principle, and direct distribution)
- (2) Reliability based on deep insights on and experience with solar panels (We have not dealt in low-quality panels.)
- (3) Network in the industry built through inspection services for solar power plants (about 1,000 companies)

- Of the needs of sellers, most replaced solar panels and unused solar panels in stock were collected by around 2019. Although, demand for replacement/repowering is increasing again. There are currently not many solar panels damaged by disasters.

# Solar Panel Recycling (Disassembly of Solar Panels)

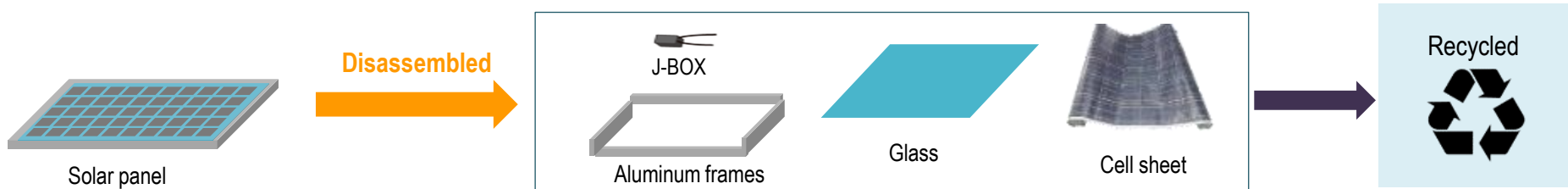
## ■ Processing method required for landfill



Solar panels have a robust structure focused on durability and sealability and are difficult to disassemble. In particular, the glass part and the metal part are laminated using resin (EVA) and very difficult to separate. Therefore, solar panels are crushed with a shredder, which generates a mixture of glass and metal. As a result, most parts are unrecyclable and landfilled in many cases though some materials such as aluminum used in the frame are recycled.

Because hazardous substances such as lead are used in the solar panel manufacturing process, they must be landfilled at a controlled final disposal site. This leads to landfill facilities running out of space in the future, a large environmental impact and high costs.

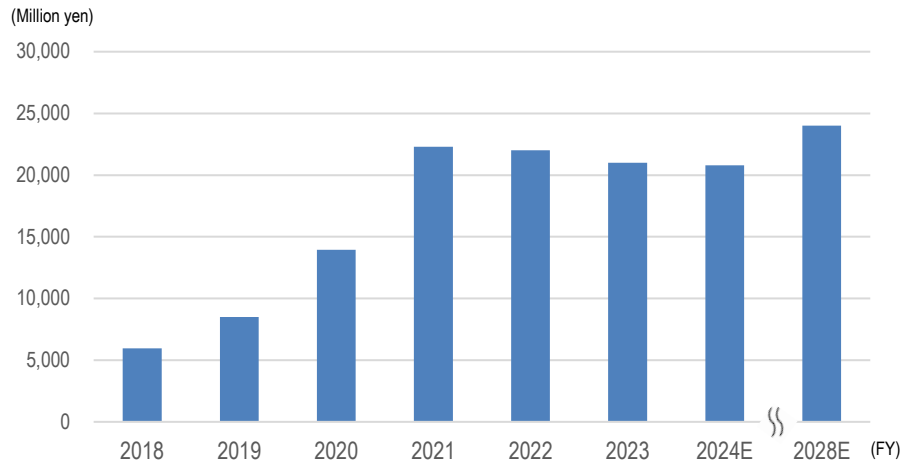
## ■ Processing method required for recycling



Glass accounts for a large part of the panel weight. Other components such as aluminum frames, silicon cells and copper wires contain metals. Because glass and metals are processed and recycled in different ways, it is important to first separate glass and metals to recycle solar panels. Collected glass can be reused, for example, as civil engineering material or sandbags. Collected metals are recycled at refineries and other facilities.

At NPC, we automatically remove the J-BOX and aluminum frames from the solar panel and separate the part of glass and cell sheet laminated with resin using our original method called "heated blade separation method".

## Scale of the plant factory market

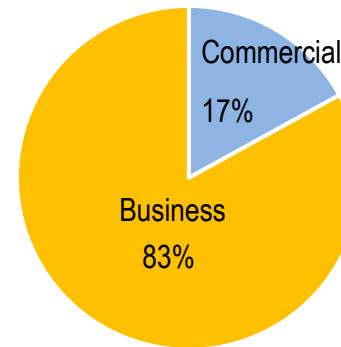


Demand for vegetables produced in plant factories is increasing due to the low risk of contamination by foreign substances, and demand is expected to grow in the future since the time and labor required for cleaning and other processes is less compared to traditional way of growing. In the future, research and development is expected to expand into the production of other crops like strawberries and herbs such as basil, as well as new attempts of growing plants such as soybeans as an alternative protein, melons, and rice.

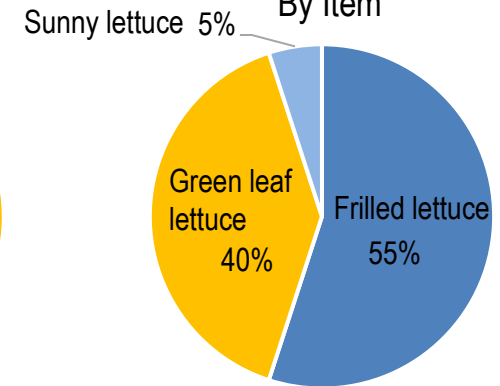
(Source: *The Now and Future of the Plant Factory Market*, Yano Research Institute Ltd., June 28, 2024)

## Sales performance

### By Purpose



### By Item



We installed facilities in building D in the existing factory, reducing depreciation costs.

