

Special Feature

North American Strategy for Hipore™

# Expansion in North America for medium-to-long-term growth of Hipore™ lithium-ion battery separator business

The Asahi Kasei Group is evolving its business portfolio through challenging investment for growth together with cash generation from structural transformation and strengthening of existing businesses. One area of focus as an investment for growth is the North American project for Hipore™ in the separator business—the core of energy storage, one of the 10 Growth Gears (GG10) businesses.

Outline of the North American investment

Location	Ontario, Canada
Plant overview	Integrated plant for base film manufacturing and coating
Total investment	Approximately ¥180 billion*
Production capacity	Approximately 700 million m <sup>2</sup> per year (as coated film)
Start of operation	Commercial start-up scheduled in 2027

\* At exchange rate of ¥145 per US\$



## Separator business overcoming adversity and moving toward recovery

The Hipore™ wet-process lithium-ion battery (LIB) separator business grew by quickly identifying specific market needs and efficiently utilizing limited resources to create value and gain market share. This is a typical pattern for a product of Asahi Kasei. Recently, however, the business has struggled. Having built solid foundations in consumer electronics applications, the business was slow to adapt to automotive applications. When coated separator became the mainstay for automotive applications, insufficient coating capacity curtailed expansion of the customer base, resulting in overdependence on demand from certain customers. This coincided with the impact of the COVID-19 pandemic,

supply-chain disruption, changes in the international situation, and other factors, leading to a significant decline in sales volumes. Currently, LIB manufacturers are planning to significantly increase their production capacities, reflecting expectations for a rapid expansion in the market for various types of electric vehicles (xEVs) in North America. Having identified a major business opportunity in the North American market, where an expansion in demand and the establishment of a new supply chain are expected, Asahi Kasei decided to target a North American market share of at least 30% by steadily meeting demand from LIB manufacturers as a leading supplier of LIB separators.

## Maximum control of investment risk

In April 2024, Asahi Kasei announced the establishment of an integrated production plant for Hipore™ separators, including base film manufacturing and coating, in Ontario, Canada. We consider it to be highly significant that we are constructing a plant ahead of other competitors in North America—where the xEV market is expected to expand and there are currently no plants for mass-production of wet-process separators. We also believe that this North American investment, backed in part by various measures to promote EVs and develop related industries, such as the Inflation Reduction Act (IRA) in the United States, will serve as a turning point for returning the separator business to growth. The investment

configuration for this project is particularly notable. An agreement has been reached for Asahi Kasei Battery Separator Corp., which is scheduled to be established in October 2024, to issue preferred shares to the Development Bank of Japan Inc. (DBJ), for which it will receive ¥28 billion in funding. We have also concluded a basic agreement with Honda Motor Co., Ltd. to establish a joint venture, with Asahi Kasei as the majority investor, and the two parties are currently studying details. In addition, we also expect to receive financial support from the federal government of Canada and the provincial government of Ontario. Although the estimated total investment in North America comes to ¥180 billion,

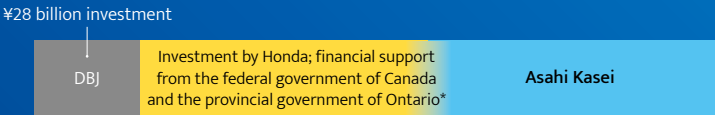


Special Feature North American Strategy for Hipore™

we plan to achieve production on a scale that fully accommodates market expansion while controlling investment risk to a significant degree by leveraging other companies' capital and government financial support.

