# EnginLink™ Update *Bulletin*

January 14, 2025

# Q4 2024 REVIEW AND FORECAST

Power Systems Research
*Data · Forecasting · Solutions™*

www.powersys.com | +1-651-905-8400 | info@powersys.com

EnginLink™ is a comprehensive database containing global historical and forecasted engine production volumes. This document outlines important forecast trends as well as the additions and enhancements applied to the database in the fourth quarter of 2024.

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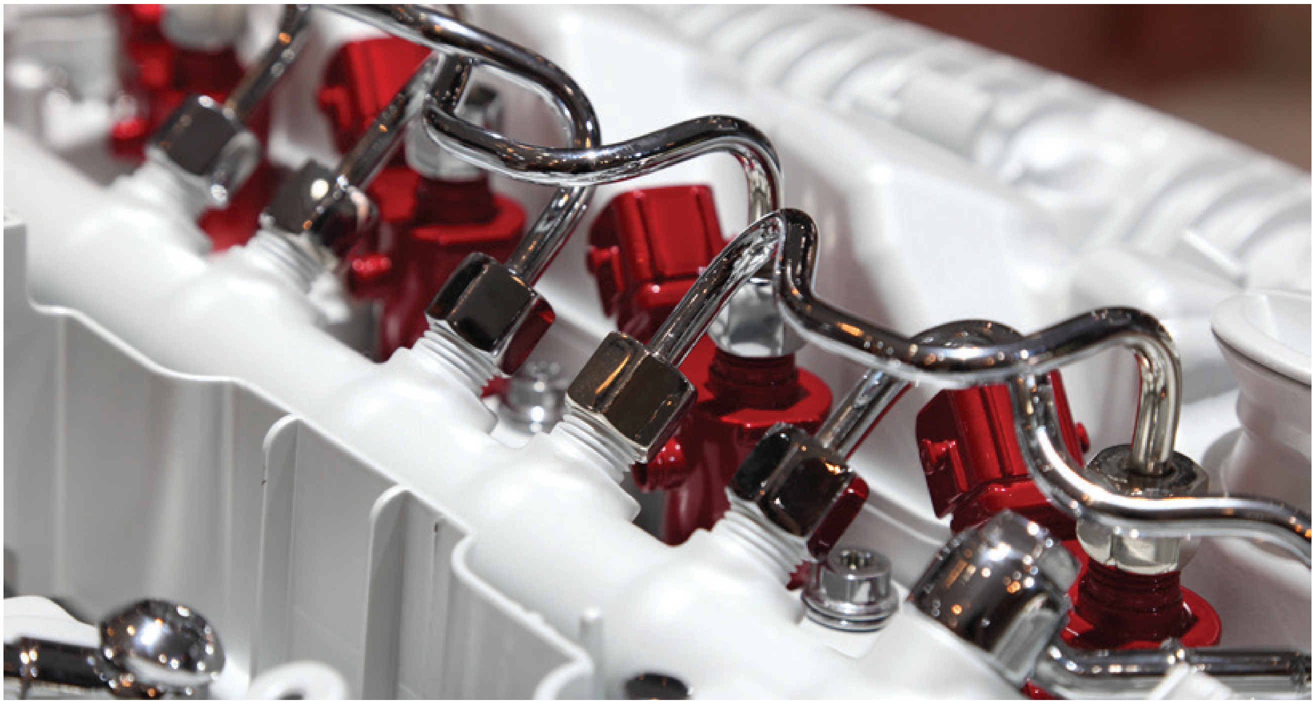
# I. Executive Notes



## A Waiting Game on Tariffs

With the start of 2025, many U.S. companies are planning for anticipated changes as the incoming presidential administration takes office.

An important looming question for the manufacturing sector is how increased tariffs on goods imported into the U.S. from China as well as other U.S. trade partners will affect their operations over the next few years. One of the Trump Administration's stated key objectives for the tariff changes is to protect and grow America's manufacturing sector.

While we wait to see what new tariff policies will be implemented, it is helpful to review what happened in 2020 as sweeping changes were made, specifically on U.S. imports from China.

### Author

*Joe Zirnhelt is President and CEO of Power Systems Research.*

The net effect of those tariffs was to cause a shift in final production from China to other low-cost countries in Asia or Latin America countries. These shifts in manufacturing resulted in U.S. imports from those countries surging over the last few years while U.S. imports directly from China have softened.

Many of the parts used in these final products were still produced in China but the actual assembly/exporting country faced a lower tariff compared to the scenario where China would produce and directly export the finished product to the U.S.

The key point here is that Chinese manufacturers have actually developed a workaround solution to avoid the higher tariffs. The net result has meant more costs associated with moving those manufacturing operations outside of China and ultimately higher costs passed along to U.S. based consumers.

All that being said, it does not feel like there was a lot of manufacturing that moved back to the U.S. as a result of these increased tariffs. From an objective standpoint the increase of tariffs on Chinese goods did not necessarily mean more jobs or more manufacturing in the U.S. The debate on tariffs is a complicated puzzle but it is clear there can be unintended consequences involved when considering ways to adjust tariffs.

It will be interesting to follow the tariff policies that are implemented in early 2025. Depending on the scope and degree of tariff changes, this may cause further shifts in manufacturing over the next several years.

At Power Systems Research, we are aware of the implications of tariff policy changes and will continue to follow relevant shifts in manufacturing operations as they develop. PSR will continue to update our databases to reflect these changes in production facilities as we identify them.

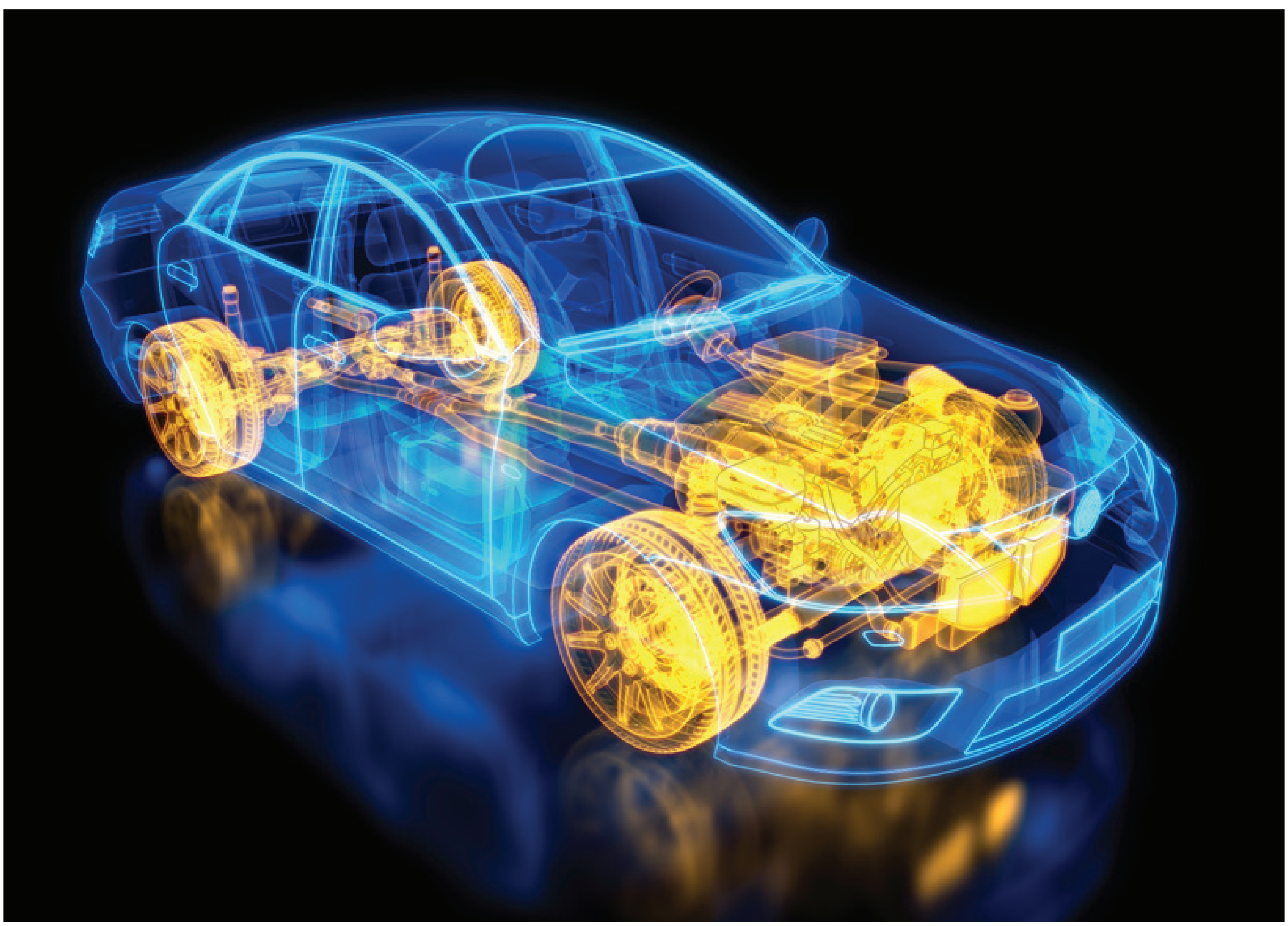
Today, there are many forces at play in the current environment for the worldwide production of powered equipment. As we move forward, you can be assured that Power Systems Research will continue to monitor developments and reflect this knowledge in our data and intelligence. Our mission is to keep you as informed as possible while we support your market planning and forecasting initiatives.

As we prepared this Q4 2024 update, we incorporated important insights we have gathered during the quarter to provide our best outlook for 2025 as well as our five-year forecast.

We hope you find this database update and these forecasts of value at this important time. As always, we appreciate your feedback and continued dialogue as you review this latest update.

If you are facing new challenges or issues that require data-driven solutions, talk to us. We can be an important resource.

Thanks for reading and for being a valued client of Power Systems Research. **PSR**



# II. Introduction

**Power Systems Research (PSR)** has developed and maintained comprehensive market data specific to the power products and drivetrain industry since 1976. Because accurate and reliable market data has always been at the heart of its activities, PSR has developed a unique family of highly specialized databases. These core databases include:

- **EnginLink™** – Engine Production and Forecast Database
- **OE Link™** – Original Equipment Production and Forecast Database
- **CV Link™** – Commercial Vehicle Production and Forecast Database
- **PartsLink™** – Original Equipment Population Database

The **PowerLink™ 3.0** dashboard effectively combines all market databases into one Internet-based tool. Using this system, subscribers can easily access, organize and download the latest engine-powered market data anytime, anywhere in the world.

The PowerLink™ 3.0 dashboard has extensive reporting capabilities and allows for customization and report distribution within your organization. This innovative system sharpens your business and planning strategies by finding hidden opportunities and targeting potential customers. The PowerLink™ 3.0 dashboard is your link to a competitive advantage in the marketplace.

EnginLink™ is continuously updated; this Update Bulletin reflects changes made to EnginLink™ during the fourth quarter of 2024. Included in this Update Bulletin are EnginLink™ database notes listing significant data modifications and an explanation of our research and forecast methodology. Additional Power Systems Research initiatives also are outlined here.

Please feel free to circulate these research notes to your colleagues and internal data users

If you have any questions regarding this update, please contact us via email at support@powersys.com or by phone at 651-905-8400. Our support email account is monitored 8-5 CDT M-F by associates at our corporate offices and at our data center.

Thank you for your continued support of Power Systems Research. **PSR**

# III. EnginLink™ Database Update Notes

## Engine Manufacturer News and Notes

**JCB** produced its one millionth engine in late October. Starting with designs and prototypes in 2001, JCB has been producing engines since 2004 in the United Kingdom and India. Although historically only producing diesel engines, JCB, producing around 500 engines a day, has started testing hydrogen engines to include in their engine line-up.

**MAN Engines** has added the D3872 LE427 engine to their portfolio. Meeting EU Stage V emission standards, the D3872 LE427 produces 1,250 horsepower with a comprehensive aftertreatment system, and will achieve an IMO Tier III emission rating in 2026.

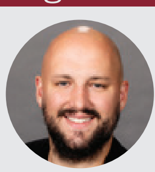
**Yanmar Co. Ltd** completed testing for a hydrogen engine for marine auxiliary power generation. The engine uses diesel fuel as a pilot fuel and produces 500 kW, and produces zero emissions.

## New Engine Manufacturers & Name Changes in EnginLink™

### Name Changes and Updates

*HWA AG* has been added to the Power Systems Research EnginLink™ database as a supplier of Mercedes engines for Pagani high-performance cars.

### EnginLink™ Update Editor



*Eric Best is the Engine Research Analyst at Power Systems Research.*

## Major Manufacturers with Data Updates

- AGCO Power
- Audi AG
- BMW Group
- Caterpillar
- Cummins Engine Company
- Deere
- Deutz AG
- Ferrari S.p.A.
- Fiat Powertrain
- Ford Motors
- FPT Industrial
- Honda Motor Company
- Hyundai Motor
- Ishikawajima-Shibaura Machinery Co. LTD
- Jaguar
- Kawasaki Heavy Industries
- Komatsu Diesel Company
- Kubota Corporation
- Lamborghini Car
- Liebherr Machines Bulles SA
- Lombardini Srl
- Loncin Group
- MAN Engines
- Mercedes
- Mercury
- Mitsubishi Heavy Industries
- Moteurs Baudouin S.A.
- mtu Friedrichschafen
- MWM Motores
- Opel
- Perkins Engine Company
- Polaris Industries
- PSA
- Renault
- Scania Power Solutions
- Suzuki
- Tata Motors
- VM Motori
- Volkswagen AG
- Volvo Group
- Wartsila NSD
- Yamaha Motors
- Yanmar Co. Ltd
- Zongshen Power

# Engine Models Added

| Manufacturer | Model |
|---|---|
| Anglo Belgian Corporation N.V. | 6EL23 Twin Turbo, 6EL23, 8EL23 Twin Turbo, 8EL23 |
| Anhui Quanchai Ltd | G16-120E60, H33-180E60 |
| Audi AG | 4.0 FSI Twin Turbo V8-641, 4.0FSI Twin Turbo V8-657 |
| Beijing Foton Cummins Engine Co. Ltd | A12NS6B520, A13NS6B620, A15NNS6B500, A15NNS6B530, A15NNS6B570, A15NNS6B580, F4.5NS6B210, F4.5NS6B240, X12NS6B520, X15NS6B620 |
| Beijing Foton Daimler Automotive Co. | OM471LA.6CB-01, OM471LA.6CB-09, OM471LA.6FB-09, OM471LA.6FB-10, OM473LA.6-57 |
| Beiqi Foton Environmental Protection Power Co. Ltd | 4F25TC12 |
| Briggs & Stratton | VANGUARD 5.0 Gross HP |
| BRP-Rotax | ROTAX 999T EFI |
| Caterpillar | G3516-2670 50Hz, G3516H-2682 50Hz, G3516H-2636 60Hz, G3516H-2658 60Hz |
| Changan Automotive Corporation | JL473Q3 |
| Deere | 4045HFG81, 4045HFG82, 6068HFU82, 4045TFU20, 4045HFU20 |
| Dongfeng Chaoyang Diesel Engine Co. | CY4BK361 |
| Dongfeng Commercial Vehicle Engine Plant | DDi11E490-60, DDi47E195-60, DDi47E225-60, DDi50E240-60, DGi13T480-60 |

| Manufacturer | Model |
|---|---|
| Dongfeng Cummins Engine Co. Ltd | D6.7NNS6B260, Z10NS6B460F, Z12NS6B480F, Z13NS6B520F, Z15NS6B660 |
| Dongfeng Light Engine Co., Ltd | ZD20D14-6N |
| Doosan Infracore Co. Ltd | DP-126 LA, DP-126 LB |
| Ducati Motorcycle | Superquadro Mono, V4 Granturismo, V2, Desmosedici Stradale |
| FAW Jiefang Engine Group-Dalian | CA4DD1-15E6, CA4DD3-16E68, CA4DD3A17E68, CA4DK2-22E65, CA4DK2-24E65, CA6DH1-26E65, CA6DK2-26E65, CA6DK2-32E65, CA6DK2A26E65, CA6DK2A35E65, CA6DK2B32E65, CA6Dk2E35E65 |
| FAW Jiefang Engine Group-Wuxi | CA4DB1-14E68, CA4DB2-16E68, CA4DB1-11E68, CA4DB1-12E6CA4DB1-13E68, CA4DB1A12E68, CA4DB1A14E68, CA4DB2A16E68, CA6DL6-35E68, CA6DL6B36E68, CA6DM2-40E66, CA6DM2-48E68, CA6DM3-48E66, CA6DM3-60E610, CA6DM3A56E68, CA6DN2-66E68, CA6DV1A62E66, CA6SM3-40E6N, CA6SM4-53E61N, CA6SM4A51E61N, CA6SM4B51E61N, CA6SM6-A43E6N, CA6SM6-A48E6N, CA6SN2-53E6N, CA6SX1-60E61N |
| Ferrari S.p.A. | F163 BC, F163 CF, F154 BE, F154 BH, F154 FA, F154 GC, F154 FB, F140 HB, F140 HC, F140 HD, F140 GC, F140 IA, F154 AQ |

| Manufacturer | Model |
|---|---|
| Fiat Powertrain | 2.0L4TI-16V2-246.5, 690T, TwinAir .9T-84, TwinAir .9T-69(MF), TwinAir .9T-79(MF), Firefly 1.0L, Firefly 1.2(MF), Firefly 1.3L Turbo, Firefly 1.5L Turbo, Firefly 1.5L Turbo-VGT, Hurricane 2.0L Turbo, 1.6L Multijet-128, FireFly 1.0L T3, FireFly 1400 16V T-JET |
| Ford Motors | 2.3 Ecoboost-395, 2.3 Ecoboost-493 |
| FPT Industrial | F28, C13 TE2F, CURSOR C13TE2A, N67 Hythane, R38, F1C-160, NEF67 TM5, CR13TE6W, N67TE8P, F1C-207 |
| Geely Automobile | JLE-4G18TDC |
| Great Wall Motor Co. Ltd | GW4C20C, GW4D24, GW6Z30 |
| Hangzhou Auto Engine Factory-CNHTC | MC11H.40-61, MC11H.46T-61 |
| Harbin Dongan Auto Engine Co., Ltd | DAM16NS, DAN20CL, D20TG, DAN20R, N25A |
| HD Hyundai Infracore Co., Ltd. | DM01, DP-126 LA, DP-126 LB |
| Huachen Xinayuan Chongqing Automobile Co., Ltd | SWEC20F, SWJ16 |
| Hualing Xingma Automobile (Group) Co., Ltd | CM6T28.430 61, HM07.350 60, HM08.350 61, HM09.370 61, HM09.370 61, HM09.400 61, HM11.460 61, HM13.560 61 |
| JAC-Cummins Engine Company | B4.5NS6B240E, HFC4DE2-2E1, HFC4DE3-2E8, HFC4DE3-2E9 |
| Jiangxi Isuzu Motors Co., Ltd | JE493ZLQ6K, JE493ZLQ6M, 4JD25Q6H, JE4D25Q6BL, JE4D25Q6BM |

