New OPP Business Briefing

April 30, 2026

FP Corporation

Securities code: 7947

Background of New OPP Development

Chairman, Representative Director and Group Representative

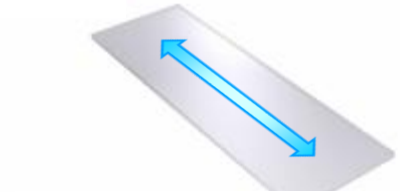
Morimasa Sato

Development of New OPP (1) : Development of Biaxially Oriented PET (OPET)

Around 2007	**Start of biaxially oriented PET (OPET) research**
April 2012	**Completion of the Kanto Yachiyo Plant Introduction of OPET production facilities**
December 2012	**World's first thermoformed OPET products launched**

Kanto Yachiyo Plant

Biaxial sequential stretching



Biaxially oriented PET
Stretched vertically and horizontally
Increased heat resistance and strength achieved at a reduced weight

Biaxially oriented PET
Stretched vertically and horizontally
Increased heat resistance and strength achieved at a reduced weight

OPET products

Development of New OPP(2) : Development of OPP at the FPCO Comprehensive Research Institute

December 2014 — **Completion of FPCO Comprehensive Research Institute**
Introduction of the KARO stretching device for R&D

↓ **Approx. 10 years**

April 2024 — **Successful development of the new OPP sheet and OPP multi-layer plate announced**


Comprehensive Research Institute

KARO stretching device for R&D

New OPP Business

Senior Vice President and Director,
Executive General Manager of Global Trading Division
Hiroshi Ogawa

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FPCO

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02. Superiority of the New OPP

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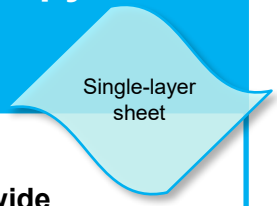
04. Timeline

05. Marketing

What is the New OPP?

Successful development of two unique materials that are the first of their kind in the world.

Ultra-rigid biaxially oriented polypropylene sheet (New OPP sheet)

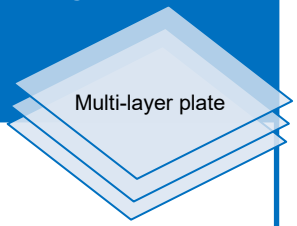


- **Thickness: 150 to 300 microns**
- **For food container applications: Suitable for a wide temperature range, from frozen to heat-resistant applications.**
- **For industrial applications: Expected use in mobility-related components and other applications.**

OPTENA®
オプテナ®

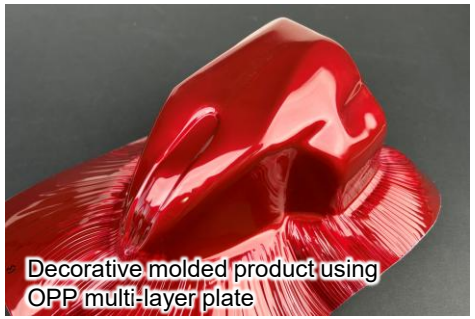

New OPP sheet transparent container sample

Ultra-rigid biaxially oriented polypropylene plate (OPP multi-layer plate)



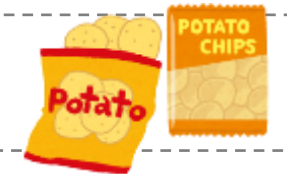
- **Thickness 1 to 4 mm**
- **Types of products to be developed:**
  Launch of a high-rigidity plate planned in early 2027
  Launch of an easily formable plate planned in early 2029
- **Industrial applications: Expected to have applications in construction materials, housing equipment materials, automobiles, etc.**

FORTENA®
フォルテナ®


Decorative molded product using OPP multi-layer plate

Standard OPP

- Thickness: 30 to 50 microns
- Applications: Flexible food packaging materials, etc.



Background to the Development of the Technology

Many manufacturers have entered the market

Standard OPP
(Thickness: 30 to 50 microns)

✓ ***Not thick enough for forming****

* *Changing the shape of a sheet or other product using an external force (or heat)*

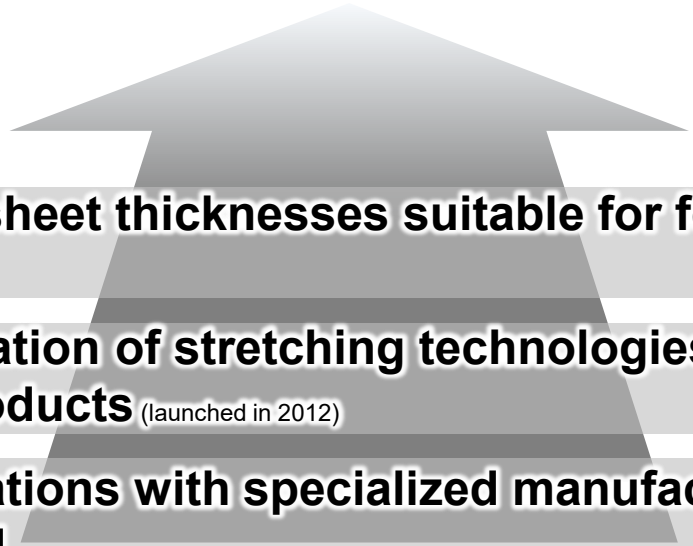
Uniquely developed by FPCO

New OPP sheet
(Thickness: 150 to 300 microns)

Uniquely developed by FPCO

OPP multi-layer plate
(Thickness: 1 to 4 mm)

✓ ***Increased thickness that makes forming possible***
✓ ***Superior balance of physical properties***



01. **R&D on sheet thicknesses suitable for food containers**

02. **Accumulation of stretching technologies through OPET products** (launched in 2012)

03. **Collaborations with specialized manufacturers in each field**

Barriers to entry **New OPP-related patents are pending.**

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Material Properties

10 features of the new OPP sheet and OPP multi-layer plate

Features of the material

1. Low specific gravity
2. Chemical resistance
3. Recyclability

Features of biaxial orientation

4. Transparency and high gloss
5. Scratch resistance
6. High rigidity
7. High toughness
8. Cold resistance

Features of the developed product

9. Formability
10. Decorative capability

Expected to have applications in civil engineering and construction materials, industrial equipment components, solar cells, automobiles and other fields

Advantages of the New OPP Sheet for Food Containers

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Comparison of transparent container materials

		New OPP (Biaxially oriented PP product)	OPS (Biaxially oriented PS product)	APET (Amorphous PET)	OPET (Biaxially oriented PET product)	Transparent PP (Amorphous PP)
Transparency		○	○	○	○	△
Heat resistance		**110°C**	80°C	60°C	80°C	110°C
Cold resistance	-30°C	○	△	×	○	×
Container weight at equivalent strength	○ Light × Heavy	○	△	×	△	×
Oil resistance		○	×	○	○	○

Advantages of In-mold Lamination

(1) Improvement in physical property balance (Rigidity + Impact resistance)

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Injection-molded product

To ensure strength,

Thickness is necessary

High-performance resins are necessary

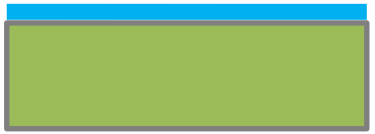
Difficult to use low-quality recycled materials

Laminated OPTENA in-mold decorated product

Laminated OPTENA enables products with a significantly improved balance of physical properties.

Thin-walling and lightweighting are possible

Use of lower-grade resins is possible



Use of recycled materials* is possible

*About the use of recycled materials

- ✓ Helps manufacturers respond to the EU's proposed End of Life Vehicles Regulations (Proposal for a Regulation on circularity requirements for vehicle design and on management of end-of-life vehicles)
- ✓ Cooperating in the Construction of a Circular Economy System (Program Director: Kohzo Ito, distinguished professor at the University of Tokyo) in the Phase 3 of the Strategic Innovation Promotion Program (SIP) by providing recycled materials to participating organizations

Advantages of In-mold Lamination
(2): Mono-material Structure”

