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Alternative Power Report

By *Guy Youngs*, Forecast & Adoption Lead



*Guy
Youngs*

What Is the Future of Alternative Power?

Making the switch from diesel powered machines to a low carbon option is not as simple as some would argue. Switching to electric has drawbacks such as their modest power density, which currently holds back their ability to power heavy equipment for a full working day. Cost is another important consideration.

So, what about HVO (Hydrotreated Vegetable Oil)? HVO, which is of particular interest to many equipment manufacturers, is obtained from cooking oil waste, grease and fat residues, waste fats and vegetable oil. The manufacture and use of HVO is nearly climate-neutral when only renewable energy sources are used in the production process. The problem with this fuel is its availability.

Ok, so what about hydrogen fuel cell technology or hydrogen as a fuel within an internal combustion engine? Cost appears as an issue for Fuel Cells, and while Hydrogen ICEs are a (relatively) simple conversion of a diesel engine, in both cases fuel supply, and its cost is a very big factor.

Source: *International Construction* [Read The Article](#)

PSR Analysis: Again, a high level article but Contractors/Machine Owners may have anxiety about their equipment purchases for some time to come as there is no single power source that will replace diesel in the entire construction industry, but rather each machine will need to use a specific power source dependent on its duty cycle and costs.

BYD Establishes JV To Produce Sodium-Ion EV Batteries

Chinese automotive conglomerate BYD is establishing a joint venture with Huaihai Holding Group to establish themselves as the world's largest supplier of sodium-ion batteries for small EVs. Previously, we've seen CATL (BYD's main competitor), announce plans to produce sodium-ion cells.

Sodium-ion batteries deliver a lower energy density than traditional lithium-ion cells but cost notably less to produce. Their main component (sodium) is also safer and more abundant than lithium. The chemistry is ideal for smaller EVs that generally deliver less range and have less demand on a daily mobility basis.

Source: *Electrek* [Read The Article](#)

PSR Analysis: This could potentially be a game changer. If the weight, volume or energy density of the new battery chemistry isn't too far out of line, this could be a major upset. It's also another example of how rapidly the battery market is changing.

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Alternative Power Report

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The mass production of batteries and EVs that use them, are beginning to show many incremental and beneficial changes that are a result of the large scale spending on research and development.

Offshore Hydrogen Could Be 10x Cost Of LNG

European energy policy makers apparently are taking a DNV report on offshore hydrogen manufacturing seriously. But this doesn't stand up to scrutiny, in either its assumptions or its conclusions, according to this article.

DNV is an international classification organization that sets standards for ships and offshore structures, according to Wikipedia.

There's a rule of thumb for construction. Whatever something costs to build onshore, it costs 10x to build offshore and 100x to build on the ocean floor. Offshore wind farms make sense because they are essentially untended – there is no operations labor offshore. Construction and maintenance are it.

The article then compares this to an offshore electrolysis plant and suggests that the DNV report (which is so crucial to the EU's thinking) doesn't include this in their calculations.

Source: *CleanTechnica* [Read The Article](#)

PSR Analysis: This DNV report concludes that producing hydrogen offshore is very expensive, but that Europe should go ahead with this. The details in this report are quite compelling and this suggests that the DNV report and its recommendation should be reviewed.

VW Claims New Dry Battery Process Is Money-Saver

Battery technology is constantly evolving as scientists, and vehicle and battery manufacturers seek to improve battery technology that will lead to less expensive electric cars with longer range and faster charging times. In the latest development, Volkswagen says it has come up with a new dry coating process that will allow it to lower the price of its electric cars by several hundred dollars. Dry coating reduces energy consumption in the production of battery cells by 30%, which could lower the cost of electric cars by several hundred dollars per vehicle.

Source: *CleanTechnica* [Read The Article](#)

PSR Analysis: The mass production of batteries and EVs that use them, are beginning to show many incremental and beneficial changes that are a result of the large scale spending on research and development. We can expect many more of these changes over the next 10 to 15 years as the technology continues to develop. **PSR**

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Global Report

Q2 2023 Economic Update Is Mostly Positive

By *Guy Youngs*, Forecast & Adoption Lead



*Guy
Youngs*

SUMMARY. There are several factors that could contribute to modest growth in the second half of this year as we await final numbers for the quarter. This should lead to total production globally growing at +2.6% in 2023 (vs 2022). Given this 2023 growth, the outlook for the years into 2028 remains positive.

Apart from Russia and Ukraine, the main country to show a decline is South Korea, while Japan is barely positive. However, the segment picture shows some differences.

