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DATAPOINT: *North American Golf Cars*

56,200

By Carol Turner, Senior Analyst, Global Operations

56,200 units is the estimate by Power Systems Research of the number of golf cars to be produced in North America during 2021. In this report, we consider North America to be the United States.

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: With 42% of total units produced, Yamaha Motor leads in production of gas-powered Golf Cars in the United States. In second position is Textron (EZGO) with 32%; third, is Club car with 26%.

Worldwide Distribution: Collectively, up to 20% worldwide.

Trends: In 2020, US production of Golf Cars dropped 18%. Production is expected to decrease another 2% from in 2021. The decline in engine powered units is due to the increase in electric models that are currently the most popular power option.

COVID-19 production drop is mostly due to supply chain disruptions such as lack of part(s) availability. During COVID times, electric golf car production dramatically increased (some electric manufacturers reporting up to a 200% increase in production).

The pandemic accelerated the demand for golf cars, not for golf course needs, but as a "lifestyle" vehicle. New models are being worked on with different fuels to make them less expensive and cleaner to run. Gas models are more powerful and are preferred on hilly terrains.

Production should remain flat over the next couple of years with an increase in gas powered units that are eco-friendlier. Further recovery in the US economy and a growing number of golfers will support demand. Expect production of gas-powered units to increase 5-10% by 2025. Electric-powered units could increase by 100%. **PSR**

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PowerTracker™ Summary Q3 2021

Joe Zirnhelt

Gen-Set Sales Growth Constrained by Supply Chain Delays

By Joe Zirnhelt, President and CEO

SUMMARY: *Our **PowerTracker™** survey of dealers and distributors reported that overall gen-set sales increased 4.3% in Q3 2021 from Q2 2021 levels. This builds on a sales increase of 6.8% in Q2 2021 and a slower start to the year of -7.4% in Q1 2021 as sales were constrained by availability and supply issues.*

This quarter's results were based on interviews with 110 gen-set dealer and distributor respondents based in North America. The overarching theme in the third quarter was a continuation of sales growth being constrained by the availability and supply of gen-sets. Longer lead times for dealers to receive shipments is limiting their sales – even though demand from end users remains at high levels.

The data comes from the proprietary ***PowerTracker™*** series of syndicated surveys conducted each quarter by Power Systems Research. Each quarter we interview gen-set dealers and distributors and other businesses across North America to maintain a pulse on the sales channels as well as monitor the ongoing needs and plans for businesses to purchase standby gen-sets to support their business operations.

Within gaseous fueled gen-set ranges, the <10 kW range had an increase of 1.3% after two consecutive quarters of decreases: -9.6% in Q1 2021 and -6.2% in Q2 2021. The 10-20 kW range experienced a more positive sales history over 2021 with 7.8% increase in Q3 2021 and a 7.6% increase in Q2 2021 after a slow start to the year with a 3.6% decrease in Q1 2021.

Rounding out the <50 kW power range, the 21-50 kW range for gaseous fuels increased 7.4% in Q3 2021 after large Q2 2021 quarterly increase of 16.5%.

Other power ranges within gaseous fueled gen-sets from 50-500 kW experienced quarterly increases ranging from 2.9% to 5.7% in contrast to Q2 2021 where quarterly sales were up 8.9% on average. Finally, the 501-1000 kW range for gaseous fuels was flat in Q3 2021 – following an up and down year where sales were up 9.6% in Q1 2021 and down 2.8% in Q2 2021.

Sales of diesel fueled gen-sets generally leveled off in Q3 2021 relative to the stronger rebound observed in Q2 2021. The only exception is diesel gen-sets <10 kW which have struggled over the last year with a reported decrease of 10.5% in Q3 2021 and marking five consecutive quarters of sales decreases going back to Q3 2020. Quarterly change across diesel <300 kW ranged from -12% to 9.6% while the 300-1000 kW range showed increases ranging from 6.3% to 9%.

Finally, the upper power ranges from 1000-5000 kW diesel reported a 5% quarterly increase.

