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## Global Report

### Global Recovery: Opportunities and Challenges



Yosyf  
Sheremeta

By *Yosyf Sheremeta, PhD, Director of Product Management and Customer Experience*

**SUMMARY.** The global economy, especially within the Engine, OEM and Components industries, has felt the impact from COVID this year: assembly line shutdowns, labor issues, supply chain issues, logistics and transportation to name a few. The pandemic has exposed many weak links in the global economic chain. However, by end of summer, most of these challenges were either completely resolved or temporary solutions had been put in place.

Diversification has become the theme during the pandemic recovery, and we expect this trend to continue. Companies looking for new markets and suppliers to grow top and bottom line revenue as well as to minimize risks, and at the same time we see a shift into new industries. Furthermore, rapid developments of new technologies create massive opportunities for OEMs and suppliers as well as posing real threats to OEMs that solely rely on traditional products that are powered by fossil fuels.

According to a report from the Organization for Economic Development (OECD), the global economy is still expected to shrink this year, but by less than previously estimated. Currently, the OECD expects the world economy to decline by 4.5% in 2020, which is better than the earlier estimated contraction of 6%; this is mainly driven by better-than-expected recoveries in the U.S. and China.

This is the election year in the US and the world will be closely watching the outcomes in November. Typically, we see a lot of uncertainty during the last few quarters before the election, as it will have an impact on the global economy. Companies preserve cash and postpone major capital investments until they understand the playing field and rules of new administration; current geo-political trends related to trade disagreements and the exposed supply chain weaknesses and challenges brought to us by the pandemic- both have a direct impact on the recovery trends and future growth.

When we look at industry developments during first three quarters of 2020, every market segment globally was negatively impacted by the pandemic. The only exception is China's Construction segment, which is primarily driven by stable demand supported by government investments.

Among all industry segments on the global scale, the On-Highway segments such as Passenger Cars, Minivan/SUVs and Commercial Vehicles segments have suffered the greatest decline, dropping 16-25%. This is mainly due to production peaking over the past couple of years; these sectors were due for a slowdown, regardless.

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## Global Report

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Consumer oriented applications will suffer most, mainly due to a lack of demand caused by business shutdowns, unemployment, and short-term elimination of financial wealth. The overall decline in these markets will be well into double digits with some suffering 25-40%, regionally. Globally, personal transportation sectors such as Passenger Cars and Minivan/SUVs will suffer close to a 20-25% decline in 2020. On the other hand, heavy industrial segments, such as Agricultural Equipment and Power Generation will be down in high single digits.

On the positive side, following a rapid deterioration of production levels in 2020, we expect demand and production to increase across the board in 2021, averaging 5.18% among all market segments, which is higher by 0.3% than our forecast from previous quarter and by 1.6% vs Q1 2020 estimates. At this point, we believe it will take 2-3 years for the general economy to come back to pre-COVID levels and for some segments it will be even longer than that.

**AGRICULTURAL.** Given the current circumstances globally, we expect 2020 to finish in negative territory. Our latest estimates of production volumes show a decline of 7.9% in 2020 vs 2019, which is an improvement from last quarter by 1.5%. China is the largest producer of Ag equipment globally, but most of the volume falls under the 2-wheel drive tractors application. Over the past few years this product category has been shrinking significantly, mainly due to the product replacement by larger HP machines.

Globally, we do not expect any rapid recovery next year (2021) or high growth, mainly due to current economic conditions. We expect 2021 growth will be at 2.7% globally, which is slightly higher (by 1.7%) than our estimates as of last quarter and 3% higher than estimates from Q1 2020. Such trend shows better than expected recovery and we believe Ag machinery segment is nicely positioned for stronger recover and steady future growth.

China will contribute most to the decline in overall global performance at -2.8% in 2021 (mainly driven by the decline in smaller equipment and the shift to larger HP machines); at the same time, Europe, Central/South America and India will show much stronger recovery at 9%, 11 % and 11.9% respectively. We certainly see a steady recovery patten, however the key factor to agricultural machinery growth will depend on overall speed of economic recovery from the pandemic.

**CONSTRUCTION.** The global Construction sector has performed very well for the past five years, posting an overall growth rate of 9.6% in 2018 and 1.9% in 2019 globally. The latest crisis has eliminated this growth trend. At this time, we estimate the global construction equipment market will drop 9.3% in 2020 vs 2019. This rate is higher by 2% vs. previous quarter estimates.

At the same time, we expect a recovery and growth at 7.1% in 2021 vs 2020, which is higher by 0.7% then previous estimates. The recovery pattern certainly seems to be improving in comparison to estimates just six months ago. However, the markets will not recover to pre-crisis levels for another few years, at best. India, Europe and South/Central America will contribute the most to the recovery in terms of growth in 2021 vs 2020, at +32%, 8.9% and +8.4% respectively.

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## Global Report

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*Passenger Cars will suffer the largest decline among consumer-oriented applications, as demand rapidly collapsed with the progression of the virus crisis.*

Other **Off-Highway** segments, such as **Industrial, Lawn and Garden** and **Power Generation**, will closely follow the latest global economic conditions. Currently, we expect them to decline in 2020 vs 2019 at -10.6%, -13.9% and -7.8%, respectively. The recovery in the following year will take place at rather slow rate. We estimate that 2021 growth vs 2020 in these segments will be +6.7%, +4.4% and 0.1% respectively.

