

# Medium- and Long-Term “2025 Business Plan”

To deal with a dramatically changing business environment and achieve sustainable growth into the future, Toyoda Gosei’s 2025 Business Plan lays out three key areas that take advantage of the Toyoda Gosei Group’s cultivated strengths. This shows not only numerical targets or business expansion, but also new efforts to contribute to society and to grow sustainably.

## What we aspire to be

Toyoda Gosei aims to grow as a global company that acts flexibly and swiftly in today’s dramatically changing business environment, delivering the highest levels of satisfaction to customers worldwide through **safety, comfort, well-being and the environment**

## Financial objectives

	FY2017 (J-GAAP)	FY2025 (IFRS)
Revenue	¥806.9 billion	¥1 trillion
Operating profit ratio	5.1%	8%
ROE (Return on equity)	6.6%	10%

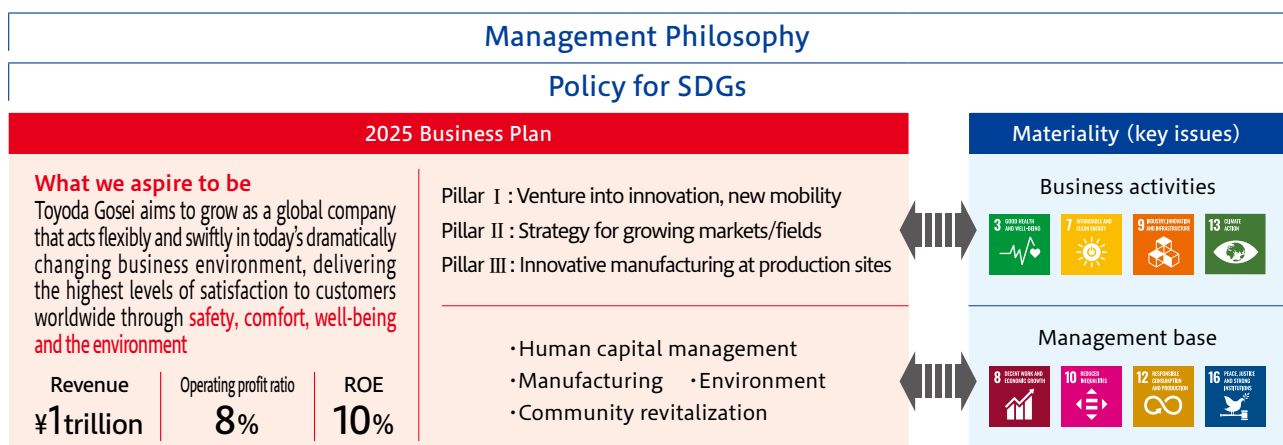


## Financial Policy

Shareholder returns	Regarding shareholder returns for the time being, we will work wholly to reward shareholders based on a consolidated payout ratio of 30% or greater, from a variety of perspectives.
Capital investment	We will secure 50 billion yen by FY 2025 as funding for capital investment for growth.
Cash reserves	In view of the prevailing circumstances, we will secure cash reserves* of consolidated monthly turnover + 30 billion yen including funds to cover risk. * Short-term borrowings (less than one year) are excluded.

## Sustainability efforts

To create social value and economic value, we are promoting efforts associated with the 2025 Business Plan and materiality.



## The situation before us and key future strategies

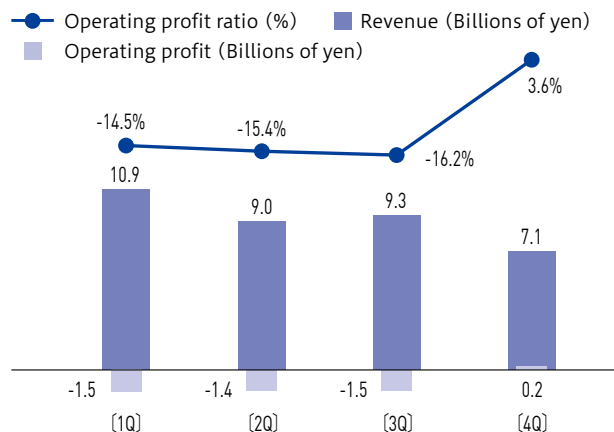
### The situation before us

Sales and profits declined in FY2019 due to the loss on liquidation of our business in Europe and the impact of the novel coronavirus. Our European business has been a challenge for some time, and while we posted a temporary loss, we were able to set definite targets for structural reforms. In the three months of the fourth quarter we recorded a surplus for the first time in five years.

