

In the second business shaping scenario, "create good tires," Bridgestone accelerates value creation through the fusion of ENLITEN, the base technology for product design, positioned as Bridgestone's unique "new premium," and BCMA, the base technology for R&D and manufacturing that reduces business cost.

# From Volume to Value—Accelerating Focus on Premium

Bridgestone E8 Commitment	Energy	Ecology	Efficiency	Extension
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# Strategic Direction from a Mid-long-term Perspective: Why Does Bridgestone Need to Create "New premium"?

Currently, the demand growth for high rim diameter tires as the premium segment becomes a tailwind for PS (passenger car) tires. This tailwind is expected to continue during the 24MBP period, however, may slow down after 2030 or possibly a little earlier.

First, during the 24MBP period, we will seize the tailwind in demand to the fullest extent. To overcome "decrease in tailwinds" after 2030 and keep growing, Bridgestone will create its own "new premium" starting from the 24MBP period.

# Strengthen Existing Premium Segment "From Volume to Value": Accelerating Focus on Premium

Focusing on PS tires, where a tailwind in demand continues, Bridgestone is accelerating its focus on premium, "from volume to value" in all product types, and is driving sales and is aiming to increase market share in the premium segment.

For PS tires for replacement, we improve the sales mix, increasing the sales ratio of premium tires including premium tire brands to 70% in 2026. For high rim diameter tires, we also focus on ultra-HRD tires 20 inch and above and further expand sales and market share. Particularly, in North America, the most important market, we aim to continue to strengthen sales expansion and market share increase and improve the sales portion of high rim diameter tires to 65% and the sales portion of premium tires to 80%. In Europe, we aim to increase our market

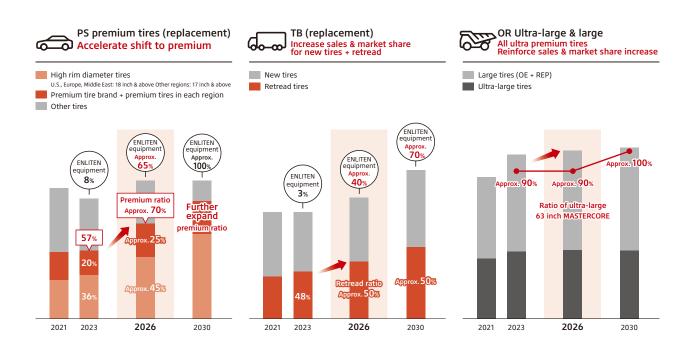


share with high rim diameter tires, and thoroughly pursue our focus on premium in other regions also.

Regarding TB (truck and bus) tires for replacement, we plan to expand sales and increase market share globally, and by strengthening retread tires mainly in North America and Japan, Bridgestone will increase the portion of retread tires in the entire TB business to 50% globally in 2026. Particularly in North America, where we have a strong

business foundation, we promote to expand sales and increase market share in the entire TB business for new and retread tires.

For OR (off-the-road for mining vehicle) tires, where all tires are ultra premium, we expand sales and increase market share with Bridgestone MASTERCORE at our core, as a Dan-Totsu product.







# Premium Tires for Passenger Cars—ENLITEN as New Premium in the EV Era

Bridgestone E8 Commitment Energy Ecology Efficiency Extension

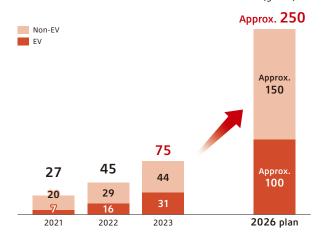
Based on the foundation of reinforcing existing premium, Bridgestone creates its own unique "new premium" through the expansion of ENLITEN, the base technology for product design. ENLITEN is a technology that evolves environmental performance while expanding basic performance and elevating all conventional performances. It also pursues "ultimate customization" to sharpen edge in a performance which not only meets the apparent needs and potential wants of the markets and customers, but also further inspires markets and customers by creating new value that they may not have imagined, according to the characteristics of diverse vehicles and usage conditions. Particularly for PS tires, we respond to changes and diversification of desired tire values on the back of the adoption of EVs, etc., as "new premium in the EV era".