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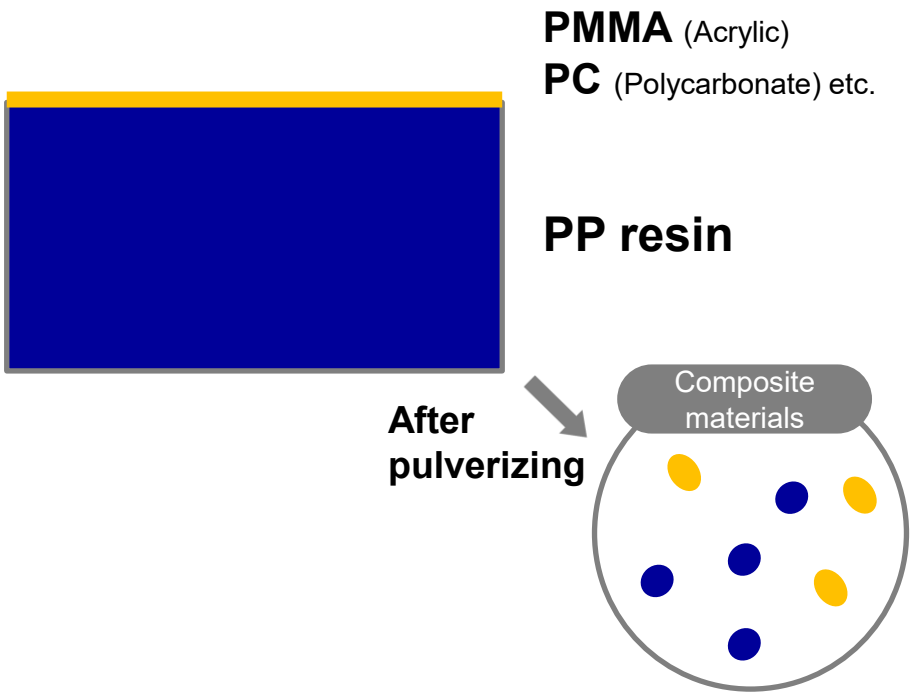
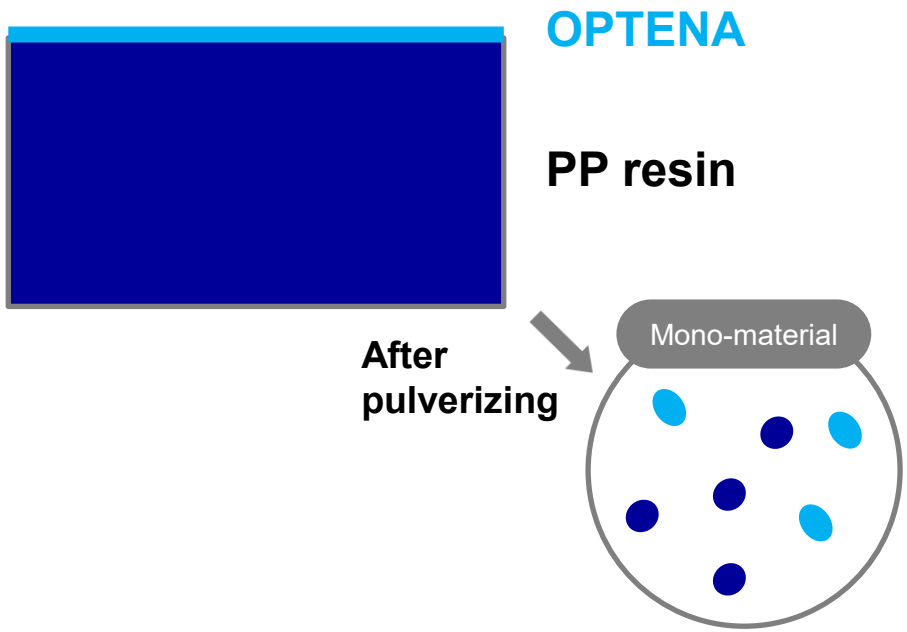
Conventional in-mold product



✓ **Because they are composite materials, it is difficult to recycle them after use.**

Laminated OPTENA in-mold decorated product



✓ **Recycling the products after use is easy because the surface layer and the base material are all PP materials.**

Advantages of In-mold Lamination

(3) Paintless Process and Higher Surface Quality

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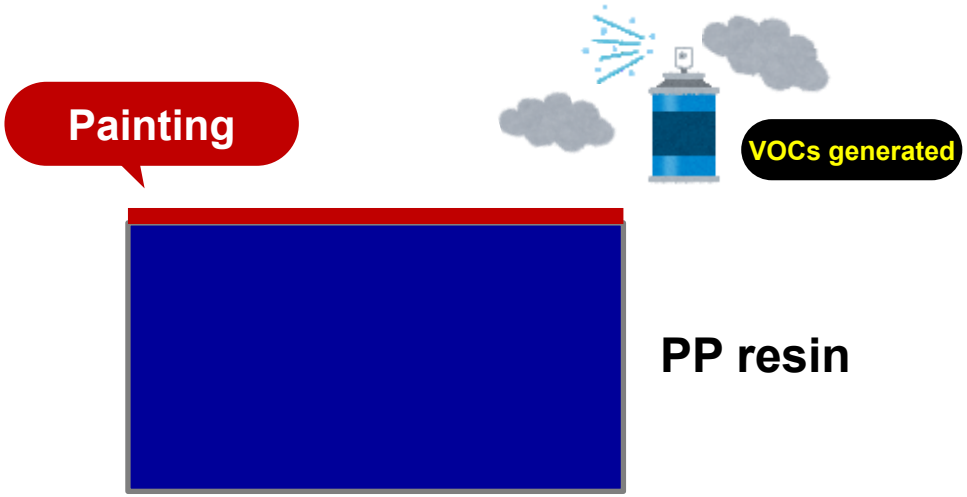
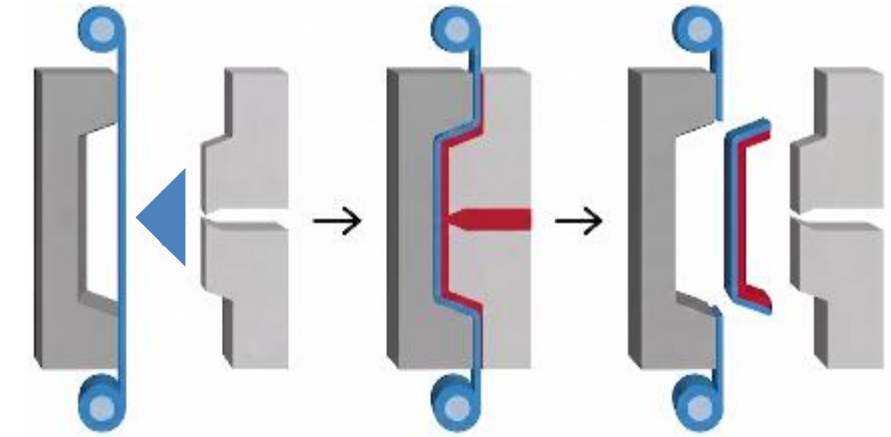
Injection molded products + Painting



- ✓ A painting process is necessary after injection molding
- ✓ Environmental impact of the VOCs* generated during painting
- ✓ Uneven paint finish possible

Laminated OPTENA in-mold product



- ✓ Paintless process
- ✓ Molding and decoration can be performed simultaneously
- ✓ Higher surface quality

*Volatile organic compounds

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Overview of the Bando Plant

Bando Plant and Distribution Center (tentative name)

Increasing new OPP sheet manufacturing and logistics capacity

Completion: September 2028
Total investment: Approx. 58.0 billion yen (estimate)
* Including approx. 41.0 billion yen related to new OPP
* Including approx. 17.0 billion yen for logistics investments
Total floor area: 83,103.51 m^2