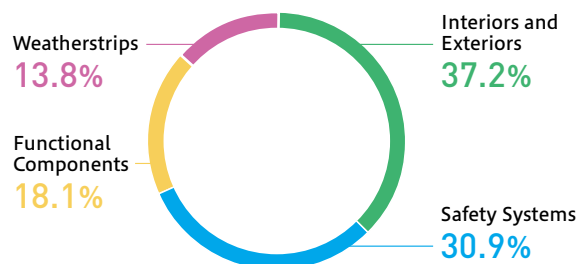
In the immediate future we will remain in “emergency mode” globally from the impact of the novel coronavirus, and execute cost controls to deal with the decrease in sales.

Meanwhile, we will implement a range of measures that give greater priority to resources for a prompt recovery corresponding to the changes in the post-corona markets, research and development with a view to the future, and key geographical regions and business fields. In this way we will continue to work toward sustainable growth. We will also seek to promote productivity improvements globally, such as manufacturing innovations utilizing AI and IoT, and remote work and other work-style reforms to accelerate the achievement of the 2025 Business Plan company-wide.

Performance in the Europe/Africa region (FY2019)



Sales ratio by product area



### Key future strategies

The figure on the right shows our key strategies for achieving the goals of the 2025 Business Plan. The red arrows pointing upward to the right show the geographic regions and product areas where we aim to grow sales.

In the product areas of safety systems and functional parts, we plan to expand sales of airbags and products for electric vehicles and fuel cell vehicles in many regions with a focus on safety and security. In the area of interior and exterior products, we will try to expand sales mainly in the Americas, where profitability is high.

Among geographic regions, the Americas have been key to much of our growth, but now we will undertake various efforts to cultivate China and the rest of Asia as a second pillar.

By focusing our resources on product areas and geographic regions with potential for excellent growth and profitability, we will optimize our portfolio and improve overall profitability.

Strategy by segment/product area

Product Area \ Segment	Safety Systems	Functional Components	Interiors and Exteriors	Weatherstrips	New Technology	Total
Japan	↗	→	→	→		→
Americas	↗	↗	↗	→	↗	↗
Asia	↗	↗	→	→		↗
Europe	→	→	→	↘		↘
<b>FY2025 sales image (FY2019)</b>	¥350 billion (¥230)	¥150 billion (¥130)	¥300 billion (¥280)	¥100 billion (¥100)	¥100 billion (0)	
	Growing sales in most regions	Energy focused on regions where profits can be earned		Faster commercialization		

Note: Assumed exchange rate \$1 = ¥100

## Pillar I : Venture into innovation, new mobility

### e-Rubber exhibited at domestic and international trade shows

Toyoda Gosei’s knowledge of rubber has been cultivated over many years. Today we are using that knowledge in a focused effort to develop e-Rubber, an innovative rubber that moves when electricity is applied. In January 2020, we exhibited for the first time at CES, the world’s largest consumer technology trade show held in the USA, with a booth that featured e-Rubber haptics. The following month we exhibited an e-Rubber tactile hand that can detect the shape and softness of an object at RoboDEX in Japan. These exhibits were favorably received by visitors, many of whom requested samples.

#### e-Rubber haptics in augmented reality



Toyoda Gosei booth at CES

Our booth at CES included a demonstration using haptics technology, in which vibration or other forces are used to simulate the actual feel of touching an object. In this demonstration, a virtual bird appeared in front of the user through AR goggles. When this virtual bird lit on the user’s finger, the user experienced a life-like feeling of being touched through a thin, soft vibrating device made with e-Rubber.