| Manufacturer | Model |
|---|---|
| Jiangxi Jiangling Motors Co., Ltd (JMC) | DURATORQ4D20B6H, DURATORQ4D20C6H, DURATORQ4D20D6H, DURATORQ4D236H, DURATORQ4D236L, ECOBOOST4G20G6L, ECOBOOST4G20C6L, ECOBOOST4G23A6L, JX493ZLQ6F, JX495ZLQ6A, JX495ZLQ6C, JX4D20A6H, JX4D256H, JX4D25B6H, JX4D30F6H, JX4G23A6L, JX4G23B6L, JX495ZLQ6C, JX4D23A6L, JZ4G23A6L |
| Kunming Yunnei Power Company LTD | YNG130-NF1, D20TCIF18, D25ProPlus, G16MPIV, YN25AL, YN25PLUS10, G16MPI, 490PLUS1, 490PLUS2, D20TCIF16, D20TCIF17, D20TCIF21, D25Pro-170, D25TCIF170, HFC4DF140, YN25PLUS160A, YN25PLUS160B, YN25PLUS160C, YN30NF, LJM20B, HFC4DF145, D20TCIF64, D20TCIF66, D25TCIF170E, D36TCIF1, D36TCIF2, D40TCIF4, D43TCIF2, D67TCIF16, G20TGDI3 |
| Lamborghini Car | L539 V12-770, L539 V12-774, L539 V12-780, L411 |
| Liquid Combustion Technology LLC | Ariens AX 252 |
| Liuzhou Wuling Liuji Power Co.,Ltd | LJM13BC, LJM16A, LJM20B, LQ475QMB, LQ481QFB, LQ481QSM |
| Loncin Group | MC271.3 |
| LS Mtron | L4C25, L3C19 |
| MAN Engines | D3872 LE427 - Euro V |

| Manufacturer | Model |
|---|---|
| Mercedes | V12-R, V12-R Evo, M120-740, M120-800, M120E72-542, M158-730, M158-754, M158-791, M158-827, M158-829, M158-838, M158-852, M158-840, M297-558, M297-602, M297-650, M297-669, M297-760, M297-789 |
| Mianyang Ruiqing Power Technology Co., Ltd. | RQ23 |
| Mianyang Xinchen Engine Co., Ltd | 2TZH, V22HCNG |
| Moteurs Baudouin S.A. | 8F21, 20M55 50Hz, 4M06G20/5, 4M06G25/5, 4M06G35/5, 4M06G44/5, 4M06G50/5, 4M06G55/5, 4M11G120/5, 6M21G385/5, 6M26G500/5 |
| mtu Friedrichshafen | 16V2000G26F, 16V2000G36F, 12V4000G63, 16V4000G63, 16V4000G23, 20V4000G23, 20V4000G63, 20V4000G63L |
| MV Agusta | MC1000, MC931 |
| Perkins Engine Company | 2506C-E15TAG3, 4008-30TAG2, 1206A-E70TTAG1, 1206A-E70TTAG2, 2806A-E18TTAG5 |
| Polaris Industries | ProStar 1000-114 EFI, ProStar 1500 EFI, 70-EFI, 112-EFI, 196-EFI |
| Qingling Motors Company | 4KH1CT6S1, 4KH1N6MD, 4KK1N6SD |
| SAIC Fiat Powertrain Hongyan Co. Ltd | F2CCE611E-M, F2CCE611G-M, F2CCE611H-M, F2CCE611J-M, F3GCE611A-M, F3GCE611B-M, F3GCE611D-M, F3GCE611E-M, F3UCE611A-M, F3UCE611B-M |

| Manufacturer | Model |
|---|---|
| Sany Power (Kunshan) Co., Ltd | D09C6-320E3, D09C6-340E3, D09C6-360E2, D09C6-360E3, D09C6-380E2, D09C6-380E3, D13C6-460E3, D13C6-480E1, D13C6-480E3, D13C6-520E0, D13C6-520E1, D13C6-530E3 |
| Scania Power Solutions | DI13-510M, DC16-320A |
| Shandong Liangzi Power Co., Ltd. | Aodes 287cc EFI |
| Shanghai Automotive Industry (SAIC) | 20A4E |
| Shanghai Diesel Engine Co. LTD (SDEC) | SC20M125.1Q6, SC20M125Q6A, SC25R130Q6A, SC25R150Q6A, SC20M129Q6B, SC20M147Q6, SC20M163Q6B, SC20M218Q63, SCE520.2Q6, SC13ET500Q6, SC20M150Q6D, SC20M218Q6B, SC7H300Q6P |
| Shanghai Hino Engine Co. Ltd | J08E-YH, J08E-YK |
| Shanxi Victory Huaihai Engine Co., Ltd | HH415Q/P-A |
| Shenyang Aerospace Mitsubishi Motors | 4K22D4M(NG), 4K31TD |
| Triumph Motorcycle Ltd | MC660, MC798, MC1160, MC888, MC249.95, MC449.5 |
| Volvo Group | TAD851GE, TAD852GE, TAD853GE, TAD1346GE, TAD1342GE-B |

| Manufacturer | Model |
|---|---|
| Weichai Power Engine | WP2.5NQ160E61, WP2.5NQ165E62, WP2.5NQ170E62, WP2HQ190E61, EP3NQ170E62, WP10.5HNG350E62, WP11H460E62A, WP12H500E68, WP12T475E62, WP12T500E62, WP13.560E68, WP13NG480E61, WP14T530E62, QP14T580E62, WP15H680E68S, WP15NG560E61, WP15T640E62, WP15T680E62, WP3NQ158E62, WP4.1NQ200E62, WP4.6NQ240E62, WP6T280E62, WP7H300E62, WP7H300E68, WP8H360E62, WP8H360E68 |

| Manufacturer | Model |
|---|---|
| Weichai Power Yangzhou Diesel Engine Co. Ltd | WP2.3NQ150E61, WP2.3Q140E62, WP2.3Q140E62A |
| XI'AN Cummins Engine Co. | M15NS6B530, M15NS6B600, M15NS6B620, M15NS6B660 |
| Yanmar Co., Ltd. | 3TNV80F |
| Yuchai | YCDV2561-150, YCY24155-61, YCY24155-61A, K1247-60, K1249-60, YCDV3663-180, YCDV4263-185, YCDV4863-210, YCDV4863-235, YCS06290-61, YCS06290-61A, YCS06300-61, YCS06300-61A, YCY25170-66 |

# IV. Forecast Trends

## Global

### 2024 Global Update Sees Mixed Results Across Sectors

**BACKGROUND FACTORS**

- Global oil demand continues to remain weak based on rapidly slowing economies around the globe despite the advent of colder weather.

- Supply chains remain constrained and show no signs of improving despite Christmas demand.

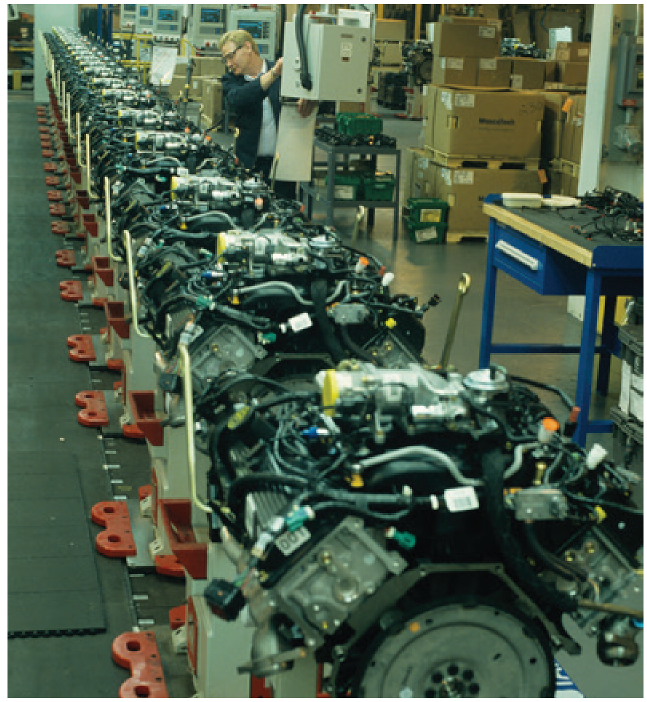
- The war in Ukraine has become stagnant and shows no sign of a speedy conclusion.

- Ukrainian exports of wheat, other grains and fertilizer remain depressed when compared to pre-war levels. Alternative routes (overland, and via the Danube) simply don't have the capacity.

- Middle East tensions are continuing with the Gaza and Lebanon conflict, and this has now been expanded by the regime change in Syria which leads to a high level of uncertainty wherever there is a population of Syrian origin.

- Germany and France remain in political turmoil with a new French Prime Minister and German elections taking place in early Q1 2025.

- Despite inflation easing, it continues to be a major concern with central banks holding their interest rates at high levels. This will pose a risk to economic growth in all regions. Inflation and price increases are putting OEMs in a difficult situation. Inflation is falling faster than expected in most regions with global headline inflation is expected to fall to 4.4% in 2025. Advanced economies are returning to their inflation targets sooner than emerging market and developing economies and core inflation is generally projected to decline more gradually.

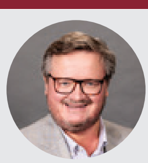


- The burden of national debt (as measured by Debt / GDP ratio) remains high with some countries exceeding 100% (USA, France, Canada & Italy) or even in Japan's case 264%.

- Risk of widespread recession remains in the background for several countries, notably China, USA & Germany, (especially within the German auto industry) and this could potentially drag other countries into recession.

Despite these factors, global growth is expected to reach 2.2% this year—before growing to 2.3% in 2025. This high level figure can be misleading as it hides declines in Europe and the Far East but is supported by growth in China and India. Lawn & Garden and Passenger Car sectors decline but these are balanced by growth in Recreational Products and Minivans/SUVs.

Author



*Jim Downey is Vice President-Global Data Products at Power Systems Research.*

## *Global: 2024 Q4 Global Update Show Mixed Results*

*Continued from page 11*

**AGRICULTURAL.** The Agricultural sector is showing mixed signs with growth in 2024 of around +1.2% before falling back in 2025 to +03.1% and to 2.8% in 2026. The average growth rate remains at +2.2% and the market is expected to grow +554k by the end of the forecast period. Most of this growth comes from China and India with Japan, Germany and Italy showing small gains or losses

**CONSTRUCTION.** The global construction equipment sector is expected to have declined by -0.7% in 2024 but is expected to bounce back in 2025 to +1.3% and then grow for the rest of the forecast period. The average growth rate remains at +1.7% and the market is forecast to grow +158k by the end of the forecast period. In 2024, China is expected to grow modestly at +0.7% before slowly growing back during the rest of the forecast period, Germany (-7.1%) and USA (-1.4%) are also expected to decline during 2024 before recovering to positive growth most of the rest of the forecast period. Of the major countries, only Japan remains in positive growth throughout the period.

**INDUSTRIAL.** Industrial is expected to continue to grow throughout the forecast period except in 2024 when the growth is expected to be down by -1.5%. The average growth rate remains a good +1.9% and the market could grow by +749,000 units by the end of the forecast period. The USA is the largest manufacturer in this segment, and it is expected to decline during 2024 (-4.8%) and 2025 (-3.5%) before rebounding strongly for the rest of the forecast period. China is the second largest manufacturing country in this segment and is expected to grow every year from between +3.0% to +5.0%.

**LAWN & GARDEN.** Lawn & Garden remains positive in all forecast years except for 2024 when it is expected to decline by -3.2%. The average growth rate remains at+2.0% and the market is expected to grow by +4.133m units by the end of the forecast period. The USA is the largest producer for this sector with almost half of the total volume so a fall in 2024 of-2.4% contributes significantly to the 2024 market decline. Of the big five producers, only China remains positive throughout the whole forecast period.

**LIGHT COMMERCIAL VEHICLES.** This segment is expected to remain positive throughout the forecast period (barely) with growth of between 0.1% and 3.8%. The average growth rate remains a good +2.2% and the market is expected to grow by +1.470m by the end of the forecast period. Both of the top two countries (China & USA) mixed growth/decline figures throughout most of the forecast but still end the forecast period with solid volume growth

*The global construction equipment sector is expected to have declined by -0.7% in 2024 but is expected to bounce back in 2025 to +1.3% and then grow for the rest of the forecast period.*

**MARINE AUXILIARY/MARINE PROPULSION.** 2024 is expected to grow marginally by +0.3% and decline in 2025 (by-0.5%) before recovering slowly. The average growth rate remains modest at +1.1% and the market is expected to grow by 61,000 units by the end of the forecast period. Japan is the largest producer with over half the volume and is expected to decline -1.0% in 2024 and -1.2% in 2025 but remains positive for the remainder of the forecast.

**MEDIUM & HEAVY VEHICLES.** This segment is expected to decline in 2024 by -2.6% and then grow strongly except in 2027 when it's expected to be +0.5%. The average growth rate remains good at +1.9% and the market grows by +489,000 units by the end of the forecast period. Of the big three production countries, only China remains positive throughout the period with growth rates ranging from +3.0% to +6.0%.

**PASSENGER CARS/MINIVANS & SUVs.** Generally, 2024 is expected to remain a good year for these segments with growth around +12.1% The average growth rate remains healthy at +2.6% and the market should grow by 9.886m units by the end of the forecast period. China and USA produce a little over half of the volume in these segments and both remain strongly positive throughout the forecast period with China averaging +5.1% and USA +3.9%. Germany starts the

## *Global: 2024 Q4 Global Update Show Mixed Results*

*Continued from page 12*

forecast period off with two years of decline with -5.1% in 2024 and -1.6% in 2025 before return to growth

**POWER GENERATION.** Power generation is expected to continue to grow strongly during the forecast period with growth ranging from +2.4% to +4.9%. The average growth rate remains healthy at +3.5% and the market is expected to grow by +1.530m units by the end of the forecast period. Both of the top two power generation countries (China and United States) show good growth for every year of the forecast period with growth figures ranging between +1.3% and +6.0%

**RAILWAY.** Global railway production is expected to grow strongly throughout the forecast period with an average growth rate of +5.8% and increase in size by just short of 2,000 units. The market is dominated by China (60% of the production) which is forecast to have an average growth rate of +4.1%. This market mostly follows standard cyclical replacement rates. There will also be a push to move to more alternative drive types in that time as well.

**RECREATIONAL PRODUCTS.** This segment follows a similar pattern to consumer products and includes items such as motorcycles, ATVs, scooters, personal watercraft, and snowmobiles. Now with higher inflation and rising costs, 2024 market's growth was expected to slow but hasn't with volumes growing on average by +4.4% and forecast to add 21.609m units by 2029. The size of this segment is so large that it can distort overall market views.

Growth rates for the future years are driven by China and India which dominate the market (over 80% share). The key factors to better performance in recreational products are affordable personal transportation, significant demand for these products, the impact of electrification and higher consumer spending with more disposable income.

**ALTERNATIVE POWER.** After growth of +5.9% in 2024, Alternative Power (Battery, Fuel Cell and Corded Electric) is expected to grow at between +5.9% and +8.6%, with an average growth rate of 7.4% and add an extra 26.796m units by 2029. The remainder to the market, on the other hand, is growing much slower with +1.0% in 2024 and from then on growth rates are between +0.7% and +2.3% (with an average growth rate of 1.5%). **PSR**

# Europe

## Is the Worst Finally Behind Us?

E **SUMMARY.** Geopolitical tensions remain one of the major factors affecting the wider European Economy. Almost three years have passed since Russia's invasion of Ukraine, with unsure progress towards peace continues. The war remains fierce, and Russia continues shelling Ukrainian lands. While Europe continues to face many problems, Russia's war on Ukraine has intensified several issues, and has created a socio-economic emergency on the European continent, increases disruptions in raw material supplies and trade routes.

Despite this horrible war, the European economy is showing timid signs of stabilization, with a slight improvement in 2025 forecast. 2024 Inflation remains below 3%, although during the summer months, different sectors registered an increase in prices.

For the moment, we remain optimistic in seeing further reduction in inflation in 2025, projected at 2.3% by the ECB. The European Central Bank, followed by local institutions, knowledges an improvement in the Euro area, and cut the deposit facility rate by 25 basis points on Sept. 12, a measure that should help manage inflation. However, manufacturing industries still are suffering higher energy prices and remain less competitive compared to key competitor regions.

Most probably with the new U.S. Trump government, new import duties will be implemented on most goods. We expect a 10% rate, which will probably be mirrored by the EU. However, considering that imports of US goods to Europe account for a small proportion of the European GDP, we do not expect this to have significant impact on inflation. On the other hand, exports from Europe to the US might suffer in 2025, at least initially. In fact, if Trump's new government will indeed lower corporate taxes, and attract international investors, the dollar could significantly appreciate towards the Euro, mitigating the effect of the (portable) import duties.

*Despite this horrible war, the European economy is showing timid signs of stabilization, with a slight improvement in 2025 forecast.*

There was brisk improvement in component shortages in the second half of 2023, with many companies reporting improvement in supply chain dynamics, returning to pre-Covid levels. The recent attacks of Houthi militias in the Red Sea, have not caused significant impacts on logistics, but the situation could deteriorate further, given the ever-increasing atrocities in Gaza, and the expansion of the war in neighbouring countries like Lebanon and Syria.

While economic factors are improving, some business segments struggled in 2024. Euro zone PMI is showing a negative trend, and orders of new machines are lacking. OEM inventories are still high, and many companies are trying to reduce their components stocks. Demand for new machines is also weak, with the exception of motorcycles.

Nevertheless, the resiliency of the economy, the improvement in monetary policies, and the end of the elections in the EU should favor a very mild revival in orders during 2025. We will closely monitor the evolution of the market, particularly given the harsh environment in Germany, where a new government should be elected at the end of February, and in France, where the political situation is even more complicated: in the worst case scenario the country could remain in a gridlock until the end of President Macron term in 2027.

Author

*Christopher Bamforth is the PSR European Market Analyst*

*Emiliano Marzoli and Natasa Mulahalilovic contributed to this report.*

## *Europe: Is the Worst Finally Behind Us?*

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**AGRICULTURAL.** Order books intake continued its downward trend as expected throughout 2024. Some momentum has already appeared in the market, the outlook for this year even though not very good is still better than 2024. This should translate into an uptick in sales and production for 2025, although it might take a few months to fully manifest itself as many players are still expressing some concerns, and low overall market confidence could delay a recovery.

The cautious optimism that we have been seeing for the last few months has been highlighted by a slight uptake in business activity and higher business activity expectation for the next six months reported by the CEMA (European Agricultural Machinery Association) barometer could indicate some light at the end of the tunnel.