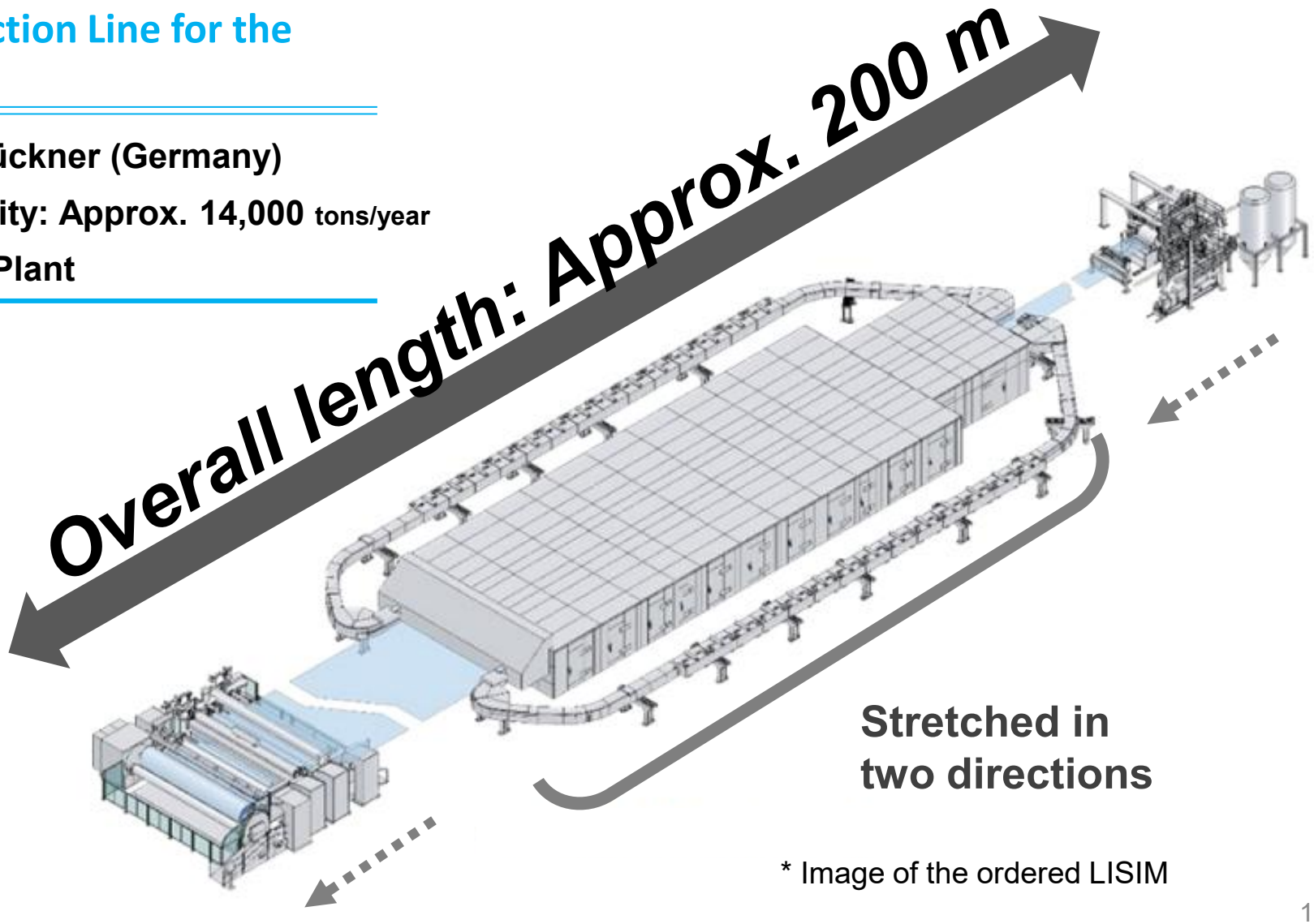
LISIM, a Production Line for the New OPP Sheet

LISIM, a Production Line for the New OPP Sheet

Manufacturer: Brückner (Germany)

Production capacity: Approx. 14,000 tons/year

Location: Bando Plant



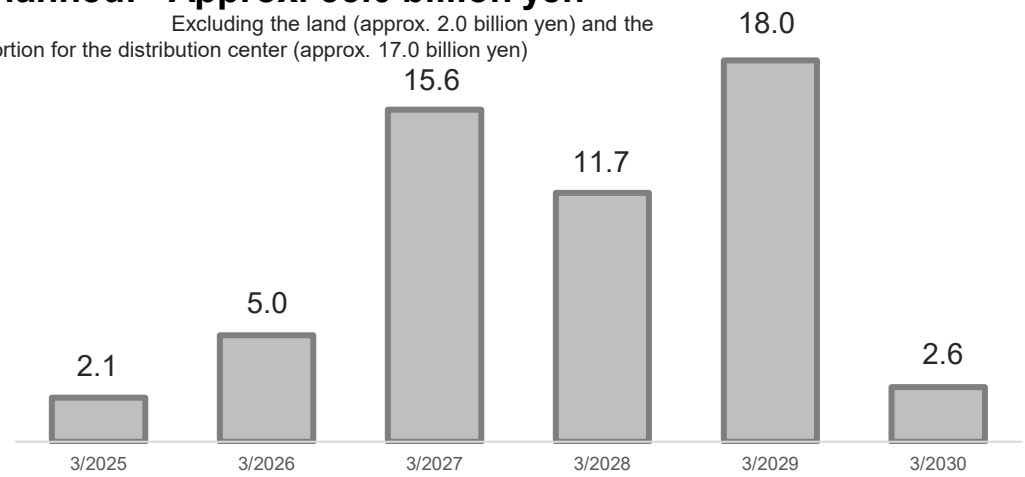
* Image of the ordered LISIM

New OPP-related Capital Investments

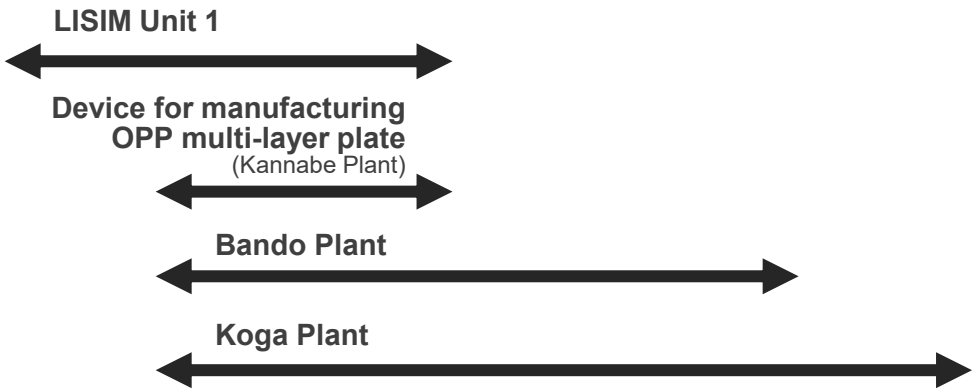
Capital investment (billion yen)

Approved: 22.0 billion yen
Planned: +Approx. 33.0 billion yen*

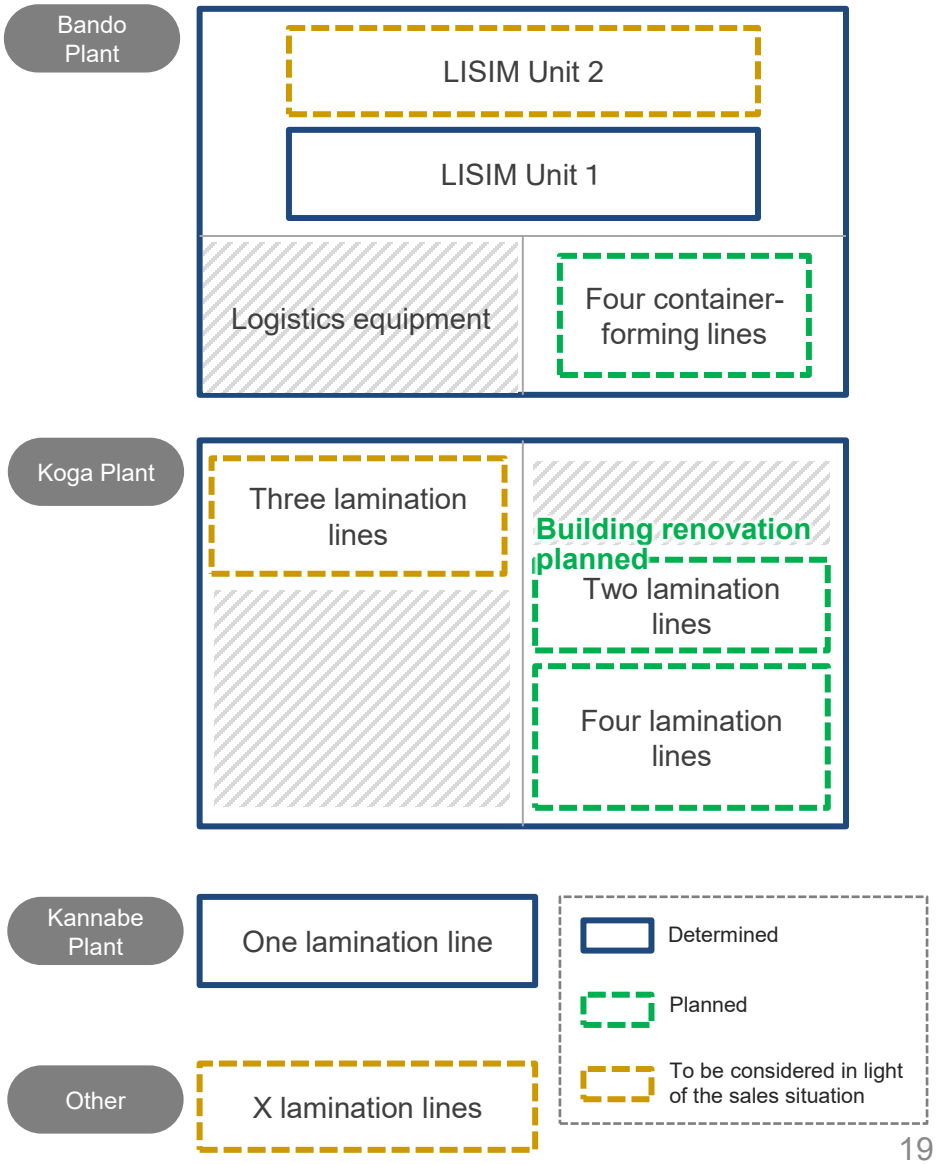
*Excluding the land (approx. 2.0 billion yen) and the portion for the distribution center (approx. 17.0 billion yen)