- **Fuel prices** have eased recently, but they remain a serious concern.
- **Supply chains** remain constrained.
- **The war in Ukraine** shows no sign of a speedy conclusion, despite recent successes by Ukraine.
- **Ukrainian exports** of wheat, other grains and fertilizer continue but are still low compared to pre-war levels.
- **Inflation** continues to be a concern and central banks are raising their interest rates. This will pose a risk to economic growth in all regions. Inflation and price increases are putting OEMs in a tricky situation.
- **Risk of recession** appears in several countries including the USA and Germany.
- **Covid** is still lingering with global deaths now at over 6.9 million, but the death rate has slowed considerably.
- **Latent demand** for machinery keeps bursting out into the open.

AGRICULTURAL. The Agricultural sector is showing mixed signs with an overall decline in 2023 (-4.4%) but with growth expected in 2024. Apart from Russia and Ukraine, China declines in 2023, but then recovers, while South Korea and Japan both are forecast to decline in 2023 and 2024 before recovering to positive growth. The other major Agricultural countries (India, Germany, Italy, and United States) remain positive throughout the time period.

CONSTRUCTION. The global construction equipment sector is expected to decline -2.8% in 2023 but is expected to bounce back in 2024 and for the rest of the forecast period. In 2023, China (-11.9%), USA (-3.8%) and India are expected to decline in 2024 (it's an election year). From 2024 all the major construction countries are expected to be positive.

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INDUSTRIAL. The Industrial segment is expected to maintain positive growth throughout the forecast period with 2023 and 2024 growing at 1.6% and 2.2%, respectively. All the top five countries are expected to be positive throughout the forecast period, but Mexico is expected to decline in 2023 and 2024 before remaining relatively flat from there on.

LAWN & GARDEN. Lawn & Garden is expected to maintain positive growth throughout the forecast period with growth of between 1.8% and 5%. The top five countries (United States, China, Germany, Sweden and Italy) show mixed results with only Italy suffering modest declines in 2023 (-0.1%) and 2024 (-1.6%). Otherwise, growth is positive. Of the countries with smaller volumes, Slovakia is expected to continue to decline throughout the period.

LIGHT COMMERCIAL VEHICLES. This segment is expected to maintain positive growth throughout the forecast period with growth of between 2.0% and 3.7%. Of the top two countries, only China maintains positive growth throughout, while the other majors have mixed results, and five countries show a decline in 2023 (USA, Japan, Thailand, Germany and France).

MARINE AUXILIARY/MARINE PROPULSION. After a strong recovery in 2021 and 2022, the Marine segment is expected to show growth from 0.9% to 1.9% during the years to 2028. Of the two major producing countries Japan's growth ranges from 0.5% to +3.1%, while the USA ranges from -0.4% to +2%

MEDIUM & HEAVY VEHICLES. This segment is expected to grow in 2023 (+3.0%) but the outlook for the remaining years shows that growth is a bit erratic as it ranges from -2.2% (in 2024 to +4.8% in 2025). The world's largest producing country (China) remains strongly positive during the forecast period with growth ranging from 3.0% to 7.9%.

PASSENGER CARS/MINIVANS & SUVs. These segments were heavily affected by the pandemic, but despite this situation growth in 2023 is expected to be +2.6% and remain positive through the rest of the forecast period with growth of 3.0% to 4.8%. Of the top five countries (China, United States, Japan, India and Germany), only Japan shows any decline (-0.3% in 2023 during the rest of the period).

POWER GENERATION. Power generation is expected to grow strongly during the forecast period with growth ranging from +2.1% to +4.8%. All the top 10 power generation countries show good growth for every year of the forecast period with growth figures ranging between +0.7% and +10.0%

RAILWAY. Global railway production is expected to grow through 2028. The next years (2023-2028) should average growth rates between +4.5% to 7.1% and mostly following standard cyclical replacement rates. There will also be a push to move to more alternative drive types at that time as well.

RECREATIONAL PRODUCTS. This segment follows consumer products and includes items such as motorcycles, ATVs, scooters, personal watercraft, and snowmobiles. Now, with higher inflation and rising costs, 2023 market's growth

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Global Report

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In recent years, there has been a noticeable shift towards environmentally friendly and energy-efficient outdoor power equipment in the global market.

is slowing to +3.0%. Growth rates for the next years are driven by China and India which dominate the market (over 80% share) and will remain in the range of +3.0% to +4.4%.

The key factors to better performance in recreational products are low cost 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 +7.6% in 2022, Battery Electric is expected to grow between +6.6% and +12.5% throughout the forecast period, while ICE growth rates start the period at +2.0% (in 2023) and then grow sporadically between +1.2% and +2.3%. Battery Electric is expected to grow from 14.0% of the market in 2023 to 20.5% by 2028, while during the same period ICEs are expected to decline from 83.5% of the market to 75.7%.

Outdoor Power Equipment Shifts To Electric

By *Mike Aistrup*, Senior Analyst



*Michael
Aistrup*

In recent years, there has been a noticeable shift towards environmentally friendly and energy-efficient outdoor power equipment in the global market. This shift is evident in both the consumer and the construction markets. Battery-powered tools have gained popularity because of their lower emissions, reduced noise levels, and convenience.