**Marine Auxiliary** and **Main Propulsion** sectors will finish the year with -11.3% and -12.2%, respectively. Cumulatively, most decline will take place in India (-23.7%), North America (-15.1%) and Far East (-12.4%). Promising recovery at this point is expected in 2021 at an overall rate of 5.8% vs 2020. This is an improvement by 1.5% from the previous estimates in Q2 2020.

For the **On-Highway** sectors, we will see a decline in production volumes across all product classifications. Cumulatively, across all on-highway sectors the overall decline will be at -21.6% in 2020 vs 2019. This is an improvement by 1.8% from the previous estimates in Q2 2020.


**Passenger Cars** will suffer the largest decline among consumer-oriented applications, as demand rapidly collapsed with the progression of the virus crisis. We estimate that globally passenger car production will decline 25.6%, with India, North America and South/Central America contributing the most to the decline rate at -28%, -32.6% and -43.7%, respectively. We estimate a small recovery within the segment at 5.4% in 2021 vs 2020, where Central/South America, South East Asia and India are estimated to grow faster than other regions at 39.7%, 15.9% and 15.3%, respectively.

**Minivan/SUVs** will go in line with the Passenger Cars segment. Overall decline will be 19.2% in 2020 vs 2019; where India, Eurasia and Central/South America are leading in the decline at -22.4%, -34% and 20.9% respectively. The small recovery in 2021 will also be in line with the passenger car segment at +5.2% vs 2020. Regionally Central/South America, India and South East Asia will be growing faster than other regions at 44.3%, 15.3% and 15.9%, respectively.

**Light Commercial Vehicles** will decline 15.6% in 2020 vs 2019 globally. Significant declines will take place in India, North America and Central/South America at -45.3%, -25.4% and -31.%, respectively. Small recovery is expected in the following year (2021) at 5.6% overall globally. Regions with higher recovery rates will be India, Eurasia, and Central/South America, which are expected to post gains of 44.3%, 13.9% and 21.4%, respectively.

During the past few quarters, we have forecasted that demand and production of **Medium and Heavy Vehicles** were expected to slow down in 2020-2021. Peak production volumes in previous years as well as COVID-19 impact will have a profound impact on the segment, which is forecast to suffer most among all sectors we track in our databases.

At the same time, the MHV segment has made most improvements in the forecast for 2020 and has shown faster progression in the recovery estimates from previous quarters. Currently, we expect production volumes in 2020 to be

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## Global Report

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down at -15.9% globally. Most regions will experience double digits decline, with North America, Europe, India and Far East declining at 39.1%, 32.8%, 61.9% and 28.4%, respectively. We do expect modest recovery in 2021 at 5.4% overall vs 2020. Regionally, the growth rates in India, Central/South America and North America are expected to be 40.3%, 23.7% and 16.1%, respectively.

**Recreational Products** follows consumer-oriented segments, but globally the decline overall will not be as significant as in the Passenger Car and Minivan SUVs segments. Currently, we expect the decline in 2020 to be at -12.1% vs 2019. The key factors to better performance in Recreation products are affordable personal transportation (motorcycles) and significant demand for RV, driven by the pandemic and the travel restrictions.

Most of the volume (2-wheelers) is concentrated in China, and as of now we do not forecast any major decline there for the current year. Other regions, such as India, Europe and North America will decline at rates of -23%, -33.8% and 20.1%, respectively. The recovery in 2021 is expected to be 5.8% globally, where India and South/Central America are leading the growth at 11.1% and 6.1%, respectively. **PSR**

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## North America Report

### Bus Fleets Convert To Zero Emission Vehicles



By *Chris Fisher*, Senior Commercial Vehicle Analyst

During the past few years, many cities and states have committed to full adoption of their transit bus fleets to zero-emission vehicles. While the implementation dates vary, most are aiming to have the transition completed by 2040.

*Chris  
Fisher*

Since transit buses typically have pre-defined routes and access to recharging infrastructure, they are good candidates for adoption. It also helps that this segment is not-for-profit, and a short-term payback is not required. The significant barriers to adoption appear to have been overcome. Here are some prime examples of zero-emission mandates.

- In California, CARB has established a mandate requiring all transit buses to be zero-emission compliant by 2040.
- The Los Angeles Department of Transportation plans to have an all-electric bus fleet by 2028. They recently ordered 155 electric buses from BYD and Proterra to be delivered during the next two years. Other Los Angeles County transit agencies have committed to convert their entire bus fleets to zero-emission by 2030. This includes the Los Angeles County Metropolitan Transportation Authority, which today has 2,200 buses.

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## North America Report

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- San Francisco plans to have a zero-emission bus fleet by 2035 and plans to purchase only zero-emission buses starting in 2025.
- In Seattle, King County Metro plans to move to 100% zero-emission buses no later than 2040. King County currently has 1,400 buses in its fleet.
- New York has over 5,000 buses which is the largest transit fleet in the country. The City plans to convert the entire fleet by 2040.
- The Chicago city council approved the transition to a 100% zero-emission bus fleet by 2040.