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PowerTracker Summary

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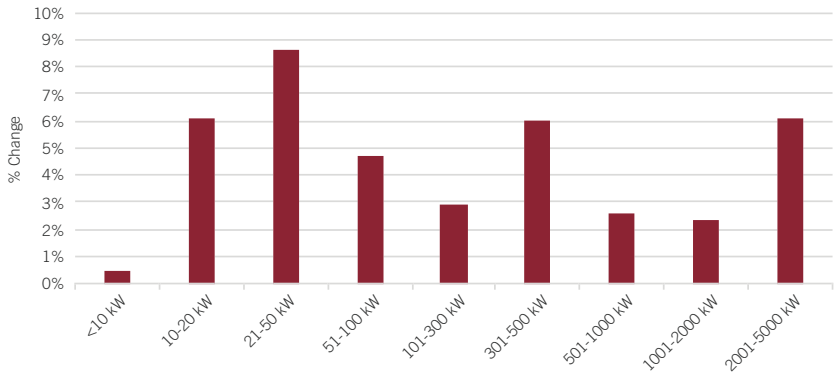
Year-on-Year, inventories are down 41% in Q3 2021, which reflects the inability for dealers to replenish inventory during this time of higher demand and short supply/longer lead times.

Percent Change by kW Range from Q2 2021 to Q3 2021- All Fuel Types



Looking by application, portables were down 2.4% from Q2 2021 levels reflecting a shortage and backlog of available units in the smaller gasoline units. Other applications were up in Q3 2021 including standby (10% increase), Peak Shaving (7% increase), Base Load (6% increase) and Cogeneration (18% increase). These increases for the "other" applications align with increases we have observed for quarterly sales of gaseous (i.e. natural gas) type of gen-sets >50 kW.

In Q3 2021, dealers reported overall that inventories declined by 6.8% from Q2 2020 levels. The quarterly decline in inventories for Q3 2021 continues a trend where overall dealer inventories have decreased on a quarterly basis going back to Q2 2020. As demand remains at relatively high levels a high percentage of dealers reported they cannot maintain supply to meet customer demands.

Year-on-Year, inventories are down 41% in Q3 2021, which reflects the inability for dealers to replenish inventory during this time of higher demand and short supply/longer lead times. Over the last three quarters the overall inventory levels have maintained a level of approximately 40% lower than one year earlier.

Again, this seems to be due to dealers not being able to replenish needed inventories and not the case that dealers are hesitant towards placing orders for new inventory.

METHODOLOGY: Since 1998, Power Systems Research (PSR) has been continuously maintaining its ***PowerTracker™*** series of syndicated surveys, conducting at least 300 interviews each quarter among two key respondent groups in North America: gen-set dealers and distributors, and business consumers.

We conduct 200 interviews each quarter among dealers and distributors; the focus of this survey is on recent sales and market observations for the current quarter as well as expectations for the coming quarter.

Our Business Consumer survey consists of 100 interviews per quarter among a wide cross section of businesses to gather their input concerning ownership, usage trends and motivating factors for purchase, including any concerns about the reliability and availability of electric power.

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PowerTracker Summary

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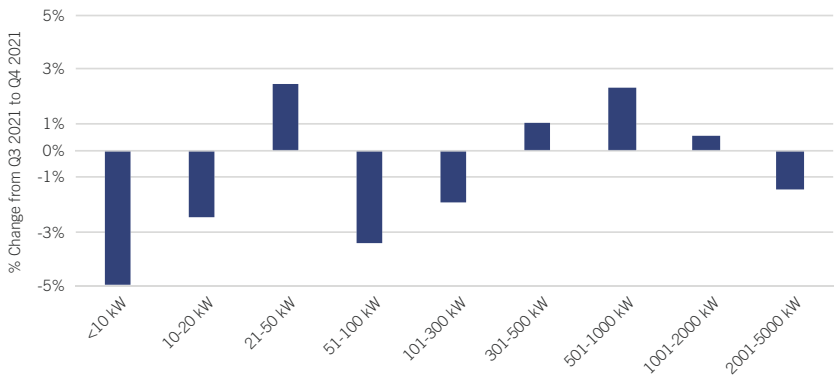
Dealer/Distributor Outlook for Q4 2021

Expectations of quarter-to-quarter sales growth for Q4 2021 varied depending on the power range and fuel type. Sales expectations for diesel fueled gen-sets less than 300 kW were mostly negative with the dealers selling <10kW units citing the largest decrease of 23% and the 101-300 kW range a slight decrease of 1.4%. The only brighter spot for diesel <300 kW is the 21-50 kW range estimating a 3% increase in Q4 2021 sales. Sales for diesel fueled sets above 300 kW are more positive with Q4 2021 sales expectations averaging 2.1% for the larger power diesel gen-sets.

Sales expectations for gaseous fueled gen-sets were fairly neutral across the power ranges with quarterly changes ranging from -3% to 3% expected for Q4 2021 sales. The only exception is the gaseous <10 kW sets which are expecting a decrease of -8.6% for Q4 2021 sales. This most likely is due to the dealer group's belief that supply chain issues will continue to hamper sales for smaller gasoline gen-sets through the end of the 2021 year.