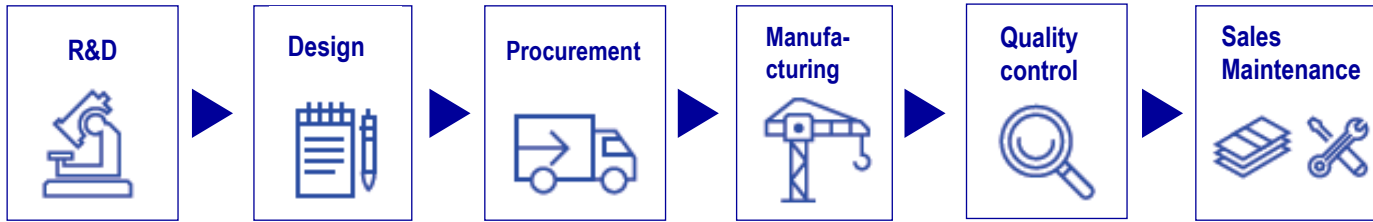
- Plant factories are powered through in-house solar power generation using the rooftop solar power system to reduce utility costs and achieve clean energy production. We employ reused solar panels in the solar power system, establishing a recycling business model.
- As the plant factory market is expanding due to the demand for safe and secure vegetables, we mainly address local needs in Ehime Prefecture. As of the end of FY2022, we achieved full production of 60 t/week and almost all the products have been sold out. The high quality of our lettuce is highly rated as Hakohime brand and sold for commercial use to regular customers. We have also sold this product for consumer use at supermarkets and grocery stores.
- As this business contributes to improve company recognition among the public.
- As the material cost and labor cost have been increasing, and sales price cannot be set to the expected level, the investment in the plant production was booked as an impairment loss under extraordinary loss for the fiscal year 2022. (82 million yen)
- However, there are few competitors in plant factory business in Ehime area and needs for stable supply of vegetables is expected to increase due to climate change. We switch to items with higher added value and reduce cost to continue the business.



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# Production System and Capacity

## Integrated manufacturing system



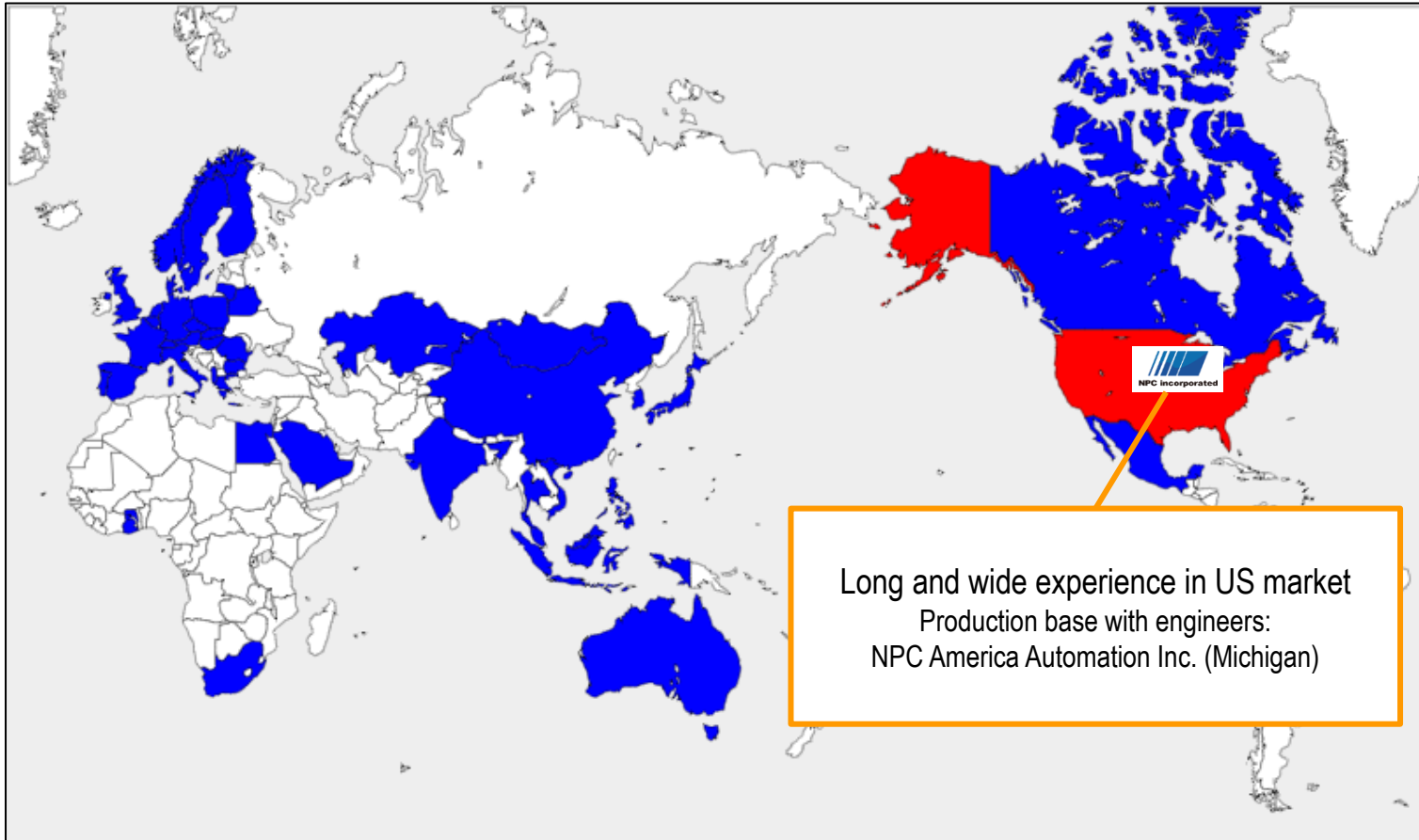
## Production capacity of Matsuyama Factory