Whether or not the various cities and states will achieve these dates is uncertain but the trend toward electrification in the transit bus segment appears to be underway. **PSR**

## Robotic Mower Industry Reaches \$1.3 Billion in 2020



By *Michael Aistrup, Senior Analyst*

There's nothing like the look and smell of freshly cut grass, but for an increasing number, mowing the lawn as become an unpleasant experience and a waste of time. Some homeowners spend hours every week doing the work while others are investing in a robot lawn mower to do the work.

*Michael  
Aistrup*

A **robotic lawn mower** is an **autonomous robot** used to cut **lawn** grass. A typical **robotic** lawn mower (in particular earlier generation models) requires the user to set up a border wire around the lawn that defines the area to be mowed. The robot uses this wire to locate the boundary of the area to be trimmed and in some cases to locate a recharging dock. Robotic mowers can cut up to 30,000 m<sup>2</sup> (320,000 sq ft) of grass.

Think of robot lawn mowers as **Roombas, but** for lawns.

The global robotic lawn mower market size is expected to reach revenue of \$1.3 billion in 2020, growing at a CAGR of over 12% during the period 2019–2025. The market demand will be fueled by the growth of the residential sector in the global market.

These factors are likely to contribute to the growth of the robotic lawn mower market:

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## North America Report

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*The European robotic lawn mower market is expected to reach \$1.7 billion by 2025.*

- Merging of Consumer Electronics and Internet of Things
- Increased adoption of green spaces
- No resolution of safety hazards of gas and diesel lawn mowers
- Growing marketing and promotional activities

Robotic lawnmowers suitable for small-sized lawns are popular in North America and Europe. In Europe, the demand for small-sized garden equipment is high, as most European lawns and gardens tend to be smaller than the US.

The global smart segment is expected to reach 344,000 units by 2025. The garden equipment industry is increasingly heading toward a world of machine learning and artificial intelligence. Robotic lawnmowers can leverage the benefits of machine learning to achieve greater efficiency, enhance product quality, and optimize workflows.

The European robotic lawn mower market is expected to reach \$1.7 billion by 2025. Europe, which is considered as one of the largest in the gardening equipment segment, is mainly expected to be driven by commercial end-users that are increasing the usage of these machines in their respective businesses. Companies are expected to use ground management equipment, increasing the need for landscaping services in the area. A growing number of commercial spaces, with the number of public parks and lawn areas, is also boosting the demand for robotic lawn equipment in Europe.

### Benefits of Robotic Mowers:

- Zero Emissions – Robots are fuel and emissions free, using approximately \$2 worth of electric per month. Reliable Mowing – Can mow every day, rain or sun.
- Perfect cut – lawns are cut every day with the clippings used as fertilizer for the lawn.
- Quiet mowing – Can be run at night.

### Typical robotic mower specifications:

- Lawn Size - 0.2 to 1.25 Acres
- Expected Runtime - 60 to 270 minutes
- Charging Time - 50 to 90 minutes
- Cutting Width - 7 to 9.45 inches
- Cutting Height - 2 to 7 inches
- Maximum Slope - 14 to 24 Degrees
- Modes - Chaotic moving patterns
- Sensors and Other Features - Alarm, PIN Code, Installation Lock, Time Lock, Lift Sensor, Tilt Sensor
- Warranty - 2 Years

Robot mowers operate on a rechargeable lithium-ion battery and run automatically based on a schedule, which the user sets using an app. When it's time to mow, they head out cutting the grass to a predetermined height and generating grass clippings that essentially become mulch.

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## North America Report

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Robot mowers learn where to mow based on a perimeter wire, which is set around the edges of the lawn to form a boundary. The mower will turn around, cut a different area until it runs into another wire boundary or senses an object in its path. When they're not running, they sit safely docked in a charging port plugged into an outdoor outlet.

Robot Lawn Mowers eliminate reliance on traditional lawn crews, who move from yard to yard. With the robot mowers, there is no need to worry about social distancing and COVID-19. Plus, the battery-powered bot's quiet motor is a welcome alternative from the noisy blowers and mowers disrupting the workflow happening in home offices. It's the perfect way for homeowners, campuses, recreational spaces, property management groups and homeowners' associations to save time and the environment. **PSR**

## DATAPOINT: US Shredders

**68,200**

By *Carol Turner, Senior Analyst, Global Operations*

The 68,200 units is the estimate by Power Systems Research of the number Shredders to be produced in the U.S. in 2020.

This information 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:** MTD dominates the Shredder industry in the U.S. with 86% of the total units manufactured. In second position is Ardisam with 6.5%. Third, is Mackissic with 5.5%.

