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EV CONNECT

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India's Favourite Bi-Monthly E Magazine for EV Industry.

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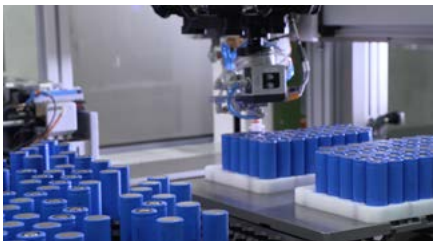

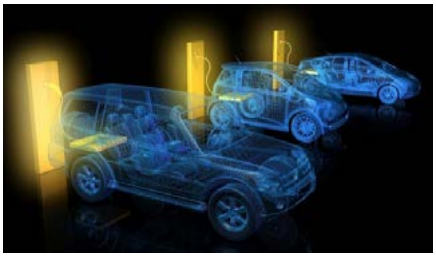

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Editor-in-Chief : B. Kartikeya

EDITORIAL

Special Editor : Ft.Lft AT Kishore

Associate Editor : Dr. Pranay Kumar

Correspondent : Vamsi Krishna

CREATIVE HEAD : Rajesh Bali

PHOTOGRAPHER : Krishanth

MARKETING

Head Marketing : Dr. Pranay Kumar
+91 80836 30500

SUBSCRIPTION

Asst.Manager, Subscription : Naheda

Sr.Customer Support Officer : Sony

FINANCE & ADMINISTRATION

Sr.Manager : Karunandhi

Asst.Manager : Md. Wajid Ali

Editorial & Advertising Offices

Future Aviation Media Pvt Ltd
No 27, Rd Number 2a, Tirumala Hills,
Asmangad, Hyderabad, Telangana 500036, India.
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For Advertising details contact
Marketing@futureaviation.in

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No 27, Rd Number 2a, Tirumala Hills,
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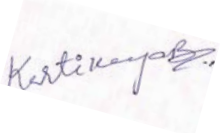
Flipping through the pages of a magazine can make you smarter and possibly generate a new topic of interest that you can't get enough of. We aspire to achieve that with 'EV Connect,' bringing all the exciting updates of the EV world in one place. In this magazine, we present interesting developments in the EV space for October 2022. The articles will hook you with catchy subjects, images, and new perspectives.

From companies collaborating for technology development to thrilling new launches, it's been a busy month for the EV industry. The launch of OTUA is set to transform the three-wheeler EV sector, and the joint effort of Ashok Leyland and IIT Madras for hybrid EVs seems promising. We've extensively covered the readiness of stakeholders in light of the booming EV industry globally. Practical innovations in battery swapping and lifespan were seen. In addition, government schemes for the encouragement of electric vehicle adoption have witnessed a rise, pointing towards a smoother transition to an electric future for India. Developments also mean increased responsibilities of overseeing the implementation of new ideas. That's why we've detailed major appointments of CEOs and directors worldwide in the EV zone.

Accumulation of information isn't enough. Fresh takes help to keep the momentum going in any developing sector. We recognize that and have included an interview with Flt. Lt AT Kishore, the CEO of Vidhya Sangha Technologies Pvt. Ltd. It carries useful insights into his industry experience and key advancements in the EV zone that can become big in the future.

Designing this issue has been a fascinating yet exacting journey for us. We've put in our best efforts to include the most dynamic selection of topics and have been careful to detail all crucial advancements. Thanks to all those who've played a part in the making of this magazine.

Get in a comfortable spot and enjoy this read packed with gripping stories of the EV world!



Senmiao Technology Signs Co-operation Agreement with New Energy Vehicle Leasing and Charging Station Operator in

SENMIAO TECHNOLOGY
NASDAQ: AIHS

Senmiao Technology Limited, an online ride-hailing industry in China, has announced that it's wholly owned subsidiary Chengdu Xixingtianxia Technology Co, Ltd, has signed an agreement with Guangzhou Tongchuang New Energy Ltd, a first-tier new energy vehicle leasing company approved by the Guangzhou Municipal Transportation Commission.