Investment schedule



Funding: Interest-bearing debt will be used while financial soundness is maintained



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Timeline

New OPP sheet (OPTENA)

2024

April: Successful development of a new OPP sheet announced
November: Order placed for LISIM, a production line for manufacturing the new OPP sheet

2029

[Bando Plant]
Commercial production of LISIM, a production line for the new OPP sheet, to begin

OPP Multi-layer plate (FORTENA)

2024

April: Successful development of OPP multi-layer plate announced

2025

September: Order placed for a device for manufacturing OPP multi-layer plate

2027

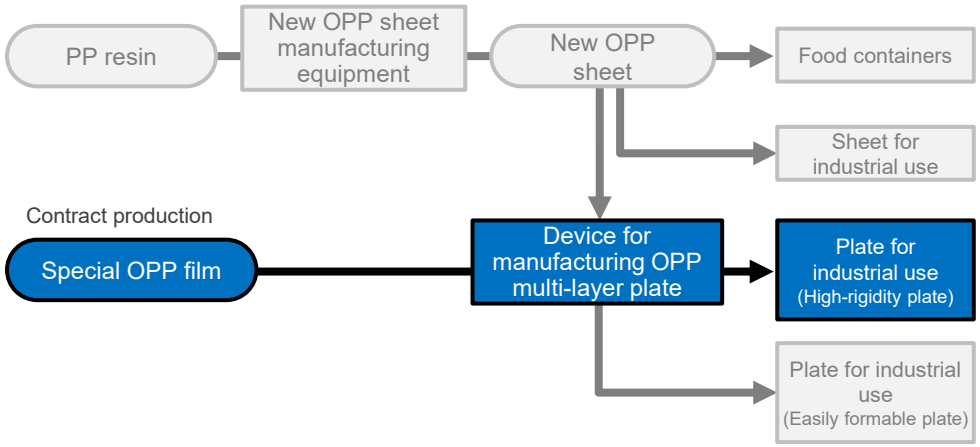
[Kannabe Plant]
Commercial production to begin using the OPP multi-layer plate manufacturing device
Launch of a high-rigidity type using laminated special OPP films planned

2029

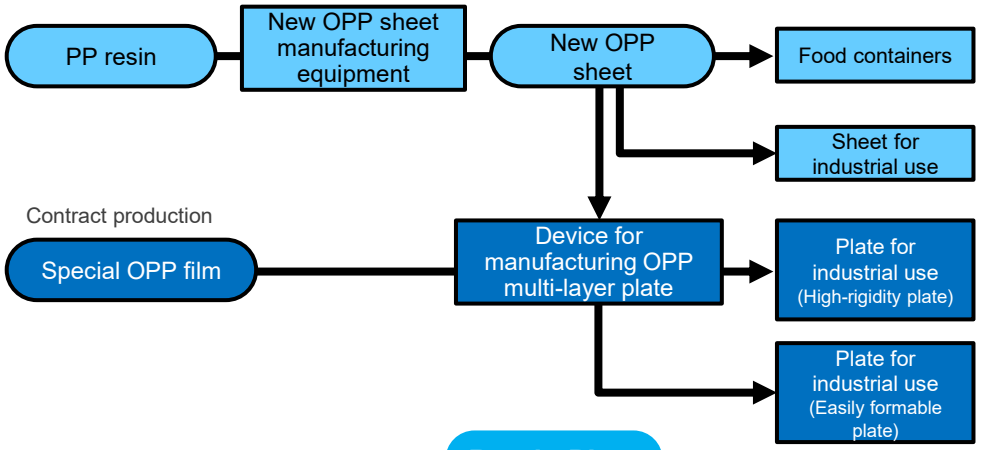
[Koga Plant]
Launch of an easily formable OPP multi-layer plate planned

Steps Leading to the Launch of the Business

2027: Production to commence at the Kannabe Plant



2029: Commercial production of LISIM to commence at the Bando Plant



Kannabe Plant

OPP Multi-layer plate (FORTENA)

[Raw materials]	Special OPP film (contract production)
[Type]	High-rigidity plate
[Purpose]	R&D, market development (some commercial production)

Bando Plant

New OPP sheet (OPTENA)

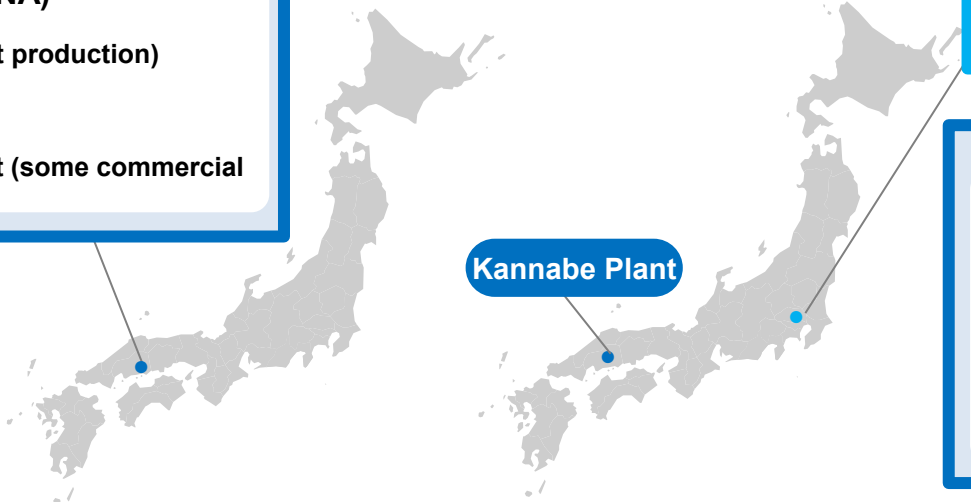
Manufacturing the new OPP sheet using LISIM