Listed below are several trends developing in the outdoor power equipment global market.

- An increase in reliance on robots because of the development of AI technology.
 - o The global market for smartphones has grown significantly which has led to the creation of robotic lawnmowers for both personal and business purposes that can be operated using smartphones.
 - o Several companies are developing robotic mowers driven by the rising demand for technologically advanced mowers. The latest automated lawn mowers are equipped with GPS tracking and remote controls, making it easier for the user to operate, monitor, and track the mower.
- Demand driven by increased gardening grows.
 - o The garden and lawn industry is adapting to consumer requirements by launching equipment that is lighter in weight and makes work easier.
 - o The gardening trend has increased rapidly, mainly among younger homeowners. They are more likely to live in smaller yards and will require equipment for tighter spaces.

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Global Report

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- o Maintaining and enhancing outdoor spaces will fuel the need for efficient and powerful tools.
- o Home improvement projects will continue to grow in popularity, and the stay-at-home trend due to the pandemic has extended the gardening season.
- Maintenance costs will increase. These costs include regular inspection of cords and switches, and routine sharpening, oiling, and other repairs. The maintenance cost of outdoor power equipment is relatively high and could slow growth.
- Government regulations will be enacted to address gasoline-powered environmental issues.
 - o Professional landscaping service providers operating within municipalities, hospitality, office, state entities, and customers with indoor projects are looking to produce zero exhaust emissions and quieter equipment to expand working hours in public spaces.
 - o California is expected to ban gas-powered chainsaws, lawnmowers, and leaf blowers as early as 2024.
- The lawn mower segment will continue to capture the largest market share of the Outdoor Power Equipment market and is expected to expand, especially with battery powered mowers entering the market.
- The popularity of gardening and landscaping services will increase in the U.S. to provide an aesthetic appeal to commercial and residential lawns and gardens. Customers are increasingly outsourcing landscaping services to maintain corporate, institutional, and residential areas.
- North America will continue to dominate the global outdoor power equipment market.

The market will continue to grow at a fast pace due to trends such as the growing popularity of home improvement projects, technology advancements and the adoption of wireless networking techniques resulting in the continued development of smart and connected tools. **PSR**

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DATAPOINT: North America Mixers

34,000

By *Carol Turner*, Senior Analyst, Global Operations

34,000 units is the estimate by Power Systems Research of the number of Mixers expected to be produced in the United States, Mexico and Canada in 2023.

Mixers are used by a variety of industries, especially for construction applications, and mix an assortment of materials. Power Systems Research tracks the North American production of two types of mixers: one used to produce asphalt and one for mixing mortar or concrete. Asphalt Mixers/Agitators are used to manufacture asphalt, macadam and other forms of coated road stone, often called “blacktop.”

A Cement/Mortar Mixer is a mechanical mixer that uses rotating paddles attached to a horizontal axle to blend the mix ingredients of mortar or concrete.

Product information for this report comes from industry interviews and from two proprietary databases maintained by Power Systems Research: **EnginLink™**, which provides information on engines, and **OE Link™**, a database of equipment manufacturers.

Market Share: Mexico produces 97% of the mixers in North America and the U.S. produces slightly less than 3%. Canada produces only about 60 units of the total of 34,000 units expected to be produced in 2023.

With 61.5% of total units produced, Cipsa Mexico leads in production of Mixers in North America. Also located in Mexico, placing second is TK Equipment (Joper) with 35.5%; third, is US based EZ Group Corporation with 2%.

Exports: Mexico exports up to 85% of its Mixer production, Canada about 70%, and the U.S. about 30%.

Battery/Corded Electric Units: Production of electric units are expected to increase by 23% in 2023 over 2022, climbing 1,300 units to about 6,800 units this year powered by either battery or cords. In 2023, electric units (battery and corded) will be about 2% of total North American Mixer production.

Combined Electric Totals

2021	2022	2023
5005	5560	6818
From 2021-2022 production of Battery/Corded Mixers increased 11%.		
From 2022-2023 production of Battery/Corded Mixers increased 22.6%.		

Battery only

2021	2022	2023
2	3	3
From 2021-2022 production of Battery Mixers increased 50%.		
From 2022-2023 production of Battery Mixers remained flat, no gain.		

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DataPoint Report

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The Electric and Hybrid Marine Expo was held June 20-22 in RIA Amsterdam and featured more than 200 exhibitors from Europe and other countries.

Corded only

2021	2022	2023
5003	5557	6815
From 2021-2022 production of Corded Mixers increased 11%.		
From 2022-2023 production of Corded Mixers increased 22.6%		

Trends: During 2022, production of Mixers in North America decreased 3% from 2021. Production is expected to gain 9% in 2023. The decline in 2022 was linked to Exmark & M-B-W leaving the market coupled with a lull in demand for new mixing equipment.