**CONSTRUCTION.** This segment is very much following the same trend that we see in the Agricultural Segment. Demand, similar to the Agricultural Segment, was declining in 2024. We are seeing this decrease across many business activities, especially in the residential and private sectors. We are seeing a clear decrease in activity reported by CECE (Committee for European Construction Equipment) and other trade associations. The overall trend is likely to mimic Agricultural, and we can expect it to recover slightly in 2025, but it seems that it will take a few months for it to be felt. It's possible that the recovery process could take longer due to a possible shortage of labor to fill so many incentivised positions.

The same risks are applicable to Construction as to the other segments. For example, the potential looming recession applies, but possible government and investment help and funding on new projects could keep the markets afloat. Similarly to the CEMA, the CECE's members have reported the possibility of lower revenue and order intake for the next six months.

**LAWN AND GARDEN.** We are seeing a slowdown overall due to lower demand especially on the residential consumer side. The same risks could be reduced by the electrification shift that is increasingly prevalent throughout the EU. The overall segment slowed down in 2024, partly due to the lower sales and

## Europe: Is the Worst Finally Behind Us?

*Continued from page 15*

order intakes. There was a hope that the consumer side of this segment will be balanced by professionals, and new homeowners which bring a certain level of elastic demand, unfortunately, this was not the case for 2024, but we are seeing some signs that a small recovery will take place this year but not quite enough to offset the decrease from last year.

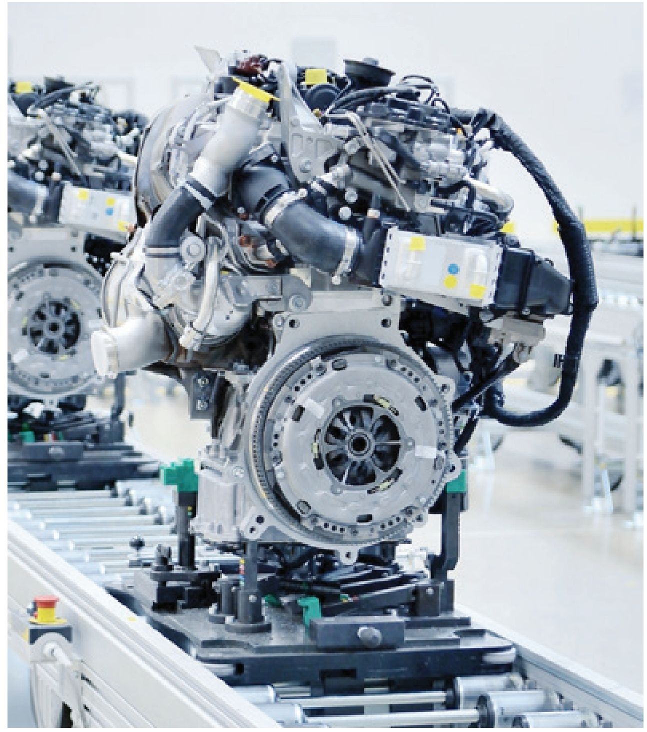
Furthermore, many consumers are investing or switching to battery-powered equipment, and even professionals are switching so they can use it as a USP (unique selling point), especially since many government contracts now call for a portion of all machines used on the job to be low emission. This trend, while small, should continue to be fuelled by the many electrification incentives being pushed into 2025 for many member states.

**INDUSTRIAL.** This segment has been experiencing similar trends to both Agriculture and Construction on a more subdued level. We saw a decrease throughout the segment in 2024 although at a diversified rate between different applications. We expect this trend to continue in 2025 showing an overall slight recovery, not yet catching up to 2023 levels. However, we will see a few applications outperform others such as forklifts and terminal tractors. This being said, we might need a few months before seeing the uptake in orders

**MARINE PROPULSION.** This segment will remain relatively flat overall in 2025 as it starts to feel the effects of reduced demand. We expect this segment to taper off as the year continues. There are still some issues that must be resolved before recovery can regain full momentum. We expect this slowdown to continue throughout 2025, but to pick up around the end of the year.

**PLEASURE BOATS.** The European pleasure boats market slowed in 2024, and sales of new boats drastically decreased compared to the two previous years. Segments being the most affected were small boats in size under 7 meters and monohull sailboats in size from 9 to 16 meters. Motorboats in size 12 to 16 meters made slight progress.

Sales of luxury motor yachts from 16 to 24 meters and



superyachts have been relatively stable, depending on the brand and innovations brought to the latest models. The best sellers remain motor and sail multihulls, thanks to the global rental market being in a constant growing phase.

In overall, sales of a new boats manufactured in Europe dropped by 25% in 2023/2024.

The second-hand yachts market was relatively dynamic but also saw a decrease of 10% compared to 2022/2023.

A very complex geopolitical context, global economic slowdown, persistent inflation, and a general uncertainty, are the main factors that make manufacturers and industry experts believe that the negative trend will not change direction soon. Our estimate is that demand for a new boats manufactured in Europe will decline by 10-15% in 2025.

The Marine pleasure industry faces other challenges such as environmental changes, ecological requirements, new technologies and innovations, and final product prices. The new generation of boaters go towards innovative, clean and affordable boating. This will require significant changes to the existing business models and related actions to dynamize the market.

## *Europe: Is the Worst Finally Behind Us?*

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**PASSENGER CARS, MINIVANS & SUVs.** Demand for new Passenger Vehicles in Europe remained stable compared to 2023. However, 2024 was an extremely complicated year for the European car industry, and there is not much good news on the horizon, either.

Production of passenger vehicles decreased by 2% in 2024, the CAGR compared to 2019 is an alarming -8%, or some 400,000 vehicles. This trend will continue in 2025, with large groups like Volkswagen and Stellantis that have announced a cut in production in the next 12 months. In addition, new average CO2 emissions rules have entered in force in January 2025, with a potential (unlikely) effect of billions of euro of fines towards OEMs that will not be able to lower their average fleet CO2 emissions. However OEMs are allowed to buy credits from other OEMs, and this should enable them to avoid expensive fines.

The Euro 7 emissions standards soap opera has come to an end. With the latest developments, EU lawmakers have agreed to leave limits on toxic NOx and the mass of particles emitted from new cars untouched. Furthermore, the new standards have been postponed to 2029. The new regulations put the EU in a follower position on environmental standards, behind the more stringent US EPA tier 3 Final and China 6b standards. The latest developments highlight the way in which the car industry is regaining its weight and power after a few years of weakness following Dieselgate in 2014.

Uncertainty remains very high. The European and German car manufacturers are struggling to convince consumers to move to battery electric vehicles. Chinese and Indian manufacturers are penetrating the market, while in previous years they were almost non-existent. They can offer very cheap and practical EVs. BYD, one of the leaders in production of batteries and EVs, is now developing its production facility in Hungary to anticipate any measure from the EU and offer EVs made in Europe.

The emissions regulations that in the past worked like a barrier protecting the European market, are now becoming irrelevant. If the EU and the European manufacturers do not realize that a greater challenge than Euro 7 is on the horizon, they might find themselves in much more agitated waters.

**POWER GENERATION.** Gen-Set production and demand in Europe was hurt by the pandemic. However, the sector quickly rebounded in 2022. Demand remained positive in 2023, but we saw signs of a decrease in the last months of last year. 2024 will turn negative for this segment, but this is not a surprise, given the unprecedented levels gained during 2022 and 2023.

*Production of passenger vehicles decreased by 2% in 2024, the CAGR compared to 2019 is an alarming -8%, or some 400,000 vehicles.*

However, with a rebound in investments towards the end of the year, Gen-Set demand will start to pick up, and in 2025 the segment will return to a timid growth, followed by a more robust performance in 2026.

**RECREATIONAL PRODUCTS.** The segment was taken by storm at the end of November 2024: KTM AG, Europe's largest motorcycle manufacturer, is currently facing significant financial challenges that have led to a strategic restructuring plan. The very existence of the company is under threat, and only in February 2025 will we be able to understand if the OEM will continue to exist. How the market will react in 2025 is still uncertain. Other European OEMs do not have the capacity to absorb KTM production volumes, thus registrations of new bikes in Europe will most likely be negative in 2025. Production too, even if KTM survives, will slow down. We expect to see a further contraction of 1% in 2025, following a 4% decrease in 2024.

**RAILWAY.** Demand in this segment is less affected by current market trends as contracts are usually over several years. We are seeing a slow but steady increase continuing into 2032. As a result, we are seeing a high percentage of contracts being fulfilled, although the numbers are still relatively low compared to other segments. Incentives are still very present for the push to reduce CO2 emissions for 2030 for many member states and outside of Europe demand. **PSR**

# China

## 2025 GDP Goal Is 5%

**SUMMARY.** In terms of monetary policy, in 2025, it is expected that both aggregate and structural policies will run concurrently, with reserve requirement ratio (RRR) cuts and interest rate reductions remaining the main measures of the central bank. Regarding fiscal policy, its role in economic growth may be even greater than that of monetary policy.

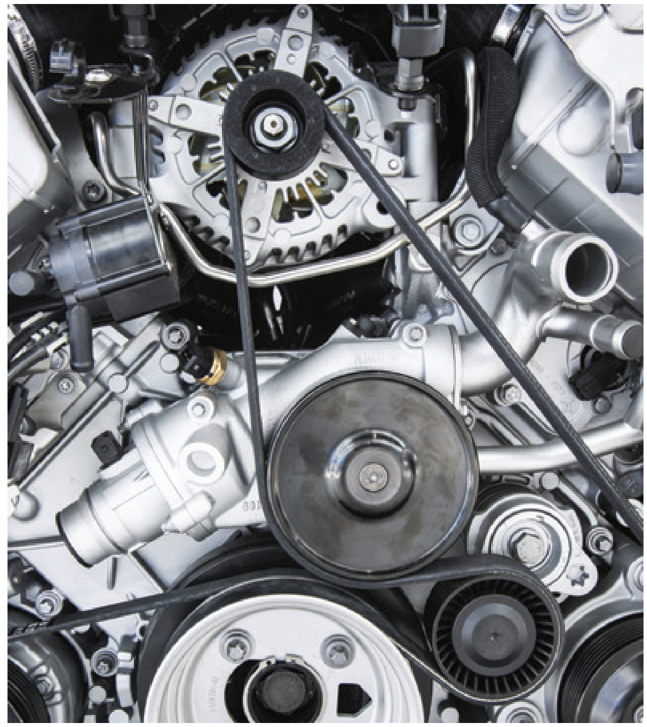
Currently, China is in a situation of loose money and tight credit, with a large amount of liquidity idling within the financial system, leading to a "liquidity trap" that diminishes the effectiveness of monetary easing. Among the nine key tasks deployed by the Central Economic Work Conference, "vigorously boosting consumption and improving investment efficiency, and expanding domestic demand in all aspects" is ranked first.

Infrastructure investment is on the rise, and manufacturing investment maintains rapid growth. Infrastructure investment has always been an important measure for the government to stimulate the economy. Manufacturing investment may slow down slightly, but it will still maintain rapid growth.

Considering the upcoming inauguration of the new U.S. president, a new round of Sino-American trade wars may begin in the second half of the year. Looking at the whole year, due to the rise of "trade protectionism," exports to the U.S. are likely to decline; however, exports to Latin America, Africa, and other regions will all accelerate compared to the previous year, and it is expected that China's exports to developing countries will remain resilient, with the export growth rate in 2025 being around 1.2%.

Author

*Jack Hao is Senior Research Manager - China for Power Systems Research*



**AGRICULTURAL.** The driving factors for the recoverable growth of the agricultural machinery market mainly include the following points:

- **Policy Support:** The state's emphasis on the modernization of agriculture, the implementation of the national grain security strategy and the rural revitalization strategy, and the acceleration of the modernization of agriculture and rural areas continue to be important drivers of the Agricultural segment. Policies such as the "2024-2026 Agricultural Machinery Purchase and Application Subsidy Implementation Opinion" have provided substantial benefits for the development of the agricultural machinery industry, promoting market demand and healthy development.

- **Technological Upgrades:** The agricultural machinery industry is innovating and developing forward-looking technology, especially in the promotion and application of high-horsepower high-end machinery, hilly and small-scale machinery for facility horticulture, and high-end intelligent machinery.

## China: 2025 GDP Goal Is 5%

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- **Market Demand:** With the continuous improvement of agricultural mechanization, agricultural machinery loans have become one of the fastest-growing areas of agricultural loans. The implementation of a new round of agricultural machinery scrapping policies will stimulate the demand of hundreds of billions of yuan and accelerate the entry of agricultural machinery products into a new round of demand.
- **Replacement Demand:** In the agricultural machinery market, demand for replacement has become the main driving force for the purchase of agricultural machinery. According to industry research, the service life of tractors is 5-8 years, and the service life of harvesting machinery is generally 3-5 years. The demand for replacement is expected to hit a low in 2024 and then enter an upward cycle of replacement.
- **Service Capacity Improvement:** With the batch deployment and use of Tier 4 products, the after-sales service capacity of companies has been continuously strengthened, which helps improve user satisfaction and increases their willingness to purchase agricultural machinery products.
- **International Market Expansion:** With the advancement of the national "Belt and Road" strategy, domestic agricultural machinery products have a cost-effective competitive advantage in developing countries, and agricultural machinery enterprises have begun to promote internationalization strategies and product sales.
- **Industry Reshuffle and Intensified Competition:** After the switch to Tier 4 products, the agricultural machinery industry will face more intense competition.

The markets for large and medium-sized tractors, rice harvesters, and corn harvesters have begun to see multiple superpowers and strong competitors. The industry has entered a new round of reshuffling, promoting the transformation of industrial manufacturing and high-quality products

The growth rate for 2024 was 4% and will be about 5% for 2025.

**CONSTRUCTION.** In 2025, with the dual impact of fiscal and monetary policies, domestic demand is expected to be stimulated, leading to an improvement in investment in machinery and equipment. Overseas, the Federal Reserve's interest rate cuts and fiscal stimulus, coupled with increased tariff risks, may lead to a differentiation in the export chain.

We are optimistic about three main trends:

> *With the continuous improvement of agricultural mechanization, agricultural machinery loans have become one of the fastest-growing areas of agricultural loans.*

- **Opportunity** for cyclical recovery brought about by policy-driven stimulation of domestic demand.
- **Investment opportunities** in growth stocks brought by technological progress.
- **Chinese companies** with strong overseas demand are expected to continue to increase their global market share

**Domestic Market.** The recovery of domestic construction machinery demand in 2025 is expected to be a slow process. Domestically, considering weak demand and low prices, the government is determined to stabilize growth, with coordinated fiscal and monetary policies.

We believe the stimulation of domestic demand is expected to lead to an improvement in investment in machinery and equipment. The cycle of construction machinery is highly synchronized with the real estate cycle, and against this backdrop, the demand for domestic lifting equipment and concrete equipment has shown a significant decline. This puts considerable pressure on the domestic revenue of major manufacturers.

Excavator equipment has performed relatively well. There is still a significant differentiation within the excavator structure, with domestic mini-excavators achieving relatively strong year-on-year growth, gaining from the special bond issuance by the central government at the end of last year.

## *China: 2025 GDP Goal Is 5%*

***Continued from page 19***

Fields such as water conservancy, rural construction, and urban renewal, which are key areas supported by special bonds, have driven the growth of new machine sales. However, due to the downturn in real estate and the temporary obstruction of capital expenditures in the mining industry, medium and large excavators still face the risk of decline.

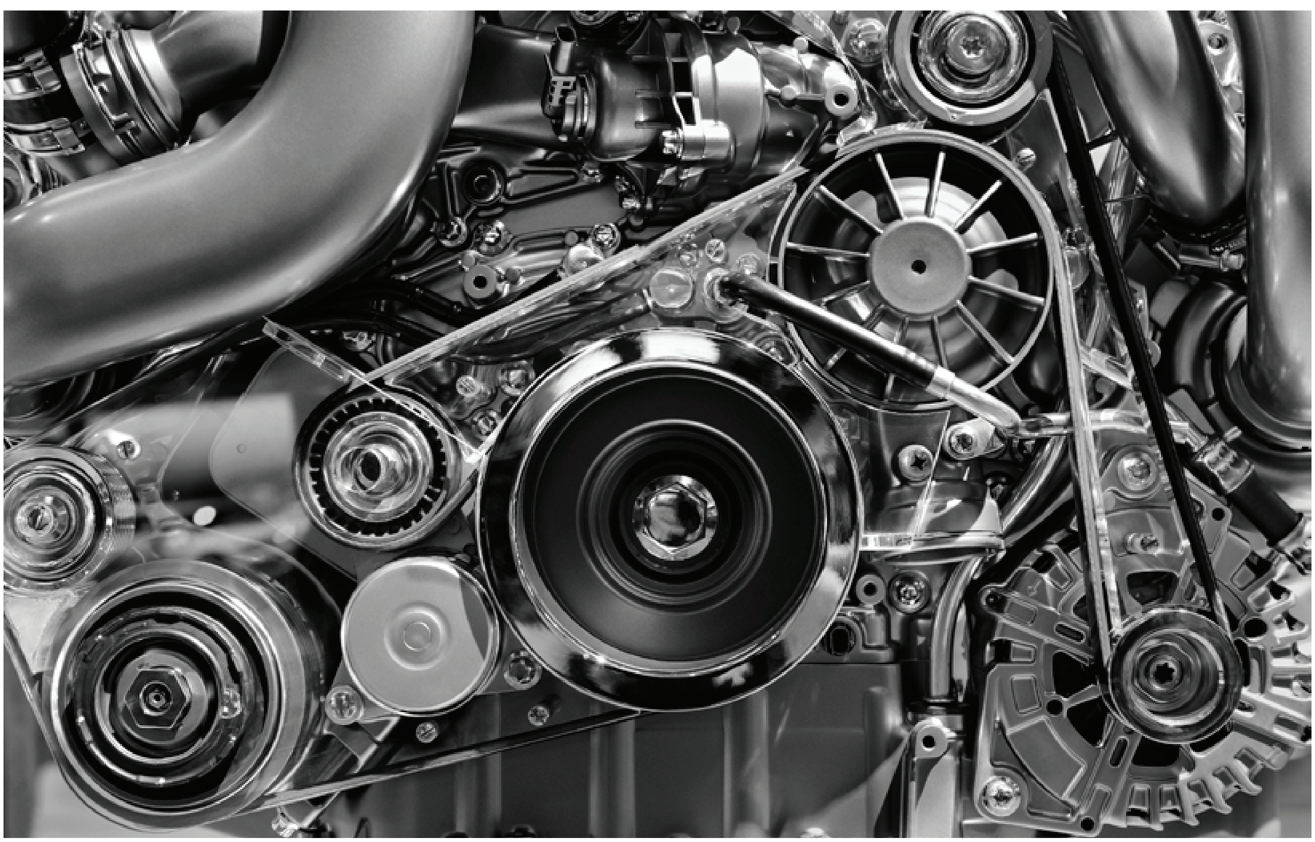
In 2025, real estate starts in China will continue to trend downward, so we expect that the demand for real estate-related products also will decline. However, considering that the sales volume of lifting and concrete products is only 10-20% related to the peak period in 2024, we expect the domestic revenue of construction machinery manufacturers in 2025 will grow. We expect that domestic construction machinery will show a relatively flat cycle in the future.