Manufacturing new OPP food containers

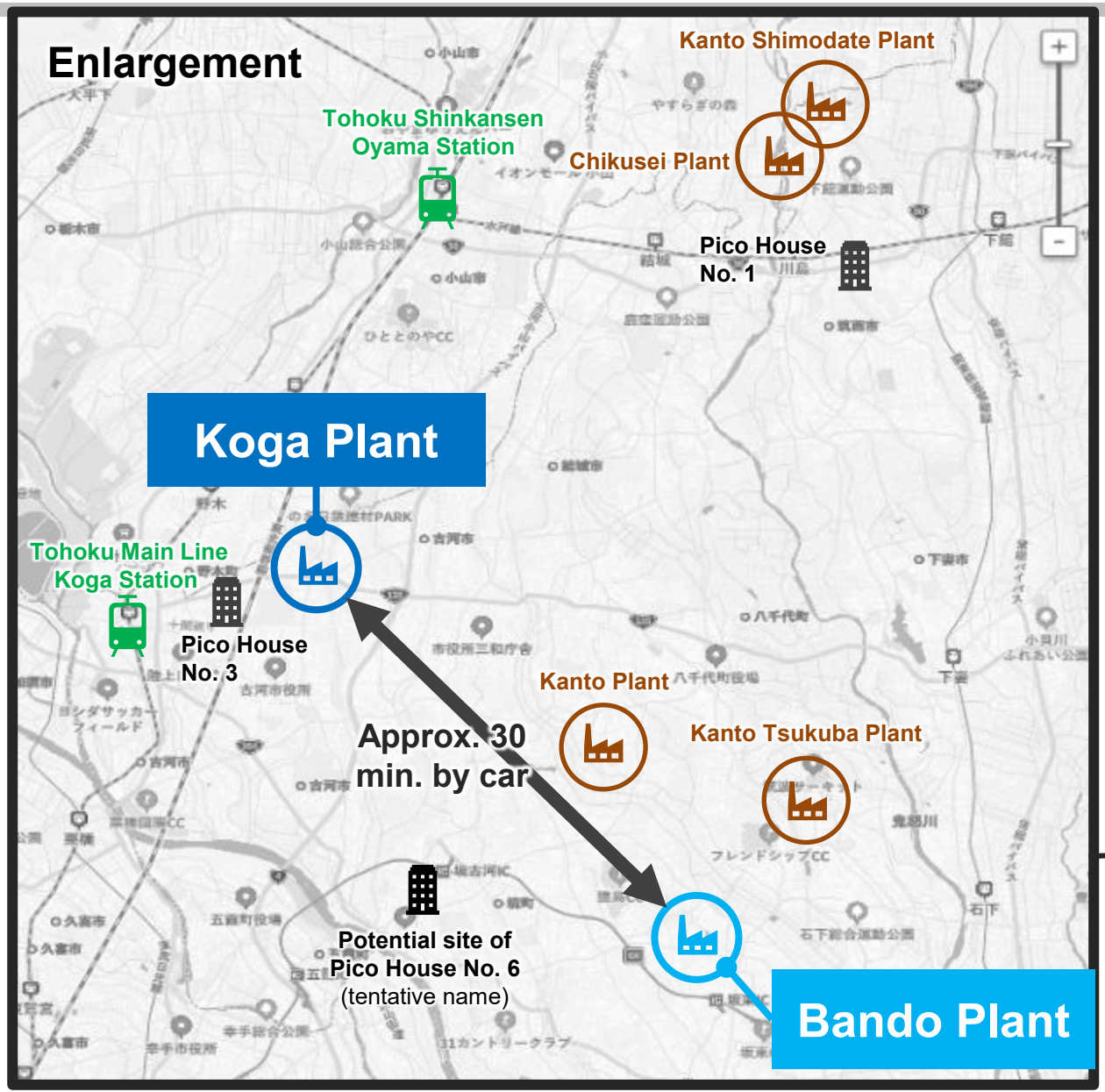
Koga Plant

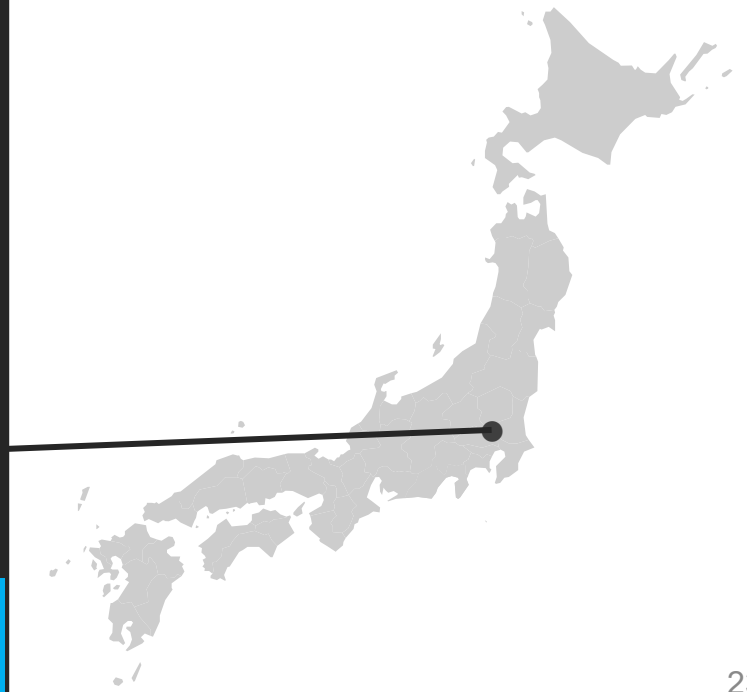
OPP Multi-layer plate (FORTENA)

[Raw materials]	New OPP sheet Special OPP film (contract production)
[Type]	Easily formable plate / High-rigidity plate
[Purpose]	Commercial production



Locations of the Koga Plant and the Bando Plant





2027: OPP Multi-layer Plate (FORTENA)
— High-rigidity Plate —

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FORTENA

Flows of products

PP resin → New OPP sheet manufacturing equipment → New OPP sheet → Container forming → Food containers: Transparent containers and lids that can be used in temperatures ranging from extremely low to high

New OPP sheet → Sheet for industrial use: Mobility decorative sheets, etc. are expected

Contract production: Special OPP film → Device for manufacturing OPP multi-layer plate → Plate for industrial use (High-rigidity plate): Civil engineering and construction materials, housing equipment, solar cells, etc. are expected.

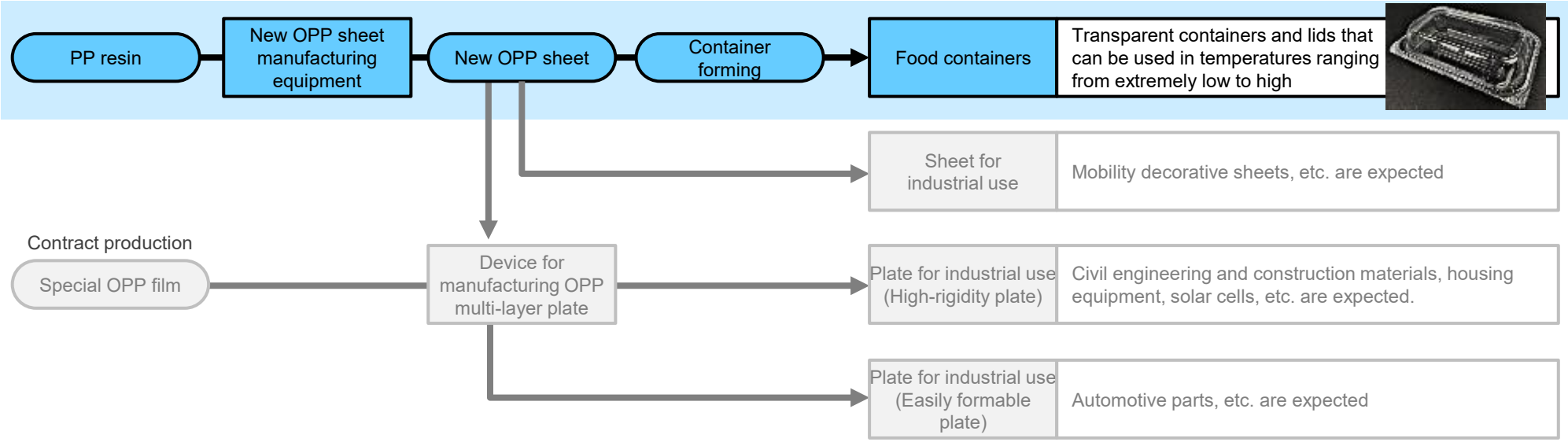
Device for manufacturing OPP multi-layer plate → Plate for industrial use (Easily formable plate): Automotive parts, etc. are expected

Comparison with the properties of alternative materials

	FORTENA	Iron	Aluminum	FRP	PC	CFRP
Specific gravity (g/cm3)	0.9	7.8	2.7	1.5	1.2	1.5-1.7
Thickness of products with equivalent stiffness	2.5	0.6	1.0	2.0	3.5	0.4
Weight ratio	0.48	1.0	0.57	0.64	0.90	0.14
Recyclability	○	○	○	×	×	×

2029: Planned Launch of New OPP Food Containers

Flows of products

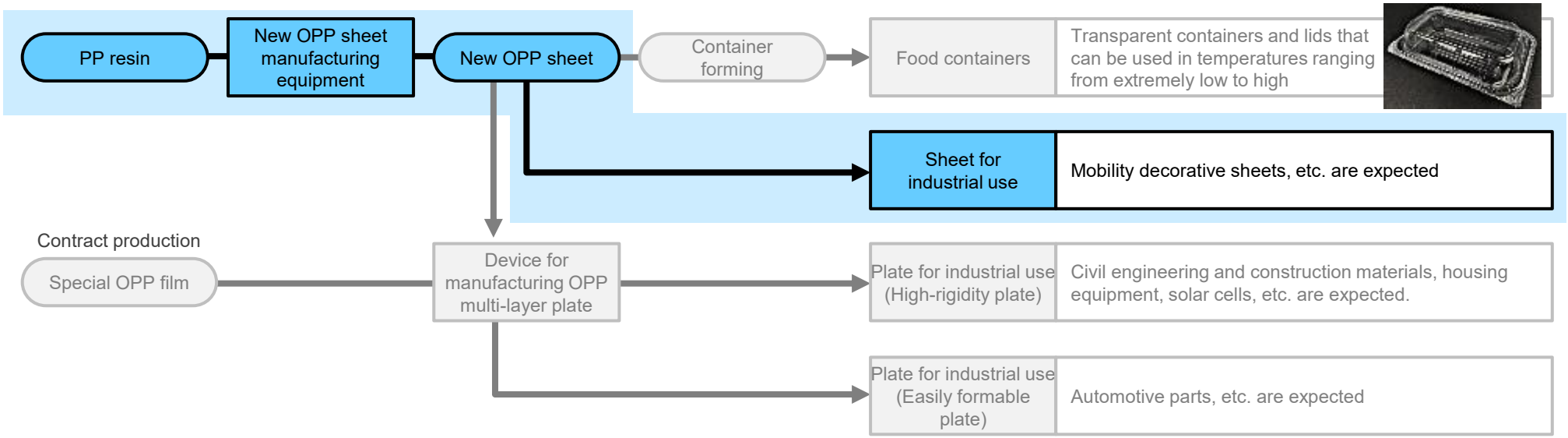


Comparison of transparent container materials

		New OPP (Biaxially oriented PP product)	**OPS** (Biaxially oriented PS product)	**APET** (Amorphous PET)	**OPET** (Biaxially oriented PET product)	**Transparent PP** (Amorphous PP)
Transparency		○	○	○	○	△
Heat resistance		**110°C**	**80°C**	**60°C**	**80°C**	**110°C**
Cold resistance	-30°C	○	△	×	○	×
Container weight at same strength	○ Light × Heavy	○	△	×	△	×
Oil resistance		○	×	○	○	○