Breakdown of funding

≈ ¥180 billion total investment



\* Financial support from the federal government of Canada and the provincial government of Ontario, in addition to support under the September 2023 memorandum of understanding between Canada and Japan concerning battery supply chains

A completely new way of business expansion

We have gained four main strengths over more than 40 years in the separator business. The first is relationships with customers. The relationships of trust built through a high ability to respond to customer needs using our accumulated know-how has enabled the development of products based on a high degree of coordination. The second is high productivity. Our world-leading production speed is approximately double the industry standard for both base film and coating. The third is the high performance and quality of our products. With a diverse lineup of coated membranes that

meet customer needs, our high-quality products contribute to improved battery yield and extended battery service life. The fourth is environmental consciousness. We have superior environmental technology such as non-fluorinated coatings that do not use per- and polyfluoroalkyl substances (PFAS), which have been the subject of tighter restrictions in recent years.

Our business expansion in North America will fully leverage these four strengths in a completely new way. We have conventionally been successful at promoting high value-added

products in niche markets. With the North American project, in contrast, we are adopting a different approach by making a major up-front investment to attract customer inquiries. In addition to thoroughly achieving low-cost production, we will establish alliances with business partners based on their technological advantages and realize production on a scale sufficient to accommodate market expansion. This project will build business foundations in North America by leveraging our accumulated battery-related technology.

Medium- to long-term outlook for the Hipore™ business

In terms of the performance outlook for the Hipore™ business over the medium term, we are targeting sales of ¥160 billion and an operating margin of at least 20% in fiscal 2031, the fifth year of operation at the Canada plant. While sales were sluggish in fiscal 2022 and 2023, we expect sales volume to increase from 2024. We especially foresee further increased volume in fiscal 2026 with the start of new coating lines in the United States, Japan, and South Korea, as announced in 2023. For the time being, we will supply the North American market from our plants in Japan. Once the plant in Canada becomes operational in fiscal 2027, the capacity in Japan will be available to supply

the Japanese and South Korean markets, which are projected to ramp up at that time. This will allow us to maintain high operating rates across all plants. Our plans are firmly grounded on earnest requests from major customers for local separator production in North America. As of July 2024, 60% of the main North American customers had completed their evaluation of our separators and begun discussions for long-term supply, with smooth progress in evaluation by the remaining 40% of customers. We are also considering second and third phases of investment, and will continue to examine how to adequately meet further expanding demand over the long term.

A major step toward carbon neutrality

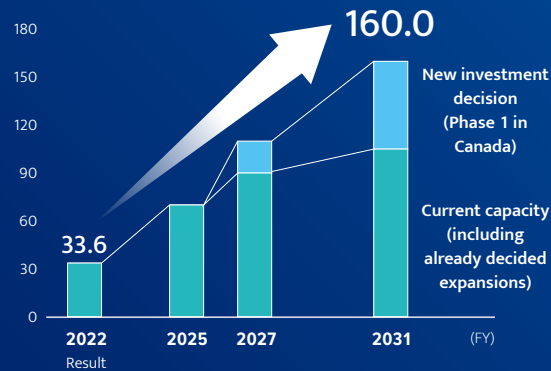
Though many challenges remain to achieve carbon neutrality, governments and companies across the world are working diligently to address them. Asahi Kasei has accumulated an array of intangible assets through many years in LIB separator and other membrane-related businesses, including the core technology of phase separation, human resources, know-how, and customer relationships. These

intangible assets are the sources of our strength. We believe that by fully leveraging such intangible assets to supply high-quality LIB separators for xEVs, we can support the expansion of the xEV market and contribute to carbon neutrality. While taking this important challenge, we will also fulfill our Group Mission of contributing to life and living for people around the world.

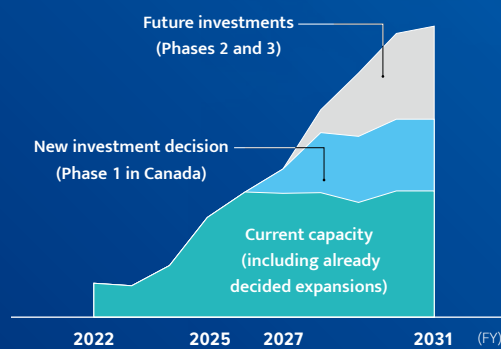


Sales outlook for Hipore™ business

(¥ billion)