**Exports:** Collectively, up to 30% worldwide.

**Trends:** In 2019, production of Shredders in North America decreased 3.5%. Production in 2020 is forecasted to drop another 8%. The demand for chore products has remained stable over the last few years in both commercial and residential segments. Despite COVID-19, economic and weather-related factors, yard upkeep and maintenance remain important to homeowners. Patriot Products expects production to nearly double in 2020 due to stay-at-home mandates that have increased lawn upkeep along with the demand for products made in the USA. Overall, expect Shredder production to increase up to 10% by 2025. **PSR**

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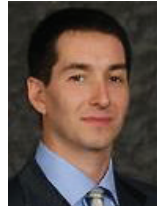
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*Scania, a Swedish truck manufacturer, is developing an 18-meter long solar cell-clad trailer that will be able to generate energy from devices along 140m<sup>2</sup> of surface area on the sides and roof.*

## EUROPE REPORT

### Scania Creates Bridge To EU 2030 Emissions Targets

*By Emiliano Marzoli, Senior Business Development Manager - Europe*



*Emiliano  
Marzoli*

Scania, a Swedish truck manufacturer, is developing an 18-meter long solar cell-clad trailer that will be able to generate energy from devices along 140m<sup>2</sup> of surface area on the sides and roof.

According to the truck manufacturer, the powered trailer will be able to generate fuel saving between 5% and 10% in northern Europe, and up to double that in sunny regions like Spain. The tests are also validating the use of the trailers as power stations to feed the main grid, once they have completed charging the batteries and the vehicle is stationary.

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

**PSR Analysis:** Covid-19 Pandemic caused a severe hit on truck demand and production in Europe, as in the rest of the world. However, the European Parliament voted on Oct. 6, 2020, to update EU's climate target for 2030, backing a 60% reduction in greenhouse gas emissions by the end of the decade, up from 40%, currently.

Development of Batteries and Hydrogen Fuel Electric trucks is still at an early stage and cannot substitute for Diesel and Natural Gas trucks in the short term. If this concept proves successful, it will allow OEMs more time to develop new technologies to meet EU's Targets. **PSR**

## Brazil/South America Report

*By Fabio Ferraresi, Director Business Development South America*



*Fabio  
Ferraresi*

### Petrobras Finishes Tests To Start Production of HVO in Brazil

Petrobras has concluded the test production of 40 million liters of diesel mixed with HVO from 2 million liters of soy. The regulation is still pending on ANP. Once regulated, the HVO will compose part of the renewable mix at Diesel with the existing Biodiesel yielding better effects for engines and even less emissions. Today, the renewable content of the mix is 12% and it will reach 15% by 2023.

**Source:** [Agência Petrobrás](#) [Read The Article](#)

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## Brazil/South America Report

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**PSR Analysis:** The industrial scale production is an affirmation that HVO will be regulated soon and become a reality in Brazil. With this scale of production, it tends to be competitive with Diesel. The high productivity in soy agricultural in Brazil makes the initiative more likely to succeed and determine competitive prices for higher renewable content in the mineral-renewable mix.

## Brazil Extends Trade Agreements with Mexico and Paraguay

Brazil recently published two trade agreements with Mexico, and, earlier in July, with Paraguay. The Mexican agreements cover Commercial Vehicles trade, with the reduction of import taxes progressively reaching zero by 2022. The agreement with Paraguay covers auto parts taxes from country to country. The taxes are now between 0 and 2% and will be zero in 2022.

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

**PSR Analysis:** The agreement with Paraguay is beneficial to auto parts makers on both sides of the border and helps to fight Asian competitors. With Mexico, the installed Truck Industry in Brazil is likely to expand exports to Mexico in coming years.

## Iveco Sets Record Sales of NG Trucks in Argentina

After selling 35 NG Trucks in Chile, Iveco announced the sale of 100 Stralis NP Cursor 13 NGs in Argentina for a supplier to O&G industry in the Southern country.

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

**PSR Analysis:** The acceptance from customers helps to remove a barrier to NG sales, transforming this technology from a Trend to a reality. NG was formerly more deployed in Buses than in Trucks. With the experience of fleet owners, the technology will gain scale rapidly in South America countries and accelerate the volumes in South American markets. **PSR**

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## China Report

*By Jack Hao, Senior Research Manager-China.*

## Tesla Cuts Prices of China-Made Cars

Taking advantage of new battery options and big government subsidies, Tesla has slashed its Model 3 prices in China. The company's Chinese website is now advertising a base price for the popular battery-electric sedan of 249,900 yuan, or roughly \$36,800.

While this is big news for the company in its efforts to remain dominant in the Chinese market, U.S. consumers won't be affected...at least, not yet

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## China Report

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Jack  
Hao

**Source:** *China Daily* [Read The Article](#)

**PSR Analysis:** Tesla Model 3 has cut its price for the sixth time in China. Compared with the initial price of 355800 yuan, the price has dropped by nearly 30% in more than a year, which not only has a great impact on consumers, but also brings great pressure on competitors such as Weilai, BYD and Xiaopeng. The main reason for the price reduction is that the former ternary lithium battery was replaced by the lithium iron phosphate battery of Ningde, and the cost is lower. In the short term, it will bring a lot of pressure to domestic new energy vehicle enterprises.

At the same time, China's new energy vehicle enterprises will be forced to increase their innovation efforts and improve their strength in competition with international enterprises and domestic new energy vehicles.