In Guangzhou, Tongchuang operates 42 electric vehicle charging stations. Tongchuang provides vehicle leasing and maintenance through its charging stations network, with more than 200 vehicles under the lease. It is among the first leasing industry to offer free charging for its leased vehicles. Tongchuang's leased vehicles can charge for free at any EV charging station.

As per the agreement, Tongchuang will utilize Senmiao's online ride-hailing platform to provide these services by appointment in Guangzhou. They will use their vehicle and driver resources to comply with relevant regulations. Tongchuang will shoulder the responsibility of managing its own drivers. Tongchuang's drivers will be provided with real-time information, including service types and pricing, by Senmiao. Senmiao will pay commission fees to Tongchuang monthly based on the collection of customer fares.

Senmiao's Chairman and CEO, Xi Wen, stated, "We are excited to begin this cooperation with Tongchuang, an innovative company in the leasing industry that has cultivated longstanding relations with its drivers. We look forward to similar cooperations with leading companies to continue strengthening our position as a leading provider of online ride-hailing services serving a growing customer base in Guangzhou and other key cities."

The partnership between Senmiao and Tongchuang will accelerate the growth of Senmiao's online ride-hailing services in Guangzhou.

Hertz joined forces with bp to accelerate EV charging in North America.

Hertz

The American car rental company Hertz has joined hands with bp. The parties have announced the signing of a memorandum of understanding (MOU) focussing on developing a national network of EV charging stations powered by bp pulse, bp's global electrification and charging solution brand.

As per the agreement, bp pulse will manage Hertz's charging infrastructure and customization of its Omega software. This will ensure Hertz's growing fleet of electric rental cars is charged quickly and efficiently between rentals.

The collaboration benefits bp pulse as Hertz has a national footprint of locations across North America. It will help build and manage a network of fast-charging hubs to serve Hertz customers.

Hertz has already assembled a fleet of tens of thousands of EVs through its large-scale purchases from Tesla, Polestar, and GM. These EVs are available at 500 Hertz locations across 38 states. By the end of 2024, they aim to have one-quarter of their fleet to be electric.

Amply Power, rebranded as bp pulse, installed charging infrastructure at 25 Hertz rental locations in multiple states in 2022.

Hertz CEO Stephan Scherr said: "Hertz is accelerating the adoption of electrification by investing in the largest rental fleet of electric vehicles in North America and expanding the availability of charging stations. We are excited to partner with bp pulse to create a national charging infrastructure for the Hertz fleet."

The chief executive of bp, Bernard Looney, said, "It's brilliant to be joining forces with Hertz- quite simply, they are one of the biggest names on the road. Working together to deliver charging facilities and design solutions, we believe we can take the EV driving experience to the next level for US customers.

The MOU assures Hertz and bp's future of mobility and hopes to accelerate EV consumer adoption.

Ashok Leyland and IIT Madras Join Hands on Turbine Technology for Hybrid EVs

ASHOK LEYLAND

IIT Madras, an institute of national importance, and Ashok Leyland, a leading manufacturer of commercial transportation owned by the Hinduja group, are collaborating to develop and market the 'Swirl Mesh Lean Direct injection System.' This decision is a crucial step towards developing a line of hybrid EVs using the Micro Gas Turbine. The gas turbine is an innovation by an IITM startup to offer a replacement for heavy car batteries. Researchers at NCCRD (National Centre for Combustion Research and Development) are working on this turbine technology for generating onboard power on electric trains.

Researchers have successfully tested this technology and got a letter of support from Ashok Leyland, encouraging them to optimize it for heavy passenger vehicles, starting with a 9-meter electric bus. This project focuses on developing hybrid electric vehicles that emit the least, are affordable, and offer long-range for heavy passenger or non-passenger vehicles. They are also considering fuel flexibility for this series as it'll ease the vehicles' marketability.