Matsuyama Factory, our production base, has 130 employees and all the manufacturing functions such as R&D, design, manufacturing, and maintenance. This system enables quick and accurate response to requests from customers.

The 5 spacious assembly buildings (height: 8m, area: 40 x 100m) assure vast space for manufacturing any kind of equipment including a large-scale lines. We enhance production capacity by consigning some assembly work to cooperated companies.

# Overseas Experience and North American Office



We have delivered equipment to more than 50 countries around the world and met local safety standards including the European CE standards. In particular, we can meet the safety standards required in the U.S. market such as the UL and NEC and manufacture machines using Rockwell controllers as required by U.S. customers based on more than 25 years' experience in the country. In addition, one of our advantages is our manufacturing base with engineers stationed in Michigan, from which we can locally provide technical support and market our products to Japanese companies.



# Wide Range of Technical Strengths and Expertise on Equipment Manufacturing



Inspection/  
measurement  
technology



Soldering technology



Dispensing  
technology



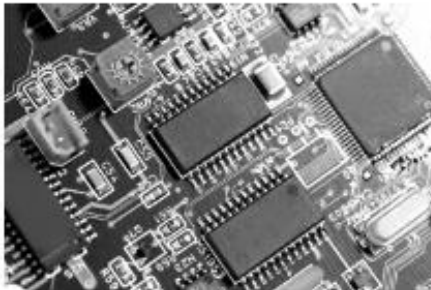
Automated material supply/  
Transfer technology



Vacuuming/  
Bonding technology



Data analysis  
technology



Electronic Parts



Display



Automobile



Logistics

Since we entered the PV module industry in 1994, we have developed automation machines for the junction, application, automatic material supply, transfer, image processing and other processes, starting with vacuum laminators based on the vacuum technology, and provided them as an integrated manufacturing line. We now provide equipment as energy-saving solutions in diverse industries including the electronic parts, automotive and display industries by leveraging the technologies and insights we have accumulated for over 25 years to design and manufacture automation machines for industries other than the PV module industry as well.

# A Wide Range of Business Deployment in the Solar Industry

Manufacturing

Inspection & maintenance

Reuse & recycling



PV module manufacturing equipment



Inspection service for solar power plants



Reuse panel sales



Recycling of solar panels



Solar panel inspection machines



Solar panel disassembly equipment

Starting with PV module manufacturing equipment, we have provided a variety of services for all aspects from the manufacturing of PV modules through recycling of solar panels, offering solar power plant inspection equipment, inspection services, reuse and recycling, panel disassembly equipment, and other offerings. We used to be involved in contract manufacturing (OEM production) of PV modules and have developed solar-related businesses based on this experience.

# Management Team and Experienced Engineers



Masafumi Ito, President & CEO

- School of Mechanical Engineering, College of Engineering of Osaka Prefecture University
- Sales engineer of automation machines in Itoman Corp.
- Directed business expansion and technical development of PV module manufacturing equipment since NPC entered PV industry
- Expanded various PV-related businesses as CEO



Kazuo Hirosawa, Senior Managing Director

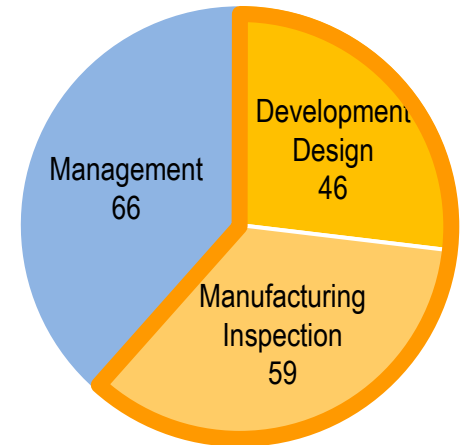
- Engineer in Itoman Engineering Corp.
- Directed development of vacuum-related equipment after establishment of NPC
- In charge of the entire management divisions



Toshiyuki Yauchi, Managing Director

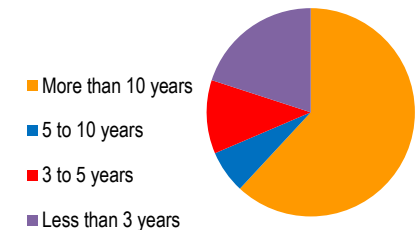
- Engineer in manufacturers such as Mazda, etc.
- Successive service in various technical posts in NPC
  - Design of an integrated PV module manufacturing line
  - Development and design of new mechanisms for automation machines, solar panel disassembly equipment, etc.