#### Barista robots (equipped with a tactile hand)



Toyoda Gosei’s “tactile hands” that use lightweight, soft and highly sensitive e-Rubber sensors are employed in robot systems by QBIT Robotics Corp.\*1

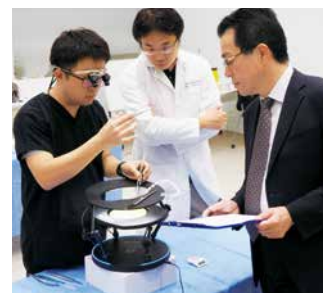
\*1 A startup that develops systems centered on collaborative robots for use in the service industry, including food service and entertainment.

### Launch of “Super BEAT” medical training simulator using e-Rubber

Toyoda Gosei and EBM Corporation\*2 launched the “Super BEAT” surgical training simulator in October 2019. This simulator can reproduce the beating of the heart with extreme accuracy using e-Rubber. The two companies have been collaborating since November 2017 to develop a practical simulator that can help surgeons to efficiently improve their skills. Demand for such surgical training simulators is rapidly growing as medical surgeries are becoming increasingly sophisticated and ensuring safety becomes important more than ever. Training using simulators has become compulsory in specialties such as cardiovascular surgery, where doctors must complete a fixed amount of training.

A special program installed in the simulator enables more than a dozen heartbeat patterns, which can be combined to mimic varying states such as the complex heartbeat patterns seen with arrhythmia or the rapid heartbeat of infants. A stressful surgical environment very close to that of actual coronary artery bypass surgery\*3 can also be reproduced.

The current coronavirus pandemic has brought new social needs to the fore. Telemedicine, for example, may help to ensure the safety of medical personnel and prevent medical systems from being overwhelmed. With e-Rubber, the human sense of touch when touching on object is converted into digital signals, which are then transmitted and reproduced at a distant location. With haptics technology, e-Rubber has the potential to contribute to the realization of telemedicine. It is looked to with expectation from many quarters.

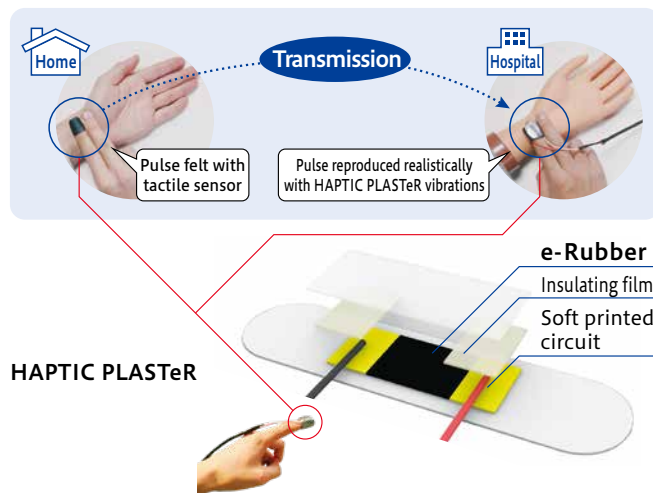


\*2 EBM is a university-launched venture company involved in training simulator development and system creation for both domestic Japanese and overseas markets, principally in the field of cardiac surgery. Their main products are used in about 70% of cardiovascular surgery hospitals in Japan, and also sold in the United States, Europe, and Asian countries. With the aim of international standardization of surgical technique training, EBM is cooperating closely with doctors from the aspects of both equipment and practices, centered on their Fukushima Institute of Surgical Training (FIST).

\*3 In surgeries to repair angina, myocardial infarction or other conditions in which circulation of the blood (oxygen supply) in the heart is impaired due to arteriosclerosis, blood flow is ensured by connecting the constricted artery to another healthy artery. To reduce patient burden, off pump surgery done without a heart-lung machine, which means the heart is still beating, is increasingly used. A high level of skill is essential to suture together vessels with a diameter of 2 millimeters on the surface of a beating heart.