Dr. N. Saravanan, CTO of Ashok Leyland, said, talking about joining hands on the hybrid powertrain, "Micro Gas Turbines hold significant promise as a technology that will extend fuel combustion beyond traditional IC engines and provide for more efficient performance and multi-fuel capability."

This collaboration could hold the key to India's growth in technological enhancement for electric transportation. India will be moving ahead in its transition from conventional vehicles to sustainable transport.

Harting India Is Closely Watching the E-Mobility Market

Harting India Private Limited started in 2005, is an auxiliary for Harting Germany. It provides interconnection solutions that cater to several industries. Their products are in most demand in the transportation, infrastructure, and energy sectors. The connectors they manufacture are crucial in updating machinery. Some products they provide are PCB and Interface connectors, System cabling, Ethernet solutions, and switches.

The most successful innovation of Harting India, however, is their 'Han' connector. They offer Miniaturization & Integration services and customization solutions whose simulations can be run for testing. Harting's electrical cabinet innovation slashes installation time by 80%. With all these amazing services and products, Harting India seems like an upcoming global player.

Their director of Market & Product Management, Mr. Arvind Tekur, recently spoke about the company's intentions of distending in the EV tools manufacturing space. Harting already meets the industry standards of OEMs (Original Equipment Manufacturers) in its EV connector gun assemblies. These connector guns are indispensable for EV manufacturers because they act as a connecting cable between the charging device and the electric vehicle's battery. The company wants to boost its manufacturing locally and has set up a best-in-class facility in Thirumazhisai, Chennai. Arvind also talked about Harting's alignment with the 'Make in India' initiatives of the government and the strategies they'll devise to meet their objectives.

Loop Global Inc. Secures $60 million to redefine EV charging infrastructure

Loop Global Inc is an EV charging Infrastructure Company that provides owners with a profitable solution for deploying EV charging networks. Recently, they announced the completion of a $40 million Series A-1 funding round. These funds will be used to expand its US operations, continuing to provide support to all 50 states. They also aim to expand beyond the 15+ countries the company already supports.

Fifth Wall Climate, the largest venture capital firm focused on technology, co-led the funding round with Agility Ventures, a global leader in supply chain services, infra, and innovations. Additional investors in the round were Keystone National Group, which provided an additional $20 million financing facility to support the company's rapid growth, and B. Riley Financial, an investment banking partner.

The demand for affordable and reliable EV charging infrastructure is extremely high, as almost 230 million EVs are expected to be on the road by 2030. But, many property owners do not know where and how to implement the technology across their properties. Loop offers simple, smart, and affordable EV charging products to enable passive charging at home, work, and on the go.

Dustin Cavanaugh, the CEO of Loop, said, "At Loop, we believe in transition to clean EV will only move as quickly as the EV charging infrastructure to support it. Loop is streamlining this transition by making the next-generation EV charging infrastructure solutions for affordable property owners."

To date, Loop has sold over 7000 charging stations worldwide. The company's next-generation EV charging solutions are adopted nationally and internationally.

Magna Establishes New Engineering Center in Bangalore to Spearhead Electric Mobility

Magna International, a Canadian mobility technology company, is one of the top dealers in the automotive industry and offers almost everything from spare parts to full-vehicle assembly. The Canadian auto giant is big on entering the EV game in India and recently invested over Rs. 984 Crores in creating an engineering center called 'Magna Innovation Campus' in Bangalore. The 240,000-square-foot center in Brigade Tech Garden will be the hub for powertrain electrification and EV parts development in India. It will be up and running before April of 2023 with a team of over 1000 product engineers and tech experts by the end of next year.

Anton Mayer, Chief Technology Officer & Executive Vice President of Magna International, commented on Magna's investment decision saying, "With this new engineering center, we can further strengthen our vehicle systems development and IP creation, especially in the areas of e-mobility." Magna sees huge potential in the growing EV sector in India. Therefore, it recently acquired a stake in the Indian EV startup YULU, against the funding of Rs. 633.4 Crores.