Breakdown of number of employees (consolidated, as of August 31, 2024)



Approximately two-thirds of the employees are engineers

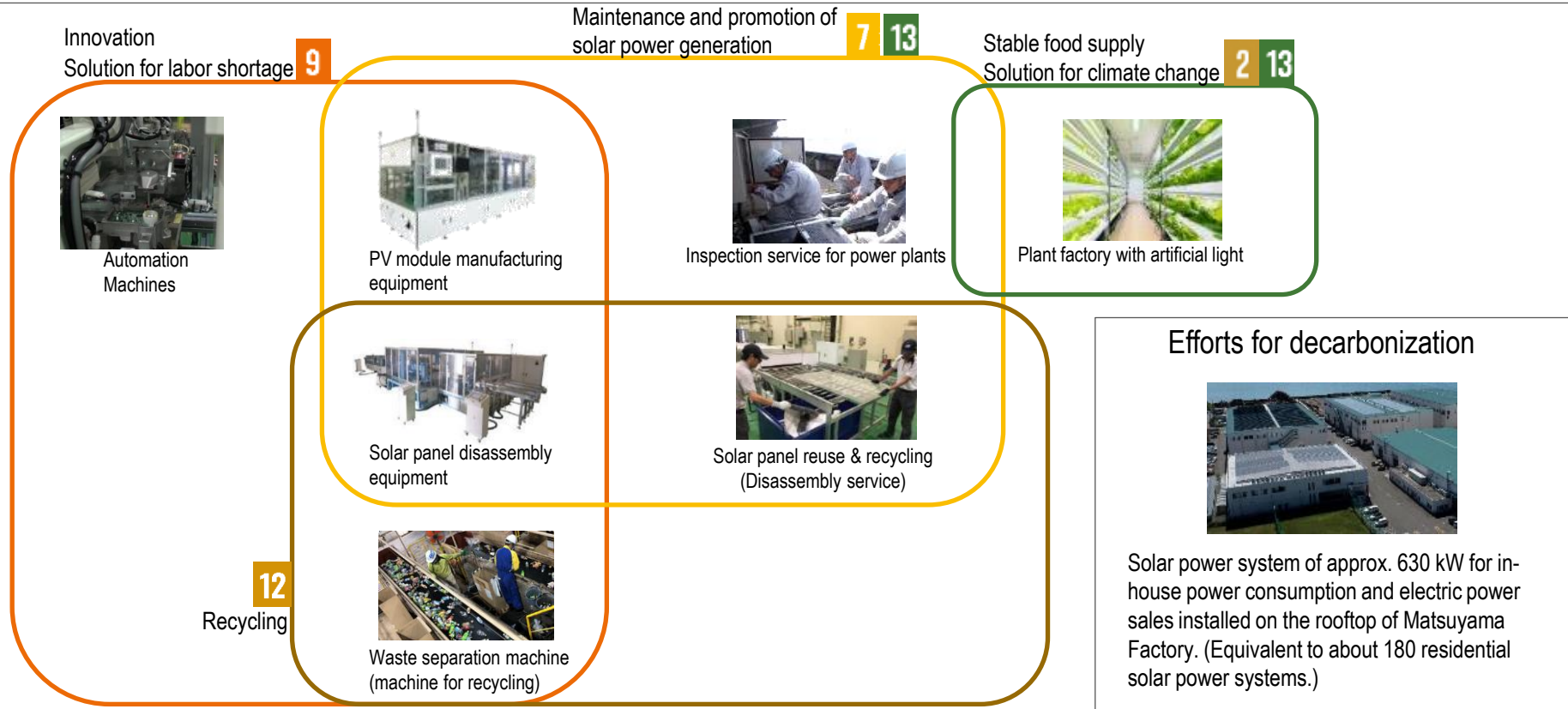
Number of years enrolled for the engineers indicated above:



All of our inside directors have an engineer background and 30 years' experience in the machine manufacturing industry including the solar industry. Not only are they familiar with the solar industry, since each member of the management team has a network of contacts and information sources based on their many years of business experience, our company can make appropriate business decisions. In addition, because many of our employees are experienced engineers who have worked for us for a long time, we have a framework where skilled engineers develop younger engineers.



# Businesses that Contribute to SDGs



We have contributed to the spread and sound operation as well as sustainable development of renewable energy through providing equipment and solar-related services. We will continue to deploy businesses that contribute to sustainability around the PV modules and solar panels, for example, through developing businesses in new fields to address climate change and recycling-related equipment.

# Patents, Compliance with Overseas Safety Standards, License and Registration

## ■ Patent

Patented technology	Number	Description
PV module manufacturing equipment	7	CP mechanism and CF equipment in stringing process Laser inspection mechanism
Vacuum-related machines (laminator)	4	Hot air press mechanism / hot plate mechanism
PV panel disassembly equipment	4	Heated blade separation technology / aluminum frame separation mechanism
Inspection service of solar power plant	1	Multi string prove holder (power generation measuring jig)

## ■ Compliance with overseas safety standards

Area	Standard/directive	Standard number and outline
EU	CE	EN ISO 12100, EN ISO 13849-1, EN ISO 13850, EN ISO 13857, EN ISO 14120, EN ISO 60204-1 General principles for design, safety-related parts of control systems, emergency stop, electrical requirement of machines, etc.
North America	NEC	NFPA 70、NFPA 79、ANSI RIA R15.06 National electrical code, electrical standard for industrial machinery, and industrial robots and robot systems - safety requirements
Canada	CSA	CAS Z431、CSA Z432、CSA Z434、CSA C22.1 Basic and safety principles, safeguarding of machinery, etc.
Semiconductor	SEMI	SEMI S2、SEMI S10、SEMI S22、SEMI S1、SEMI S8 Environmental, health, and safety guideline, electrical design, risk assessment and risk evaluation process, equipment safety labels, etc.