### Haptics (tactile transmission) will contribute to the realization of telemedicine

e-Rubber can function as both an actuator and a sensor. Utilizing these strengths, e-Rubber is promising for areas such as telemedicine, where it can be used for online “palpation” and other tactile aspects of examinations, through haptics technology that simulates the feeling of touch.



### Various kinds of elemental technologies for the realization of future concepts introduced at Tokyo Motor Show

#### Commu-Touchpad

This is a haptic technology that simulates various tactile sensations using the vibration of e-Rubber, a next-generation rubber that expands and contracts with electricity.



### Toyoda Gosei’s future technologies for the age of CASE shown at the Tokyo Motor Show

Toyoda Gosei exhibited at the 2019 Tokyo Motor Show, held at Tokyo Big Sight in October 2019. The exhibit included our CASE-compliant technology that will contribute to mobility in the coming years, and our future interior-exterior concepts as a specialist in rubber and plastic products.

We also showed modular products that combine safety support functions and attractive design by integrating sensors and other electronic components into our main products, such as front grilles and steering wheels, and new airbags for the era of autonomous driving.



#### Front grille module

This module is equipped with sensing functions that recognize the surrounding environment with cameras and millimeter wave radars, and signage functions that communicate the vehicle’s operating status to people nearby with LED lights.



#### Next-generation safety system

Airbags are integrated into seats to accommodate the more diverse occupant postures that are expected with autonomous driving.



#### Steering wheel module

Human machine interface functions are added for coordinated vehicle operations between humans and systems. Driver monitoring functions sense the condition of the driver with cameras and sensors, and information functions convey information with light and vibration.



## Future concepts

### Flesby III

In Flesby III, AI is applied to a soft body made with the use of rubber and plastic technology, making this car like a partner that can communicate through touch.

This exterior concept includes a safety function that absorbs shocks in the event of contact with a pedestrian, and an energy-saving function that optimizes the vehicle shape according to the driving situation.

The interior concept has a “first class” function that creates a feeling of calmness with a softly enveloping sheet and LED lighting that changes color depending on the scene.



## Pillar II: Strategy for growing markets/fields

### Strategy for Asian business

Asia is a region where we will continue to grow our business. It is our second pillar following the Americas.

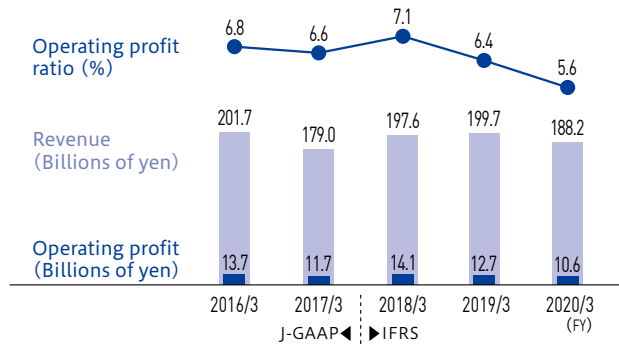
China is a key market that is expected to grow significantly, where we are moving ahead with even greater profit structure reform. In India and other emerging countries, we can expect an increase in airbag utilization rates due to stricter safety regulations, and we aim to steadily increase profits by expanding sales and reducing costs.

In China in particular, we are consolidating our business management system and reorganizing our company locations in anticipation of the growth of our customers' businesses. We are ensuring management efficiency as we grow in scale, speeding up decision making, and delegating authority to national staff.