Overseas demand. This is expected to expand in 2025. In 2025, the certainty of incremental demand in overseas markets is higher than that in domestic markets, with export growth expected to maintain a rate of over 10%. Regions with rapid growth include Latin America, Africa, Brazil, and India. Overseas markets are becoming increasingly important and are also the preferred choice for domestic construction machinery manufacturers to obtain new profits.

The gross profit margin of domestic products is much lower than that of overseas sales, and without the strong profit support from overseas markets, there are limited growth opportunities. Key domestic companies are adjusting their global capacity planning, implementing localization strategies, and accelerating global efforts.

Regionally, the overall average growth rate of a company in Southeast Asia, the Middle East, and Central Asia remains robust, better than the industry average; South America, Africa, and South Asia are becoming new drivers of overseas business growth. The growth rate was 1% in 2024 and is expected to be 2% in 2025.

**INDUSTRIAL.** Although it's one of the world's largest markets for forklift sales, China's market size continues to expand. The rapid development of the manufacturing industry, the rise of the logistics sector, the increase in export demand, and the trend of mechanization



## China: 2025 GDP Goal Is 5%

*Continued from page 20*

replacing human labor are the main factors driving the growth of the forklift market. Additionally, the trends towards electrification and intelligence have also brought new growth opportunities to the forklift market.

**Electrification Trend.** With the advancement of new energy technology and the promotion of environmental policies, electric forklifts are gradually replacing internal combustion forklifts. Electric forklifts have significant advantages in terms of resource conservation, cost-effectiveness, and environmental friendliness.

**Policy Support.** Governments around the world are introducing supportive policies to promote research and development of key technologies for electric forklifts, as well as the application and promotion of electric forklifts.

**Intelligent Technological Development.** With the rapid development of technologies such as the Internet of Things (IOT), cloud computing, and unmanned driving, forklifts are heading towards intelligent development. Intelligent forklifts will be equipped with functions like unmanned operation, remote monitoring, and warehouse management, enhancing logistics efficiency and safety. Intelligent forklifts are widely used in scenarios that involve repetitive handling, high intensity lifting, and harsh working conditions, meeting the market's demand for efficient, safe, and intelligent logistics solutions.

Between 2024 and 2029, the scale of China's forklift market is expected to maintain steady growth, with especially notable expansion anticipated in the fields of new energy forklifts and intelligent forklifts. The growth rate was 5% in 2024, and the rate will dip to 4% in 2025.

**LAWN AND GARDEN.** Today, developed countries and regions such as Europe and America are the main consumption areas of garden machinery products. The global market demand base for garden machinery products is large and shows a long-term growth trend. For most developing countries, the garden machinery industry is in the stage of sustainable development. Benefiting from economic growth and huge population bases, developing countries and regions such as Asia will continue to expand their market share and play an increasingly important role in the future.

## China: 2025 GDP Goal Is 5%

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The continuing development of the greening industry has provided unlimited business opportunities for the garden machinery and garden industry. The total output value of greening in China will increase by 30% - 50% annually. The rate for L&G was 3% in 2024, and the rate will be 2% in 2025.

**MEDIUM AND HEAVY VEHICLES.** Due to tight fiscal funds across various many regions in 2024, the commencement of new infrastructure projects did not meet expectations, and coupled with the sluggish real estate market, it failed to stimulate demand for heavy trucks, especially dump trucks, mixer trucks, and other engineering vehicles.

At the same time, persistently low freight rates and market overcapacity are still present, leading to the heavy truck industry not meeting expectations in 2024. It is anticipated that the real estate market will continue its downward trend in 2025, which will affect the demand for heavy trucks, particularly engineering vehicles. The significant fiscal revenue and expenditure gap at the local level means there is not enough money to invest in infrastructure projects, making it unrealistic to rely on more infrastructure projects to stimulate demand for heavy truck vehicles.

Considering the broader automotive industry's transition towards new energy, the trend of the heavy truck market developing in the direction of new energy has become increasingly evident. The new energy heavy truck segment and products have become focal points for many companies in 2025.

With the growth in cold (supply) chain applications, e-commerce, cross-border transportation, and the large-scale elimination and renewal of National IV vehicles, it is expected that the commercial vehicle market will recover in 2025. Important trends in this segment:

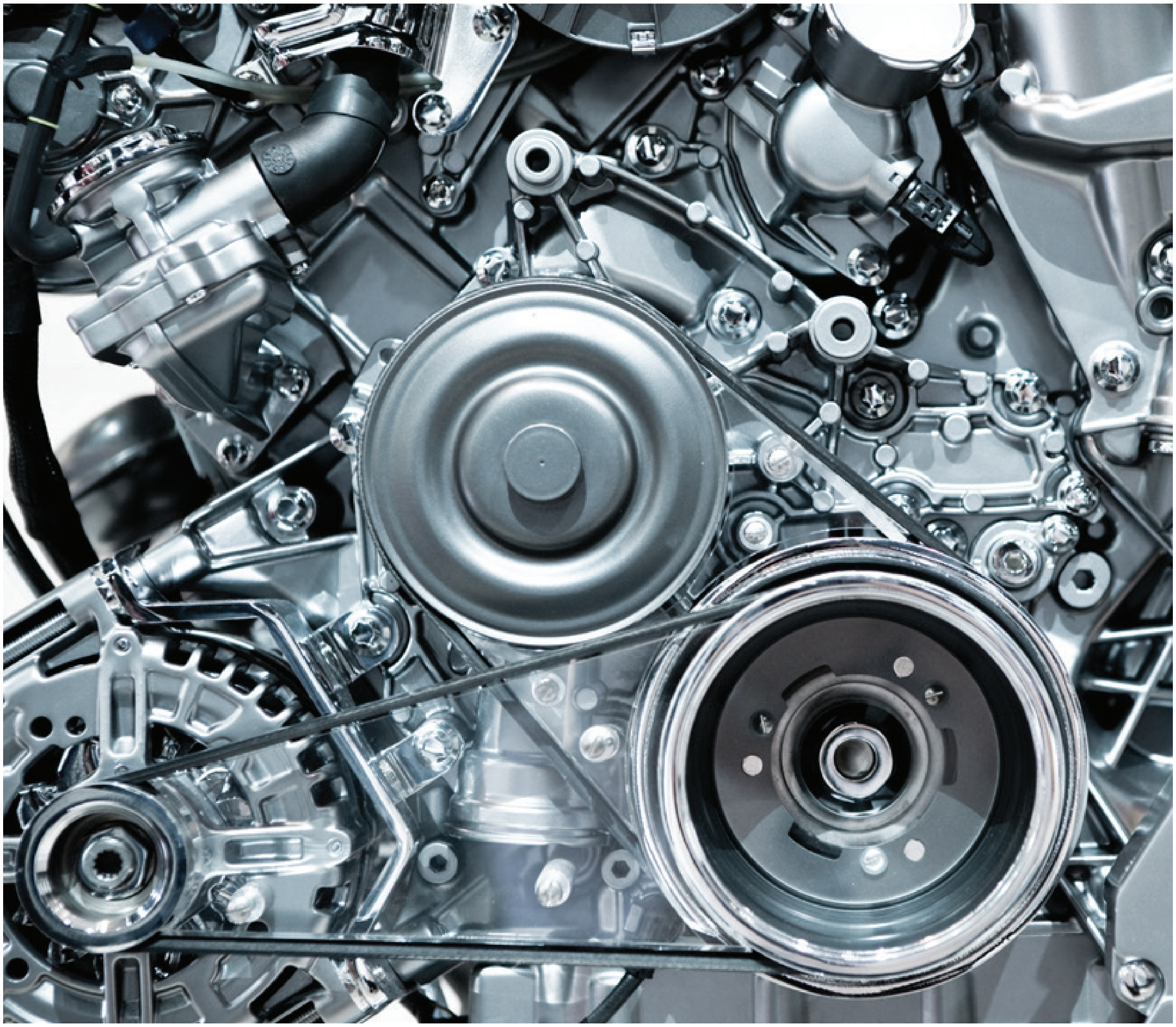
- **Massive Phase-out and Renewal of National IV Vehicles:** With increasingly strict environmental regulations, vehicles that meet National IV emission standards will face a large-scale phase-out, creating market opportunities for renewal and updating.
- **Market Opportunities for Gas Vehicles** in Southwest and Northwest Regions. Gas vehicles still have good market opportunities in these resource-rich regions, providing regional growth points for the development of gas vehicles.

*The continuing development of the greening industry has provided unlimited business opportunities for the garden machinery and garden industry.*

- **Regional Growth.** The commencement of key national projects and the shift of industries to the western regions are expected to bring regional growth to the heavy truck market.
- **Sustained Growth** in demand for cold chain, e-commerce, and cross-border transportation. The term cold chain applies to a specific type of temperature sensitive supply chain. The continuous growth in demand in these areas will provide sustained momentum for the commercial vehicle market.
- **Rapid Development of New Energy Heavy Trucks** and the Prominent Trend of Electrification in Medium and Heavy-Duty Trucks. The new energy heavy truck market is expected to grow rapidly, especially in the medium and short-haul transportation sector, where the trend towards electrification is becoming increasingly evident. It is projected that by 2025, the penetration rate of new energy in heavy trucks will rise to over 20%, and the penetration rate for light trucks will reach over 25%. These forecasts are based on the increased support for new energy policies and the prominent trend of electrification in medium and short-haul heavy trucks.

In 2024, the market for medium and heavy trucks declined 2%. It is expected that the growth rate of medium and heavy trucks will rebound to 6% in 2025.

**PASSENGER CARS.** In summary, China's passenger car market in 2025 will continue to be influenced by the rise of new energy vehicles, intensifying market competition, export growth, and the development of smart technologies, overall showing a trend of steady growth with some increases. We expect that the sales



## *China: Economic Growth Driven by Strong Public Investment*

***Continued from page 22***

volume of passenger vehicles in China was around 1% in 2024, and rate will keep another 2% in 2025.

The Chinese market saw intense price competition in the automotive sector in 2024, and this trend is expected to continue into 2025. Due to overcapacity in the automotive industry, price competition has become an effective means for brands to compete for market share. With technological advancements and policy support, the market penetration rate of new energy vehicles (NEVs) is expected to continue to increase. The momentum of NEVs and policy promotion may lead to a penetration rate exceeding 55% in the coming year, and for the first time, it is likely to surpass the market share of gasoline vehicles.

Technological innovation will continue to lead market trends. The rapid growth of domestic NEV brands has significantly impacted the traditional fuel vehicle market, with independent brands such as BYD, Chery, Geely, and Changan showing outstanding performance. This suggests the Chinese automotive market may be entering a new phase dominated by domestic brands.

The “trade-in” policies introduced in various regions will continue to influence the market, encouraging consumers to replace old vehicles with new ones. These policies not only provide direct subsidies for purchasing vehicles but also stimulate the vibrancy of the automotive market.

## *China: Economic Growth Driven by Strong Public Investment*

***Continued from page 23***

Despite facing many challenges, the export of automotive products will continue to develop in 2025, especially against the backdrop of increasing international market demand for high-quality, intelligent vehicles.

With the popularization of high-level driver assistance functions, intelligent driving technology will further promote business model innovation and enhance user stickiness in the automotive market. The completeness of high-level driver assistance functions and the high stickiness of users will accelerate the development of autonomous driving technology.

Progress in battery technology: Advances in battery technology, especially the implementation of high-voltage fast charging technology and semi-solid-state batteries, will address the energy replenishment shortcomings of NEVs, enhance the flexibility of battery management, and further promote the development of the NEV market.

**POWER GENERATION.** The power generation market for some high horsepower diesel generator sets will continue to grow in 2025. By contrast, the small gas gen-set market is vulnerable to external forces in export markets. The trend toward natural gas power generation will grow in the future with the energy consumption conversion from coal to NG, and an increased need for renewable energy backup power generation.

More competition will occur in the small horsepower segment both at home and abroad. The biggest change will come from the North America market, which is the key region for the small gasoline power generation market. The growth rate was 3% in 2024, and the rate will be 3% in 2025.

**RECREATIONAL PRODUCTS.** As a marginalized industry, the motorcycle industry is very difficult to make profits but also contains the smallest risk. Will it affect the purchase time of consumers? I think this scene is unlikely to happen, and the reason is very simple. Now China's motorcycles have been seriously saturated.

From the perspective of subdivided products, compared with the performance, price and safety of electric motorcycles and fuel motorcycles, electric motorcycles are cheaper, cheaper to use, and have almost no pollution in the process of use. Therefore, as a substitute for transportation in the city, they have more development advantages.

> *The power generation market for some high horsepower diesel generator sets will continue to grow in 2025. By contrast, the small gas gen-set market is vulnerable to external forces in export markets.*

With the continuous implementation of the policy of carbon neutralization and carbon peak, China has also put forward the policy goal of green development for the motorcycle industry. In the past, the development of China's motorcycle industry has been in a relatively disordered state. Many motorcycles with excessive emissions have been on the road illegally without permission, while electric motorcycles have not been clearly defined in the past, and there are many loopholes in supervision and technical indicators.

Therefore, in recent years, in terms of policy, the state actively promotes the standardized and green development of motorcycle manufacturing industry. In the following years, the supply and demand of motorcycles in China will still be affected by the national environmental protection policies, and the development and transformation process of the industry will be further accelerated. Therefore, the growth rate of motorcycle production will slow down, and more will be replaced within the industry.

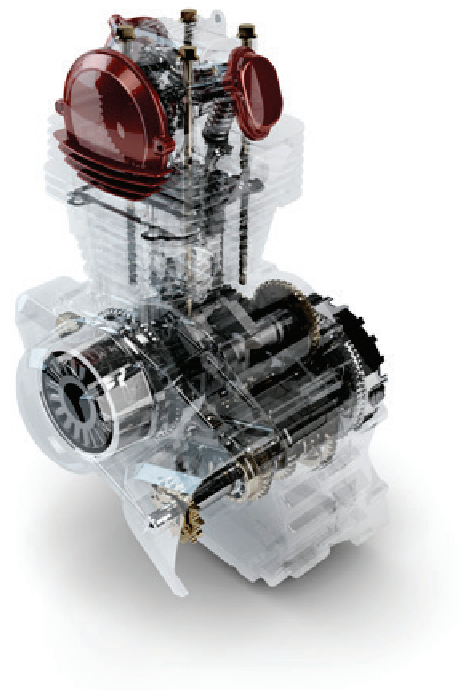
With the continuous expansion of policies and the advantages of electric motorcycles, the proportion of electric motorcycle production will continue to increase. It is predicted that in 2027, the output of motorcycles in China will reach 22.5 million units, with a compound annual growth rate of about 5%, of which the proportion of electric motorcycles will increase from 20% to 30%. The growth rate will be 4.3% in 2024, and the rate will be 3% in 2025Y. **PSR**

# Far East (Japan and South Korea)

## Japan Economy Facing Many Uncertainties

**JAPAN SUMMARY:** Japan's manufacturing sector experienced a year of stagnation in 2024. Overall growth was flat. The diffusion index (DI) for large company manufacturing in the Bank of Japan's quarterly Short-Term Economic Survey of Enterprises in Japan (Tankan) (December 2024 survey) improved by one point from the previous survey to 14. There was a slight recovery, particularly in production machinery, but the overall result was flat due to the significant impact of rising raw material prices.

Looking ahead, the DI decreased by one point to 13 for large manufacturers and by five points to 28 for large non-manufacturers. The manufacturing sector's outlook is more cautious due to increased uncertainty surrounding President-elect Trump's trade policies, while the non-manufacturing sector's outlook is more cautious due to factors such as worsening labor shortages and concerns about rising interest rates.



The latest hot topic is that Nissan is in talks with Honda about a possible merger. Nissan is the shareholder of Mitsubishi Motors, and Mitsubishi will also be involved in these talks. Although nothing has been officially decided, the market believes that the aim of this merger is to take advantage of economies of scale to survive the intensifying global competition led by the Toyota Group. However, it is not clear whether this will have a positive effect on Japan's automobile industry, the country's main manufacturing industry.

For Nissan and Mitsubishi, which are currently struggling, integration with Honda may provide a sense of security, but simply increasing capital will not produce effective synergies. Integrating three companies with completely different corporate cultures is not easy. It will also have a major impact on the structure of each company's parts suppliers. This type of management integration strategy between large companies can be seen in many other industries, including shipbuilding. Many of these strategies are implemented as a countermeasure against international competition in overseas markets, especially against Chinese companies. However, this can also be interpreted as meaning that they have not been able to find effective strategies other than business integration and mergers.

Politics is also in a state of confusion. It has no power to manage the economy and is creating more confusion. The government of newly appointed Prime Minister Ishiba, who took office after the October elections, is promoting immigration policy. China and South Korea are trying to get involved in Japanese politics, and the Japanese government has greatly eased the conditions for issuing visas to China with astonishing speed. This will lead to many more Chinese entering Japan, and there is already a significant impact on public safety.

Author

*Akihiro Komuro is the Research Analyst Far East / Southeast Asia at Power Systems Research.*

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The government's economic policy is also completely off the mark. Even though the average national income has been stagnant for about 30 years, the government is trying to raise taxes, and many people are struggling to make ends meet. If this situation continues, Japan's international competitiveness will continue to decline. The Cabinet Office announced on Dec. 23 that Japan's GDP per capita will be $33,849 in 2023. It was overtaken by South Korea and fell to 22nd place among OECD member countries.

Although the declining birthrate was predicted more than 10 years ago, no measures have been taken to address the problem. Simply put, Japan's manufacturing industry will face many challenges in the future, and yet it has been unable to find an effective growth strategy. The stifling situation will continue until 2025.

**SOUTH KOREA SUMMARY:** The political situation in South Korea is also in a state of confusion. On the evening of Dec. 3, South Korean President Yoon Seok-yol issued an emergency statement declaring a state of emergency. A state of emergency, commonly referred to as martial law, is a situation in which the military takes control of the administration and judiciary and can restrict basic human rights such as freedom of speech and assembly. It was believed that a state of emergency would be declared only in times of war, coup d'état, terrorist attack, or major disaster. Martial law was lifted by other members of parliament after six hours, and as of Dec. 27, an impeachment trial to hold the president accountable was about to begin, so there is a strong possibility of a change of government.

In this situation, stable economic growth is not expected. On Dec. 26, a Korean business organization announced that the Business Survey Index (BSI) for January 2025, a survey of 600 major Korean companies, would be lower than the same month of the previous year for the second year and 10 months in a row. This is the longest period of consecutive year-on-year declines since the survey began in 1975.

The Bank of Korea has forecast that the economic growth rate will be 1.9% in 2025, below the potential

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*Continued from page 26*

growth rate of 2%, and will fall to 1.8% in 2026. If this happens, it will be the first time since statistics began in 1954 that the South Korean economy has grown at a rate of less than 2% for two consecutive years.