## ■ License, registration, and permission

License, registration, and permission	Registration date, license number
Environmental management system ISO14001	March 30, 2006 E1217
Quality management system ISO9001	August 27, 2009 Q2899
Used goods merchant license	August 29, 2016 Tokyo 306601606280 / September 23, 2016 Ehime 821080001389
Registered electrical contractor	December 15, 2016 Ehime Chuyo Local Bureau 2021155
Industrial waste disposal license	April 4, 2019 License No:08920209040
Industrial waste collection and transportation license	June 4, 2020 License No:03807209040

1. Business Model
2. Market Environment
3. Source of Competitiveness
- 4. Business Plan**
5. Risk Information

# Short-term Business Plan: Review of Company Actions for FY 2024

	Company actions	Review at the end of FY 2024
PV module manufacturing equipment	<ul style="list-style-type: none"> <li>■ Receive orders for equipment of First Solar's New factory in Louisiana. Book the sales of equipment for Alabama new factory, expansion of Ohio factory, and for R&amp;D of silicone/thin-film tandem module.</li> <li>■ Receive orders of high-end equipment for perovskite PV module, residential PV modules, etc.</li> </ul>	<ul style="list-style-type: none"> <li>■ Received orders of equipment for First Solar's new factory in Louisiana as scheduled. Booked the sales of equipment for expansion of Ohio factory, new factory in Alabama, and for R&amp;D of silicone/thin-film tandem module.</li> <li>■ Received order of upgrading of existing manufacturing line of domestic PV manufacturer.</li> <li>■ Received orders and booked the sales of pilot line and R&amp;D equipment for perovskite PV module for domestic PV manufacturer.</li> </ul>
Automation Machines Vacuum-related equipment	<ul style="list-style-type: none"> <li>■ Focus on the major customer in the Japanese electronic parts industry, which has continuous capital expenditure plan.</li> <li>■ Acquire other stable customers.</li> </ul>	<ul style="list-style-type: none"> <li>■ Orders from major customer in Japanese electronic parts industry was less than what was planned, due to the delay in customer's capital investment., but still booked the sales of equipment.</li> <li>■ Received order and booked sales of automation machines for the US subsidiary of Japanese company in automobile related industry. Continue sales activities to make them a long-term customer.</li> </ul>
Inspection service for solar power plant	<ul style="list-style-type: none"> <li>■ Acquire orders of pre-operation inspection for power plants to be built and regular inspection for power plants in operation.</li> <li>■ Acquire orders of inspection for power plants of wind, biomass, etc.</li> </ul>	<ul style="list-style-type: none"> <li>■ Implemented periodic and spot inspections as planned</li> <li>■ Received one order and implemented the inspection of biomass power plant.</li> </ul>
Reuse and recycling of solar panels	<ul style="list-style-type: none"> <li>■ Establish a solar panel collecting network.</li> <li>■ Improve the recycling rate of equipment and reduce recycling cost by developing use of collected materials.</li> </ul>	<ul style="list-style-type: none"> <li>■ Booked two major sales of reuse panels.</li> <li>■ Conducted R&amp;D for improvement of recycling rate.</li> <li>■ Got further into application development through actions such as providing post-separation glass for use in crafts.</li> </ul>
Solar panel disassembly equipment	<ul style="list-style-type: none"> <li>■ Book the sales of projects for which we have received orders.</li> <li>■ Enhance sales in target regions such as Japan, Europe, and Australia.</li> <li>■ Launch new products for improvement of recycling rate.</li> </ul>	<ul style="list-style-type: none"> <li>■ Orders received                             <ul style="list-style-type: none"> <li>- 3 companies in Japan (Hiroshima, Saitama, Ehime)</li> <li>- 2 companies overseas (France, Czech Republic)</li> </ul> </li> <li>■ Sales booked                             <ul style="list-style-type: none"> <li>- 4 equipment for 4 companies in Japan (Oita, Shizuoka (2 companies), Kagoshima)</li> <li>- 4 equipment for 3 companies overseas (USA, France, Australia (2 equipment))</li> </ul> </li> </ul>
Plant factory business	<ul style="list-style-type: none"> <li>■ Continue operation as sustainable business that improves company recognition.</li> </ul>	<ul style="list-style-type: none"> <li>■ Continued full production and full sales as sustainable business that improves company recognition.</li> </ul>
New business	<ul style="list-style-type: none"> <li>■ Conduct R&amp;D of methane fermentation of food waste and production of fertilizer from the fermentation residue.</li> <li>■ Start sales activities for fertilizer production plant and its maintenance service.</li> </ul>	<ul style="list-style-type: none"> <li>■ As a result of R&amp;D, development of fertilizer production plant was temporarily terminated</li> <li>■ Started considering new businesses such as closed-cycle land-based aquaculture of shrimp and other marine products, and development of health beverage using discarded lettuce, etc.</li> </ul>