# ENLITEN Expansion — OE/REP Linkage: Premium Tires for Passenger Cars — OE

For original equipment (OE), the starting point of expanding ENLITEN, we strengthen our approach to premium vehicles/ OEMs, prestige OEMs, and premium EVs. By developing "ultimate customization" with ENLITEN technology and proving its value, we aim to expand the number of new car models that come fitted with ENLITEN OE-produced tires from 75 models at the end of 2023 to approximately 250 models at the end of 2026 including emerging EV manufacturers (global cumulative total). Also, through strengthening approach to prestige OEMs, we will link this with building a sustainable premium brand.

Premium EV users in the initial stage of EV adoption have a high tendency for recursion from OE to REP tires. We steadily capture REP recursion demand, starting from the expansion of OE fitment.

### • Number of car models with ENLITEN OE fitment (global)



# Create Value in REP Tires by Leveraging "Retail & Service Network" as a Touchpoint with Customers and Vehicles

Based on the retail & service network, which serves as a touchpoint between Bridgestone and its customers and vehicles, we create new demand by ourselves through strengthening value creation in REP tires. By being attentive to customers, providing high-quality services and listening to the voice of customers at retail sites, we meticulously understand the value desired of tires by car and by market. In addition, through end-of-life tire surveys by field engineers on-site (Genbutsu-Genba) we identify challenges and promote tire product planning and development to pursue "ultimate customization", starting from customer pain points.

In 2023, Bridgestone launched the TURANZA EV, our first tire specifically designed for EVs, reflecting customer feedback from the U.S. West Coast and addressing the issues of enhancing sustainability and early tire wear on EVs. In Europe, we have also launched TURANZA 6, which is EV ready and has enhanced wet-handling performance and wear, etc. required in the European market. In Japan, we launched the REGNO GR-X III in February 2024, the first ENLITEN-equipped tire for REP use in Japan. This has also improved handling performance, sharpening our edge in quietness, and enhanced the environmental performance by using renewable resources as raw materials. From 2024, we plan a full-scale expansion of the number of ENLITEN-equipped REP tires for the global market, aiming for a cumulative total of 45 products and 65% ENLITENequipped products by 2026, and 100 products and 100% ENLITEN-equipped products by 2030.

The 24MBP is the "1st stage of the new premium" that offers new value to customers by expanding the first generation of ENLITEN technology. The 27MBP will be the "2nd stage of new premium" where we launch the 2nd generation of ENLITEN in the market, expanding value together with the evolution of brand power which aims to establish a sustainable premium.

### Creating social value linking with business

Through the expansion of ENLITEN, the "new premium in the EV era", we commit to the realization of a caron neutral mobility society—Energy in the Bridgestone E8 Commitment.





#### ENLITEN - equipped REP products





More than 20% higher wear resistance vs. Bridgestone's conventional product Significantly improved wet-handling performance and rolling resistance, important performances in the European market. Balanced in every performance at a high dimension

# Japan -REGNO GR-XIII ENLITER The first ENLITEN product for replacement in Japan aunched Feb. 2024 Comfort Quietness MCN Dry Handling Light Weight Wear Resistance Wet Handling Fuel Efficiency

Comfort achieved from Superior quietness, and driving performance refined with highly responsive handling. Contribute to the realization of sustainability through reduced weight and use of recycled & renewable materials.



ratio to 50%

Our team worked on developing "TURANZA EV", Bridgestone's first EV specialized tire equipped with ENLITEN technology, to realize our vision "Sustainable solutions company".

We aimed to offer the performance which contributes to sustainability to customers, and also listening to the voice of customers, mainly from the West Coast where the shift to EV is advancing, cooperation with Bridgestone retail channel network to capture clearly the pain points on EV such as premature wear.

After many co-creations with diverse departments to realize our vision, ENLITEN technology was first installed in North America. We also achieved to provide customers EV-specialized tire with improved wear resistance by 50% versus conventional product and with recycled & renewable material of 50%.

#### Jeff Cook

**Executive Director** Product Strategy and Portfolio Planning, Bridgestone Americas



# R&D and Manufacturing Transformation: BCMA (Bridgestone Commonality Modularity Architecture)

Bridgestone E8 Commitment Energy Ecology Efficiency Extension Economy

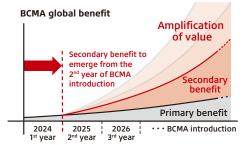
BCMA, supporting "ultimate customization" consolidates tire parts into three modules and shares them among different products, simplifying the supply chain including development and production. It is Bridgestone's base technology for R&D and manufacturing which shortens development and production lead times to agilely provide value to customers while also aiming to reduce business cost including environmental impact.