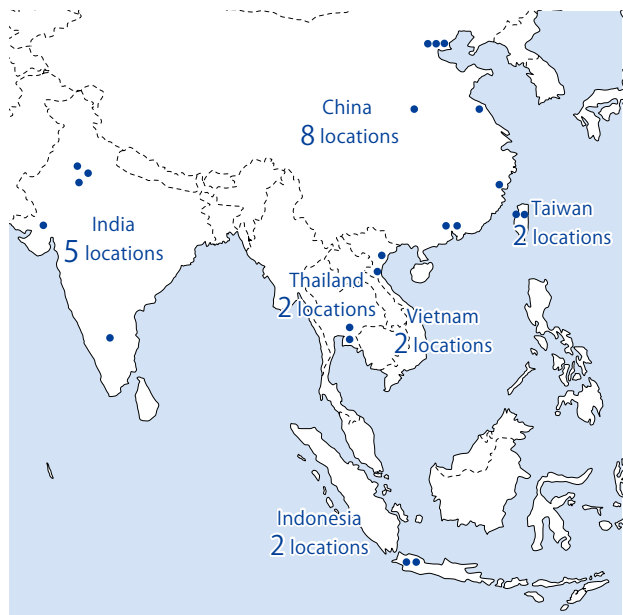
Until recently, we expanded our business in coastal areas, but a December 2018 investment in Hubei Rock (currently Hubei Toyoda Gosei Zheng Ao Rubber & Plastics Sealing Science and Technology) gave us a foothold in the inland area with the Dongfeng Motor Group. The environment in the Chinese market is currently harsh due to the recent economic slowdown and intensifying competition with the growth of the market, but we will seek to recover from this setback with CASE-compliant products.

To take us in that direction, we are moving TG China's Shanghai Office R&D Center (scheduled to start operation in March 2022) and taking other steps to strengthen our local technical development system.

### Sales and operating profit trends in Asia



### Production locations



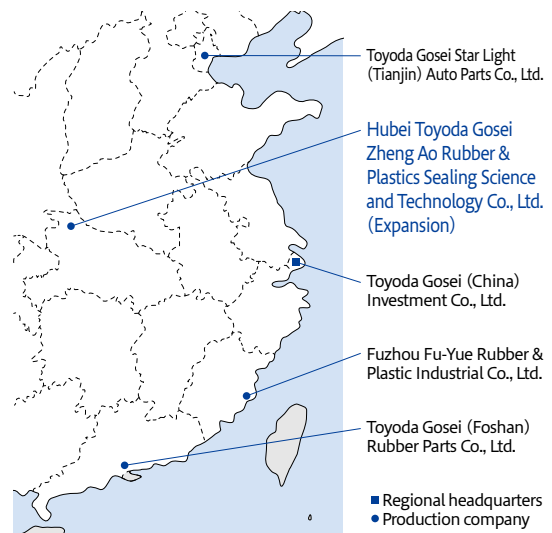
TOPICS

**Strengthening our weatherstrip production network in central China**

To expand our automotive parts business in China, the world's largest market, we are strengthening our production system for weatherstrips at an affiliated company in Hubei Province called Hubei Toyoda Gosei Zheng Ao Rubber & Plastics Sealing Science and Technology Co., Ltd. (TG Zheng Ao). By May 2021, we will enlarge the plant building and add production equipment to double the weatherstrip production capacity from the level in FY2018.

TG Zheng Ao became a Toyoda Gosei affiliate when the Toyoda Gosei Group invested in independent supplier Hubei Rock in December 2018. The company has supplied weatherstrips to Dongfeng Motor Corporation, one of China's "Big Three" automakers, as well as to its joint ventures Dongfeng Honda Automobile Co., Ltd. and Dongfeng Peugeot-Citroën Automobile Co., Ltd., automakers in partnership with Honda Motor Company and Groupe PSA, respectively. With this expansion, Toyoda Gosei aims to make TG Zheng Ao a core location for growing the TG Group's business in central China.

Weatherstrip production network system in China



TOPICS

**Reorganization of production subsidiaries in India**

Toyoda Gosei Co., Ltd. is restructuring its production subsidiaries in India to optimize its production network in that country. The company will transfer all its shares in Toyoda Gosei South India Pvt. Ltd. (TGSIN) to Toyoda Gosei Minda India Pvt. Ltd. (TGMIN) in 2020.