The gains this year are driven by the increase in construction-related activities (despite COVID-19), increasing government spending on infrastructure development and the demand for mixers for rental usage.

Production made exclusively for Mexico is lower than in prior years due to political influences. Expect the production of mixers in NA to remain flat with up to a 5% increase by 2025. **PSR**

Europe Report

By *Natasa Mulahalilovic*, Marine Pleasure Boat Analyst-Europe

Show Report: Electric and Hybrid Marine Expo Europe



*Natasa
Mulahalilovic*

The Electric and Hybrid Marine Expo was held June 20-22 in RIA Amsterdam and featured more than 200 exhibitors from Europe and other countries including Canada, China, Japan, Republic of Korea, Israel, New Zealand, Singapore, Hong Kong, Taiwan and Turkey.

Exhibitors included global leaders in developing solutions to decarbonization, electrification, new fuels, hybridization, and low carbon shipping solutions such as ABB, MTU, Volvo Penta, Wartsila, Cummins, Siemens, Torqeedo.

The show was held in cooperation with UKi Media and Events Ltd, producer of 17 highly specialized exhibitions worldwide and 13 leading international magazines since 1991.

The exposition continues to gain in popularity every year, and it has tripled in size since the pandemic. This year's event attracted the industry experts, commercial and pleasure boat manufacturers, municipality and government representatives, non-profit organizations, and citizens willing to learn and discuss the innovations, progress, and future projects with the true change makers.

Exhibitors say that this event is the world's leading show for marine electrification and that it is the place to be to exchange experience and knowledge, to discuss

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Europe Report

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common projects and make potential partnerships to accelerate the trends in the maritime transportation.

Three days of conferences were focused on marine decarbonization, port and charging infrastructure, integration of alternative fuels and energy, system integrations, control and optimization, batteries and energy storage development, battery monitoring and safety and charging standards.

Power Systems Research continues to build its knowledge of trends in this area and in talking with the new systems and solutions engineers, designers, architects, and sellers we discovered that the interest in electric and hybrid solutions is growing and has been accelerating since 2020. The trend remains positive and seems unlikely to stop.

Ten years ago, we could see just a few electric or hybrid very small boats on inland waters, but today, there are hundreds of units of full electric and hybrid taxis, ferries, buses, sightseeing boats, day cruising boats, tenders, motor and sailing yachts and catamarans boating on inland waters and seas. In combination with solar, hydro and wind energy, the electric systems generate enough power to drive vessels across the Atlantic. The commercial sector makes up 90% of the coverage but the pleasure boats segment is growing rapidly.

The main opportunities for a faster electrification are seen in legislation/ requirements regarding decarbonization and clean maritime transportation, boating and yachting, increasing awareness of climate changes emergency, solid governmental incentives, and continuous promotion of the segment as clean, safe, and reliable. Further perfectioning of propulsion systems, battery technologies and storage solutions, hydrogen technology, alternative fuels, investments into electrification of ports, production in a higher number of vessels units will allow prices to drop and will build the trust of the future owners and users.

The companies active in marine electrification and hybridization believe that half of vessels including pleasure boats and yachts will be powered with 100% electric propulsion by 2030-2035. Many of them strongly believe that ICE drives will no longer be in use after 2050. Hydrogen, or alternative fuel, will power big commercial transatlantic ships and mega yachts. Hybrid is seen as a good transition solution, but fully electric will certainly be more supported by legislation to achieve the goal of decarbonization and zero-emission shipping.

The next year North American edition of Marine and Hybrid Expo is scheduled for March 13 & 14 in Long Beach, CA. The European event will take place June 18-20 in RIA Amsterdam, focusing on the latest next-generation electric and hybrid marine charging and propulsion technologies and components. **PSR**

Ammonia-Powered Fuel Cell Developed for Deep Sea Shipping

ShipFC is the project financed by the Union European program Horizon 2020 and Hydrogen Europe aiming to prove that fuel cells powered by green ammonia can meet the strict IMO standards of zero-emission Deep Sea shipping.

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Europe Report

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Currently, a 100% zero-emission solution is not available in this segment. Batteries do not last long enough with a size that can fit a ship onboard, and Hydrogen technology has some other challenging issues to resolve.

Currently, a 100% zero-emission solution is not available in this segment. Batteries do not last long enough with a size that can fit a ship onboard, and Hydrogen technology has some other challenging issues to resolve. Alternative fuel solutions are promising but still need to be tested, confirmed, and approved by DNA.

The main partners for project ShipFC are Eidesvik Offshore, the owner of the vessel Viking Energy; its contractor, the oil company Equinor; Alma Clean Power, a manufacturer of power cells, and Yara Clean Ammonia, a supplier of green ammonia.