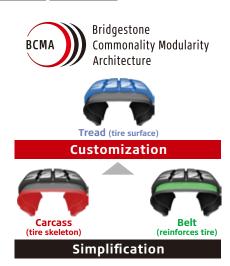
In promoting BCMA during the 24MBP, we pursue the essence of R&D and manufacturing based on Genbutsu-Genba (respect for being on-site) to start creating benefit, focusing on value creation. Direct benefits, or the primary benefits from BCMA are generated from the first year of BCMA introduction in 2024. These consist of manufacturing cost down related to reducing changeover in production by sharing parts between products, and development cost reduction due to module sharing. Secondary benefits plan to be created mainly from the second year of BCMA introduction in 2025, in which we expect the reduction in direct material cost and in conversion cost from productivity improvement. These include benefits from the evolution of R&D and manufacturing such as improved capacity in production process and reduced workload at production sites in BCMA deployment.

These benefits will be adjusted according to each plant's R&D and manufacturing power. Plants in the EAST regions (Japan and Asia), that already have high R&D and manufacturing power and have high productivity, tend to have smaller room for improvement through BCMA. On the other hand, plants in the WEST regions (U.S. and Europe), that face challenges in manufacturing, tend to have greater room for improvement. We lead to create value by specifying the benefit in each plant according to the roles and responsibilities of each of the 45 new tire plants clarified in 2023. Four tire plants globally, two each from Bridgestone EAST and WEST, have been designed as model plants and lead benefit creation. (Model plants: Burgos plant in Spain; Joliette plant in Canada; Nong Khae plant in Thailand; Tochigi plant in Japan.) During the 24MBP period, we will switch approximately 50% of our global PS tire production to BCMA.

#### BCMA global benefit amount

Accelerate value creation by steadily deploying BCMA in each plant





# Link Steady Productivity Improvement and Shift to Green & Smart

Linked with BCMA deployment, we drive steady productivity improvement as well as the shift to Green & Smart to amplify value and reinforce earning power. In terms of steady productivity improvement, we are pursuing streamlined production based on Genbutsu-Genba (respect for being on-site). In addition, we accelerate this spiral up of "standardizing craftsperson skills that have been cultivated on-site over many years by leveraging digital capabilities, and reinforcing the entire R&D and manufacturing power by ensuring and improving the standards, and then evolving the standards as craftspeople enhance their own skills." Combining this with automation leveraging smart technology will accelerate productivity improvement. We concretize and execute improvement in each plant, aiming to improve productivity by more than 10% level in 2026, compared to 2023.

Moreover, when it comes to the shift to Smart, we aim to connect the entire production process through digital sensing, AI, and automated control to achieve highly accurate and efficient R&D and manufacturing. In the 24MBP, we plan to introduce MES (Manufacturing Execution System) as a digital platform that digitally captures the production process and to automate the inspection process. We will also promote technological development, looking ahead to implementation in the 27MBP. Regarding the shift to Green, we reduce energy Gentan-i (energy consumption per unit) continuously.

In each target goal of driving the shift to Green & Smart, we steadily move forward with the 2030 Long Term Strategic Aspiration as our North Star.

#### • Shift to Green & Smart: Targets

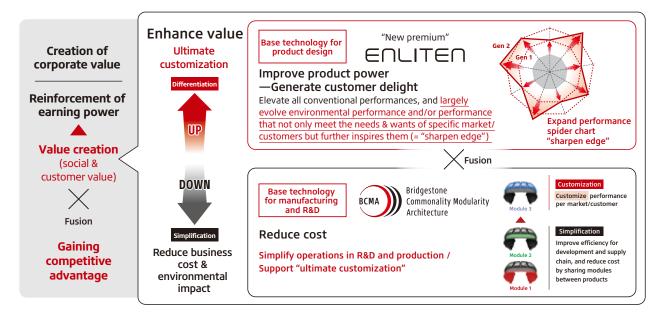
			2026 targets	2030 targets
	Green  Maximize value with minimum sustainable resources	CO <sub>2</sub> CO <sub>2</sub> emissions	50% over reduction (vs. 2011) (Scope 1, 2)	50% reduction (ys. 2011) (Scope 1, 2)
		Renewable energy (electricity)	Over <b>70</b> %	Aim for <b>100</b> %
dig	Smart "Strong" real (Takumi) x digital mastering manufacturing	Deployment ratio of ultimate "circle" technology (Deployment ratio for technology applicable machine)	y Approx. 50%	100%
		Less skills/High efficiency labor productivity	Above <b>110</b> %	130%