Projected Quarterly Change in Sales for Q4 2021- All Fuel Types



*When asked, "**Why do you expect sales to change in the upcoming quarter?**" comments from dealers focused on the following market observations:*

- **Longer lead times for gen-set delivery to dealers:** Like the past several quarters, 25% of dealers interviewed during Q3 2021 cited long lead times and lack of inventory as a reason their sales would be affected in the upcoming quarter. The supply chain issues plaguing the industry have translated into lack of available product and are impacting their sales pipeline.
- **Weather and power outages:** Over 31% of dealer responses noted either winter weather or concern for outages as reasons that their sales would increase in the fourth quarter relative to third quarter. Many dealers noted the possibility of winter weather events like ice storms as the direct attribution for an increase in sales. Others noted that an ongoing concern with an increased number of power outages over the last year combined with this threat of winter weather should translate into more inquiries and increased sales.

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PowerTracker Summary

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A trend working in the opposite direction as the weather and power outage concerns is just the cyclicality that some dealers experience during the fourth quarter.

- **Lower Sales Due to Seasonal Reasons:** A trend working in the opposite direction as the weather and power outage concerns is just the cyclicality that some dealers experience during the fourth quarter. About 10% of dealer responses noted they expect decreases in sales due to seasonal reasons. This is primarily due to the non-residential customer groups where activity in the construction sector slows down during the winter months and the fact that end of year budgets have already been reflected into their third quarter sales estimates.

*When asked, "**What changes have you recently noticed among particular customer groups or product categories within your market?**" there were several comments that emerged as common themes. Many of these are comments that have carried from quarter to quarter, but the following is a sampling of some key observations:*

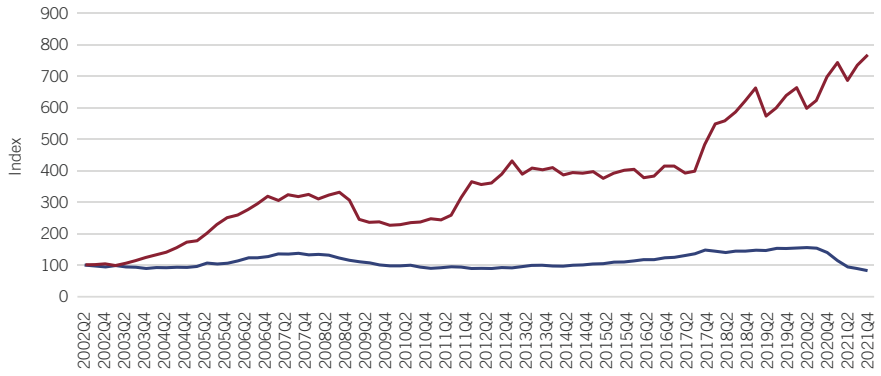
- **"No changes observed except….":** When asked what changes that dealers have observed among their customers nearly 40% mentioned "Nothing" but quickly followed this up with a comment surrounding "Nothing except for the fact that I can't get product in at the moment". While dealers overall may not be observing any larger trends in their customers groups, the lack of availability of product is right there on the top of their minds.

  We can attest to the overall level of frustration being experienced due to lack of available product within the dealer group. We do feel that dealers are really searching for that day when supply chain issues will get worked out enough and they will have more answers for customers across the board in terms of delivery timeframes that will keep the customer engaged and willing to make a purchase with an acceptable lead time for the desired gen-set. At the current moment dealers are, in many cases, not able to meet the customer expectations in terms of lead times and this is pushing off those incremental sales.

- **Strong demand from residential consumers:** As reported in previous quarters there is still a significant level demand from residential for standby generators due to COVID-19, more working from home and general security of energy supply concerns. **PSR**

Inventory vs. Sales Outlook

**based on index comparison of the releative change in inventory to the relative change in a sales on a quarterly basis.



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Brazil/South America Report

By Fabio Ferraresi, Director Business Development-South America

JCB To Expand Production Capacity in Brazil

Fabio Ferraresi

JCB plans to invest R$ 120 million (US$ 20 million) in its factory located in Sorocaba, State of São Paulo, with the objective of increasing annual production capacity from 4,000 to 10,000 units by 2026. JCB expects to grow 50% in sales volume this year, compared to last year's results, and more than double the sales.

Source: *Valor Economico* **Read The Article**

PSR Analysis: With the increased production volume from new products made in Brazil, such as Wheel Loaders, JCB should be above 80% capacity. With the market growth forecast for Brazil, it will be necessary for JCB to increase production capacity. The scenario is slightly different for other players who have higher capacity in their plants in Brazil.