The reason for the low growth rate is that the South Korean economy is heavily dependent on exports. In addition, there are concerns about the strengthening of protectionist policies in the United States. When exports are sluggish, domestic consumption is expected to support growth, but in South Korea, high interest rates and persistent inflation have led to a slow recovery in domestic demand.

South Korea has experienced rapid economic development since the second half of the 1960s, driven by the close relationship between the chaebol (business groups) and the government. This continues to this day. Samsung, Hyundai and LG account for about 40% of the South Korean economy and are inextricably linked to the government. The country's leaders have changed many times, and each time they have tried various reforms aimed at supporting small and medium-sized businesses and reducing social inequalities, but it is difficult to overturn the fundamental social structure that has taken root.

**AGRICULTURAL. Japan.** The domestic agricultural machinery market continues to stagnate. Production costs are rising, led by steel and electricity price increases, and the industry slump continues, but demand is beginning to pick up slightly due to the recovery in rice prices. Kubota, Yanmar and Iseki are all actively accelerating overseas expansion, and this is a natural trend as they move into areas where demand is strong. The impact of exchange rates on sales is often positive for agricultural machinery manufacturers. As it is difficult to find positive factors in the domestic market, it is likely that agricultural machinery manufacturers will continue to accelerate their overseas expansion in 2025.

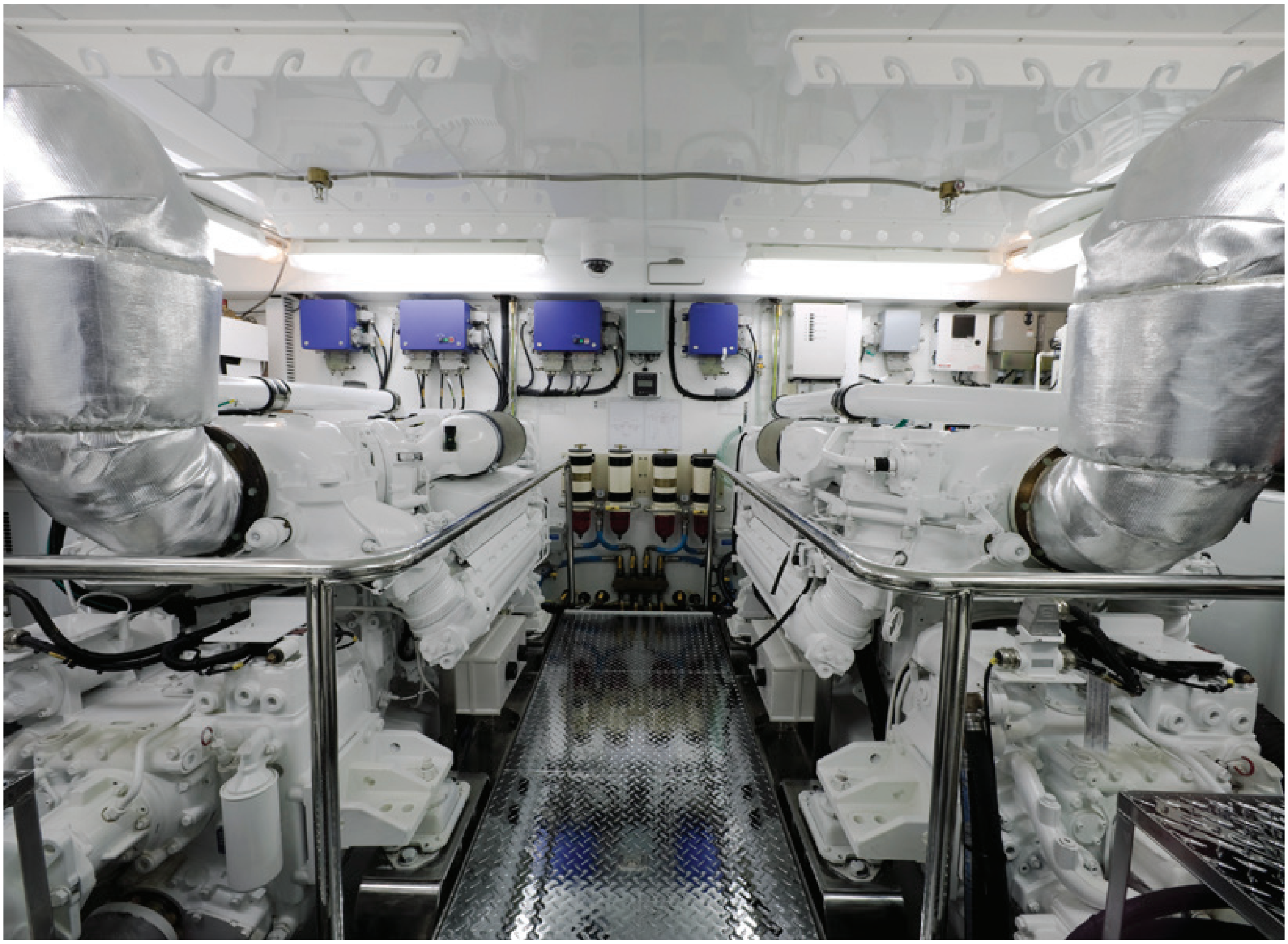
Agriculture is the industry most affected by the labor shortage, and there is an urgent need for the development of technology to reduce the need for labor, both in terms of hardware and software. When I visited an agricultural exhibition, I saw a lot of interest in software that uses AI image analysis to promote farmland consolidation, as well as management applications that make harvesting more efficient. This trend is likely to intensify after 2025.

*South Korea has experienced rapid economic development since the second half of the 1960s, driven by the close relationship between the chaebol (business groups) and the government.*

**South Korea.** As I have pointed out in the past, the size of the domestic market for agricultural machinery in Korea is about USD 1.575 billion (250 billion yen), and the average annual growth rate is about 1%. Even if the sales of Daedong, LS Mtron and TYM are added together, the global market share in terms of sales volume is still only about 1%. Moreover, an analysis by the Korea Institute of Agricultural and Food Technology Evaluation and Planning has shown that the technological level of Korean companies in this field is about three years behind that of other countries.

Against this background, Japanese agricultural machinery has about 30% of the agricultural equipment market in Korea and is highly regarded by users. But 50% of the engines in Korean-made agricultural equipment are made in Japan, and 60-100% of the core components such as automatic transmissions, electrical technology, and integrated control systems are also made in Japan. There are even some Korean-made agricultural equipment that are made entirely of Japanese parts.

For Korean manufacturers to be internationally competitive with major agricultural machinery manufacturers such as John Deere and Kubota, they need to increase their investment in research and development, but there is no sign of such a move at present. All companies are looking to expand overseas, but it is not easy to enter new markets. The difficult situation is expected to continue in the future.



## Far East: Japan Economy Facing Many Uncertainties

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**CONSTRUCTION. Japan.** In 2024, sales were generally flat, or up slightly. Domestic demand was supported by relatively strong public and private investment. Exports were also supported by strong demand from North America, the largest market. According to several industry insiders, sales were not as bad as expected, contrary to predictions of flat or slightly declining sales in 2024. However, there are also views that sales will slow by around 1-5% in 2025 as a reaction to this.

Research and development in the field of DX continues, and in the forestry sector, which is the most dangerous, various technological developments are being promoted to reduce the risk of accidents and manpower shortages. Machines that can be operated remotely are often seen at exhibitions, but at many forestry sites it is difficult to connect to the Internet. Today, internet connections are mainly provided via mobile phone networks, but there are also proposals to use Starlink in cases where mobile phone signals do not reach. There are also systems that use drones to take pictures of forests and analyze them to make logging more efficient. Systems with this type of function, which involves taking photos, analyzing the images, and making the process more efficient, can be seen in many other segments in addition to construction equipment, and are likely to become more widespread after 2025 as they contribute to labor savings.

**MARINE. Japan.** Demand for outboard engines is expected to decline slightly in 2024, as the special demand for leisure equipment for the wealthy has been largely satisfied after several years. Research is underway on ammonia as a potential next-generation fuel for large commercial vessels. The impact of the falsification of engine fuel efficiency data by Japanese shipbuilders, which we discussed here in the third quarter, is still unclear. Going forward, it will be

 

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inevitable for manufacturers to spend money to review their design and manufacturing processes to prevent such misconduct, but the increased costs will ultimately be borne by ship owners, cargo owners, etc. Large engines for commercial vessels are in price competition with China and South Korea, but Japan cannot compete with a strategy of selling at low prices. Instead, it uses high quality and durability as selling points, and bad news like this will not have a positive effect. 2025 will be a year of improving corporate structure, but significant growth cannot be expected.

**INDUSTRIAL. Japan.** There are no major changes from our Q3 2024 forecast. Demand for automated equipment in warehouses is expected to continue to grow, and automation of forklifts and material handling equipment is progressing. We expect these products to be gradually introduced in 2025.

**LAWN & GARDEN. Japan.** There are no major changes from the Q3 2024 forecast, and the market is expected to remain flat or grow 1-2% through 2024. Most hand tools are already electrified and established in the market. Exports are also generally in line with the previous year, with no major changes. In 2025, it will be interesting to see to what extent engine forklifts, which have temporarily stagnated, will pick up again. Although many have already been replaced by battery-powered models, there are still many sites where only engine-powered models can be used. Further development of the charging environment is needed for battery models.

**PASSENGER CARS / MINIVANS and SUVs. Japan.** Although data for December has not yet been released, the year was negative. This was due to the impact of the temporary suspension of shipments caused by the irregular inspection of many manufacturers, as well as a slight slowdown in exports. Looking back at 2024, in the first half of the year, a comprehensive inspection of all domestic manufacturers related to certification was conducted, and it was announced that Toyota, Honda, Suzuki, Mazda, and Yamaha (motorcycles) were also involved in irregularities. I won't go into the details here, but the act of cheating on certification tests for strictly defined model specifications is not something that can be forgiven.

With Daihatsu resuming its advertising activities in July and Toyota, which had been ordered to suspend shipments until the end, resuming all production on Sept. 2, the industry has at least set a tentative benchmark for recovery. Although there were irregularities, it is not the case that there were actual safety or quality problems with the vehicles in which these irregularities occurred. There are different ways of interpreting this, but it could be seen as a sign that the regulators and the industry are not on the same page and that this is hindering the growth of the industry.

> *Demand for automated equipment in warehouses is expected to continue to grow, and automation of forklifts and material handling equipment is progressing.*

The issue that shook the industry in the second half of the year was the problems at Nissan. On Nov. 7, Nissan announced its financial results for the first half of FY2024. Operating profit plummeted from 336.7 billion yen in the same period last year to just 32.9 billion yen. This is a huge loss of 303.8 billion yen or 90.2% of the previous year's figure. At the same time, Nissan's CEO announced a restructuring plan that includes a reduction in the number of employees by 9,000 (just under 10% of Nissan's global regular employees), a 20% reduction in global production capacity, and the sale of 10% of the 34% stake of Mitsubishi Motors.

As I mentioned in the SUMMARY, if the proposed merger between Nissan and Honda goes through and Mitsubishi Motors also joins the group, it will create the third largest automaker, but now it is completely unknown whether this will really be beneficial to the group. It's not a world where just being a big group is enough. Common platforms and more efficient procurement of materials are often cited as the benefits of such mergers, but whether companies that have long been rivals can immediately become cooperative partners just by being integrated is not just a question of changing the management structure, but rather a question of human interaction: how will people who have been in different environments relate to each other?

At this stage, they have only agreed to "begin discussions on the management integration of Nissan and Honda, and whether or not Mitsubishi will be involved…", but we should be able to see some details by early 2025. The auto industry is the backbone of Japanese manufacturing, and the impact of this integration will be significant.

**South Korea.** The South Korean auto industry has declined slightly for 2024. Amid the global slowdown in demand for BEVs, Hyundai Motor, South Korea's largest automaker, has announced a medium- to long-term management strategy called the Hyundai Way. According to the plan,

- The company aims to sell 5.55 million vehicles per year worldwide by 2030 (a 30% increase from 2023),
- It aims to sell 2 million EVs per year worldwide by 2030,
- It will offer new EV models with a range of over 900 km per charge in North America and China, and
- It will expand its hybrid vehicle lineup from the current 7 models to 14 models.

Of these, I am particularly interested in item (4). Amid the re-evaluation of BEVs and the re-evaluation of HEVs, Hyundai's stance of trying to respond quickly to changes in the market is clear. In an uncertain market environment, Hyundai's rapid change of policy from its previous focus on BEVs is a move to capture market demand, and the larger the company, the more difficult it is to do so. Over the next few years, Hyundai's strategy will be put to the test.

**RECREATIONAL PRODUCTS. Japan.** Overall, there were no major changes during the year, but there were some movements, such as the hourly rental of so-called EV motorcycles for tourists in tourist areas, and the market recognition of EV motorcycles is gradually increasing. This is also an area where many small venture companies are entering the market, rather than major companies such as Honda and Yamaha, so it is still unclear who will become the major players in the EV motorcycle market. There are several voices in the market saying that major players such as Honda may release EV models in 2025, and I am looking forward to that. **PSR**

# Southeast Asia

## Steady Growth Expected, But Uncertainties Exist

**SUMMARY.** Although the economic indicators for 2024 have not yet been released, in general, Southeast Asia is on the road to a steady recovery in 2024. Looking at the growth rate for the July-September period of 2024, in Vietnam (+7.4% y/y), Malaysia (+5.3% y/y), and Thailand (+3.0% y/y), the recovery of exports is supporting the economy. In the Philippines (+5.2% y/y), bad weather had a significant impact, but in Indonesia (+4.9% y/y), growth remained steady.

Although the rate of increase in consumer prices has been subdued, the inflation rate is expected to rise gradually in the future due to improvements in the employment and income environment and import inflation associated with a weak currency. In response to the slowdown in inflation, monetary easing has begun in several countries.

Looking ahead, the economies of Southeast Asia will see a moderation in export growth, but domestic demand will remain strong, and growth will continue to be steady. By country, the Philippines, Indonesia, and Thailand, which experienced slow economic trends in 2024, will continue a steady growth path. On the other hand, Vietnam and Malaysia, whose economies are highly dependent on exports, will experience a slowdown in 2025 after experiencing high growth in 2024 due to a recovery in exports and manufacturing.

Here is the outlook for the five major countries.

**Thailand:** Thailand is expected to continue its economic recovery trend, with a focus on domestic demand, including the restoration of political stability, increased government spending, an increase in the number of tourists, and a recovery in private consumption.

### Author

*Akihiro Komuro is the Research Analyst Far East / Southeast Asia at Power Systems Research.*

*Although the rate of increase in consumer prices has been subdued, the inflation rate is expected to rise gradually in the future due to improvements in the employment and income environment and import inflation associated with a weak currency.*

In terms of external demand, exports of goods and services are expected to continue expanding in 2025 due to increased IT-related demand and measures to promote tourism. Domestic demand is expected to remain strong due to stable employment and income environment and government stimulus measures. The first round of digital benefits (10,000 baht per person for 14.5 million people) started at the end of September, and the second round is expected to be implemented next year. We expect investment to increase due to accelerated budget execution and private investment to pick up as political stability returns.

**Philippines:** The PI economy is expected to remain strong, centered on domestic demand. Consumption is expected to continue to recover, as real income increases due to higher wages and lower inflation resulting from an improved labor market, and as overseas remittances from overseas Filipino workers increase due to the weak peso. In the 2025 national budget, 1.5 trillion pesos, or 5.2% of GDP, was allocated to the infrastructure development program “Build Better More”, but this is the same level as the previous year.

The government is promoting public-private partnership projects to reduce the burden on the national budget. Therefore, private-sector investment is likely to remain strong, helped by the lower borrowing costs associated with monetary easing. In terms of external demand, exports of goods are expected to continue to increase

## *Southeast Asia: Steady Growth Expected, But Uncertainties Exist*

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gradually, while exports of services are also likely to expand steadily, thanks to a recovery in the number of foreign tourists and growth in the IT-BPO industry.

**Vietnam:** The Vietnam economy is expected to remain strong driven by increased exports and a recovery in the property market. Against the backdrop of the U.S.-China conflict, multinational corporations continue to expand in Vietnam, and the cumulative total of approved FDI (Foreign Direct Investment) from January to November was at a high level, in line with last year's strong performance, so manufacturing production is expected to expand steadily. Due to the government's stimulus measures, industries focused on domestic demand, such as services and construction, are also expected to perform well. The government is attempting to stimulate the economy through fiscal policies, such as continuing the 2% reduction in the value-added tax and expanding public investment (up 17% y/y in FY2025), and in July raised the minimum wage for private companies by an average of +6% and the basic wage for civil servants by +30%.

**Indonesia:** President Prabowo has stated that he will continue the policies of the previous administration but has also announced his own new policies. The draft budget for 2025 is expected to slow public investment, as the infrastructure budget, which increased under the previous administration, such as the construction of the new capital Nusantara, is expected to decrease by 5% yoy to Rp 400 trillion, and public investment is expected to slow.

The value-added tax will be raised by 1% from January 2025, but the impact is expected to be mitigated by a 3% tax cut on luxury cars and the distribution of rice to low-income earners. The economy is expected to recover on the strength of rising incomes, easing inflationary pressures, and a shift to monetary easing. External demand is expected to increase, particularly for commodity exports, due to China's stimulus measures, but Indonesia's exports to China may deteriorate due to deteriorating US-China trade relations.

**Malaysia:** The budget deficit for fiscal year 2025 is 3.8%, down from 4.3% in 2024, and the tight fiscal policy will have a negative impact on the economy. External demand is also expected to slow. Private consumption will remain strong due to the low rate of inflation, an increase in disposable income due to higher public sector salaries and minimum wages, and the stability of the labor market. Investment will continue to grow steadily, mainly in the private sector, as the government implements initiatives under its New Industrial Master Plan (NIMP 2030) and attracts investment from semiconductor companies in Europe, the US, and China amid the US-China trade dispute, despite a slowdown in public investment.

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**AGRICULTURAL:** According to a report on the outlook for Thailand's agricultural machinery industry issued by a research company owned by Bank of Ayudhya, Thailand's agricultural machinery market will grow at an annual rate of 3.0-4.0% between 2024 and 2026, reaching a size of 158.5-171 billion baht ($46.5-50.1 billion).

The key drivers are:

- The agricultural services market is recovering due to an increase in the production of grains and livestock products because of an increase in rainfall and improved weather due to the shift from the El Niño phenomenon to the La Niña phenomenon.
- Expansion of the area under important food, energy and industrial crops such as rice, cassava, sugarcane, oil palm and natural rubber.
- Structural problems such as an aging population and labor shortages, and rising labor and service costs due to minimum wage increases
- Government support measures for agriculture, such as the "Smart Agriculture" and "Smart Farmer Program", the "Zero Burning" campaign to reduce air pollution, and the Board of Investment's (BOI) promotion of a Bio-Circular-Green (BCG) economy, etc.