Sales and population of electric vehicles is still small in the Chinese market, compared with traditional fuel vehicles. The frequent price reductions of Tesla's products will accelerate consumer awareness of electric vehicles, strengthen the market development of electric vehicles, and speed up the transformation of the entire fuel vehicle industry to new energy vehicles. **PSR**

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## Far East: Japan Report

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

### Kawasaki Receives Order for First Electric Tanker



Akihiro  
Komuro

Kawasaki Heavy Industries says it has been awarded a contract to design an electric propulsion system for the world's first electric tanker. Two shipbuilders in Shikoku will build the two vessels, with the first one to be completed by March 2023. It is about 60 meters long and has a gross tonnage of 499 tons.

The ship will be powered by lithium-ion batteries, which have the capacity of about 100 electric cars, and will run without emitting greenhouse gases. The order was placed from Asahi Tanker, a MOL-affiliated company. The order amount was not disclosed. The ship is planned to be used as a fuel carrier for ships in Tokyo Bay. The tightening of environmental regulations by the International Maritime Organization (IMO) has led to several moves to develop fuel ships to replace heavy oil.

**Source:** *The Nikkei* (The original article was partially revised by the author.)

**PSR Analysis:** The purchaser, Asahi Tanker, is one of the seven members of the e5 Consortium, which was established to develop and promote zero-emission

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## Far East Report

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*Of course, batteries themselves will continue to evolve, especially in terms of weight reduction. However, the weight of the current batteries may put pressure on ship operating costs and installation space.*

electric propulsion vessels. The "e5" stands for "electrification" "environment" "evolution" "efficiency" and "economics".

Coastal vessels are facing structural problems in the industry, such as a shortage of seafarers, an aging population, and aging vessels, as well as the need to reduce greenhouse gas emissions. Electric powered ships could be one solution to these problems. The aim is to reduce the burden of engine maintenance and fuel management. One idea is to use electric-powered ships as a portable power source in times of disaster. The initial cost of construction would be high, but the running costs, including labor costs, would be low. However, there is also a crucial challenge to the electrification of merchant ships: the weight of the batteries.

Of course, batteries themselves will continue to evolve, especially in terms of weight reduction. However, the weight of the current batteries may put pressure on ship operating costs and installation space. The question of how Kawasaki Heavy Industries will solve this problem in design will be a touchstone for the electrification of ships. **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

### 世界初の電動タンカー、川崎重工業などが受注

川崎重工業は10月8日、世界初の電動タンカーの電動推進システムの設計を受注したと発表した。四国の造船会社2社が2隻を建造し、1隻目は2023年3月までに竣工する。全長およそ60メートル、総トン数は499トンで、電気自動車およそ100台分の容量があるリチウムイオン電池で、温室効果ガスを排出せずに動く。商船三井系の旭タンカーから受注した。受注額は非公表。東京湾内で船舶用の燃料運搬船として使う計画だ。国際海事機関 (IMO) による環境規制の強化で、これまで使われてきた重油に代わる燃料船を開発する動きが相次いでいる。船の電動化を巡っては、ノルウェーでも電動フェリーが実用化されている。

**出典:** 日経 (一部筆者により元記事内容を改編しました)

**PSR 分析:** 発注者の旭タンカーはゼロエミッション電気推進船 (EV船) の開発および普及に向けて設立された「e5コンソーシアム」のメンバー7社のうちの1社だ。e5とは「electrification (電気化)」「environment (環境)」「evolution (進化)」「efficiency (効率)」「economics (経済性)」を指している。特に内航船は、船員の不足や高齢化、船舶の老朽化といった構造的な問題を抱えており、温室効果ガス排出削減も求められている。これらの課題を解決するためにEV船はひとつのソリューションになり得る。エンジンのメンテナンス負担と燃料管理の負担を低減する狙いだ。災害時に可搬性の電源としてEV船を使用するというアイデアもある。建造に掛かるイニシャルコストは高くなるだろうが、人件費を含めたランニングコストは安くなる。だが、商船の電動化には極めて重要な課題もある。バッテリーの重量だ。もちろんバッテリーそのものの進化、特に軽量化は進んでいくだろうが、現在のバッテリーの重量は船舶の運航コストや設置スペースを圧迫する恐れがある。そうした課題を設計上どのように川重が解決するか、このチャレンジは船舶の電動化の試金石になるだろう。 **PSR**

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## Far East Report

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## Yanmar To Analyze Data on Off-Road Equipment

Yanmar Holdings announced it will begin operating Yanmar Synergy Square, a support base for monitoring the operational status of customers' agricultural and construction equipment, beginning Oct. 19, 2020. Data will be collected and analyzed via communication from sensors installed on machines and equipment. It will suggest parts replacement and maintenance before they malfunction. It was built at a cost of 2.5 billion yen (23.8 million USD) and will be operated by Yanmar Global CS, a subsidiary of the company.

Yanmar set up a support base in Osaka in 2015, but the focus was on monitoring and the actual customer support was often handled by staff at dealerships around the country. The company has expanded its functions in response to a five-fold increase in the number of products equipped with communication terminals to 110,000 units in 2020, up from 2015.

**Source:** *The Nikkei* (The original article was partially revised by the author.)

**PSR Analysis:** IoT-based equipment monitoring is likely to become increasingly common in the agricultural machinery field as well. The ability to prevent breakdowns is especially important for agricultural equipment, since it is not always to run it every day, and breakdowns are unacceptable when they are needed.