VWCO To Invest US$ 400 million in Four Years in Brazil

The amount is expected to be directed mainly to new technologies, such as for the Proconve P8 introduction in 2023, new technologies for Connectivity and development of sales and aftersales areas.

Source: *O Estado de São Paulo* **Read The Article**

PSR Analysis: The investment is higher than the former investments cycles but keeps the same line and makes the company one of the most important players in the Truck and Bus industry in South America. With this announcement, VWCO confirms its belief in the Brazilian Market and indicates its willingness to keep its market share lead.

Cummins Announces Hydrogen and Electrified Portfolio in Brazil

When completing 50 years in Brazil, Cummins announces the arrival of the New Power unit in South America. This includes Electric propulsion, NG Engines, cleaner Diesel Engines, Fuel Cell and mainly Hydrogen.

Source: *M&T Magazine* **Read The Article**

PSR Analysis: As part of its global strategy, Cummins in South America, leads in the first phase in market niches with NG Engines and follows with other new solutions in the following phases. **PSR**

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Tawian Report

By Erik Martin, Director – Asia Region.

Erik Martin

TSMC in Early Talks on Germany Plant

Taiwan Semiconductor Manufacturing Co (TSMC, 台積電) is in early talks with the German government about potentially establishing a plant in the country, according to a senior executive.

Various factors, including government subsidies, customer demand and the talent pool, would influence its final decision, TSMC senior vice president of Europe and Asia sales Lora Ho (何麗梅) told reporters on the sidelines of a technology forum in Taipei.

The discussions come as the EU and others seek to increase domestic chip production to mitigate the risk of supply chain disruptions.

The chipmaker has not discussed incentives with Berlin or decided on a location, Ho said.

TSMC chairman Mark Liu (劉德音) in June told shareholders that the Hsinchu-based company had begun assessments on setting up manufacturing operations in the European country.

The world's largest contract chipmaker, which mostly produces domestically, has started to diversify over the past year to help meet demand in various major countries seeking to bolster domestic semiconductor production out of national security and self-sufficiency concerns.

It is building a US$12 billion facility in Arizona and is set to soon start construction of a US$7 billion plant in Japan.

Meanwhile, the EU said it would unveil the "European Chips Act" in the first half of next year as part of its strategy to boost semiconductor production.

One of the goals would be to account for 20 percent of global production by 2030, the bloc said.

Source: *Taipei Times; Bloomberg and Reuters* **Read The Article**

PSR Analysis: Continuing a theme that has been developing since early 2020, supply chain frailties and sourcing shortfalls are driving plans for localized production facilities across the globe. Semiconductors are at the center of the discussion. The causes of the current shortage in the automotive industry, ranging from natural and man-made disasters to channel diversions and everything in between, have made it clear that local production is not only beneficial, but also essential, as new technologies continue to take root and grow in the world markets.

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Tawian Report

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Toyota reportedly has partnered with China's BYD to develop an affordable electric car to launch next year.

Port congestion, labor shortages, power outages and political conflicts are impacting the movement of goods and materials. Regional semiconductor production facilities like TSMC's Europe facility being discussed will take time to build and will still face many of the same challenges which exist in current locations: raw material acquisition, skilled labor hiring, environmental certification, domestic transportation bottlenecks and water resource management.

Despite these challenges, the benefits of a diversified supply chain for these key components will offer greater opportunity for the long-term implementation of technologies need to expand alternative energy vehicles, autonomous drive capabilities and myriad other factors which will be required for smart cities of the future.

Moreover, from the Life Cycle Assessment (LCA) perspective, the chance exists to reduce some of the carbon footprint associated with semiconductor production, and possible develop meaningful recycling plans that can be managed regionally, whether in Europe or in other areas. **PSR**

Far East: Japan Report

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

Akihiro Komuro

Toyota Joins BYD To Build Affordable $30,000 Electric Car

Toyota reportedly has partnered with China's BYD to develop an affordable electric car to launch next year. The Japanese automaker has widely been recognized as a laggard in the transition to electric vehicles. Years of betting on hydrogen fuel cells and hybrid vehicles has put Toyota behind on battery-electric vehicles.

Reuters reports Toyota is planning to release a "small and affordable electric sedan" in China next year:

The electric vehicle is reportedly going to be powered by BYD's blade battery cells with LFP chemistry. LFP chemistry has improved enough in recent years that it is moving from mainly being used in electric buses to now electric cars. BYD's blade battery has attracted a lot of attention – even from Tesla, according to reports coming out of China. A Toyota source talking to Reuters said that it is what is enabling the automaker to produce its first affordable all-electric car:

The new electric vehicle will reportedly be slightly bigger than the Toyota Corolla and sell for less than 200,000 yuan (US$ 30,000). It's not clear if the automaker plans to introduce the new electric vehicle outside of China.