TGSIN supplies interior/exterior and other parts mainly to Toyota Motor in South India, while TGMIN supplies airbags, steering wheels, and other parts mainly to Suzuki Motor in North India. With this

restructuring, Toyoda Gosei intends to develop a more flexible supply system in India that is not bound by product categories.

India is a market of focus in Toyoda Gosei's medium- and long-term 2025 Business Plan. Recently the Gurgaon Sales and Engineering Office was established and a new plant went into operation in Gujarat. We will continue to enhance the development and production capacity in this emerging market.

Business network in India



## Safety Systems business strategy

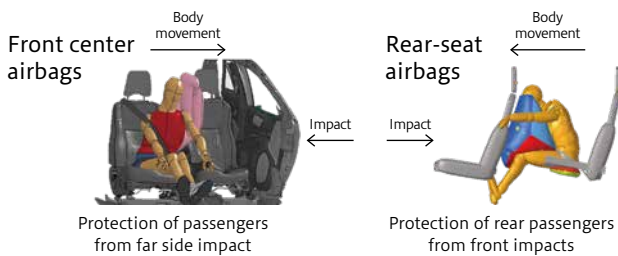
Among safety system products, we will grow sales of highly profitable airbags in both developed and emerging countries.

The assessment trends in developed countries are shown below on the left. We will continue to introduce new products with a view these stricter assessments, starting with far-side passenger protection in Europe in 2020.

### Developed countries

#### Introduction of new products with a view to strengthening assessments

- Assessment trends**
- 2020 Far-side passenger protection (Europe)
  - 2021 Stricter side impact regulations (USA)
  - 2023 Rear passenger protection (USA)
  - 2025 Oblique impact passenger protection (USA)



The number of airbags equipped in vehicles will also increase in emerging countries, such as the requirement for driver’s side airbags as standard equipment in India in 2019. We will increase sales by solidly meeting this need. We also aim to improve profitability by investing to increase airbag capacity in Vietnam and localizing inflators in cooperation with Daicel in India.

### Emerging countries

#### Handling increased number of airbags used and promoting cost reductions

- Assessment trends**
- 2019 Driver’s side airbag becomes standard equipment (India)
  - 2021 Stricter offset impact regulations (China)
  - 2021 Far side passenger protection (China)
  - 2021 Pedestrian protection (ASEAN)

- Cost reductions**
- Increased airbag production: Investment to increase capacity (Vietnam)
  - Inflator localization: Cooperation with Daicel (India)

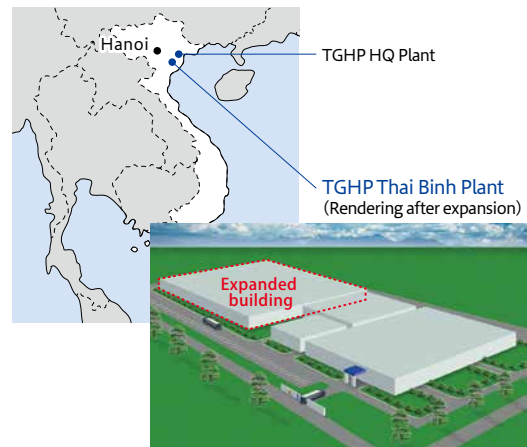
### TOPICS

## Enhancing production capacity for airbag parts in Vietnam

To meet the growing demand for airbags globally, we are increasing production capacity at the Thai Binh Plant of Toyoda Gosei Haiphong Co., Ltd. (TGHP). This is our second production subsidiary in Vietnam, which went into operation in July 2019. A new building will be constructed and annual production capacity in Vietnam of the bags that inflate on impact will be increased to 25 million bags by FY2023, about 1.5 times the FY2018 level. Investment for this plant expansion is estimated at about JPY1.8 billion.\* The construction of the new building started in May 2020 and production will start from October 2021.