As more models of communication terminals are installed, data will be accumulated that can be used for failure trends and predictions, and the reliability of the data will increase. Yanmar's rival and industry leader Kubota has already started KSAS, an IoT support system for efficient agriculture, and KSIS, an equipment monitoring system for the water treatment sector.

Japan's agriculture is almost certain to face an increasingly severe labor shortage in the future, so improving efficiency is an absolute necessity. In other words, there is a race between efficiency and labor shortages. **PSR**

## ヤンマー、顧客の遠隔支援拠点 農機や建機のデータ分析

ヤンマーホールディングスは10月8日、顧客の農機や建機の稼働状況を監視する支援拠点「ヤンマーシナジースクエア」の運営を19日から始めると発表した。機械や装置に搭載するセンサーから通信でデータを集め、分析する。不調になる前に部品交換やメンテナンスを提案したり、修理に関する問い合わせに対応したりする。25億円を投じて建設し、子会社のヤンマーグローバルCSが運営する。ヤンマーは2015年に大阪・梅田にサポート拠点を設けたが、監視が中心で実際の顧客サポートは国内各地の販売店のスタッフが担うことが多かった。通信端末を搭載する製品の数が2020年に11万台と2015年から5倍に増加していることから機能を拡充した。

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## Far East Report

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**出典: 日経** (一部筆者により元記事内容を改編しました)

**PSR 分析:** 農機の分野でもIoTによる機器モニタリングの流れは今後ますます一般化していくだろう。毎日稼働するとは限らない農機は、必要になった時に故障は許されないため、特に故障予防の機能は重要だ。通信端末の搭載モデルが今後増えるに従って、故障の傾向や予知に使用できるデータも蓄積されていき、データの信頼性も高まる。クボタは効率的な農業を行うためのIoTサポートシステムKSASや、水処理分野の機器監視システムKSISをすでに始めている。人手不足が今後ますます深刻化することがほぼ確定的な日本の農業は、効率化が至上命題である。このようなIoTの活用はその一例である。つまり、効率化と人手不足の競争だ。 **PSR**

## Far East: South Korea Report

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

### Hyundai and LG To Collaborate on In-Car Appliances

Hyundai Motor will collaborate with LG Electronics on home appliances for the interior of electric vehicles. The two companies will work together to develop OLED TVs to be mounted on the ceiling and walls, as well as home appliances such as refrigerators and coffee makers that make the interior of the car more comfortable. They unveiled the next generation concept car "Ionic Concept Cabin."

It has a curved OLED panel on the ceiling and a small refrigerator under the seat. Air purifiers and high-quality speakers have also been modified from LG products for in-vehicle use to improve indoor comfort, according to the company. LG Electronics is one of the suppliers of electronic components to Hyundai Motor. Compared to gasoline-powered cars, EVs provide more space inside the vehicle, which means that they can be used as more than just a means of transportation. In a world where not only driving performance but also comfort is important, Hyundai is collaborating with LG to add value to its vehicles.

**Source: The Nikkei** (The original article was partially revised by the author.)

**PSR Analysis:** This is an interesting initiative to make cars not just a simple means of transportation, but also a place to create new value by making more efficient use of interior space. LG's group company, LG Chem, supplies batteries to Hyundai and its subsidiary Kia Motors. The tag-team of South Korea's leading conglomerates, Hyundai and LG, is starting to become more active among the companies in their respective groups.

The new concept car is equipped with a variety of livability-oriented features, including - Shoe care that keeps your shoes comfortable even when they're wet or dirty; Capsule coffee machine that easily makes coffee; Clothes management machine that helps you keep your clothes dry, and a Mini bar with refrigeration to enjoy cold drinks anywhere in summer. Of course, advances in the driving performance and economy of EVs themselves are important, but comfortableness will also be an important factor in future purchasing decisions. **PSR**

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## Far East Report

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*MVLLabs is a company that operates a mobility ecosystem based on the blockchain protocol. TADA, a no-fee car dispatch platform built on MVL's blockchain, launched in Singapore in 2018.*

## 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、LGと車内用家電で協業 テレビや冷蔵庫など

現代自動車は電気自動車などの車内向けの家電製品でLG電子と協業する。天井部分や壁面に搭載する有機ELテレビのほか冷蔵庫やコーヒーメーカーといった車内空間を快適にする家電を両社で開発する。次世代コンセプトカー「アイオニック・コンセプトキャビン」を公開した。天井には湾曲した有機ELパネルを搭載し、座席の下に小型の冷蔵庫を設置した。空気清浄機や高音質スピーカーもLG製品を車載向けに改良して室内の快適性を高めたとする。LG電子は現代自に電子部品などを供給するサプライヤーの一社。EVはガソリン車に比べて車内空間が広がるため、単純な移動手段にとどまらない活用方法が可能となる。走行性能だけでなく乗車時の快適性が重視されるなか、現代はLGとの協業を通して車の付加価値を高める。