Source: Electrek

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Far East Report

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> *"The impact of this move on the industry will not reach a very large level. Currently, Toyota is mainly receiving battery supplies from PPES (Prime Earth EV Energy, a company co-founded with Panasonic) and CATL."*

PSR Analysis: I called **Mr. Kenichiro Wada of the Japan Electrification Research Institute**, a specialist in the Japanese EV industry, for his opinion on this report. The following is Mr. Wada's point of view, which is very sharp and to the point, so I would like to introduce it here.

"The impact of this move on the industry will not reach a very large level. Currently, Toyota is mainly receiving battery supplies from PPES (Prime Earth EV Energy, a company co-founded with Panasonic) and CATL. As the EV market is expected to grow in the future, (methods) to procure batteries will have a significant impact on production, and this is where almost all automakers, not just Toyota, are currently focusing their efforts. Toyota's collaboration with BYD should be seen as part of its efforts to increase its battery procurement channels, and this is like an insurance policy for Toyota to expand its battery procurement routes.

"Toyota is working on all aspects of hybrid, plug-in hybrid, EV, and FCV. But Toyota's real intention is that hybrids, Toyota's current strong point, will continue to be accepted by the market for a long time. And this expectation is being undermined in the market. Both Europe and the U.S. are moving to promote EVs and not allow HV sales in the future.

"Toyota's market share in Europe is only about 6%, and even Toyota is almost incapable of influencing the decisions of the entire European market by one company. In an interview in early December, the CEO of Toyota Motor Europe indicated that the company plans to limit the cars it sells in Europe to zero-emission vehicles by 2035. This is a far cry from Toyota's previous policy of promoting PHVs until EVs are widely available, and they appear to be in a hurry and rush.

"As for the developments regarding batteries, Toyota, like other manufacturers, is also investing heavily in all solid-state batteries and fuel cells, but the prospects for all solid-state batteries in particular are not promising at all. Since rare metals such as cobalt and nickel have been almost completely suppressed by foreign manufacturers, led by China, Japan, including Toyota, is developing battery technology that does not require rare metals.

"However, while technological advancement is important, what is really important is to find the right balance between supply and demand. Resources are currently very expensive across the board, but even if battery technology is developed that does not require these resources, it is important to know if it will contribute to the cost."

While I cannot present all of Mr. Wada's remarks here, I feel that his perspective is very solid and qualified. International competition is becoming very fierce in areas such as batteries and rare metals, but many of these issues are increasingly being decided politically by each country or region to protect its own auto industry, rather than on the basis of numerical accuracy, such as technological superiority or environmental impact. I am concerned about this.

We cannot ignore the political background to the collaboration between Toyota and BYD. There is a question as to whether this is the right course of action to truly contribute to users and the environment. **PSR**

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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

トヨタ、BYDと提携して3万ドルの手頃な電気自動車を製造

トヨタ自動車は、中国のBYDと提携し、来年発売予定の手頃な価格の電気自動車を新たに開発すると報じられている。

日本の自動車メーカーは、電気自動車への移行に遅れをとっていると広く認識されている。長年、水素燃料電池やハイブリッド車に賭けてきたことで、トヨタはバッテリー式の電気自動車に遅れをとっている。ロイターによると、トヨタは来年、中国で「小型で手頃な価格の電気セダン」を発売する予定とのこと。4人の関係者がロイターに語ったところによると、最終的に手頃な価格でありながら余裕のある走りを実現するために、重要な技術を現地のパートナーであるBYDに依頼した。

この電気自動車には、BYDのLFP化学を用いたブレードバッテリーセルが搭載されると言われている。LFP化学は近年十分に改良されており、主にバスに使用されていたものが、今度は乗用車のEVに使用されるようになってきている。報道によると、BYDのブレード電池はテスラからも注目されている。BYDのブレード電池のおかげで、同社初の手頃な価格の電気自動車の生産が可能になったとのことだ。

この新しい電気自動車は、トヨタ・カローラよりもわずかに大きく、20万元（3万ドル）以下で販売されると報じられている。なお、中国以外の地域にも導入する予定があるかどうかは不明だ。

出典: Electrek（一部筆者により元記事内容を改編しました）

PSR 分析: この報道について意見を求めるべく、私は日本のEV業界のスペシャリストである、**日本電動化研究所**の和田憲一郎氏へ電話で取材を試みた。以下は和田氏の視点だが、非常に鋭く、核心を突いた内容であるため、是非ここで紹介したい。