# Business Results for FY2024

## Consolidated Statement of Income

(Million yen)

	FY2023		FY2024								
	Results (A)		Initial forecast (As of Oct. 11, 2023) (B)		Revised forecast (As of Apr. 12, 2024) (C)		Results				
	Amount	Vs. Sales (%)	Amount	Vs. Sales (%)	Amount	Vs. Sales (%)	Amount	Vs. Sales (%)	Vs. (A) (%)	Vs. (B) (%)	Amount
Sales	9,320	100.0	10,384	100.0	10,995	100.0	<b>10,797</b>	100.0	15.8	4.0	(1.8)
Gross profit	1,944	20.9	2,615	25.2	3,270	29.7	<b>3,579</b>	33.1	84.1	36.9	9.4
SG&A expenses	967	10.4	1,030	9.9	1,121	10.2	<b>1,143</b>	10.6	18.2	11.0	2.0
Operating income	976	10.5	1,584	15.3	2,149	19.5	<b>2,436</b>	22.6	149.6	153.8	13.4
Non-operating income	6	0.1	3		10		<b>4</b>	0.0	(33.3)	33.3	(60.0)
Non-operating expenses	20	0.2	4		3		<b>14</b>	0.1	(30.0)	250.0	366.7
Ordinary income	963	10.3	1,584	15.3	2,155	19.6	<b>2,426</b>	22.5	151.9	53.2	12.6
Extraordinary income	-	-	-	-	-	-	-	-	-	-	-
Extraordinary loss	-	-	-	-	-	-	-	-	-	-	-
Net income before tax	963	10.3	1,584	15.3	2,155	19.6	<b>2,426</b>	22.5	151.9	53.2	12.6
Income tax-current	191	2.0	502		684		<b>722</b>	6.7	278.0	43.8	5.6
Income tax-deferred	(221)	-	0	-	0	-	<b>27</b>	0.3	-	-	-
Net income attributable to owners of the parent	993	10.7	1,081	10.4	1,471	13.4	<b>1,676</b>	15.5	68.8	55.0	13.9

Note: 1. Percentages at vs. (A), (B) and (C) represent increase/decrease rate.

# Short-term Business Plan: Business Results for FY 2024

## Changes from Initial Forecast

### Sales

Sales was stronger than expected due to the reasons below:

- Sales booking of some projects of First Solar were moved to FY2025 due to the timing of acceptance inspection, some projects were moved to FY2024 from FY2025.
- Sales of the machinery parts were favorable.
- Other projects such as equipment for the factory expansion, new factory, and R&D of First Solar, pilot line for perovskite PV module were sold as planned.

### Gross profit

Gross profit largely increased due to the reasons below:

- Successfully reduced cost by things such as purchasing effort in projects for which orders had been received at an amount that anticipated an increase in the cost of materials.
- Reduced man-hours and costs by optimizing on-site operations.
- Adding to the favorable sales of expendables and spare parts, profit further increased by the depreciation of yen.

### SG&A expenses

- Bonuses and welfare expenses increased in accordance with the increase of profit..

### Operating income, ordinary income, net income attributable to owners of the parent

- Though SG&A expenses increased, increased in accordance with the increase of gross profit..



# Medium-term Management Plan

## Factors for Revision of Management Plan

### Sales

- There is no major change from the previous plan
- Both sales and operation income are expected to increase in FY2027, since continuous capital investment of First Solar, which is our major customer, market expansion of perovskite PV module and recycling of solar panel, etc., are anticipated.