2029: New OPP sheet (OPTENA)

Flows of products



Developed by FPCO

In-mold product

Developed by FPCO

Overlay-molded products

Future applications of the new OPP sheet
(for illustration purposes only)

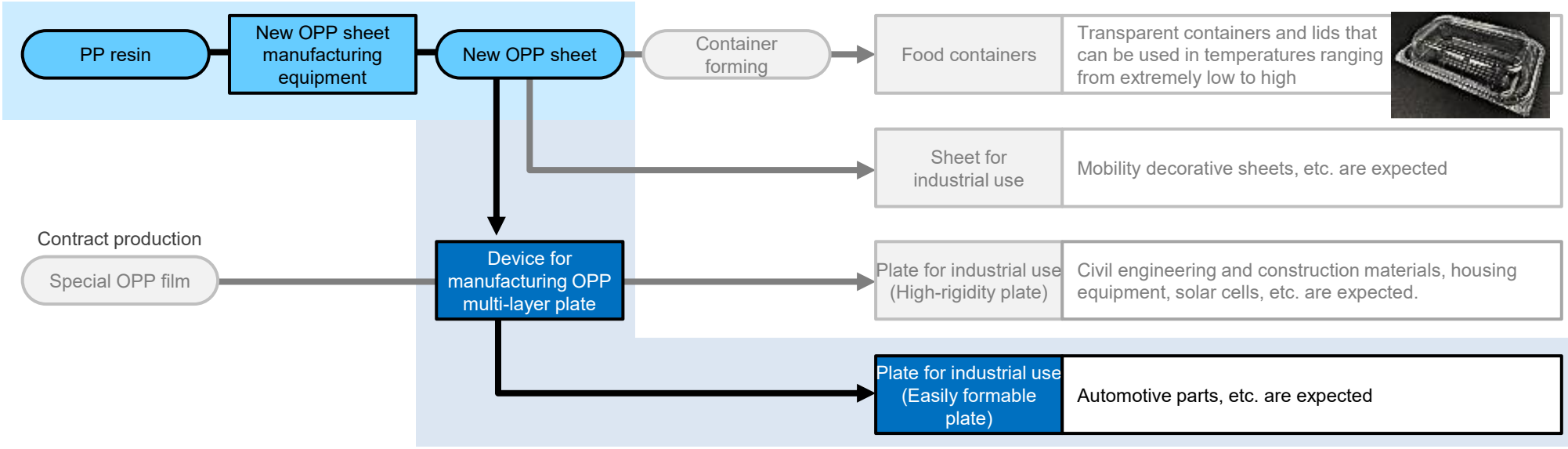
Source: Quoted from Toyota Europe Newsroom, a website of Toyota Motor Corporation
https://newsroom.toyota.eu/new-land-cruiser-200/

2029: OPP Multi-layer Plate (FORTENA)
— Easily Formable Plate —

FPCO

Flows of products

FORTENA



Developed by FPCO **OPP multi-layer plate**

Civil engineering and construction materials

Housing equipment materials

Automobiles

Source: Quoted from AWIN, a website of Giken Co., Ltd.
https://a-win.jp/lineup/

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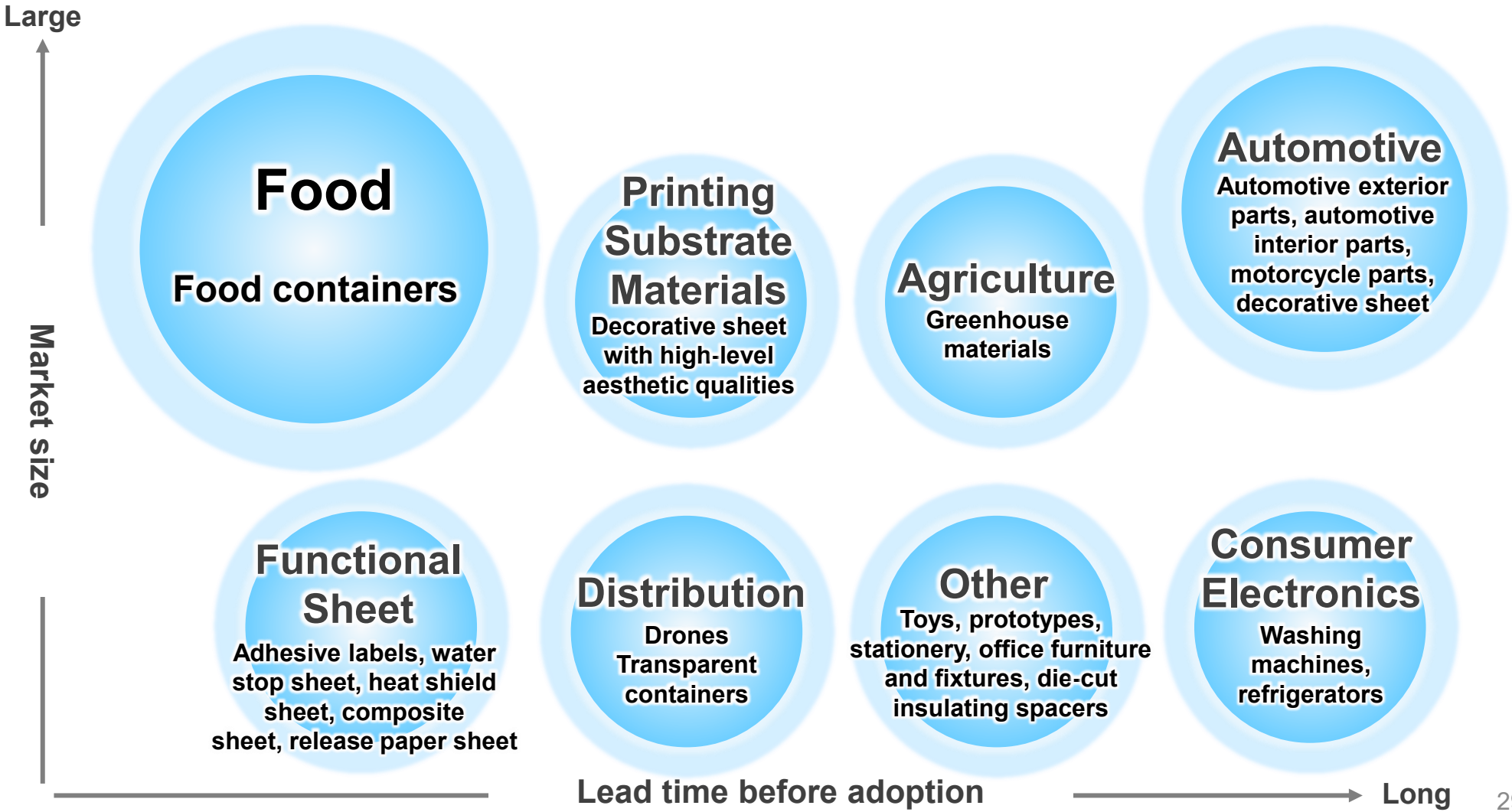
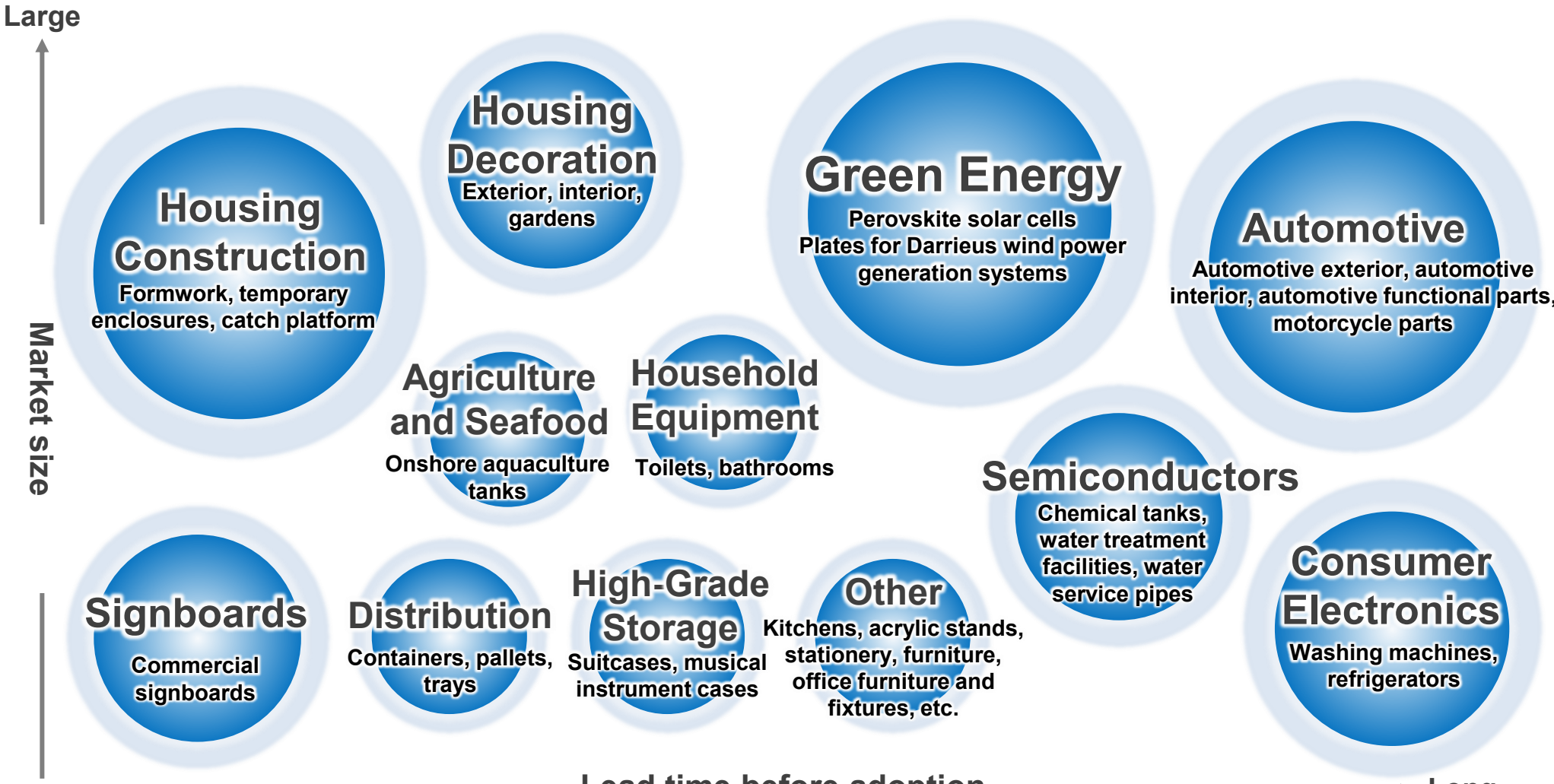
Target Markets for the New OPP Sheet (OPTENA)