The vessel used for the experiment is Viking Energy, an Offshore Supplier Ship refitted in 2003. Originally, it was built in 2016 as an LNG-fueled vessel with hybrid battery power installation added. For “the carbon free ammonia fuel cell” project, the ship could operate up to 3,000 hours annually on ammonium fuel cell.

A high-temperature solid oxide fuel cell will be powered by green ammonia onboard. Ammonia is already treated in different segments and applications, but this is the first time it’s ever been used onboard a ship. It is a zero-emission fuel when it is produced by electrolysis powered by renewable energy. It has a highly efficient energy density and is relatively easy to store. Power and heat are generated silently without vibrations. The whole process is combustion free and ensures low or zero emissions.

The heart of the project is a Solid Oxid Fuel Cell (SOFC) invented by the Norwegian company Alma Clean Power. The fuel cell can also operate with other low and zero-emission fuels such as LNG, hydrogen, or methanol. The SOFC System is adaptable to any project since it comes in models producing from 0.5 to 2 MW per unit.

The ShipFC project still is in progress, and the ammonia powered fuel cell will be installed into the vessel in late 2023. The project explores zero-emission ammonia fuel cells for efficiency and safety, as well as maritime storage solutions, markets and business models and possibilities of incentives for green ammonia production. The ship is planned to operate with this newest technology solution in 2024. **PSR**

Brazil/South America Report

By *Fabio Ferraresi*, Director Business Development South America

Alternative Propulsion MHVs Down 55% YTD in Brazil

Unlike what happened with automobiles, in which new propulsion technologies registered an increase of almost 60% in the first half of 2023, heavy vehicles powered by electricity or gas dropped 55.5% in this period.

From the 604 units licensed in H1 2022, the volume fell to 269 from January to June this year. The survey was released by the National Association of Motor Vehicle Manufacturers (Anfavea).

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South America Report

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*Fabio
Ferraresi*

Source: *Automotive Business* [Read The Article](#)

PSR Analysis. Although OEMs say the drop is in line with the overall market reduction, the ICE market does not account for the significant decrease in sales. Sales from January to June 2023 are only 1% below 2022 in the same period. The small volumes and the size of orders can be explained by the oscillation with orders postponed from Q1 2023 and Q2 2023 with expectations for incentives and better credit in the second half of 2023.

First VW Truck Produced in Argentina

The first Volkswagen truck has just left the new exclusive area for the assembly of commercial vehicles of the Industrial Center of Córdoba, Argentina. The vehicle, a VW Delivery 11.180, will be used in the validation of the manufacturing process and for the training of employees. Then it will be part of the fleet that will run tests around the country. The agreement announced by Volkswagen Caminhões e Ônibus and Volkswagen Argentina in December 2022 provides for the manufacture of five models of the brand in that country from 2024.

The new assembly line in Córdoba occupies an area of 15,000 square meters to produce the VW Delivery 9.170 and 11.180 trucks, the VW Constellation 17.280 in chassis-cab and horsepower versions, as well as the Volksbus 15.190 OD bus chassis.

Source: *Press Release* [Read The Article](#)

PSR Analysis. This production is an important milestone for VW's plan to produce in scale in 2024 and forward. Forecasts of introduction and production/sales ramp ups are available in PSR's OE Link/OE Link Sales databases.

BYD Expands EV Production in Brazil

BYD announced the installation of an industrial complex in Camaçari, Bahia. The largest manufacturer of electric vehicles in the world, the Asian giant will invest, in five years, about US\$ 600 Million (R \$ 3 Billion) in the installation of three factories at the Bahia complex, generating about 5,000 direct and indirect jobs. In addition to passenger vehicles, electric bus and truck chassis will be made on site, as well as a battery split.

The company will take over Ford's facilities. The deal, however, has not yet been officially announced. The Camaçari pole is the last factory that still belonged to the North American brand in Brazil. The automaker, which announced the end of its local production in 2021, has already sold its facilities in Taubaté (SP) and São Bernardo do Campo (SP).

The industrial planning will have an initial objective of 30,000 vehicles and may reach annual production capacity of 150,000 units. BYD will manufacture for the

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South America Report

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Although the issue of autonomy has in theory been solved with the extra cylinders, there are other points of attention regarding Scania's gas model.

domestic market, as well as building units for export. Production is likely to start with the Song hybrid SUV and the Dolphin mid-size hatchback.

Source: *UOL* [Read The Article](#)

PSR Analysis. This agreement has long been expected. BYD is been successfully selling HEV and BEV imports and should impact the LV Market heavily with the compact ones planned for the future.

Scania Launches HV Truck with 900km Range

The X-gas line, presented by Scania in June 26, in Piracicaba (SP) will have versions with powers of 280, 340 and 410 horsepower, and has a range of 900 kilometers, 400 km more than Scania's debut version in the gas segment.