Medium- to long-term outlook for Hipore™ sales volume





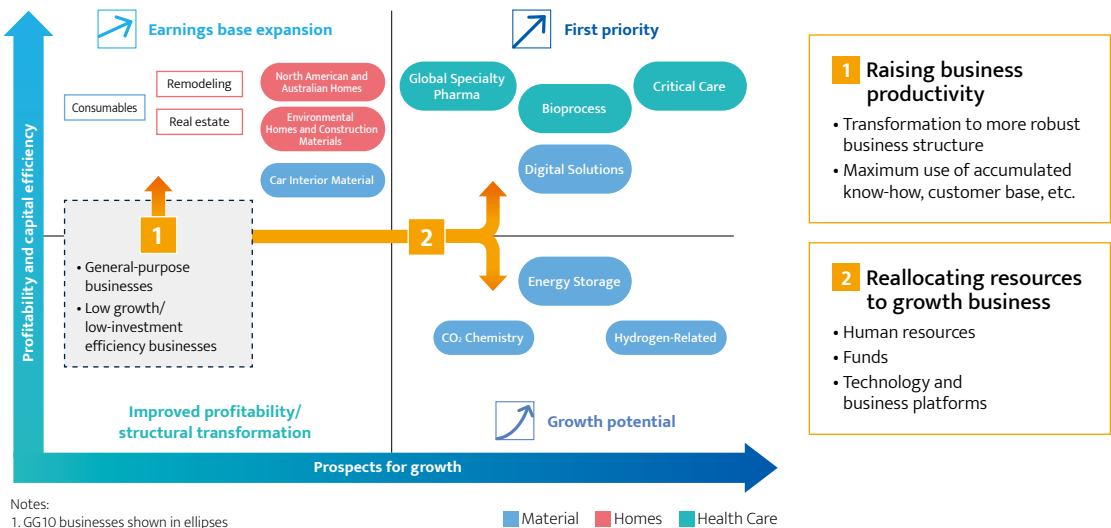
Both Structural Transformation and Growth Investments

Accelerating business portfolio transformation through structural transformation

Asahi Kasei promotes the structural transformation of a variety of its businesses, including petrochemical chain-related businesses, and transforms its business portfolio by directing the resources it generates through these efforts to growth businesses.

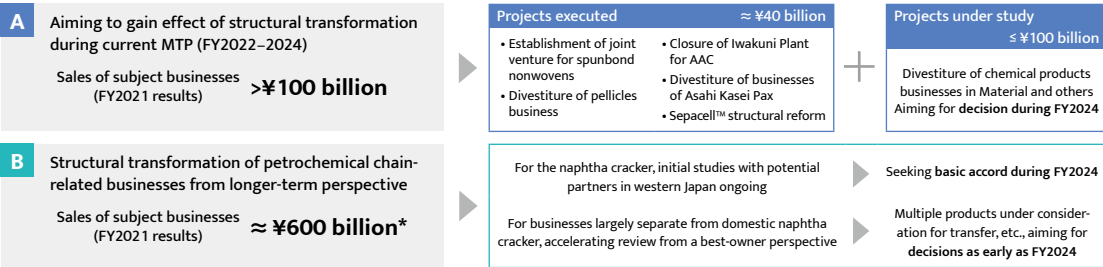
Overview of business portfolio and path of transformation

In managing our business portfolio, we categorize businesses into four quadrants along the two axes of “prospects for growth” and “profitability and capital efficiency,” advancing actions in accordance with each quadrant. In particular, given the pressing need to transform businesses in the lower left quadrant positioned for earnings improvement or structural transformation, we examine transformation from two perspectives. The first perspective involves fully leveraging the know-how and customer bases of these businesses to enhance their profitability and capital efficiency, in addition to strengthening their profit structure. Through these actions, we aim to transform businesses in the upper left quadrant positioned for “earnings base expansion.” The second perspective involves reallocating resources to “first priority” businesses and “growth potential” businesses to enhance the productivity of the Asahi Kasei Group as a whole. In light of the current challenging earnings situation, our examinations will prioritize the potential of the second perspective. To this end, we view it as particularly critical to focus human resources in businesses with high growth potential.