### Operating income

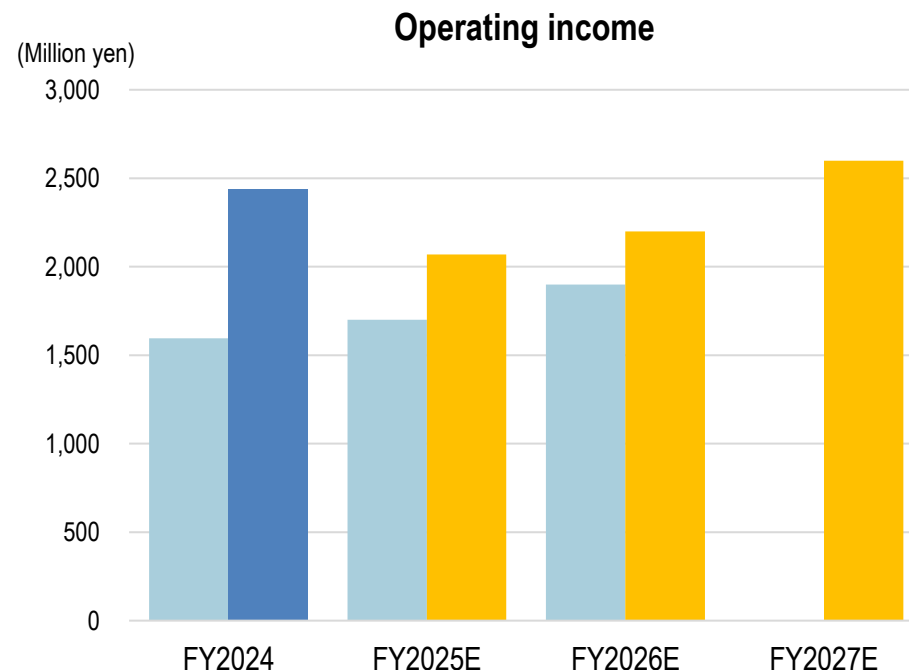
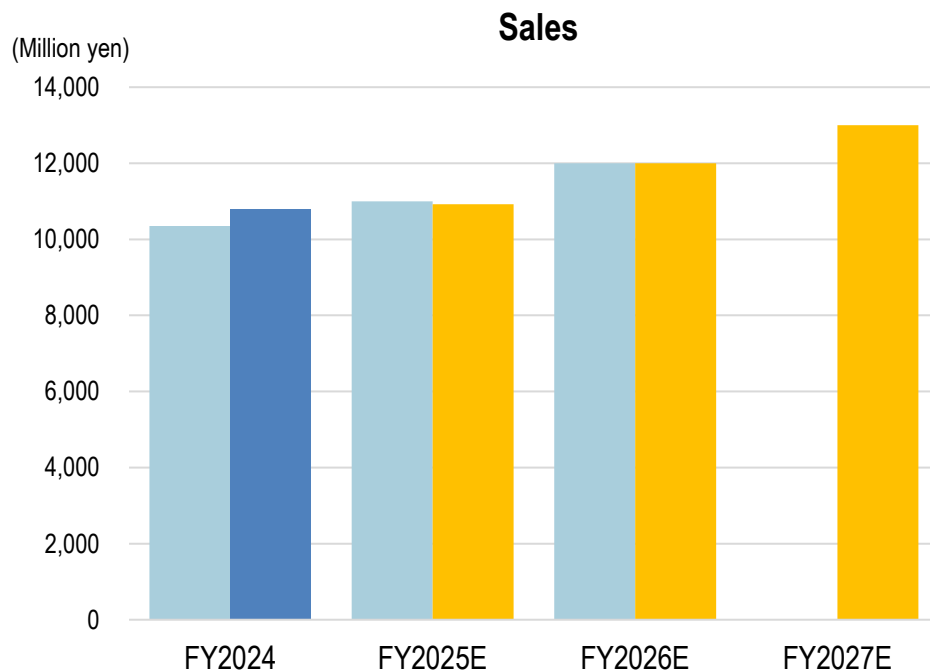
- It will decrease temporarily since the operating income of FY2024 largely exceeded the expectation, however, operating income is expected to be 2.6 billion yen in FY2027.
- Expected to further increase from the previous forecast by continuing the cost reduction and sales efforts done in FY2024.

### Basic policy

- Continue to focus on our major customer in the US.
- Optimize the business balance for steady growth by expanding business domain. Specifically, NPC will strengthen efforts on acquiring orders of perovskite PV module, which increase in demand is expected hereafter, acquiring long-term customers of automation machines, sales activities on solar panel disassembly equipment. Furthermore, addition of new products and services that contributes to the realization of circular economy will lead to the expansion as well.
- Continue the solar panel inspection service, reuse and recycling to acquire know-hows about intermediate treatment and to build an information network with EPCs and partner companies, which eventually will lead to the expansion of sales of solar panel disassembly equipment..
- Enhance production capacity by securing human resources, especially engineers, to deal with the increasing demand.

# Medium-term Management Plan (FY 2025 – FY 2027)

Former plan Results FY2024 New plan



(Million yen)

	FY2024 (Results)	FY2025 (Plan)	FY2026 (Plan)	FY2027 (Plan)
Sales	10,797	10,925	12,000	13,000
Operating income	2,436	2,069	2,200	2,600

# Short-term Business Plan: Company Actions for FY 2025

<p>PV module manufacturing equipment</p>	<ul style="list-style-type: none"> <li>■ Receive orders for equipment for First Solar's capital investment. Book the sales of equipment for new factory in Louisiana and for R&amp;D perovskite PV module.</li> <li>■ Receive orders of equipment for perovskite PV module.</li> </ul>
<p>Automation Machines Vacuum-related equipment</p>	<ul style="list-style-type: none"> <li>■ Book the sales of the orders received in FY2024</li> <li>■ Strengthen relationship with the US subsidiary of Japanese automobile related company.</li> <li>■ Acquire long-term customers, reinforce sales activity of vacuum related equipment which is used for development of various products.</li> </ul>
<p>Inspection service for solar power plant</p>	<ul style="list-style-type: none"> <li>■ Acquire orders of pre-operation inspection for power plants to be built and regular inspection for power plants in operation.</li> </ul>
<p>Reuse and recycling of solar panels</p>	<ul style="list-style-type: none"> <li>■ Establish a solar panel collecting network.</li> <li>■ Improve the recycling rate of equipment and reduce recycling cost by developing use of collected materials.</li> </ul>
<p>Solar panel disassembly equipment</p>	<ul style="list-style-type: none"> <li>■ Book the sales of orders received in FY2024.</li> <li>■ Enhance sales and acquire orders in target regions such as Japan, Europe, Australia, and USA.</li> <li>■ Develop products to improve recycling rate.</li> </ul>
<p>Plant factory business</p>	<ul style="list-style-type: none"> <li>■ Continue operation as sustainable business that improves company recognition.</li> </ul>
<p>New business</p>	<ul style="list-style-type: none"> <li>■ Pursue study/R&amp;D of the as closed-cycle land-based aquaculture of shrimp and other marine products.</li> <li>■ Pursue study/R&amp;D of health beverage etc., using discarded lettuce.</li> </ul>

\*Please also refer to "Business Information FY2024", disclosed on October 17<sup>th</sup>, 2024, for company actions of FY2025.