The longer range was made possible by increasing the number of cylinders that store fuel in the chassis of the vehicles. There are 16 tanks, eight on each side, with a capacity ranging between 118 and 95 liters. In the gas truck previously launched by Scania, there were eight tanks in total.

The manufacturer claims that the model is born out of a demand from customers who, in the wake of the ESG agenda, need to reduce carbon emissions in their long-distance operations. With the X-gas line this becomes possible, considering that the level of emissions of the automaker's gas propellant is equivalent to that established by the current Euro 6 standard.

Although the issue of autonomy has in theory been solved with the extra cylinders, there are other points of attention regarding Scania's gas model. One of them is the fact that the X-gas is a rigid chassis model – there would therefore be no physical space in an eventual Tractor version.

In any case, the carrying capacity of the X-gas is still relevant. In the composition with an implement coupled to the truck, the vehicle is homologated to carry up to 56 tons.

The X-gas enters Scania's commercial operation from the last quarter of the year, and there is even the possibility that a new version, with a 460-horsepower engine, will be added to the line by the beginning of next year.

Source: *Revista Caminhões* [Read The Article](#)

PSR Analysis. Our team has been in touch with Fleet testing Gas Trucks and facing the limitation of the 400km range. The new launch is not the perfect solution, as it is a rigid truck version while the bulk of Brazil volume is Tractor versions, but it helps to reach other applications segments and increase the penetration according to our long term projections. **PSR**

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Far East: Japan Report

By *Akihiro Komuro*, Research Analyst, Far East and Southeast Asia

Honda Forced To Reduce Car Features



*Akihiro
Komuro*

Honda will sell some of its new vehicles without a function that detects vehicles in the blind spot and warns the driver, saying the dedicated semiconductors required for this function have been in short supply.

To solve the situation where it takes about a year from order receipt to delivery, Honda will sell the new models with the function reduced so that they can be delivered in about six months.

Sales of the new SUV model "ZR-V" began with a specification that eliminates "Blind Spot Information (BSI)," which alerts the driver by detecting vehicles diagonally behind the vehicle and displaying them in the door mirror. Since the procurement of the necessary in-vehicle semiconductors was not completed in time and the delivery period was expected to be prolonged, the company decided to sell the car without this BSI function. Although it varies by store and model, the time from order to delivery can be reduced by half, from about one year to about six months.

At the same time, Toyota Motor Corporation has reduced the number of "smart keys," the remote-controlled keys given at the time of delivery, from the usual two to one, starting with production in November 2022. The second key will be given as soon as it is ready.

Nissan Motor Co. is averaging 2 to 3 months for delivery of its small car "NOTE" and mid-sized minivan "SERENA," which is half of what it was six months ago. However, before COVID, it was one to two months.

Source: The Nikkei

PSR Analysis: I visited CONEXPO2023, the world's largest construction equipment exhibition, where many remote-control systems, including Trimble, were on display. The system consists of multiple large monitors, a cockpit, and joysticks to operate

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construction equipment from a remote location via the Internet. It is my impression that many of these systems were developed by telecommunications giants and aimed at construction equipment manufacturers.

Hitachi Construction Machinery is now offering this system as its own service to its customers. In the midst of a serious labor shortage, such labor-saving systems are in high demand. Unmanned operation is the ultimate goal of the construction machinery industry, but the first step would be to operate multiple job sites from a single location using such a remote-control system. **PSR**

極東 > 日本レポート:

小室 明大 – 極東及び東南アジア リサーチアナリスト

ホンダ、半導体不足で車の機能絞る SUV納車1年→半年へ

ホンダは新型車の一部で死角に入った車両を検知しドライバーに警告する機能をなくして販売する。この機能に必要な専用の半導体は不足が続いている。受注から納車まで1年程度かかる状況を解消し、半年程度で納車できるように機能を絞って販売する。

SUVの新型車「ZR-V」で、走行中の死角になりやすい斜め後方の車両を検知してドアミラーに表示することでドライバーに注意を促す「ブラインドスポットインフォメーション (BSI)」をなくした仕様で販売を始めた。必要な車載半導体の調達が間に合っておらず、納車までの期間が長期化する見通しとなったため、このBSI機能を搭載せず販売することを決めた。店舗やモデルで異なるが、受注から納車まで1年程度だった期間が半年程度と半分程度に短縮できるという。

トヨタ自動車は2022年11月の生産分から納車時に渡す遠隔操作型の鍵「スマートキー」を通常の2つから1つに減らしている。半導体不足の影響とみられ、現在も正常化のめどは立っていない。2つ目は準備が整い次第、渡している。

ホンダは一部の車種の納車が短縮されたが、全体としてはまだまだお客様を待たせている。

日産自動車は小型車「NOTE」や中型ミニバン「セレナ」などで納車期間は平均2〜3カ月、半年前と比べて半分になった。ただCOVID以前は1〜2カ月だったので、なお回復途上といえる。