Progress on structural transformation

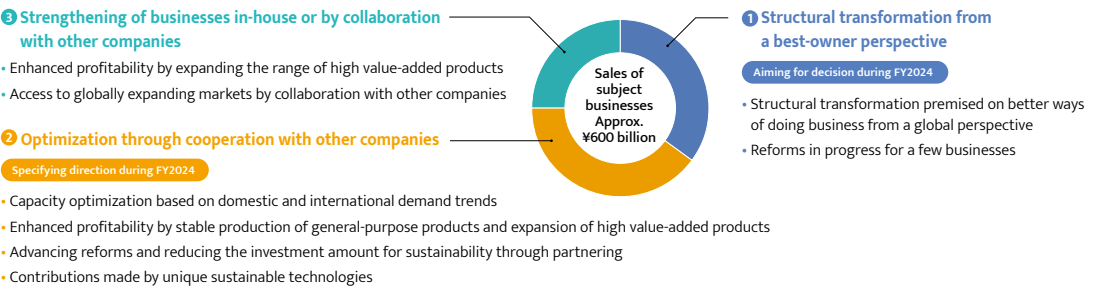
Looking at the reforms we enacted to create effects during the period of the current MTP, we aimed for structural transformation in businesses with net sales totaling ¥100 billion or more (based on fiscal 2021 results). We have already implemented structural transformation in businesses with total net sales of approximately ¥40 billion. These efforts include the establishment of a joint venture company for spunbond nonwovens with Mitsui Chemicals, Inc., and the closure of the Iwakuni Plant of Asahi Kasei Construction Materials. In addition, with reforms equivalent up to approximately ¥100 billion currently under examination, including the transfer of a chemicals business, we fully expect to achieve our target. We are also working on structural transformation from a medium-term perspective in petrochemical chain-related businesses, which have net sales of ¥600 billion (based on fiscal 2021 results). For businesses based on the naphtha cracker at the Mizushima Works, we are advancing discussions with partner candidates in western Japan with the aim of reaching an agreement on the direction of reforms during fiscal 2024.



\* Some overlap with category A

Structural transformation of petrochemical chain-related businesses

We are examining the transformation of petrochemical chain-related businesses based on three different approaches: 1) structural transformation from a best-owner perspective, 2) optimization through cooperation with other companies, and 3) strengthening of businesses in-house or by collaboration with other companies. Businesses targeted under the first approach account for approximately one-third of the aforementioned ¥600 billion. For these businesses, we are already taking concrete steps in several projects with the aim of making decisions during fiscal 2024. The second approach includes the naphtha cracker and derivative products that use basic chemicals from naphtha cracking. Under this approach, we will not only optimize capacity but also pursue the best outcome with an emphasis on utilizing our sustainable technologies. In businesses included in the third approach, we are advancing actions from the perspective of enhancing business value through our own efforts or in collaboration with other companies. Implementing these measures will enable us to improve ROIC in the Material sector, which will improve the capital efficiency of the Asahi Kasei Group as a whole.




Both Structural Transformation and Growth Investments

# Continuous growth through strategic investments in GG 10 businesses and M&A


Sustainable growth of the Asahi Kasei Group is achieved by strategic allocation of resources generated through structural transformation to investments in the expansion of GG10 businesses with high growth potential and the steady execution of M&A.

## Progress on GG 10 investments


When we announced the current MTP in fiscal 2022, we designated GG10 as businesses to drive our future growth. In fiscal 2023, we broadly categorized the GG10 businesses in accordance with time frame, scale, and way of growth, as outlined to the right. Our growth investments in GG10 businesses emphasize the realization of a well-focused allocation of resources between the three categories.