Applications in 21 areas across 8 fields under examination

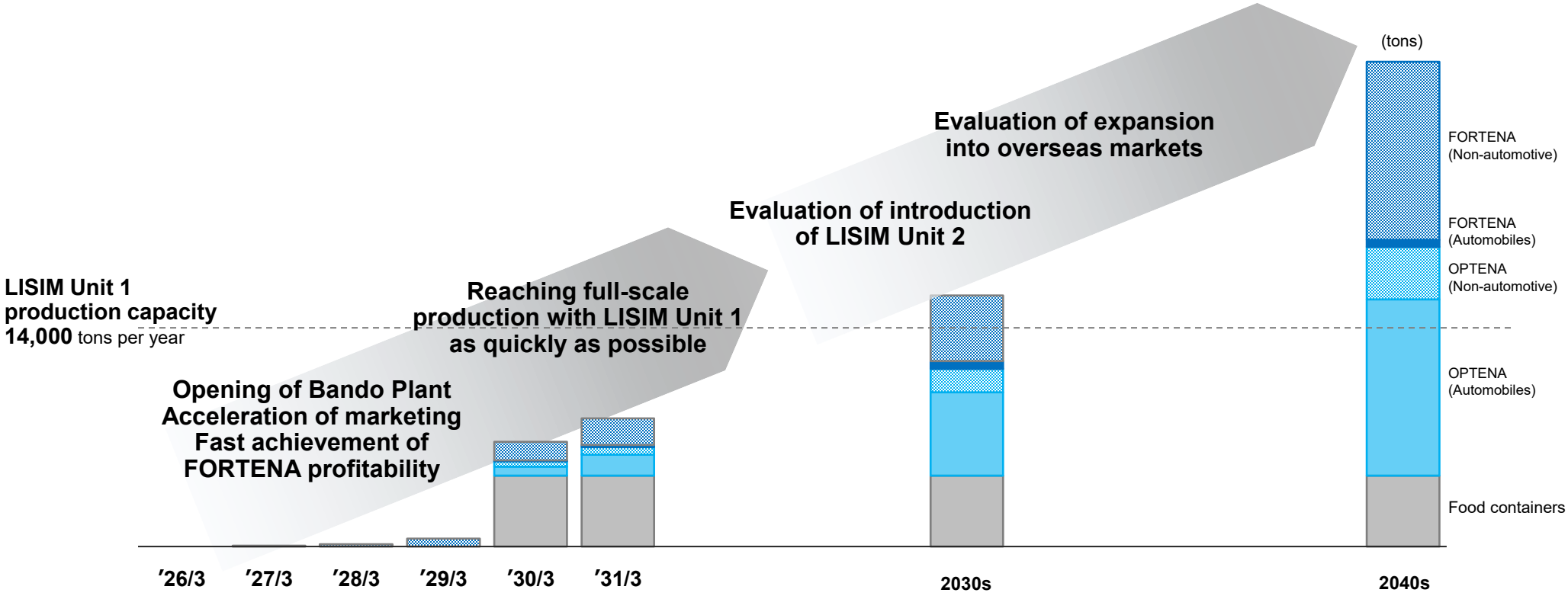


Target Markets for the OPP Multi-layer Plate (FORTENA)

Applications in 31 areas across 12 fields under examination



New OPP Sales Forecast



Sales projections	**10.0 billion yen-**	**30.0 billion yen-**	
Expected ROIC	**-**	**6%-**	**8%-**

Example Initiative: Obayashi Corporation

Temporary enclosures being tested at the Bando Plant construction site

Expected benefits

01. Transparent panel | White panel

Weather resistance and rigidity that make it possible for the panels to be used on construction sites in tough *environments*

02. Transparent panel | White panel

Lighter weight compared to existing products
Workload mitigation

03. Transparent panel

Prevention of collisions at the corners of construction sites

04. White panel

Transmits light at night facilitating safety and preventing crime

05. Transparent panel | White panel

Can be recycled as PP resin after being used the targeted number of times

Example Initiative: GIKEN Co., Ltd.

In the automotive field, we are developing aero parts (including spoilers and garnishes) and other accessory parts.