参考: 日経 (一部筆者により元記事内容を改編しました)

PSR 分析: 半導体不足は改善されつつある、と報道されることが多いが、実際にはこの状況は各OEMの購買部門が調達を必死に行っている結果であり、依然として不足している状況は継続している。せっかくの受注も納期が長期化すればキャンセルされてしまうため、OEM各社は必死になって半導体を確保しようとしている。今回のホンダはそうした工夫をすることで少しでも納車期間を縮めようとしている。この状況はいつまで続くかわかることは多いが、少なくとも見積もっても2024年Q2までは似たような状況が続くだろう。 **PSR**

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Far East Report

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Hyundai Motor plans to improve the production efficiency of its two remaining plants and use them as export bases to emerging markets.

Far East: South Korea Report

By *Akihiro Komuro*, Research Analyst, Far East and Southeast Asia

Hyundai China Sales Drop 77% in Six Years

South Korea's Hyundai Motor has announced that it will sell two plants in China. Beijing Hyundai, a joint venture with China's state-owned auto giant Beijing Automotive Group, will reduce the number of plants in operation to two. Sluggish sales in the Chinese market have prompted the company to make structural reforms.

Hyundai Motor's sales in China were 260,000 units in 2022; in 2016 it sold 1.13 million units, a 77% decline in six years.

"Over the past few years, the Chinese business has been made tougher by a variety of negative factors, both internal and external," said a company announcement. "We will focus on high-performance models to improve our brand image, which has declined."

Hyundai Motor plans to improve the production efficiency of its two remaining plants and use them as export bases to emerging markets. In the Chinese market, Hyundai Motor plans to reduce the number of models it sells from the current 13 to 8, and to sell high-end models such as the Genesis luxury model and SUVs, mainly in Shanghai.

Source: The Nikkei

PSR Analysis: Although there are many factors behind this situation, one of them is the fact that the quality of Chinese domestic brands is improving every year. Compared to models made in Korea and Japan, Chinese-made models in the same class are about 20% cheaper, and this pricing strategy has led to the rapid growth of local brands and sluggish sales of foreign brands. This cost competition in the Chinese market is expected to intensify further, and as a result, foreign brands will increasingly challenge the Chinese market with luxury cars, as Hyundai Motor has done at this time. **PSR**

極東 > 韓国レポート:

小室 明大 – 極東及び東南アジア リサーチアナリスト

現代自動車、中国2工場を売却へ 販売台数は6年で77%減

韓国の現代自動車は6月20日、中国の2工場を売却すると発表した。中国国有自動車大手、北京汽車集団との合併会社「北京現代」の稼働工場を2カ所に縮小する。中国市場の販売不振で構造改革を求められていた。

現代自の中国販売は2022年に26万台だった。2016年は113万台を販売しており、6年間で77%減少した。CEOは「ここ数年間、中国事業は内外の様々な否定的な要因によって厳しくなった。低下したブランドイメージ向上のために、高性能モデルに注

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力する」と話した。現代自は残る2工場の生産効率を高め、新興市場への輸出拠点としても活用する。中国市場では販売車種を現在の13種から8種に絞り込み、高級車モデル「ジェネシス」やSUVなど高価格帯の車種を上海市中心に販売していく方針も示した。

参考: 日経 (一部筆者により元記事内容を改編しました)

PSR 分析: この状況には多くの背景が絡んでいるが、中国の国内ブランドの品質が年々向上していることはその一因に挙げられるだろう。韓国製や日本製と比べ、同クラスのモデルの中国製は2割程度安く、こうした価格戦略が自国ブランドの躍進と国外ブランドの販売低迷という流れを生んでいる。今後中国市場では更なるコスト競争の激化が予想され、その結果として国外ブランドは今回の現代自のように高級車で中国市場に挑む構図が増えていくと筆者は見ている。 **PSR**

China Report

By *Jack Hao*, Senior Research Manager - China

New VI B Emissions Seen Boosting China's Auto Industry



*Jack
Hao*

The new national standard for automotive emissions, scheduled to be implemented July 1, 2023, could boost China's auto industry, say industry insiders.

The Ministry of Ecology and Environment, the Ministry of Industry and Information Technology, and other departments recently issued a joint notice proposing that the National VI Emission Standards for automobiles (National VI B) be implemented nationwide July 1, 2023.

Industry insiders believe that the implementation of the new regulations will drive car companies to accelerate technological upgrading, thereby achieving green and low-carbon development of the automotive industry.

The "National VI Standards" are standards formulated to prevent and control motor vehicle pollution emissions and improve environmental air quality. The "National Sixth Standard" for light vehicles sets two emission limit schemes of National VI A and National VI B, to be implemented in 2020 and 2023 respectively.