Airbags and other safety system products are a key business in Toyoda Gosei’s 2025 Business Plan, and by FY2023 we plan to increase global airbag production to 100 million units annually, approximately 1.6 times the level in FY2018.

\*Calculated at \$1 = ¥109



## Functional product business strategy

Functional components are another of the product areas where sales are growing in many geographic regions. These parts are also associated with safety, and so they require high quality. This makes the barriers to entry by other companies high. We believe that the rubber and plastics knowledge and the trust we have built up over many years can be used as

a weapon to expand sales globally. Market trends indicate that gasoline and hybrid vehicles will remain the main types of vehicle for the time being, and we believe that we can continue to increase sales by having our plastic fuel filler pipes and fuel valves, which contribute to weight reduction, used in a wider range of vehicle models. In addition, since

these products are already in the payback period, we can expect profitability to increase with increased sales.

Automobile powertrains will change in the future, but we believe we will be able to respond adequately to changes in the market by enhancing our lineup of products such as cooling pipes for electric batteries and hydrogen tanks for fuel cell vehicles. Cooling pipes in particular are a product with which we can utilize the materials and design (routing) technology that we have cultivated for the hoses used in gasoline engines and around fuel tanks. Moving ahead with sales while keeping initial investments down is also an advantage.

Sales growth items	Plastic fuel filler pipes/ Fuel valves	Cooling pipes	Hydrogen tank
Market trends	Gasoline, Diesel	HV, PHV	FCV
	HV, PHV	EV	
	Continuing major trend	True growth from 2022	True spread from 2025
Key regions	Americas, China	Japan, China	Japan, China
Product lifecycle	Collection period	Growth period	Introduction period

### Interior and exterior product strategy (North America)

Among interior and exterior products, we will focus on large exterior products, one of the product groups with particularly high added value. Toyoda Gosei has advanced mold technology and decorative technology, such as plating and painting, and we will expand sales in North America of high value-added products that utilize these technologies.

In 2019, we established a new R&D and sales office near one of our customers to strengthen our sales network for this non-Toyota customer. In addition, we will continue to invest in major capacity increases at our main production locations to further enhance the advantages we have built up in North America.

We are enhancing the production capacity at three manufacturing subsidiaries in the United States to handle growth in sales of radiator grilles and other interior and exterior parts in North America. We will invest a total of USD60.3 million by the end of FY2021 to enlarge factory buildings and add molding machines, painting equipment and other equipment at Toyota Gosei Texas, TG Missouri, and TG Kentucky. With this investment, we plan to increase Group sales of interior and exterior products in North America to approximately 87 billion yen by FY2025, about 1.3 times the level in FY2018.

## Pillar III: Innovative manufacturing at production sites

### Manufacturing innovations that support strategy

In the past, we suffered large production losses with the launch of new models. Reflecting on this, over the last few years the entire Group has been working to develop manufacturing systems that do not generate loss. Recently, we have been focusing particularly on the use of IoT and big data. Loss reduction is achieved by identifying the cause of equipment stoppages with “visualization” of processes using IoT and elucidation of the mechanisms of failure by

analyzing collected big data. Information can be visualized by simply installing a relatively inexpensive device in existing processes. Thus, it can be applied to various products. Currently, we are implementing this approach on a priority basis to key strategic parts, such as inflators and plastic fuel filler pipes. In the future we will increase the impact by spreading it globally.

**IoT standard tools**

Andon\*1    Process control board    Automation of daily reports

**The use of big data**

Elucidation of defect mechanism    Data analysis

**Reduced loss from equipment stoppages**

Product	FY2019	From FY2020
Inflator	Japan	Americas, China
Plastic FP*2	Japan	Americas, China
Painted products		Japan, Americas, China

**Reduced loss from defects**

Product	FY2019	From FY2020
Inflator	Japan	
Millimeter wave compatible emblems	Japan	
Weatherstrips		Japan, Americas

\*1 Light displays for equipment operation status    \*2 Plastic fuel filler pipes