*この動きが業界に与えるインパクトは、さほど大きなレベルには至らないだろう。現在トヨタは、主にPPES（プライムアースEVエナジー, Panasonicとの共同設立会社）とCATLからバッテリーの供給を受けている。今後伸長するEV市場では、バッテリーをどう調達するかが生産に大きく影響するため、トヨタに限らずほぼ全ての自動車メーカーは現在そこに注力している。今回のトヨタのBYDとの協業は、バッテリーの調達チャンネルを増やすための一環と見るべきであり、これは言わばトヨタにとってバッテリー調達ルートを拡げるための保険のようなものだ。

*トヨタはハイブリッド、プラグインハイブリッド、EV、FCVと全方位に取り組んでいる。だがトヨタの本音は、現在のトヨタのストロングポイントであるハイブリッドが今後も長く市場に受け入れられていくことである。そして、市場でこの

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期待は損なわれている。欧州も米国もEVを推進し、HVの販売については将来的に認めない方向で動いている。欧州でのトヨタの市場シェアはわずか6%程度であり、トヨタと言えども1社で欧州市場全体の意思決定に影響を与えることはほぼできない。トヨタ・モーター・ヨーロッパのCEOは12月初頭のインタビューで、2035年までに欧州で販売する車をゼロエミッション車に限定する方針を示した。これは、「EVが広く普及するまではPHVを推進していく」というトヨタの従来の方針からはだいぶ急ぎ焦っているように見える。

*トヨタのバッテリーに関する動きについては、全個体電池や燃料電池についても大きな投資をしているが、特に全個体電池についての見通しは全く立っていない。コバルト、ニッケル等のレアメタルはほぼ中国を筆頭に海外メーカーに抑えられてしまっているため、トヨタに限らず日本はこうしたレアメタルが不要なバッテリー技術の開発を進めている。だが、技術的な進化も重要だが、本当に重要なのは需給バランスの見極めである。現在資源は軒並み非常に高値を付けているが、これらの資源が不要なバッテリー技術が開発されても、それがコストに貢献するかどうかが重要だ。

和田氏の全ての発言をここで紹介はできないが、彼の視点は非常に適格だと私は感じている。バッテリーやレアメタルなど、国際的な競争は非常に激しさを増しているが、それらの多くは技術的優位性や環境負荷などの、数値で見える正確性よりも、それぞれの国や地域が自国自地域の自動車産業を保護していく目的で、政治的に決定されていく傾向が非常に強まっており、私はこの点を懸念している。今回のトヨタとBYDの協業も、政治的な背景を無視することはできない。真にユーザーや環境に貢献する流れとしてこのアクションが正しいのかどうか、疑問な側面もある。**PSR**

SouthEast Asia: Indonesia Report

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

Indonesia Aims at Lead in Integrated EV Production

Investment related to EVs is gaining momentum in Indonesia. While the government is aiming to upgrade the industry by mainly using nickel as a battery material, Hyundai Motor of South Korea and Hon Hai Precision Industry of Taiwan have announced their plans to produce EVs and automotive batteries. If the concentration of industries advances, the country will compete with Thailand, which is also making efforts to attract related industries, for the leading role in EV production in Southeast Asia.

At the Indonesia International Auto Show, which started in the suburbs of Jakarta on Dec 11, Hyundai Motor's compact EV "Kona" attracted much attention. The company will begin production in 2022 at its plant in West Java province, which will soon be operational.

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Southeast Asia Report

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The reason why the companies are so aggressive about local production is because the Indonesian government is eager to establish an EV industry.

Chinese companies are also developing their aggressive stance. Wuling Motors, which operates under the FAW brand, announced that it will launch the GSEV, a compact EV, in 2022. MG, a subsidiary of SAIC Motor Group, also exhibited an EV.

The reason why the companies are so aggressive about local production is because the Indonesian government is eager to establish an EV industry. The amount of investment that the government considers necessary for the consolidation of the EV industry is $35 billion. In order to attract investment, the government has banned the export of unprocessed nickel and has introduced a 10-year corporate income tax exemption for companies that invest more than 5 trillion rupiah in EV-related projects.

Source: The Nikkei

PSR Analysis: Major EV-related investments in Indonesia are as follows.

1. South Korea: Hyundai Motor's $1.55 billion for complete vehicle plant
2. Taiwan: Hon Hai is considering building a complete EV plant
3. China: CATL is considering building a $5 billion battery plant
4. Germany: BASF plans to invest in a nickel refinery / VW considers investment to batteries
5. United States: Tesla Considering Battery-Related Investments

Indonesia is a market with attractive potential due to its large domestic demand, its large working population, and its abundance of resources as a concentration point for the automobile industry in Southeast Asia comparable to Thailand.