**出典:** 日経 (一部筆者により元記事内容を改編しました)

**PSR 分析:** 自動車を単純な移動手段としてではなく、室内空間をより効率的に活用して新たな価値を創造する場に造り上げるための興味深い取り組みだ。LGのグループ会社であるLG化学は現代のEV2車種とハイブリッド車、子会社である起亜自動車にもバッテリーを供給している。韓国を代表する財閥である現代とLGのタッグはそれぞれのグループ内の企業間で活発になり始めている。

今回発表されたコンセプトカーには、△濡れていたり汚れたりしているも快適な状態で管理してくれるシューズケア △簡単にコーヒーを作るカプセル型コーヒーマシン △いつも皺のない服を着られるように手伝ってする衣類管理機 △真夏でもどこでも冷たい飲み物を楽しめるように冷蔵機能を備えたミニバー、など、居住性を重視した様々な機能が盛り込まれている。家電大手のLG電子が活躍する余地がEVには多く残されている。もちろんEVそのものの走行性能や経済性などの進化は大切だが、こうした居住性も今後は購入決定の重要な要素になっていくだろう。PSR

## Southeast Asia: Singapore Report

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

### TADA Raises US\$5 Million To Enter EV Tuk Market

Singapore-based MVLLabs, the operator of car dispatch service TADA, has raised US\$5 million. MVLLabs is a company that operates a mobility ecosystem based on the blockchain protocol. TADA, a no-fee car dispatch platform built on MVL's blockchain, launched in Singapore in 2018.

In 2020 they are also expanding into Cambodia and Vietnam. MVLLabs plans to use the funds raised to facilitate continuous expansion and further develop the mobility ecosystem. According to them, mobility data such as transactions, journeys, accidents and vehicle maintenance are recorded and connected

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## Southeast Report

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within a single MVL ecosystem. Users can interact with the MVL ecosystem on the blockchain through connected services such as TADA and other upcoming services. Operating in Singapore, Cambodia and Vietnam, TADA has over 50,000 drivers and more than 500,000 users.

**Source:** *BRIDGE* (The original article was partially revised by the author.)

**PSR Analysis:** Unicorn companies in Southeast Asia have been raising large amounts of capital. Tech companies are solid. They are cleverly combining sophisticated business strategies with promotion to attract investors. There has been a noticeable trend in the past for foreign companies with huge capital to invest in Southeast Asia, and the Southeast Asian governments have also been eager to attract factories in the region in anticipation of this. But now, in addition to that trend, homegrown companies are making their presence felt by challenging the local market. As COVID-19 is bringing globalization to a standstill, the trend of local companies growing as a local economic base will accelerate further.

Three-wheeled taxis with various names such as Tuk, Bajaj, Tricycle, etc. can be found in many cities in Southeast Asia. For example, there are about 22,000 registered tricycle taxis in Thailand. In the Philippines, there are an estimated 2.5 to 3 million tricycle taxis. However, air pollution due to exhaust emissions and noise pollution due to engine noise are two of the main problems, and there are calls for the adoption of EVs as a solution to these problems. Several companies have carried out test deliveries of EV Tuk Tuks, but there have been a number of breakdowns in the past because of exposure to heavy rain during the rainy season. It will be interesting to see what strategies companies with no previous experience in vehicle development will adopt to enter this field, where durability is strongly demanded. **PSR**

## 東南アジア > シンガポール 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

### ブロックチェーン配車アプリ「TADA」の運営企業がEVトウクトウク参入に向け500万米ドルを調達

配車サービス「TADA」を運営するシンガポールの MVL Labs は、500万米ドルを調達したことを明らかにした。MVL Labs は、ブロックチェーンプロトコルを元にしたモビリティエコシステムを運営する企業。MVL のブロックチェーン上に構築された手数料無しの配車プラットフォーム TADA は、2018年にシンガポールでローンチした。2020年にはカンボジアとベトナムへも進出している。MVL Labs は調達した資金を使って継続的な拡大を促進し、モビリティエコシステムをさらに発展させる計画だ。MVL Labs によれば、取引、移動、事故、車両メンテナンスなどのモビリティデータが、単一の MVL エコシステム内に記録・接続される。ユーザは TADA や今後展開されるサービスなどコネクティッドサービスを通じて、ブロックチェーン上の MVL エコシステム上と対話することができる。シンガポール、カンボジア、ベトナムで運営されている TADA には5万人超のドライバーが在籍し、50万人以上のユーザがいる。



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## Southeast Report

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*Daimler India Commercial Vehicle (DICV), a subsidiary of Stuttgart-based Daimler, plans to increase its dealership count by 10% to 250 this year.*

**出典: BRIDGE** (一部筆者により元記事内容を改編しました)

**PSR 分析:** 東南アジアのユニコーン企業が大規模な資金調達をする動きが目立つ。テック企業はしたたかで、ち密な経営戦略を上手にプロモーションに結び付けて投資家の気を引いている。これまで莫大な資本を持つ外国資本の企業が東南アジアに投資し、東南アジア政府もまたそれを期待し積極的に工場を誘致することがほとんどだったが、今はその流れに加えて、地元出身の企業が地元の市場にチャレンジして存在感を示している。COVID-19がグローバル化に停滞をもたらしつつある中、地元の企業が地元の経済基盤として成長していく流れは今後さらに加速する。

トゥクトゥク、Bajaj、Tricycleなど、様々な呼称を持つ三輪タクシーは東南アジアの都市の多くで見られる。例えばタイには国内に約22,000台の登録台数がある。フィリピンでは250~300万台があるといわれている。だが、排ガスによる空気の汚染と、エンジン音による騒音被害があり、これらの問題解決に向けてEV化が求められている。数社がEVトゥクトゥクのテスト納入を行ったが、雨季に強い雨にさらされる環境であることから故障が続出したという過去もある。耐久性が強く求められるこの分野で、これまで車両開発の経験を持たない企業がどのような戦略で参入するかは注目に値する。 **PSR**

## India Report

By *Aditya Kondejkar*, Research Analyst – South Asia Operations.