All these factors will have a positive impact on the demand for agricultural machinery. The report also points out that small farmers, who own most of the agricultural land in Thailand, tend to choose low-end agricultural machinery that is inexpensive and easy to maintain and repair.

It concludes that the introduction of expensive, high-tech, high-maintenance, advanced agricultural machinery will face challenges. I think this view is correct. DX and smart agriculture are often talked about as trends, but in Southeast Asia, low-tech equipment is still the norm, and while there is great potential for growth in smartphone-based farm management apps, it is unlikely that high-functionality models will spread quickly in the short term, as the selling price of agricultural machinery itself is still a key consideration.

In Thailand and other Southeast Asian countries, a common issue is the region's growing population and declining number of farmers, and of course sales are affected by the economy, but demand for agricultural machinery is likely to continue to grow in the future.

> *The report also points out that small farmers, who own most of the agricultural land in Thailand, tend to choose low-end agricultural machinery that is inexpensive and easy to maintain and repair.*

**CONSTRUCTION:** The current situation of China's Belt and Road Initiative in Southeast Asia is gradually becoming clear, but it is said that the construction of urban development-related projects, excluding railways and roads, is being suspended in more and more places. In addition, the policies of Southeast Asian countries toward China are mixed, so it is not possible to make a simple assessment of Southeast Asia as a whole. Overall, the demand for construction equipment in each country is strong and vigorous, as forecasted in Q3.

**PASSENGER CARS / MINIVANS and SUVs.** There have been no major changes from our Q3 2024 forecast. In particular, Chinese brands, especially in Thailand, continue to invest and are beginning to take market share from Japanese brands. If Japanese brands strategy continue to maintain the status quo, the balance of power within Southeast Asia is expected to change significantly in a few years.

**RECREATIONAL PRODUCTS:** Now, the forecast for the whole of 2024 is +2.0%, but there are many uncertainties, so we will have to wait a little longer for the release of benchmark statistics from each country before we know the exact results for the whole year. Many people think that the spread of EV bikes in urban areas will accelerate in 2025, but it will still take a year or more to improve the situation with battery stations and road conditions, so I think that engine models will remain the mainstream for at least the next 5-10 years. **PSR**

# India

## 2025 Auto Outlook Shows Resilience and Challenges

The Indian automobile industry experienced a turbulent 2024, with consumer hesitation due to economic uncertainties, extreme weather affecting rural demand, and a broader shift toward eco-friendly vehicles. Despite these challenges, certain segments showed promise, particularly SUVs and electric vehicles (EVs).

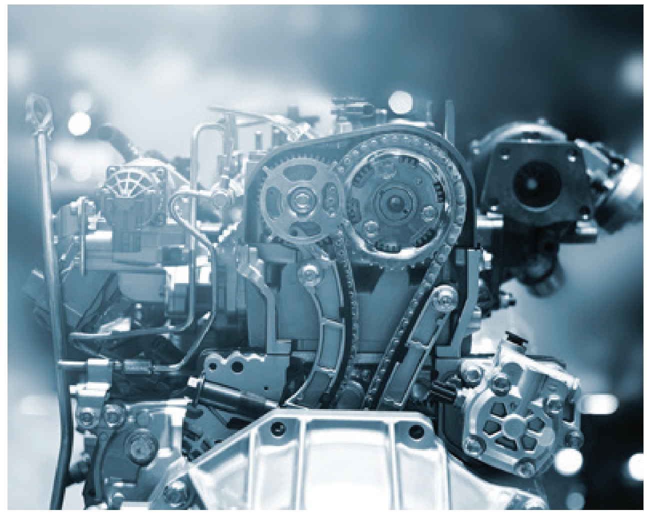
While the passenger vehicle segment posted moderate growth, driven by SUV demand, two-wheelers emerged as a bright spot, showing strong performance with a 13% growth. However, the market was impacted by high base effects and softening demand in urban areas.

As we look to 2025, the industry remains cautiously optimistic. The commercial vehicle sector is expected to recover, supported by key drivers such as infrastructure investment, strong replacement demand, and growth in core industries like coal, steel, and cement. Heavy-duty trucks and buses, particularly high-tonnage models, are likely to continue to lead growth in this sector. With government capex and tax collections expected to rise, demand for commercial vehicles is expected to improve in the latter half of FY25 (India's fiscal year runs April 1 to March 31).

On the passenger vehicle side, new electric vehicle launches, alongside price hikes to offset rising input costs, will likely shape the market. Two-wheelers are expected to maintain strong momentum, but the broader passenger vehicle market may see more modest growth, with electric vehicles continuing to lag in adoption. The government's efforts through initiatives like PM E-DRIVE and PM E-SEWA are expected to play a key role in boosting the adoption of cleaner technologies, setting the stage for a more sustainable future in the Indian auto sector.

Author

*Aditya Kondejkar is PSR Research Analyst, South Asia Operations.*



**RECREATIONAL PRODUCTS:** Motorcycle and Scooters. The two-wheeler industry in India is poised for growth in FY2025, driven by improving rural sentiments, increased infrastructure expenditures, and a heightened preference for personal transport. While the entry-level segment faces challenges due to rising ownership costs and regulatory changes, the premium segment continues to thrive, reflecting a trend of "premiumisation."

Export volumes, though muted, are showing signs of recovery, particularly with the anticipated revival of African markets, which could bolster India's two-wheeler exports.

Key players are leveraging partnerships and innovation to solidify their positions:

- **Hero MotoCorp (HMCL)** remains the market leader and is making significant inroads into the premium bike segment with models like the **Maverick 440**, **Karizma XMR**, **HD X440,** and **Xtreme 160R 4V**, developed in partnership with Harley-Davidson.
- **Bajaj Auto**, in collaboration with Triumph, is expanding its premium portfolio.
- **Royal Enfield** continues to captivate consumers with new launches catering to the aspirational and premium categories.

## *India: 2025 Auto Outlook Shows Resilience and Challenges*

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In the electric two-wheeler (E2W) space, competition is heating up:

- **Hero Vida** updated its electric scooter lineup, contributing significantly to sales with the **V2** model. Competing with rivals like the **Bajaj Chetak**, **Ola S1**, **Ather Rizta**, and **TVS iQube**, Hero's EV presence remains robust.
- **Honda**, a late entrant to the E2W market, has launched the Activa e (with swappable batteries) and **QC1**. The success of these models will determine if Honda can recreate the magic of the **Activa** legacy in the electric era.

The industry's growth in FY2025 will be shaped by its ability to adapt to shifting consumer preferences, regulatory landscapes, and the expanding EV ecosystem.

**Three Wheelers.** The Indian three-wheeler industry showed signs of recovery in 2024, driven by an uptick in exports and a rapid shift to electric mobility.

India's three-wheeler exports witnessed a modest 1.73% growth in 2024, with 273,548 units shipped between January and November compared to 268,888 units in 2023. This marks a rebound after years of decline, including a 26% drop in FY23 and 17% in FY24. The growth comes despite global headwinds such as rising inflation and economic slowdown in key markets like Sri Lanka, Bangladesh, Nigeria, and Egypt.

Recovery in key export destinations such as Sri Lanka, Kenya, and Nepal, coupled with the depreciation of the Indian Rupee, enhanced competitiveness in international markets. Anurag Singh, Advisor at Primus, noted, "While uncertainties persist in key export regions, the current trajectory suggests growth momentum may continue into FY26."

The segment's shift to electric mobility has been remarkable, with electric three-wheelers comprising 56% of total sales in 2024. Out of the 1.22 million three-wheelers sold, 691,011 units were electric. The high adoption rate was bolstered by the FAME II subsidy, although growth moderated under the EMPS scheme

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and remains to be tested under the recently launched PM E-Drive scheme.

CNG-powered three-wheelers followed electric models with a 28% market share (348,885 units), while diesel (137,768 units, 11%), LPG (32,603 units, 3%), and petrol (11,426 units, 1%) accounted for the remaining market share.

The three-wheeler industry is poised for continued growth, underpinned by rising export demand, electrification, and government incentives. However, sustained momentum will depend on how economic uncertainties in key export markets and evolving subsidy policies shape demand in the coming years.

**PASSENGER CARS, MINIVANS & SUVs:** The Indian passenger car market demonstrated remarkable resilience in 2024, achieving record domestic sales despite challenges. Demand for SUVs surged, with their share rising to 55% of passenger vehicle sales, supported by a strong urban recovery, year-end discounts, and the growing popularity of CNG-powered vehicles.

Rather than EVs, alternative fuels drove growth, with Maruti Suzuki leading the way by introducing hybrid technology in smaller cars. This aligns with government policies promoting hybrids as a transitional solution while the EV infrastructure continues to expand, making fuel-efficient options more accessible to a broader customer base.

Looking ahead to 2025, market growth will depend on GDP performance and evolving consumer sentiment, both of which currently appear subdued. Brands have announced steep price hikes, necessitating cautious pricing strategies to sustain demand in a post-pent-up demand era. While higher marketing spending may yield limited returns, sensible pricing and targeted discounting could help stabilize sales. Additionally, the introduction of mass-market EVs will diversify buyer options, though their immediate market impact remains uncertain.

**COMMERCIAL VEHICLES:** India's commercial vehicle (CV) sector has encountered a challenging start to fiscal year 2025, but there is optimism for recovery in the second half. Initially, tepid demand marked the first half, impacted by external factors like erratic weather and slower infrastructure project execution. However, infrastructure spending is expected to boost demand across most CV segments, particularly buses and vans. The industry is seeing shifting customer preferences, with greater focus on medium and heavy commercial vehicles (M&HCVs) such as 55-ton tractor-trailers and higher payload light commercial vehicles (LCVs). Industry leaders are optimistic that these evolving trends, along with government-led initiatives, will drive growth for the sector in the coming months.

*The Indian passenger car market demonstrated remarkable resilience in 2024, achieving record domestic sales despite challenges.*

While the industry is experiencing growth challenges, the future of India's CV market is also being shaped by a significant transformation toward decarbonization. Innovations in powertrains, such as diesel, natural gas, electric, and hydrogen-based technologies, are emerging to support long-term emission reduction targets. Diesel technology, although still dominant, has evolved significantly to meet stringent emission norms, offering better efficiency and lower emissions. Alongside diesel, natural gas-powered trucks, particularly using LNG, are gaining traction, especially for long-haul applications. Additionally, electric vehicles (EVs) are seeing increased adoption in urban commercial segments, spurred by government incentives like the FAME scheme, and are expected to expand into heavier applications over time.

The move towards cleaner powertrains is essential for India's commercial vehicle industry to align with environmental sustainability goals while meeting the demands of modern logistics. Hydrogen-based powertrains are seen as a viable future solution for M&HCVs, offering high energy density and zero emissions, which aligns with India's net-zero target by 2070. However, challenges such as infrastructure development for refuelling and charging stations remain. Government policies, such as BS-VI emission norms and

 

## *India: 2025 Auto Outlook Shows Resilience and Challenges*

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Production Linked Incentives (PLI), are pivotal in driving the sector's transition to more sustainable practices.

The sector's transformation presents significant opportunities for innovation and collaboration across public and private entities, positioning India as a leader in sustainable mobility solutions for commercial transport.

**AGRICULTURAL:** The Indian agriculture sector is poised for steady growth of 3-5% this fiscal year, driven by factors like above-normal monsoon predictions and a 4.8% increase in kharif sowing area. These favorable conditions are expected to strengthen rural cash flows, benefiting both agricultural input companies and farmers. Additionally, the Union Budget's announcement of higher Minimum Support Prices (MSPs) for key crops and robust growth in the agri-input sector have bolstered market confidence. Enhanced government spending in rural infrastructure and initiatives aimed at uplifting the farming community further contribute to an optimistic outlook for the sector.

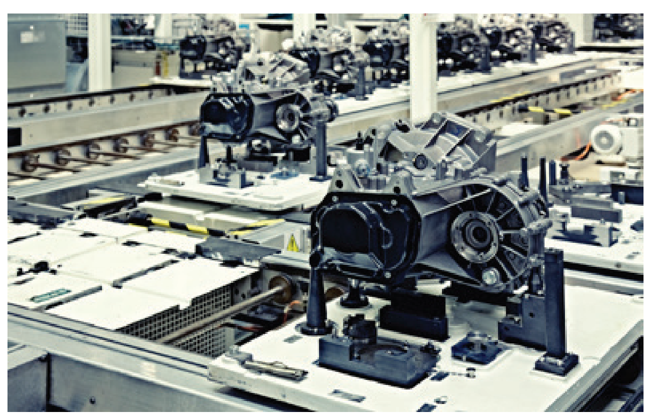
The domestic tractor industry is also projected to grow at a modest rate of 4-5%, supported by improved monsoon conditions, rising reservoir levels, and favorable terms of trade. While northern states like Haryana, Punjab, and Uttar Pradesh are showing encouraging sales trends, southern states are still recovering from last year's 30% decline in tractor sales. In the medium term, growth may moderate due to a high base effect. However, a healthy rural economy, higher grain prices in mandis compared to MSPs, and increased rural demand are expected to sustain long-term growth, reinforcing the importance of agriculture as a cornerstone of India's economy.

Mahindra & Mahindra (M&M), a leader in India's tractor market, is focusing on expanding its international footprint with the launch of its OJA platform in Cape Town. Aiming to double its tractor exports to 36,000 units by FY26, M&M is entering new markets across ASEAN and Europe, including Germany, Italy, and Spain.

**CONSTRUCTION EQUIPMENT:** The Indian construction equipment (CE) industry is witnessing significant growth, driven by ambitious infrastructure initiatives such as the National Infrastructure Pipeline (NIP), Gati Shakti, and government programs like PMGSY, Bharat Mala, and the Smart Cities Mission. These projects are fueling demand for essential equipment such as excavators, backhoe loaders, and road construction machinery, supporting both urban and rural development. Private sector investments in real estate, industrial corridors, and renewable energy further enhance the sector's momentum, solidifying its critical role in driving India's infrastructure expansion.

The upcoming implementation of Bharat Stage V emission and safety standards in 2025 marks a transformative phase for the industry, aligning Indian manufacturers with global benchmarks and unlocking export potential in markets like the EU and U.S. This shift is fostering innovation in sustainable technologies, including electric, hybrid, and alternate fuel-powered machinery, as the industry adapts to rising global demand for eco-friendly solutions. The emphasis on fuel efficiency and safety also positions the sector as a leader in sustainable construction practices.

With infrastructure spending accelerating and mega projects spanning highways, metro systems, and rural connectivity on the rise, the CE industry is poised for sustained growth. Both domestic and international players are contributing to the sector's global competitiveness, establishing India as a hub for CE innovation and manufacturing. As the country advances toward its goal of becoming a developed economy by 2047, the construction equipment industry will remain a vital driver of this transformation, bridging the gap between development goals and global opportunities. **PSR**



# South America/Brazil

## EU And MERCOSUR Sign Trade Agreement

### ECONOMY

SA

**South America.** EU-MERCOSUR. After 25 years discussing a trade agreement, finally EU and MERCOSUR signed a trade agreement Dec. 6, 2024. Members of MERCOSUR in South America are Brazil, Argentina, Uruguay, Paraguay and Bolivia. The agreement will create a trade zone of 718 million people and GDP of USD 22 trillion,

This is good news considering the uncertainties faced by the global economy.

There are several steps forward to reach the final terms and details of the agreement, but the basic terms are defined.

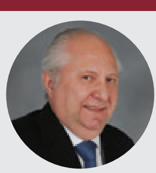
**Economy.** South America´s largest economies are forecasting small but positive GDP growth for 2025.

**Brazil.** Brazil is facing a paradox in terms of economy: GDP is growing 3.4% in 2024, (final numbers are not available as we produce this forecast.) and unemployment has reached 6%, one of the lowest levels in history.

At the same time the Central Bank has increased the interest rate due to the market perception that the government expenses are growing too quickly and generating deficits. Local currency is depreciating vs USD, which feeds the inflation.

In this scenario, the government presented a plan to reduce expenses in the coming years, which was considered by the market to be insufficient, so the expectation is that the government would present a more robust expenses reduction plan early in 2025.

Author



*Carlos Briganti is the Managing Director of South America Operations at Power Systems Research.*

The combination of an increasing interest rate plus expense reduction would end up with a GDP reduction to 2% in 2025.

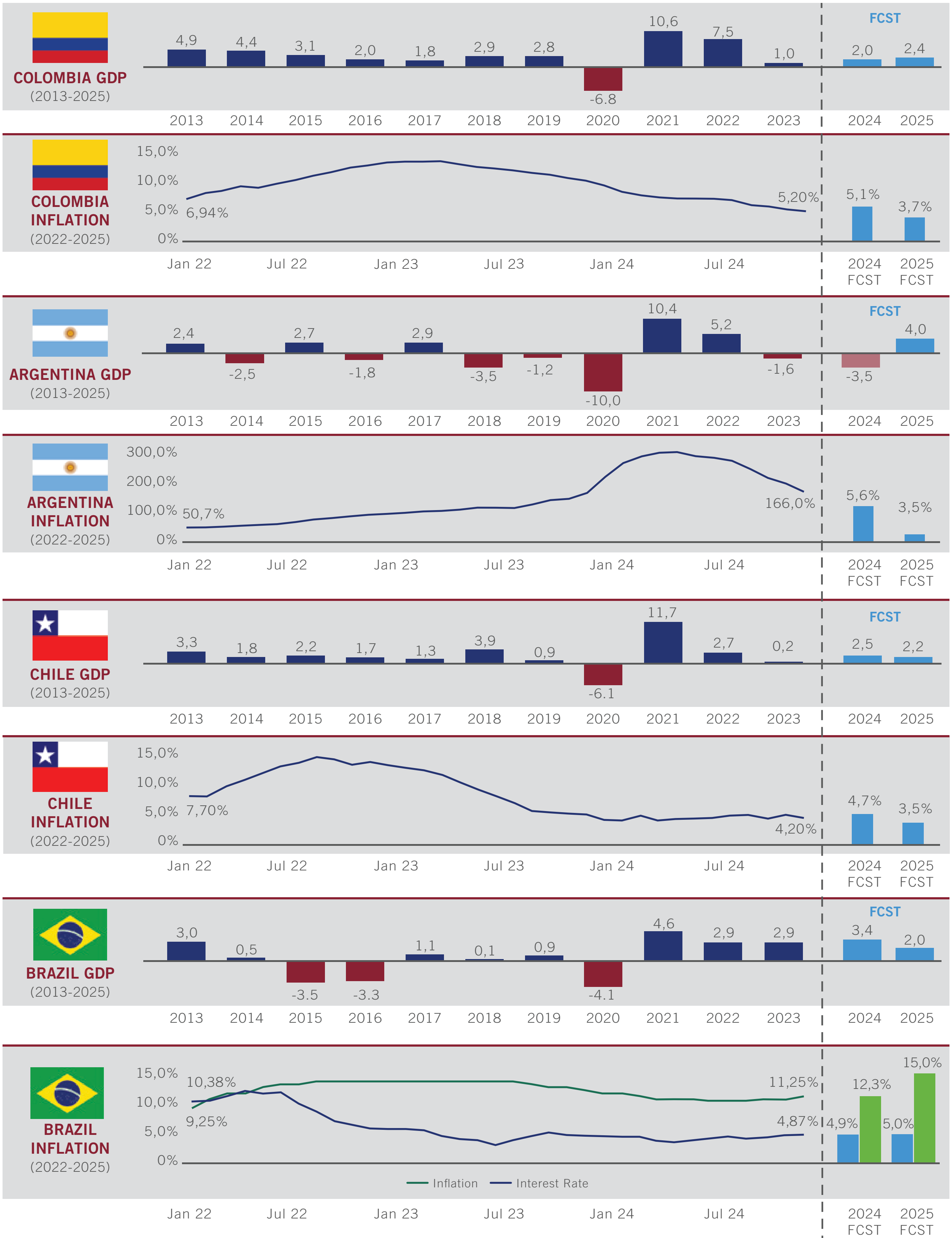
Brazil still has USD 450 billion in international reserves which is enough to prevent a crisis.