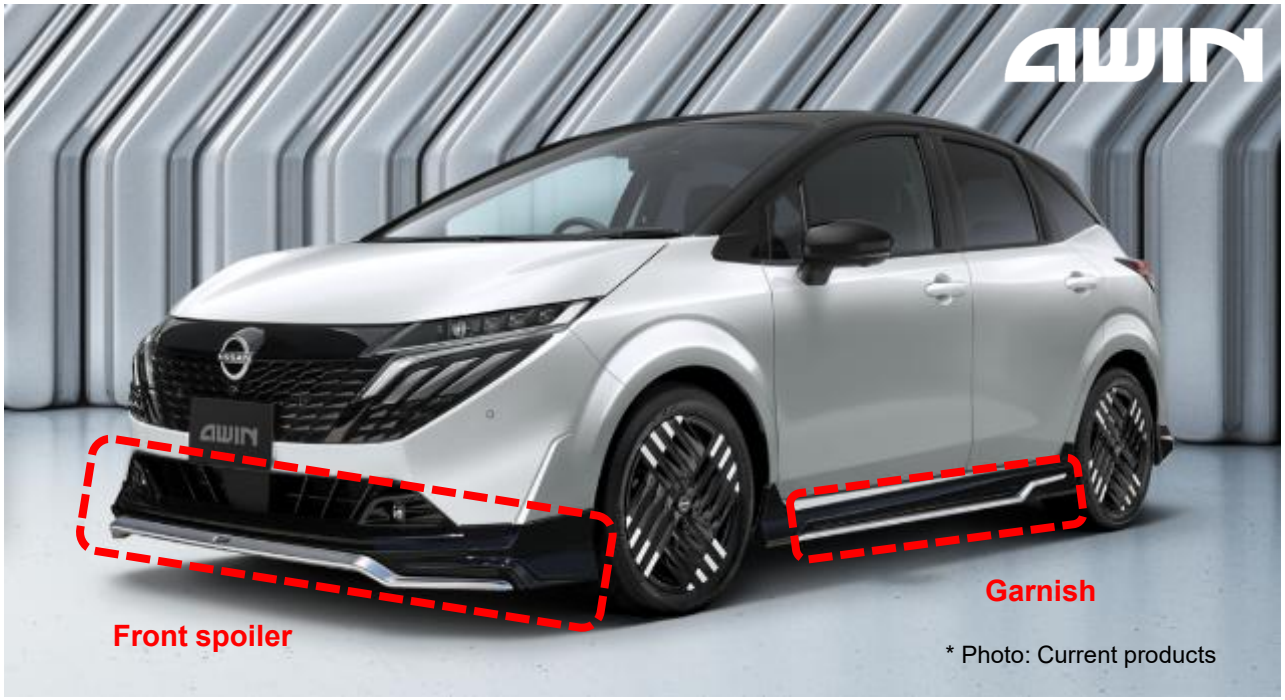
Expected benefits

01. Significant weight reduction

02. Recyclability

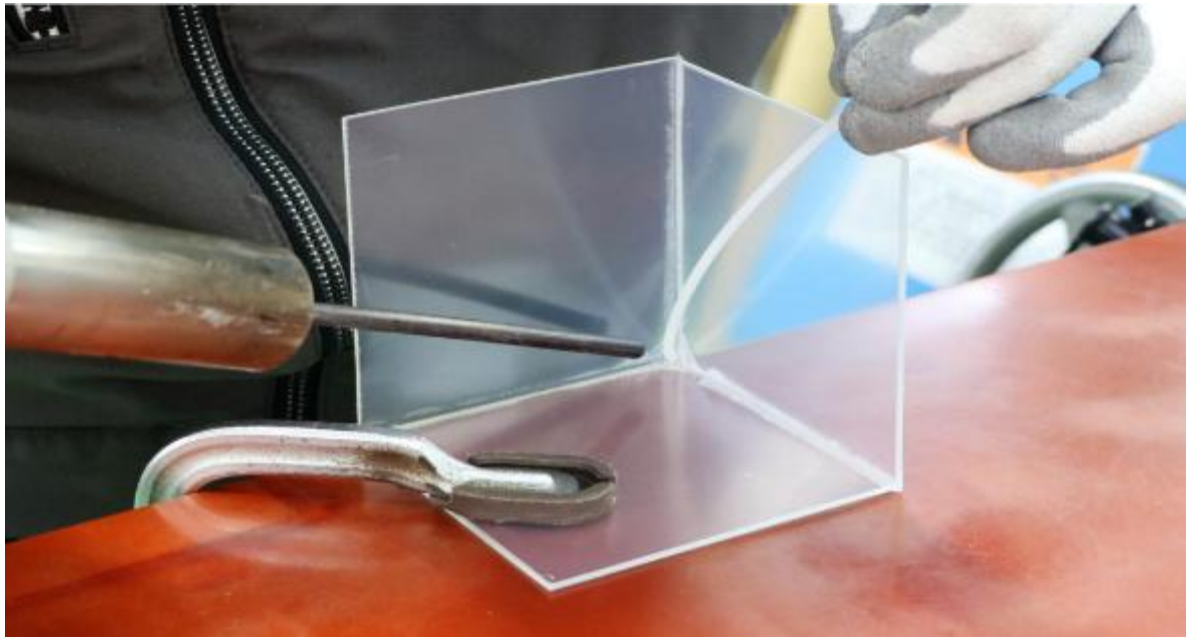
03. Paintless process

04. Rigidity and formability



Source: Quoted from AWIN, a website of Giken Co., Ltd.
https://a-win.jp/lineup/xtrail_t33mca/

Example Initiative:
FUJIWARA CHEMICAL ENGINEERING Co., LTD.



Conducted welding tests on FORTENA

Expected benefits

01. Chemical tanks: Easy visual detection of water leakage

02. Agricultural applications: Use as molds for forming crops, enabled by a property that lets light through

03. Fusing with general-purpose PP: A smart solution for customers who want to visually check inside their equipment

FORTENA was featured in a column by FUJIWARA CHEMICAL ENGINEERING

Column URL:
https://fuji-chemicaleng.co.jp/fortena-transparent-pp-welding/

Example Initiative: Honda Motor Co., Ltd.

Jan. 2026: Used for the windscreen of a Honda CRF450 RALLY during the 2026 Dakar Rally

* Photo:
Windscreen made from FORTENA

Points that were appreciated

01. Significant weight reduction improves steering (-30 g/sheet)

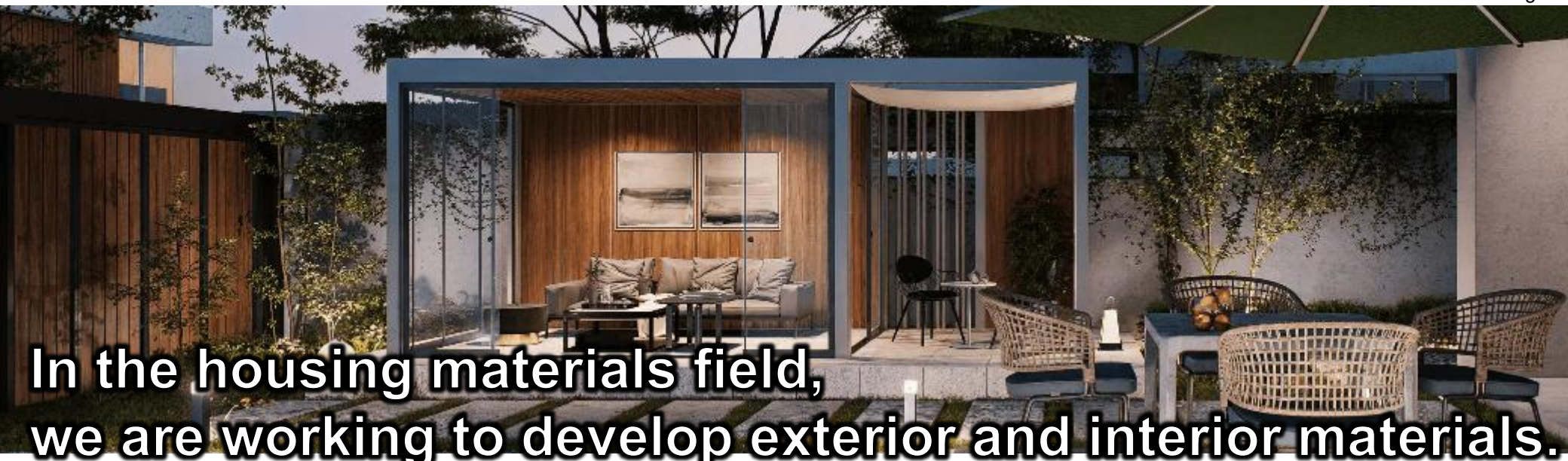
02. Superior balance of physical properties, including high rigidity and impact resistance prevents breakage due to impact.

03. High workability prevents cracking around bolt attachment points

04. Despite being a PP material, high transparency is achieved

Example Initiative: TAKASHO CO., LTD.

*Illustrative image



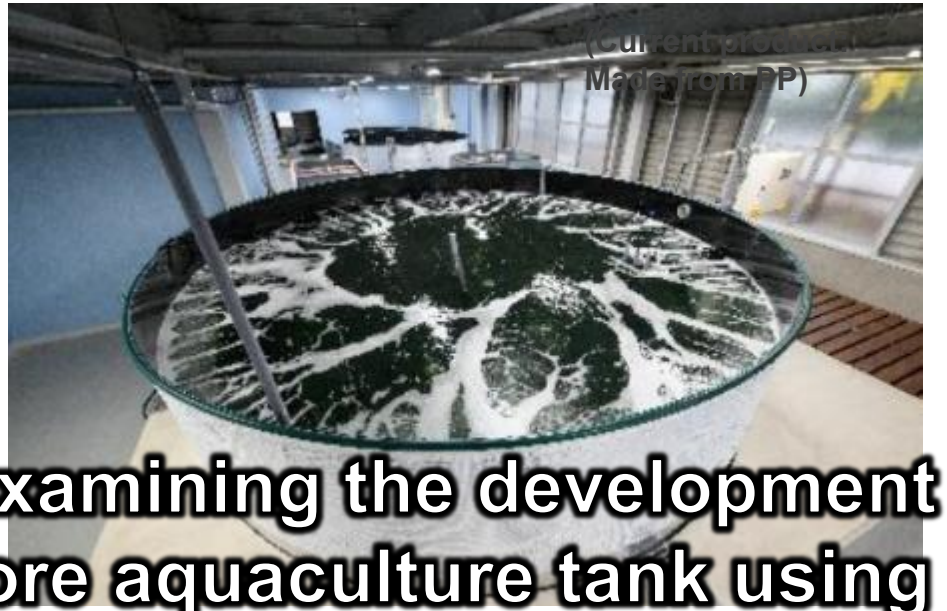
Expected benefits

01. Superior balance of physical properties

02. Resistance to breakage due to collision with an object outdoors

03. Safe and reliable with a low probability of fragmentation

Example Initiative:
Onshore Aquaculture Equipment Manufacturers



We are examining the development of an onshore aquaculture tank using FORTENA

	FORTENA tank	Standard PP tank	FRP tank	Concrete tank
Transparency	Yes Visual inspection inside the tank is possible	Almost no transparency	No	No
Waterproof paints	Not required	Not required	Initial coating and regular maintenance are required	Initial coating and regular maintenance are required
Recycling	Possible	Possible	Not possible	Not possible

To Increase Corporate Value

“Reliably deliver the most environmentally friendly products of the highest quality at the most competitive prices whenever they are needed.”