Compared to this trend, the Japanese companies, which currently have a very high market share, are not making any significant moves. There is a point to be made that the spread of EVs in Southeast Asia, where dependence on coal-fired power generation is high, could lead to an increase in carbon dioxide emissions. In essence, however, Japanese manufacturers may lack the resources and passion to take on these overseas markets.

Of course, in order to maintain and expand their presence in a region that has been so highly regarded, they need to take an aggressive stance and have a well-thought-out strategy, but they have been enjoying a stable market share for a long time and have become accustomed to peace, so to speak.

It seems that they do not want to compete simply on the basis of the size of their investment, but the question is how Japanese manufacturers will deal with Southeast Asia in the future, and whether it is right to be immersed in research when the power structure could be drastically changed. **PSR**

東南アジア > インドネシアレポート:

インドネシア、EV一貫生産　東南アジアで主導権狙う

インドネシアでEV関連の投資が活発になっている。政府が電池材となるニッケルを主にいかし産業の高度化を狙うなか、韓国の現代自動車や台湾の鴻海精

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Southeast Asia Report

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密工業などがEVや車載電池をつくる方針を表明した。産業集積が進めば、同じく関連産業の誘致に力を入れるタイと東南アジアでのEV生産の主役の座を争うことになる。

11日にジャカルタ郊外で始まったインドネシア国際自動車ショーで、注目を集めたのは現代自動車の小型EV「コナ」だ。西ジャワ州で近く稼働させる同社の工場で2022年にも生産を始める。中国企業も同じく積極姿勢をアピールする。上汽通用五菱汽車は2022年にも小型EV「GSEV」を発売し、生産も視野に入れると発表した。上海汽車集団傘下のMGもEVを展示した。

各社が現地生産などに積極的なのは、インドネシア政府がEV産業の確立に躍起だからだ。政府がEV産業の集積に必要とみる投資額は350億ドル。投資を呼び込むために未加工のニッケルの輸出を禁じ、EV関連で5兆ルピア以上を投じる企業には法人所得税を10年間減免する措置も打ち出している。

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: インドネシアでの主なEV関連の投資は、

① 韓国　現代自動車が15.5億ドル、完成車工場

② 台湾　鴻海がEV完成車工場の建設を検討中

③ 中国　CATLが50億ドルで電池工場の建設を検討中

④ ドイツ　BASFがニッケル精錬所に投資方針、VWは車載用電池関連投資を検討

⑤ 米国　テスラが電池関連投資を検討

と、非常に活発だ。内需も大きく、労働人口も多く、タイと比肩する東南アジアの自動車産業の集積地として、資源が豊富であることからも魅力的なポテンシャルを持つ市場と言える。こうした動きにも、現時点で非常に高いシェアを持つ日本勢の動きは目立たない。石炭火力発電への依存度が高い東南アジアではEV普及によって二酸化炭素の排出量がむしろ増えてしまう恐れがある、という意見にも一理ある。だが本質として、日本メーカーには、こうした海外市場に挑戦するリソースと情熱が不足しているのかもしれない。

もちろん、これまで高い評価をされてきた地域でプレゼンスを維持拡大していくためにはアグレッシブな姿勢と綿密な戦略が必要なわけだが、これまで長い間安定的なシェアを取り続け、いわば平和に慣れてしまった状態で、急に競争が激しくなって日本勢は面食らっているという状況に近い。投資の大きさで単純競争したくない、という意図も見えるが、勢力図が大きく塗り替えられるかもしれない最中で研究に没頭しているスタンスが正しいのかどうか、今後日本メーカーがどのように東南アジアと向き合うかが問われる。**PSR**

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India Report

By Aditya Kondejkar, Research Analyst – South Asia Operations.

MG Motors Plans To Make India An Export Hub

Aditya Kondejkar

Read The Article

MG Motor India is considering the possibility of exporting shipments from India to markets such as South Africa and the UK along with tapping other right-hand-drive markets across the globe. Despite the current semiconductor shortage, MG motors plans to prepare for a long-term vision of increasing its exports from India. The start of the company's South Africa operations has been delayed due to Covid-19.

MG motors has started exporting their vehicles to Nepal, and the company is preparing for the long term to make India an export hub for the neighboring markets. The carmaker has already dispatched its first batch of Hector SUVs to Nepal and plans to add Astor and ZS EV to the lineup in the Himalayan country next year.

The company is focusing on exports despite the chip shortage and order backlog in the domestic market as it is essentially looking at preparing for the future with a long-term outlook.