It is reported that the National VI B emission standard has changed the previous equivalent conversion of European emission standards, significantly increasing the limit indicator standards for most pollutants. Wang Jun, a senior engineer at the

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China Report

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Vehicle Emission Monitoring Center of the Ministry of Ecology and Environment, said the implementation of the National VI B standard has played a significant role in reducing nitrogen oxides (NOx), volatile organic compounds (VOCs), and primary particulate matter emissions.

More importantly, it provides a more favorable technical basis for all regions to further control the actual emissions of vehicles and supervise the compliance of in use vehicles.

Source: *China Economic Network*. [Read The Article](#)

PSR Analysis. According to policy regulations, the strictest National 6B standards pose challenges to the automotive industry, especially in the commercial vehicle industry. In order for trucks and buses to meet the new emission requirements, it is necessary to upgrade and transform technology in multiple aspects such as the engine, exhaust after treatment, and electronic control system.

It also involves improving the quality of fuel and lubricants, which is driving the market growth of low-carbon and emission reduction related industries.

Based on past experience, it is estimated that the National V buffer period is at least three years, which means that the restriction policy may not be updated until the emission standards are updated for three years.

On the other hand, it is very difficult to restrict the use of National IV and V vehicles. According to incomplete statistics, currently, National IV and V models account for about 69% of all vehicle models in China. Currently, most of the restriction policies are still targeted at National III and IV vehicles.

The significant reduction in pollutant emissions caused by heavy vehicles in China has led to a decrease in environmental PM2.5 concentration and a reduction in haze weather. At the same time, the price of fuel heavy-duty trucks will be higher than that of National 6A. Therefore, compared to fuel heavy-duty trucks, the cost advantage of gas heavy-duty trucks, which has been in a downward trend, may increase. **PSR**

India Report

By Aditya Kondejkar, Research Analyst – South Asia Operations.

OEMs Target India's Premium Bike Segment

The dominance of Royal Enfield in the mid-segment of the premium motorcycle market (300cc-500cc) could be facing challenges from upcoming products. The Triumph Speed 400, a result of a joint development effort between Triumph and Bajaj Auto, and the Harley-Davidson X440, developed through a collaboration between Hero MotoCorp and Harley Davidson, are set to compete in this market segment.

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India Report

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We believe the segment of above-300cc motorcycles is expected to experience heightened competition in the upcoming months.



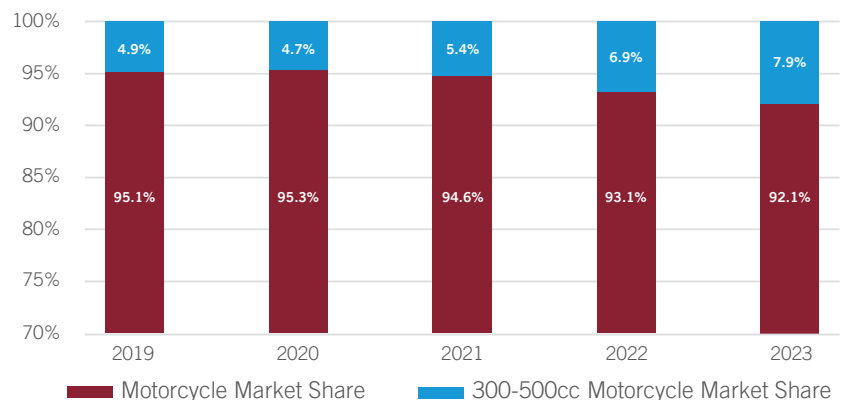
Aditya
Kondejkar

In response, Royal Enfield plans to introduce three new models in the 350-450cc range within the next year.

The Indian motorcycle market has witnessed a favorable trend towards high-end bikes. The phenomenon of premiumization has gained momentum due to increasing income levels, a growing young population, shifting preferences, and a surge in product launches.

As a result, a growing number of buyers are now inclined towards high-end bikes. This market shift has prompted motorcycle manufacturers to introduce an expanded range of products in the higher cc segments.

Market Share - 300-500cc Motorcycles vs Overall Motorcycles



In the 350cc and above engine category, the market share of Royal Enfield is approximately 85%-90%. However, the company has been steadily increasing its sales volume in other categories through the introduction of new products.

Source: *Hindu BusinessLine* [Read The Article](#)

PSR Analysis. We believe the segment of above-300cc motorcycles is expected to experience heightened competition in the upcoming months. However, it will be a difficult task for new bikes to catch the market leader, Royal Enfield. **PSR**

Russia Report

By *Maxim Sakov*, Market Consultant, Russia Operations

Editor's Note: Power Systems Research has paused all research and business development activities in Russia. We have maintained a presence in Russia since 2013 to bring important updates to our clients about the powered equipment markets within Russia. We are monitoring the current situation on a daily basis and hope to again establish this presence when the conflict with Ukraine is resolved. Please contact us at info@powersys.com if you have questions regarding business conditions in Russia. Thank you. **PSR**

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