### DICV To Strengthen Dealership Network



*Aditya  
Kondejkar*

Daimler India Commercial Vehicle (DICV), a subsidiary of Stuttgart-based Daimler, plans to increase its dealership count by 10% to 250 this year. **Read The Article**

As Ashok Leyland (second largest player in the MH CV segment) is reducing its business to focus on SCV, DICV is adopting an aggressive strategy in the struggling Indian MH CV industry.

DICV has 230 dealerships, and this move would push dealerships to more than 250 by the end of 2020. With new dealerships, the company says it can reduce the distance between dealerships from 160 km to 120 km. At the same time, new touchpoints will strengthen the company's reach in the golden quadrilateral.

In the last month, the company also has entered the used truck market, which is currently highly fragmented. **PSR**

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## India Report

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## Tractor OEs Boost Output as September Sales Surge

For 18 months, tractor factories were working on a single or 1.5 shift basis at best because of demand slowdown. With numbers picking up, factories now are moving to two or three shifts to hit 100% capacity utilization. The capacity is currently 9.5 lakh units on a two shift basis, but we can also go to three shifts if the demand holds up. **Read The Article**

There are no indications about CAPEX; however, OEMs like Sonalika, Escorts, and Mahindra are increasing shifts and clearing supply chain snags to hit 100% utilization both for domestic and export markets. Rather than demand, OEMs face the issue due to the volatility in the supply chain because of COVID.

Further, the country has seen 6% higher Kharif sowing in the last season. Better storage in the major water reservoirs is seen as a boost for the upcoming rabi crop-sowing which began in mid-October. Hence, we will have a second consecutive bumper year for agriculture. Therefore, agriculture tractor production will see growth in the next two-three quarters. **PSR**

## Russia Report

By *Maxim Sakov, Market Consultant, Russia*

### Sollers-Ford Restarts Engine Plant in Elabuga



*Maxim  
Sakov*


JV Sollers-Ford will resume production at its engine plant in Elabuga; the plant was closed in the summer of 2019 after Ford has left the Russian Passenger Car market. The engine plant in Elabuga is again owned by JV. Total investment in new project is expected to exceed US\$ 8 million (627 million rubles).

The plant will produce diesel engines for LCV Ford Transit units. Mass production is planned for 2023, and production capacity will be 25,000 engines per year. **Read The Article**

**PSR Analysis:** The plant started making engines in 2015, producing the 1.6 liter Sigma engine; it had an annual production capacity of 200,000 engines. After Ford left the Russian market, the production of Ford Transit LCVs continued, but the van has been equipped with an imported engine. Export potential of new engine is high, and recent changes in currency exchange rates have increased the competitive edge for the local product. **PSR**

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## Russia Report

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## Production of BelAZ Trucks May Be Started in Russia

Minsk has offered to Moscow to localize production of heavy mining BelAZ trucks in Russia. It was announced by deputy of Trade Minister Mr. Evtukhov.

“At the moment Belorussian colleagues have offered to produce BelAZ trucks in Russian Federation, to localize... I think, this project could be implemented – says Mr. Evtukhov on joint meeting of trade committees of two countries.

Note, that in Belarus since 9 August the protests have started. BelAZ workers also participated in meetings and strikes. [Read The Article](#)

**PSR Analysis:** BelAZ produces one of the world’s largest HHP mining trucks (up to 450 ton capacity), and Russia was one of its key markets until this year. However, now the import volumes to Russia have dropped significantly. Today, production of similar trucks in Russia is localized by Caterpillar. Similar projects also are developed by local OEMs (Tonar, KAMAZ). So, BelAZ is searching for ways to keep its market share. **PSR**

## Hyundai Plant in St Petersburg To Reduce Production

Hyundai plans to reduce annual production by 15% at its St Petersburg plant, according to plant director A. Kossack. As he notes, production volume at the plant has dropped significantly this year: in H1 2020, the plant produced only 73,000 cars, 25% of its production capacity.

Taking into consideration September’s output of 24,000 cars, total production volume through the end of the year should reach about 200,000 vehicles, almost 15% below the 2019 results. The plant has just returned to a three-shift working schedule. During the post-quarantine period, the plant working on a two-shift basis, making 700 cars per day. [Read The Article](#)

**PSR Analysis:** It appears that the most pessimistic forecasts for the passenger car market to drop 40-50% are not going to be realized. Despite this outlook, Hyundai remains positive about the Russian market, and plans to start engine production here in 2021. **PSR**

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