**Argentina, Colombia and Chile.** In **Argentina**, President Javier Milei, has continued his plan to drastically reduce government expenses. Inflation dropped from 13% in December 2023 to 2.4% in November 2024. Accumulated 12-month inflation in 2024 reached 160% vs 250% in 2023. The public accounts have reached a +1.2% surplus. GDP is expected to grow 4% in 2025 vs -3.5% in 2024.

Despite these achievements, strong recession is impacting people and poverty has accelerated, reaching

## GDP AND INFLATION BY COUNTRY

Source: Central Bank of each country



## *South America/Brazil: Brazil's GDP Growth Is Exception in South America*

***Continued from page 38***

50% of the population. Lack of international reserves has also prevented Argentina growing thru international trade.

**Colombia and Chile.** In 2024, both countries achieved GDP growth in the range of 2%, and inflation in the range of 5%. While GDP will remain at the same level in the coming years, the trend for inflation is to reach 3%.

### LEGISLATION

**Brazil – LV and MHV.** New Legislation for emission and energetic efficiency was launched by the government on Dec. 30, 2023. The program's name now is **MOVER** (Green Mobility and Innovation). Congress has approved the incentives of the plan, but emissions regulations have not been defined yet.

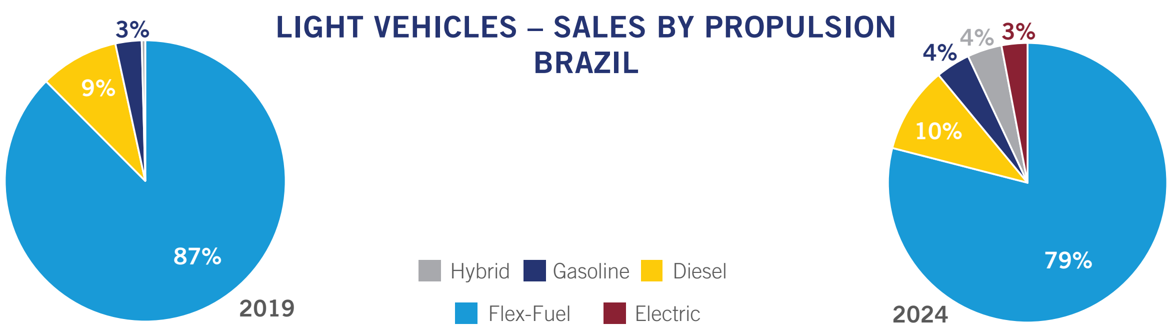
There is a clear direction on measuring CO2 emissions using the well-wheel concept which could be favorable to biofuels.

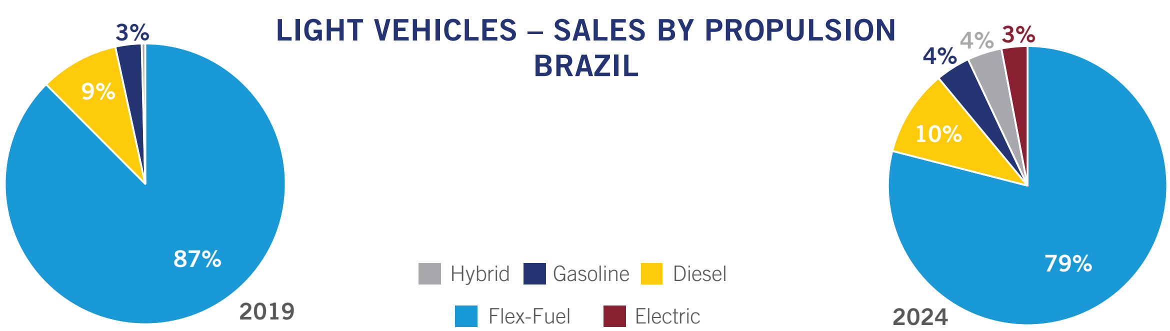
**LV:**

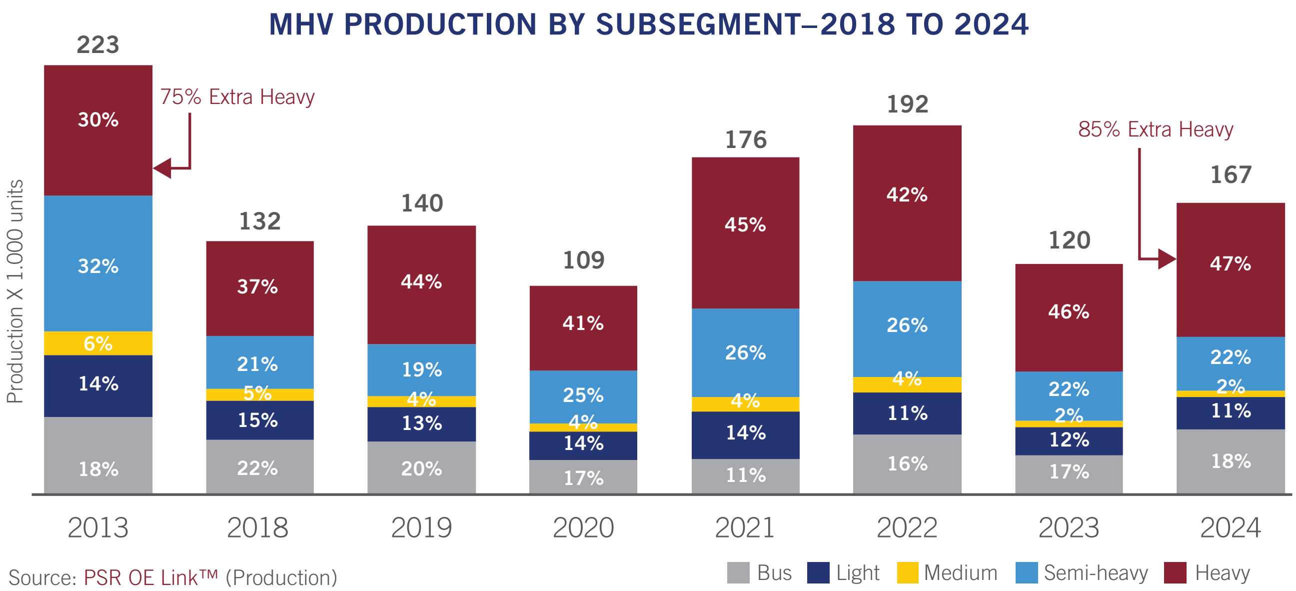
- **Emission legislation:** Continuous reductions of toxics emissions are already contemplated with introduction of Proconve L8 starting in 2025. This step of legislation also covers energetic efficiency, and it is fully aligned with US Tier 3.
- **Next steps** will be detailed by MOVER program.
- **EV and HEV:** Since last July, the Government increased import tax for EV and HEV from 10% to 20%, and will increase to 28% in July 2025, and 35% in July 2026.
- **As an incentive** for biofuels, the government has approved an increase of Ethanol content in Gasoline to 27%.

**MHV:**

- **Biofuels.** Government agency has just approved the increase of biodiesel in fossil Diesel to 14% or B14. The plan is to reach B25 by 2030. There is a dispute between Petrobras, supported by the OEM´s, versus soybean farmers, supported by the government. Current biodiesel, which formula is an Ester is considered more harmful to the Diesel IC process as its % increases. Other solutions such as HVO and R10 are considered more adequate to improve emissions reductions as well as to improve efficiency are now approved. The expectation is that the MOVER program can give more directions on this.






Source: PSR OE Link™ (Production)

## *South America/Brazil: Brazil's GDP Growth Is Exception in South America*

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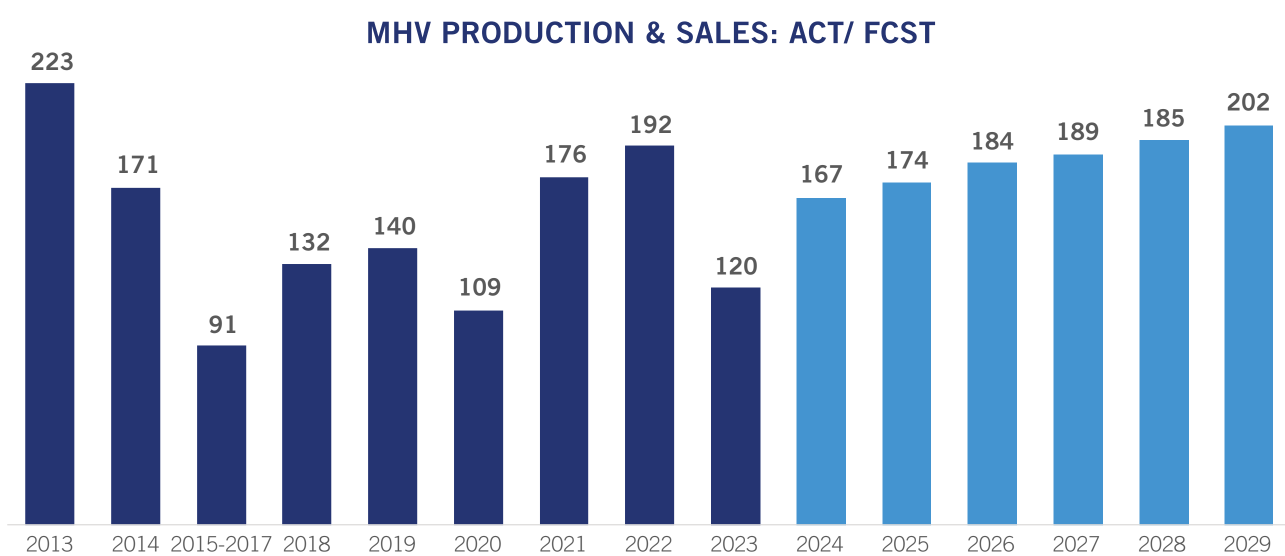
- **Safety.** 2025 – Introduction electronic stability system for HD trailers.
- **Electrical Buses.** Recent change in Sao Paulo city legislation move the target to replace 1000 Diesel buses to Electrical per year. The population of urban buses in Sao Paulo is 13,000 units.
- **In 2028,** there is a planned introduction of Anti Intrusion Bar and Crash Test legislation.

**Brazil Motorcycles.** PROMOT M5 (equivalent to Euro 5) standards, was introduced Jan. 1, 2023, for new models and was introduced Jan. 1, 2025, for all new vehicles. The standards will apply to all vehicles sold in Brazil.

**Off Highway Machines (CE and AG).** MAR II (Equivalent to Stage IV): AEA (Automotive Engineering Association) has submitted to CONAMA (National Environment Council) approval. The introduction of new legislation would be in 2028, starting with new models above 130 KW. Pre-buy is expected when the date is defined.



## South America/Brazil: Brazil's GDP Growth Is Exception in South America

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### COMMENTS BY SEGMENT

### LIGHT VEHICLES: PASSENGER CARS, MINIVANS, SUVS, LCV

**Brazil.** Total LV production was up 3.6% in 2023, and is growing 10% in 2024 reaching 2.6 million, and forecast to reach 3.0 million in 2029.

By subsegment, LCV is growing 13.6% in 2024 and will keep growing at an average of 5% in coming years. The same trend for SUV, growing 11% in 2024 and keeping growing at average 7% in the coming years.

Passenger cars turned down – 5.4% in 2024 and is forecast to have a small growth in the coming years.

Chinese OEMs are gaining market share increasing penetration of EV and HEV, but government is increasing import tax for these vehicles from 20% to 28% in July/2025 and to 35% in July/2026.

Increase of imports tax, as stated before, is driving Chinese OEMs to localize production in Brazil by 2025. Brazil would be the production hub for South America.

**Argentina.** The 2024 economic situation drove a reduction of total LVs, as a combination of Passenger Car -27%, LCV – 21%, and SUV +3%

Recovery is expected in 2025, Passenger Car +8%, LCV +11% and Passenger Car +8%.

**Colombia.** As a result of the current economy plus the phase out of the GM operations in the country, the production is forecasted to drop – 60% for LCV and -30% for Passenger Car in 2024 (when final numbers are available).

### MEDIUM AND HEAVY VEHICLES

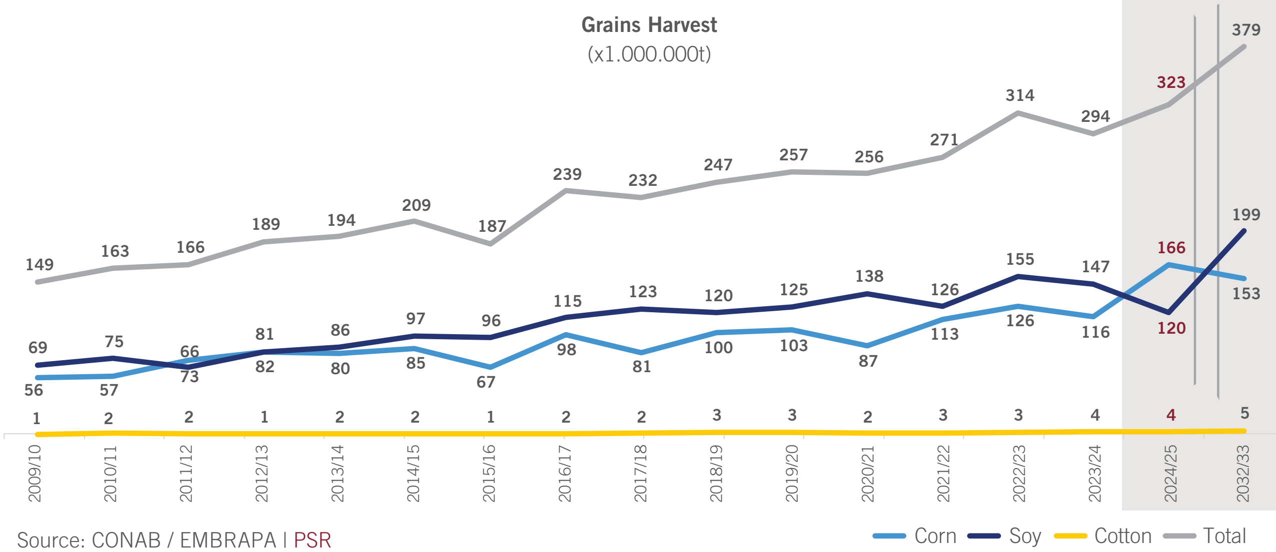
**Brazil.** 2024 recovery is now forecasted to 167,000 units, which means a gain of 38.7% over 2023. This result is one of the reasons for Industrial GDP growth as stated above.

Accumulated results are combined with our forecast to reach volume of 202,000 units by 2029.

As stated in Q1 2024, it is important to note that the mix of production in 2013, which is considered the record year, has a production mix totally different from 2024. The HD subsegment has gained share in total production as shown below:

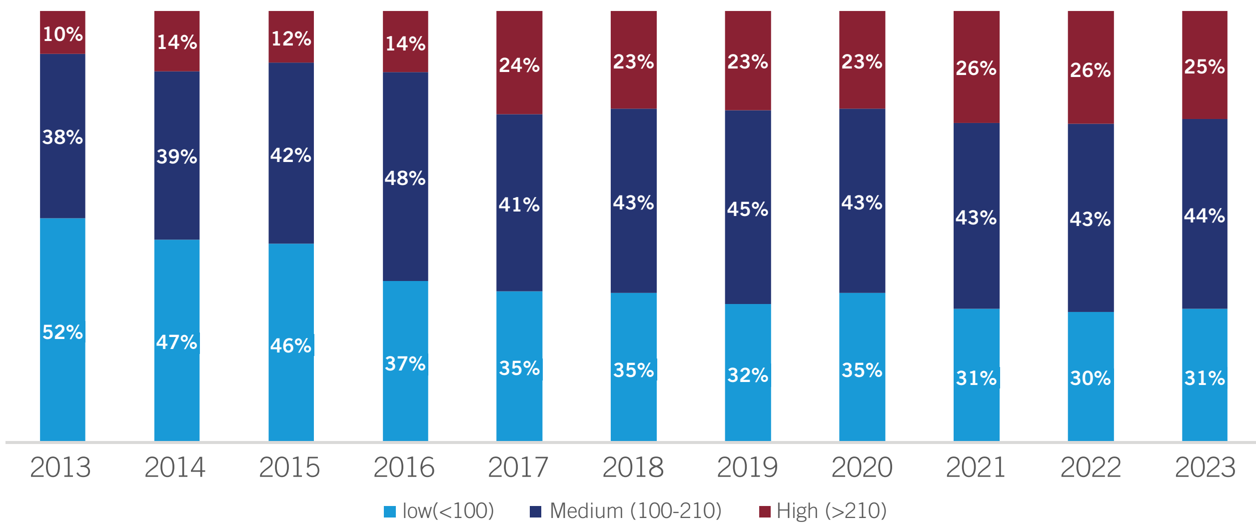
Additionally, as a trend over the years Extra-Heavy or GCW above 45 tons represents approximately 85% of Heavy subsegment.