Value creation fusing ENLITEN and BCMA gradually starts in 2024 and will expand in 2025-2026 as the true next stage, to reinforce earning power. In the 27MBP, we will build a foundation to further reinforce business quality and expand earning power.

### Creating social value linking with business

Bridgestone contributes to driving carbon neutrality by reducing its environmental impact through simplifying the value chain with BCMA and by reducing energy Gentan-i (energy consumption per unit) with the shift to Green.

#### Accelerate value creation through the fusion of ENLITEN and BCMA





As we roll out BCMA globally, we have discussions with many teammates from each SBU, at Genbutsu-Genba (being on-site), and promote initiatives on a daily basis by performing the PDCA cycle. Although regions and positions may differ, our passions for creating good tires remain the same. We will evolve R&D and manufacturing to a new stage, supporting ENLITEN to realize ultimate customization while reducing our business costs. Through BCMA, we will also transform the individual mindset to R&D and manufacturing as well as organizational culture, which will create good business quality.

#### Kosuke Yukitake Executive Director Global BCMA and Technology Strategy



Feature

# Global CTO Message: Bringing ENLITEN to the Next Stage with Technology Innovation and R&D and Manufacturing Transformation

Bridgestone E8 Commitment

Energy

Ecology

Efficiency

Extension

Emotion

### **Bridgestone's Technology Innovation**

Bridgestone is taking on the challenge of continuously creating new value by fusing digital power with strong real capability such as extensive experience & knowledge, know-how, data of tires that we have gained from staying close to customers on-site over 90 years of our history. Especially in our premium tire business as core business, Bridgestone is promoting technology innovation based on three axes of "master"—"mastering rubber", "mastering road contact", and "mastering manufacturing"—with the evolution of ENLITEN technology at its core. While leveraging new technology from internal and external co-creation, we amplify the generated value and expand its value to solutions business as growth business or exploratory business. By doing so, we aim to become a company that keeps providing social value and customer value as a sustainable solutions company, which is our vision.

# In Pursuit of "Thinner, Lighter, and Rounder"— "Ultimate Customization"

By creating tires "thinner, lighter, and rounder", we can expand the performance spider chart. Creating them "thinner and lighter" enhances environmental performance including resource productivity and higher rolling resistance, while creating tires "rounder" improves driving performance such as handling stability and ride comfort. ENLITEN, which Bridgestone positions as a new premium, not only responds to diverse needs and wants of diverse markets and customers, but also provides new value and improves the performance spider chart by pursuing "thinner, lighter, and rounder". In other words, this is a base technology for product design that sharpens edge in performances that further inspires them. However, if we simply create tires thinner and lighter, tires generally become weak, fragile, and easily distorted, which leads to reducing their performance. ENLITEN technology pursues "ultimate customization" that can be tailored to each market and customer, by assembling more robust and flexible materials accurately, which will resolve contraventions and expand the performance spider chart. We will continue to evolve ENLITEN technology to the next stage by further advancing our three technological foundations—mastering rubber, mastering road contact, and mastering manufacturing—while keeping in mind of



Bridgestone's DNA of "Genbutsu-Genba (respect for being on-site)" and "being attentive and supportive of customer problems."

### **Mastering Rubber**

Bridgestone's strengths in seeing, analyzing, and managing rubber lead to the development of innovative materials to realize thinner and lighter. First of all, we are evolving our "seeing" technology so that the structure of rubber and molecular can be observed more clearly, by utilizing collaborations with external partners. Furthermore, we will enhance our "analyzing" technology and rapidly identify molecular structure of polymer complexes by accumulated extensive knowledge about tires and rubber over our history, enhancement of introduction of state-of-the-art digital technology in material informatics, which we have been leveraging for a long time, and material analysis combined with unique simulation technology, thereby linking it to "managing" technology. Evolution of these seeing, analyzing, and managing technologies leads to more agile development of higher-performance rubber.