**First priority**




Investing management resources in this category as a top priority, including inorganic growth, with the aim of achieving growth over the medium term while reaping profits from past investments

**Growth potential**

With this category as the driver of future growth, conducting forward-looking investments and promoting strategic alliances from the perspective of strengthening competitiveness

**Earnings base expansion**

Investing in this category based on a careful assessment of fields where we can expand the scale of our earnings while continuing to generate steady earnings

Position in business portfolio	Businesses to drive future growth 10 Growth Gears (GG10)		FY2022–2024 investment amount and major projects to date (¥ billion, decision-adopted basis)		FY2021⇒FY2024 profit increase¹	GG10 financial targets
 <b>First priority</b>	Critical Care Global Specialty Pharma Bioprocess	Health Care	≤200	• Acquisition of Bionova Scientific, a U.S. biologics CDMO, and expansion of business base	+ ≈ 15 billion ↗	<div>FY2022–2024 cumulative investment (decision-adopted basis) ¥700 billion</div> <div>Note: Total amount including maintenance investments, etc.</div> <div>▶ Increase due to Hipore™ investment in North America, etc.</div> <div>FY2024 operating income GG10 total ¥110 billion</div> <div>(&gt;50% of all business income²)</div> <div>▶ Below initial target of ¥150 billion due to downturn in separators</div>
	Digital Solutions	Material Life Innovation	≤ 100	• Increased capacity for Pimel™ semiconductor buffer coat/interlayer dielectric	± 0 billion →	
 <b>Growth potential</b>	Energy Storage (separators) Hydrogen-Related CO₂ Chemistry	Material Environmental Solutions	≤300	• Expansion of automotive LIB separators (integrated plant in North America and addition of coating facilities in North America, Japan, and South Korea)	– ≈20 billion ↘	
 <b>Earnings base expansion</b>	North American and Australian Homes Environmental Homes and Construction Materials	Homes	≤ 100	• Acquisition of Focus Companies in the U.S. • Acquisition of Arden Homes in Australia	+ ≈ 10 billion →	
	Car Interior Material	Material Mobility & Industrial	≤50	• U.S. automotive interior materials	+ ≈ 10 billion →	

In fiscal 2024, GG10 businesses in the Health Care and Homes sectors are on track for steady growth with expansion investments proceeding in accordance with strategy.

Although its profits have declined recently due to sluggish performance in Energy Storage (separators), Environmental Solutions in the Material sector will increase its operating rates by expanding sales in the short term and aim to achieve major growth centered on the North American market over the medium-to-long term.

Cumulative investment in GG10 businesses (on a decision-adopted basis) between fiscal 2022 and fiscal 2024 increased from the initial planned amount of ¥600 billion to approximately ¥700 billion, mainly due to a project for lithium-ion battery (LIB) separators for automotive applications in North America.

Meanwhile, our target for GG10 operating income in fiscal 2024 stands at ¥110 billion, lower than the initial target of ¥150 billion, reflecting the downturn in the separator business.

¹ Operating income + amortization from PPA

² Proportion of business income, excluding corporate expenses

Both Structural Transformation and Growth Investments

Strategic M&A leveraging accumulated expertise

Since acquiring ZOLL in fiscal 2012, Asahi Kasei has proactively pursued business expansion by making full use of M&A. In particular, overseas M&A in the Health Care sector, positioned as a pillar of growth, have driven the expansion of the sector and accelerated our globalization. We will create value through M&A with the aim of transitioning to a business portfolio with a high proportion of high value-added businesses.

M&A target fields

Under the current MTP, we promote M&A to accelerate growth and achieve results centered on GG10 businesses—designated as growth drivers—such as Global Specialty Pharma and Bioprocess in the Health Care sector and North American and Australian Homes in the Homes sector. Going forward, we will continue to focus on the Health Care sector for M&A targets while positioning M&A as a means to achieve growth in GG10 businesses, including Digital Solutions in the Material sector and North American and Australian Homes in the Homes sector.