"This export (program) is for the long term," ," says Rajeev Chaba, President and Managing Director, MG Motors, "and we are seeding the markets right now, starting with lower volumes, but when the situation improves, say, in a year from now, this will give us a good diversification of our sales footprint." **PSR**

Russia Report

By Maxim Sakov, Market Consultant, Russia Operations

Maxim Sakov

UAZ Patriot SUV Collects US$ 3.8 Million in Pre-orders in USA

The North-American premiere of the UAZ Patriot SUV took place recently at the Los Angeles international Autosalon. The exclusive importer of the vehicle is Bremach Inc., a California company. The Russian car has its own name, Bremach 4x4. The name Taos, announced earlier, was rejected to avoid the conflict with Volkswagen, which has had a product with this name since 2020.

The Patriot was introduced in two versions--standard and off-road extreme. Both models are equipped with 2.7 gasoline engine ZMZ Pro of 149 hp and a six-

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gear automatic transmission Punch Powerglide 6L50, connected all-wheel drive. Standard version costs US$ 26,405 in USA.

According to Bremach, in the first 24 hours after the introduction, they received deposits totaling US$ 3.8 million. How many cars were ordered, was not disclosed, but the minimum deposit is US$ 100.

Bremach representatives emphasize that the UAZ Patriot is the first Russian car officially imported into the USA. It has the best price/quality ratio in the class of medium-size SUVs in USA. It also has a good warranty – 5 years or 60 000 miles, and 10 years/120,000 miles for transmission.

Bremach plans to arrange assembly of Patriots on its site in California from Russian kits. The company is also working on purchased V8 engine. First shipments of the vehicles to customers will start in 2022. **Read The Article**

PSR Analysis: If everything goes well, UAZ could repeat the success story of the Russian Ural motorcycles. They are quite popular in the USA. However, they have almost disappeared from the Russian market. **PSR**

GAZ Group May Start Mass Production of Hydrogen Engines in 2.5 Years

This report comes from General Director of GAZ Power Aggregate division Konstantin Rukhani. “After 18 months we shall complete the tests, after about 2.5 years, we’ll come to mass conveyor production,” he told Ruhani. He added that the design of the new hydrogen engine will be similar to its gas reciprocating engine.

“We consider that at the moment, if we come to the strategy of use gas piston engine working on hydrogen, we can get vehicle with a price of 30-34% higher than current ones. The engine will be less demanding for the purity of hydrogen fuel,” he added.

With this, existing electric buses are 2.5 times more expensive than diesel ones.

Rukhani mentioned that hydrogen piston engine is significantly cheaper than a fuel cell bus. Reciprocating technology resolves the task for reducing carbon exhaust but retains synergy with the design of currently produced CNG engines, transmissions and other components.

In September, the GAZ group said it will develop first two prototypes of hydrogen piston engines in 2021. Also, company has introduced two models of buses with hydrogen fuel cells. A finished prototype of the bus with hydrogen piston engine will be shown in 2023.

GAZ group is a leading Russian bus maker. **Read The Article**

PSR Analysis: A GAZ representative has not explained how the OEM is going to resolve the safety problems. It is well known that hydrogen is an extremely volatile and explosive gas. But if these issues are resolved, this concept has good possibilities. **PSR**

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The prices for cars in Russia now exceed the prices abroad. The high prices are caused by high custom taxes, certification for Glonass satellite systems and exchange rates of national currency.

New Cars in Russia Cost More Than in USA and Europe

The prices for cars in Russia now exceed the prices abroad. The high prices are caused by high custom taxes, certification for Glonass satellite systems and exchange rates of national currency. After many global OEMs built assembly plants in Russia, prices for cars were equal to cars in other markets, and after fall of the Ruble exchange rate in 2014, cars became even cheaper. However, in 2021 prices have grown significantly because of a shortage of semiconductors.

For example, the minimum price of a Hyundai Sonata in the USA is US$ 24,150, equivalent to about 1,725,000 rubles. In Russia, a similar car is priced at 1,799,000 rubles. A Kia Seltos in the USA costs US$ 22,490 (about 1,605,000 Rubles); in Russia, the minimum price is 1,734,000 rubles. Cars such as the Toyota Camry, Toyota Corolla and RAV4 are also more expensive in Russia by about US$ 3,000-5000. **Read The Article**

PSR Analysis: Actual prices are even higher in Russia because of dealer mark-ups. Sometimes, to buy a car, it's necessary to pay 1.5-2 times the prices as a cost for "options". As a result, there has been a 20% fall of sales in the country. **PSR**