## GRAIN HARVEST ACT/FCST

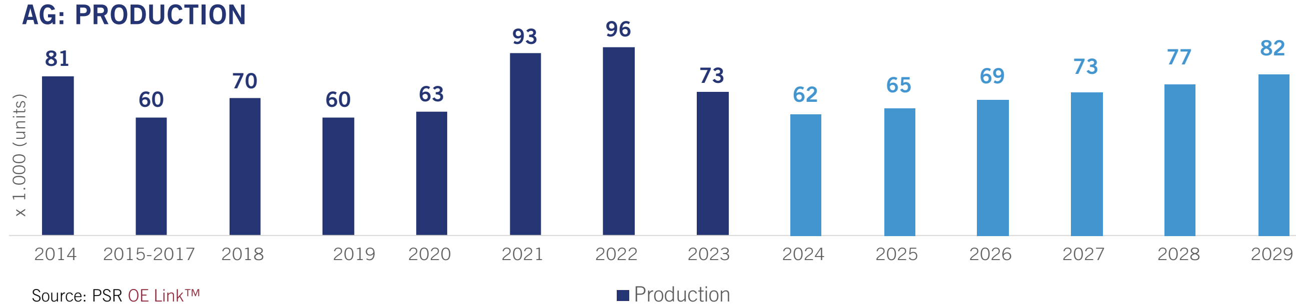



Source: CONAB / EMBRAPA I PSR

## TREND: MACHINES SOLD ALONG LAST 11 YEARS (PER POWER)




## AG: PRODUCTION




## *South America/Brazil: Brazil's GDP Growth Is Exception in South America*

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Vehicles fueled by NG or Biogas are increasing their penetration in the segment in sugar cane and garbage plants applications. Currently it represents only 0.2% of sales but the forecast is to reach 5% by the end of this decade.

EV units are also slowing their share due to urban electrical buses and the last mile applications. Our forecast is that MHV Electrical will reach 5 % of the market share in the segment by 2030 but given the recent change in Sao Paulo city legislation, it seems too optimistic.

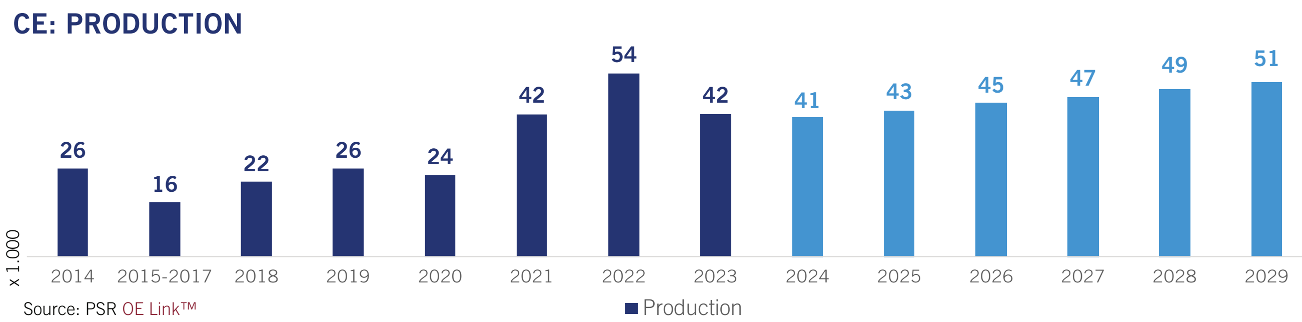
**Argentina.** In 2024, MHV is growing 14% mainly due to exports to Brazil. The recovery in 2025 plus transference of 3000 units from Brazil to Argentina ends up with a growth of 39% for 2025.

**Colombia.** After a downturn of -35% in 2023, a new downturn of – 60 % is forecasted for 2024 because of the economy and GM phase out.

### AGRICULTURAL MACHINES

**Brazil.** Overall, the agricultural segment keeps doing well and Brazil is taking advantage of being one of the largest agricultural commodities producers in the world. Despite this, 2024 was a difficult year for agriculture in Brazil due to:

- **Grain harvest** 5% lower than 2023, not considering yet flood in South of the country.
- **Commodities prices** such as soybean and corn are at the lowest level of the last two years.
- **Reduction** of agricultural machines exports, mainly to Argentina.
- **Machine power** is increasing, reducing machines units.




## *South America/Brazil: Brazil's GDP Growth Is Exception in South America*

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Based on this, after a downturn of -24% in 2023 we are again forecasting a -17% downturn for 2024, when final numbers are available.

Record harvester for the next period brings an optimistic scenario, as well as strong $ USD for exporters.

An increase in interest rate will impact the segment, and we are forecasting a recovery of 6%.

The market is moving to the Rental business model which can leverage acquisition of new machines. At same time large properties are concerned with reducing $CO_2$ emissions, which also need new and modern machines. The implementation of 5G will need more connected machines to enjoy productivity increase, but all are drivers for coming years.

**Argentina.** After facing weather problems in last three years resulting in poor harvests, Argentina will recover in 2024, reaching record results in grain harvests.

After growing 13% in 2023, machine production will decline -20% in 2024, then grow 3% in 2025. The recession drove the farmers to keep current machinery in 2024, which also impacted imports from Brazil.

### CONSTRUCTION MACHINES.

Brazil as the hub of production for South America region reached 54,000 units produced in 2022, which is way above the former record of 32,000 units produced in 2013.

In 2023 market turned down - 16.7% due to high interest rates impacting construction activities and the reduction in AG segment where CE are used. Additionally, exports are moving down. Construction activities had a good level of activity in 2024 due to the government program to build small houses for low-income people.

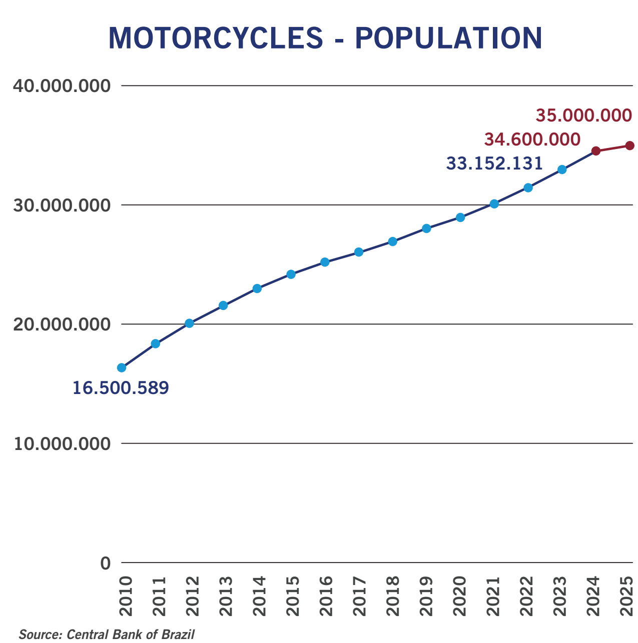
Considering the increase of the interest rate our forecast is 7% mainly due to Agriculture, Mining and Infrastructure.

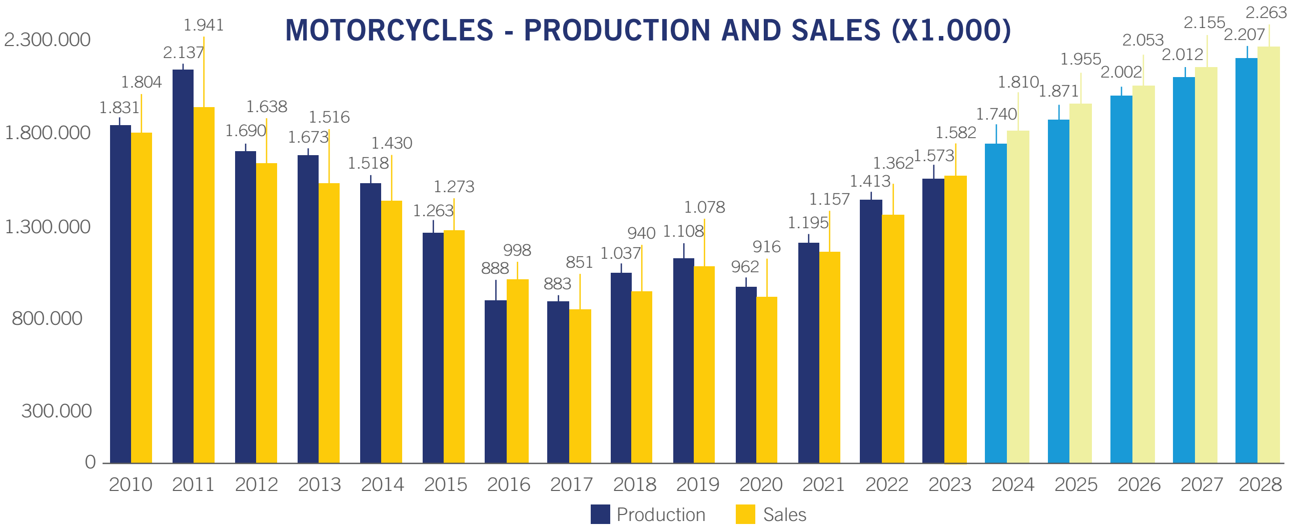
The introduction of 5G as well as initiatives in mining and steel mill segments to reduce $CO_2$ emissions will also require replacement of old machines.

### RECREATIONAL PRODUCTS

The price increase of LV and fuels plus e-commerce activities boosted the motorcycles segment in Brazil.

In 2023 the volume grew 11% over 2022. Our forecast is 10% growth in 2024 to reach volume in range of






## *South America/Brazil: Brazil's GDP Growth Is Exception in South America*

*Continued from page 44*

2.3million units in 2028, which is higher than the record year of 2013.

The majority of motorcycles produced in Brazil already use fuel injection, so PROMOT 5 legislation will not impact volume.

In Colombia, the segment of motorcycles is growing 5% in 2024, while in Argentina the segment is flat due the economic crisis.

### INDUSTRIAL.

Industry GDP will grow in 2024. Since there is a mix of products in this segment not linked to industry, our forecast is in the range of 2% for 2024. There is a remarkable change in the production level of Forklifts in Brazil due the penetration of Electrical units powered by Li batteries imported from China.

Brazilian OEMs are launching similar models in Brazil to recovery the production level. At same time, the share of Electrical models will increase over the IC powered units. This is not considered yet in our forecast.

### POWER GENERATION.

After the pandemic, the risk of power shortage is over, but the segment was still up 14% in 2023. In the coming years due to the increase of capacity generation while the demand remains flat, our forecast is low growth since electricity in the "free market" is cheaper.

The impact of fires is not considered yet in our forecast, but the trend is to increase the demand.

### RAILWAY.

This segment maintained low demand in the last decade. Now, with new infrastructure plans announced by the government in September 2021 based on legislation MP 1065/2021, the segment has grown up +110% for 2021. Our forecast is an average of 40% growth per year for the coming years since the new government keeps the plan of railway expansion. There is an increase in 2024 vs 2023, mainly due to low demand in the last year, but there is no investment from the government side to increase the demand. **PSR**

# North America

## 2025 North American Economy Depends on US Election

NA

**SUMMARY.** It is too early to say how the new administration will affect the economy at this point. The results of the presidential, senate, house, and gubernatorial elections will have varying effects on how 2025 turns out, but we will have to wait and see how fiscal policy is shaped and how that may affect economic conditions moving forward. However, the U.S. economy might be in its best shape since prior to the COVID-19 outbreak.

Inflation has cooled off, unemployment is quite low, the Federal Reserve is cutting interest rates, and a recession that many forecasted, has not materialized yet. Again, the uncertainty of the economic outlook is primarily based on the new administration's government and what policies it may pursue.

North American total production, including all market segments, was up just less than 1% in 2024 over 2023. The forecast for 2025 is at 0.3% for market growth. The expectation for 2025 production is that many of the market segments (AG, Construction, Industrial, and Rec Products) will be down over 2024. A few segments are showing some growth; these include Power Generation and Railway.

A decent rebound in growth is expected in 2026 of around 4%. As mentioned, AG, Construction, and Industrial segments are projected to be down for 2025. Overall, for total North American production, stronger rates of growth in 2027 and 2028, 5% and 6%, respectively are expected.

**AGRICULTURAL.** Agricultural machinery production for 2024 was down almost -1.5%. 2025 is currently forecasted to have a -2.7% growth rate from 2024. Crops (cash receipts) are down in 2024 10% over 2023 and may be down in 2025 also. The war in Ukraine is still having a dramatic negative effect on wheat and fertilizer exports and also contributes to a slowdown in this segment. PSR anticipates 2026 will be up with a growth rate of 3.3%. Demand should continue to pick up and crop yield will be better by 2027 and 2028.

**CONSTRUCTION.** PSR is forecasting that 2024 and 2025 equipment production will drop, with growth rates of -2.5% and -2.4%, respectively. Construction equipment's undeveloped demand is a factor as well as higher costs and some lingering supply chain issues. However, government expenditures for infrastructure expansions should help with new equipment demand, as well as lowering interest rates. PSR does expect growth again in 2026. 2026 growth rates are projected to be up 3.7%. 2027 growth is projected to be around 3.6%.

**INDUSTRIAL.** The Industrial segment follows similar growth patterns as the Construction segment. Industrial equipment production is expected to slow down in 2024 and 2025. With predominant backorders, this is predicted to continue to increase into the future. Last year's growth, 2024, is projected at -4.6% and 2025 at -4.3%. PSR is projecting a growth rate of 4% in 2026 over 2025 and with more positive growth of 4% in 2027.

**MEDIUM & HEAVY VEHICLES.** Medium and heavy commercial vehicle production is expected to decline by 4.3% this year over last year, 2024. While sales in the class 8 segment are expected to decline by around 5% this year, the OEMs continue to prepare for the anticipated pre-buy leading up to the GHG emission regulations starting in 2027.

The OEMs are expected to slow production in the first half of the year as truck inventories are currently at high levels. The freight market remains weak, and the fleets have concerns about purchasing new trucks in this economic cycle. Production is expected to ramp up again in mid-2025. Demand in the medium truck segment remained fairly strong in 2024 but is expected to slow in 2025. The impact of the new incoming presidential administration with regard to the phase 3 emission regulations scheduled to take effect for MY 2027 trucks, is unknown at the time of this writing. **PSR**

### Author

*Jim Downey is Vice President-Global Data Products at Power Systems Research.*

# V. Research Methodology

**Power Systems Research (PSR) Research Methodology**

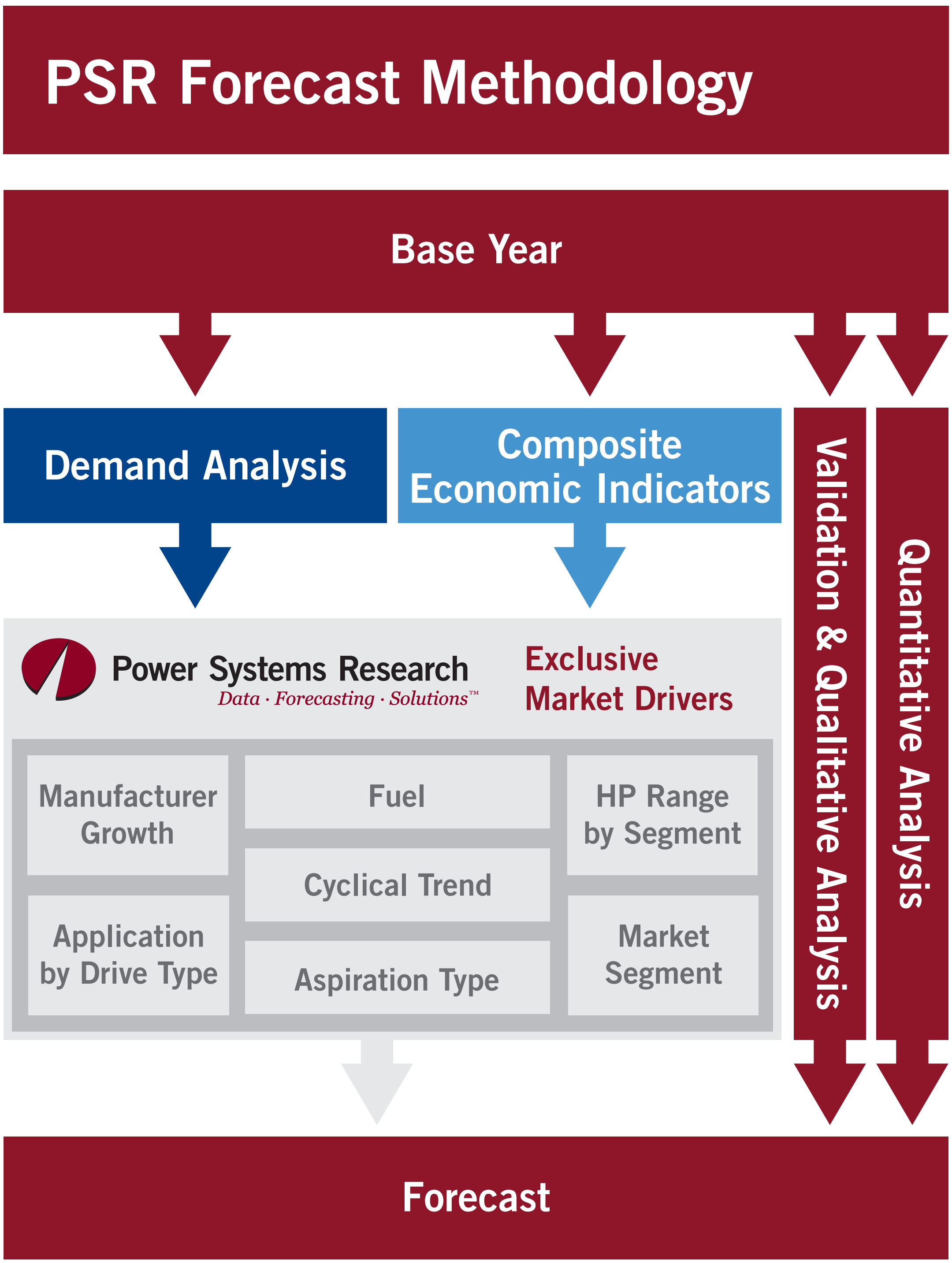
Research begins with the gathering of information from primary and secondary sources. Next, the PSR analyst team reviews and validates all data against industry benchmarks. If our analysts discover anomalies in the data, additional research and validation is performed before publishing.

## PSR RESEARCH METHODOLOGY

# VI. Forecast Methodology

**Power Systems Research (PSR) Forecast Methodology**

The analysis begins with the Base Year and key historical data then adds current and future economic indicators and market demand. Next, our exclusive market drivers are entered and the Power System Research proprietary algorithm is applied. Extensive analysis and discussion by our PSR Analyst team validates and produces the forecast.



# VII. Contact Information

## CONTACT US
### Purchasing and Inquiries

Headquarters
St. Paul, USA
+1 651 905 8400
info@powersys.com

Detroit, USA
+1 734 545 0474
infode@powersys.com

Beijing, China
+86 10 5737 9201
infocn@powersys.com

Campinas, Brazil
+55 19 3305 5657
infosa@powersys.com

European Headquarters
Brussels, Belgium
+32 2 643 2828
infobr@powersys.com

Frankfurt, Germany
+49 160 1807 044
infoge@powersys.com

Pune, India
infoin@powersys.com

Tokyo, Japan
+81 90 9139 0934
infojp@powersys.com

## About Power Systems Research

Power Systems Research (PSR), established in 1976, is the leading source of data, analysis and forecasting on the global production of engines and engine-powered equipment, including class 8 vehicles. One of its databases, EnginLink,™ includes production figures down to the model level for OEMs in key market segments, such as commercial vehicles. PSR's global research network includes eight offices and stretches across 200 countries and four continents.

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