# Short-term Business Plan: Business Forecast for FY 2025

## Consolidated Statement of Income

(Million yen)

	FY2025 forecast			
	1 <sup>st</sup> half		Full year	
	Amount	Vs. Sales (%)	Amount	Vs. Sales (%)
Sales	3,276	100.0	10,925	100.0
Gross Profit	1,105	33.7	3,205	29.3
Operating Income	536	16.4	2,069	18.9
Ordinary Income	536	16.4	2,069	18.9
Net income attributable to owners of the parent	413	12.6	1,549	14.2

- Sales are expected to be biased towards the second half of the fiscal year.
- Book the sales of the orders received (approx. 3 billion yen) as we fulfill the order backlogs from end of the previous fiscal year (approx. 8 billion yen).

## Expenses and profits

(Million yen)

	FY2023	FY2024	FY2025 forecast	Remarks
Capital expenditures	33	79	109	-Air conditioning replacement at manufacturing buildings -Software (design software, accounting software, etc.) -Facility for new business etc.
Depreciation expenses	209	218	238	-Remained almost the same
R&D expenses	38	57	116	-Development of new products (off-the-shelf products, plant factory) -New businesses -Increase in headcount due to transfer to the R&D department as a result of organizational changes

1. Business Model
2. Market Environment
3. Source of Competitiveness
4. Business Plan
5. Risk Information

# Business Risks and Countermeasures (1)

Description of risk	Countermeasures, etc.	Timing	Possibility	Impact
Risks associated with the stagnation or deceleration of the solar market - Decrease in sales and profits - Impairment loss of assets	- Enhance products and services for installed solar panels. - Enhance products and services for discarded panels. - Expand automation machine business and new business other than solar.	Occasionally	Low	Large
Exchange rate fluctuations - Exchange rate loss - Increase in overseas procurement costs (when the yen is weak) - Deterioration of price competitiveness (when the yen is strong)	- Basically, conduct business with overseas customers in yen. - Reserve exchange rate when exceptionally conducting business in foreign currency. - Increase the overseas procurement ratio when the yen becomes strong.	Occasionally	Medium	Small
Variations associated with the sales recording time and the profit rate of individual projects - Decrease in sales and profits (including carry-over) - Decrease in profit margins	- Improve quality through efforts according to ISO 9001. - Review the progress of processes in each project and address problems at an early stage as needed. - Reduce risks of failure to satisfy specifications and delay through pre-shipment inspections.	Occasionally	High	Medium
Variations in the business environment of large customers - Decrease in sales and profits - Shrinkage or suspension of deals	- Strengthen relationships with large companies through research and development as well as cost reductions. - Strengthen marketing targeting customers other than large customers. - Develop automation machines and environmental business so as not to heavily rely on large customers.	Occasionally	Low	Medium
Lengthening of lead time of parts - Lengthening of lead time of products - Increase in manufacturing costs	- Attempt overseas procurement through our overseas subsidiary. - Use alternative parts from the design phase.	Occasionally	Low	Large
Price increase of parts and raw materials - Decrease in profit due to increase in manufacturing costs	-Maintain purchase price as low as possible through negotiation with suppliers. -Reflect the increase in parts price to selling price of machines through negotiation with customers.	Occasionally	Low	Large



# Business Risks and Countermeasures (2)

Description of risk	Countermeasures, etc.	Timing	Possibility	Impact
Natural disaster - Decrease or loss of production capacity	<ul style="list-style-type: none"> <li>- The cell production system allows us to continue production activities as long as staff and space are secured.</li> <li>- Ensure flexible production capacity using partner factories.</li> <li>- Land with low risks of tsunami damage, flood damage and sediment disaster</li> </ul>	Unknown	Medium	Large
Deferred tax assets -Changes in projections and assumptions on taxable income expectation -Revisions of the tax system, including tax rate changes, revisions of accounting standards, etc.	<ul style="list-style-type: none"> <li>- Carefully assess feasibility of the profit plan to book deferred tax assets based on the taxable income which is reasonably and conservatively calculated.</li> <li>- Regularly revise recoverability of deferred tax assets.</li> </ul>	Occasionally	Medium	Medium
Lack of production capacity due to increase in orders - Lack of human resources due to rapid increase in orders and aging of engineers. - Overdue deadlines, failure to meet required specifications, and opportunity loss.	<ul style="list-style-type: none"> <li>- Outsource some work to partner companies. Accept temporary workers.</li> <li>- Enhance recruitment of young engineers.</li> <li>- Secure sufficient production period by negotiation with customers.</li> </ul>	Occasionally	Medium	Medium

\* For other risks, refer to “Business and Other Risks” in the financial statements submitted on November 29, 2024.

# Thank you very much for your interest in NPC!

“We, through creation of products,  
aim to be a company needed by nature, society and people.”

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The information in this material is based on the information sources that we can obtain as of the disclosed day. We do not represent this to be accurate or complete.

The information in this material has been made for making our business plan and strategies. It is not for a solicitation, offer to buy or sell securities or enlightening people.

**Next disclosure of “Business Plan and Potential for Growth” is scheduled for November 2025.**