In the 21MBP, we not only evolved raw materials such as polymers, fillers, resins, and chemicals, but we also developed robust, high strength network rubbers by making full use of compounding technologies and processing techniques to maximize the potential of each raw material mentioned above, thus achieving significant improvement in wear performance for products such as TURANZA EV. Furthermore, we are making efforts to develop a double network rubber that combines two different rubber networks, one for robustness and another for flexibility, in a single rubber structure by evolving our "managing" technology. We will complete development of this double network during the 24MBP, and plan to implement it into new products in the 27MBP.

# **Mastering Road Contact**

Leveraging Bridgestone's unrivaled knowledge of the world's roads, we have further evolved Bridgestone's unique tire development technology "ULTIMATE EYE", born from our experience in F1®, enabling to visualize ground contact conditions on a variety of road surfaces. Furthermore, by combining our original tire simulation with vehicle simulations, we have optimized the tension distribution of ply cords, which serve as the framework material for tires, to achieve uniform ground contact with thinner and lighter tires. This technology is incorporated in the REGNO GR-X III launched in Japan in February 2024. We will keep evolving our simulation technology toward mastering road contact by fusing of strong real and digital.

## Mastering Manufacturing

The tire production process consists of two parts: a frontend process of mixing rubber, then preparing and processing it into components of the desired dimensions, and a back-end process of assembling the processed components into the shape of a tire, vulcanizing it, and inspecting the finished product. To create tires thinner, lighter, and rounder, high-precision preparation, processing, and assembly are required at each process. As such, the evolution of our manufacturing technology is essential.

By utilizing the sensing technology and big data that were developed through our AI-implemented tire building system, "EXAMATION" which has been in practical use since 2016, and linking the data from the front-end and back-end processes, all components of a single tire can be precisely assembled. This autonomous control technology in these processes enables us to create tires that are thinner, lighter, and rounder, leading to improved product uniformity. This autonomous control technology has already been introduced at our plants. We also plan to introduce it at 20 factories globally during the 24MBP period to drive the shift to Smart.

# **BCMA Supports "Ultimate Customization"** by ENLITEN

The starting point for value creation in BCMA is on-site R&D and manufacturing. We evolve R&D and manufacturing to the next stage by approaching the essential issues of R&D and manufacturing at Genbutsu-Genba (being on-site), improving productivity, and further promoting the shift to Green &

Smart. By fusing ENLITEN, a base technology for product design and BCMA, a base technology for manufacturing and R&D, we aim to achieve both ultimate customization and business cost reduction. This will create social value and customer value, leading to reinforce earning power and create corporate value.

# From Circuit to Street Mobile Laboratory—Refining ENLITEN Technology **Using Sustainable Global Motorsports**

For Bridgestone, motorsports are our origin as a tire manufacturer as well as a "mobile laboratory". Through the development of motorsports tires that face extreme conditions, we have refined diverse technologies becoming a foundation of our technology innovations of today. Moving forward, we will leverage sustainable global motorsports to promptly demonstrate the next stage of ENLITEN technology and to reflect it to the development of tires for the markets. Most recently, we are driving technology development to supply motorsports tires equipped with next-generation ENLITEN technology for the 2025 Bridgestone World Solar Challenge (BWSC).

# Leading to Drive Sustainability / **Accelerating Technology Innovation**

We are also taking on the challenge of leading to drive sustainability across the entire value chain of motorsports tires as a "mobile laboratory." By applying our technologies of "seeing," "analyzing," and "managing" rubber, which support development of the innovative materials as mentioned above, Bridgestone is promoting diversification of resources and development of sustainable materials utilizing recycled and renewable materials. For example, in the NTT INDYCAR® SERIES in 2022-2023, we introduced tires made with natural rubber derived from quayule to some races. In the 2023 BWSC, we supplied tires that achieved recycled & renewable material ratio to be 63%. Looking ahead to the future, Bridgestone will accelerate the development of sustainable tire technology, while leading to build a carbon-neutral production structure from motorsports tires through co-creation with partners. Furthermore, we will take on the challenge of evolving Bridgestone's technology innovation at an even faster pace, from R&D and manufacturing for motorsports tires as a starting point.