M&A selection criteria

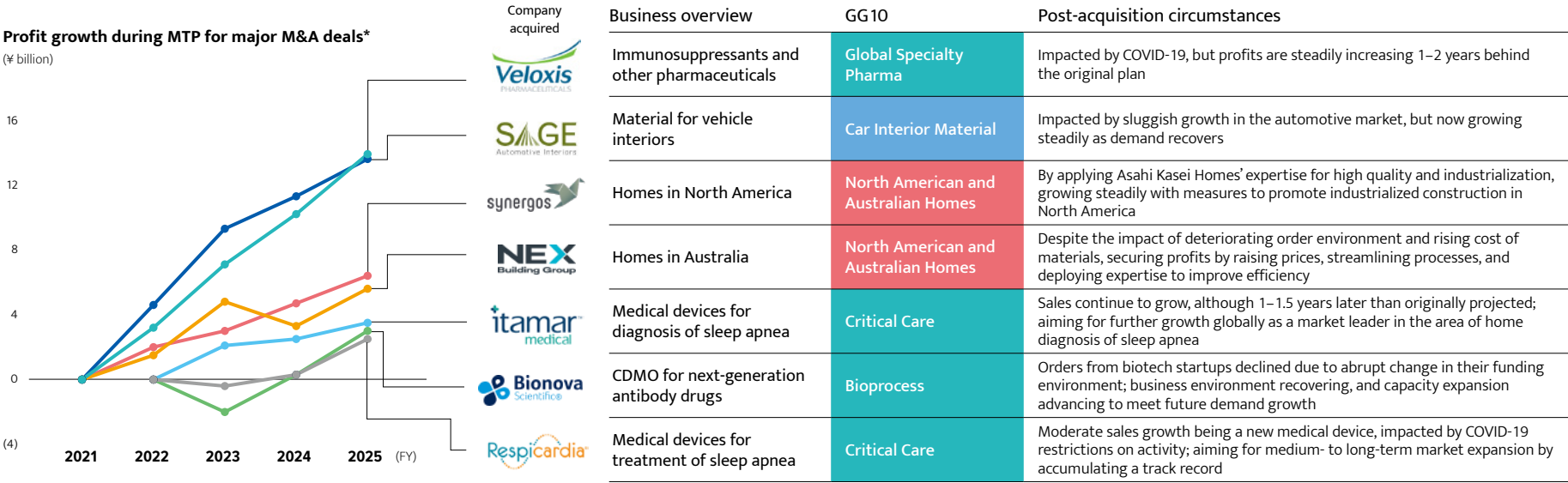
Based on our extensive accumulated experience with many M&A projects, we position the following four points as keys to success. We steadily deliver results by checking these points thoroughly when choosing target companies.

- Strong business foundation and clear business strategy
- Management that runs operations with full command over the business
- Management that understands and accepts Asahi Kasei Group philosophy, management policies, and business operations
- Trust cultivated through business activities prior to acquisition

Post-merger integration (PMI)

We conduct due diligence that anticipates the following three points from the M&A consideration stage to facilitate PMI that maximizes synergies following the execution of M&A.

- Post-acquisition governance (management structure, approval authority at acquired company)
- Post-acquisition operational framework (method for providing services to customers)
- Acquisition scenario to accomplish envisioned operations



Looking at changes in profits, although both were affected by COVID-19, Veloxis and Sage have returned to steady growth; North American and Australian Homes are also recording solid profit growth.

In contrast, Bionova and Respicardia, Inc. (Respicardia) have been affected by delays in market establishment, partly because both remain early-stage businesses.

Overall, although we are seeing an increase in profits through rigorous M&A management, we will conduct more focused monitoring of market and business conditions for projects experiencing delays in generating profits, and work to realize growth in accordance with market establishment.

\* Changes in operating income plus PPA amortization; FY2021 baseline except for Bionova, Itamar, and Respicardia. FY2024 and FY2025 are forecasts.