With 12 manufacturing units and 3 product development bases spanning India, Magna will mostly focus on system modification, simulation, testing, and innovative cloud solutions for the EV space. It's currently hiring for several Bangalore-based engineering positions at www.magna.com/careers.

VinFast and Renesas sign strategic partnership to advance automotive technology

Vietnam's first global EV maker, VinFast, and Renesas Electronics Corporation, a premier supplier of advanced semiconductors, announced that the two companies are further extending their collaboration agreement to include automatic technology development of EVs and to deliver system components. The deal was signed at VinFast's factory in Haiphong City, Vietnam. VinFast's CEO, Le Thi Thu Thuy, and Renesas's CEO, Hidetoshi Shibata, attended the ceremony.

This is not the first collaboration between these two companies, as they had previously worked together on automotive infotainment systems, Renesas's SoCs, R-car, and analog products, which have already been implemented in VinFast's new VF8 and VF9 EV models.

As per the extended agreement, Renesas will provide a broader range of products to VinFast. It will include SoCs, microcontrollers, and analog and power semiconductors. These products will provide technical support and assist VinFast in developing future automotive applications and mobility services.

Le Thi Thu Thuy, CEO of VinFast, said, "VinFast is on a course of market expansion worldwide and mass production to ensure the highest vehicle performance and timely delivery to its customers." He added, "This new partnership with Renesas will give VinFast access to both advanced in-vehicle semiconductor technology and high-level system enterprise with the aim to accelerate the development of safe and sophisticated EVs for global markets."

Hidetoshi Shibata, President, and CEO of Renesas, said, "The collaboration with VinFast reinforces our commitment. We are thrilled to join VinFast's journey for their global growth beyond Vietnam. By making EVs more widely available, I am convinced we can lead a greener, safer, and more sustainable way of living."

VinFast will develop new EVs and market expansion to increase its annual production and sales by gaining access to Renesas's leading-edge technologies and automotive industry expertise.

Mercedes-Benz rolls out the 'Made in India' EQS 580 4MATIC

India's largest luxury carmaker Mercedes-Benz has yet again achieved a significant milestone in its Indian journey by rolling out the most advanced and highly sophisticated EV- the EQS 580 4MATIC. By launching this car, India becomes the first market outside Germany to manufacture this model. The EQS is India's longest-range EV, its design and technology setting a new benchmark in the luxury EV segment.

EQS 580 4MATIC launch strengthens Mercedes Benz's global vision toward achieving a climate-neutral car fleet in the future. This luxurious EV rollout restates Mercedes-Benz's commitment to its Indian customers, promising technologically advanced and futuristic products from its global portfolio.

Martin Schwenk, CEO and MD of Mercedes-Benz India said, "The EQS 580 4MATIC is our first locally manufactured EV in India and will play a pivotal role in driving our ambitious EV plans for the market. It is a perfect blend of technology, luxury, and safety, pioneering numerous tech features for our customers. India is the first country outside Germany to manufacture the EQS 580 4MATIC. This unique distinction underpins Mercedes-Benz India's deep customer commitment and long-term vision for developing the luxury EV market here."

The EQS 580 4MATIC is the world's most aerodynamic car, boasting a drag coefficient of 0.20. It has the longest-range EV with an 857 km range (ARAI certified). The EV is packed with a high power density of the lithium-ion battery with a usable energy content of 107.8 kWh and a 400-volt battery manufactured using the latest technology. The EQS is also built with superior technology through the advanced infotainment system MBUX Hyperscreen.

Mercedes-Benz India's EQS prioritizes passenger safety with a EURO NCAP rating of 5 stars. It is also equipped with 9 airbags. It also features a rigid passenger cell, special deformation zones, and state-of-the-art restraint systems. In addition to the standard crash tests, the EQS's performance in various load situations was verified at the Vehicle Safety Technology Centre (TFS), Sindelfingen.

Dandera Ventures Launches OTUA 3-Wheeler Cargo EV

Dandera Ventures recently launched the OTUA, a cargo electric 3-wheeler. OTUA's customer base comprises last-mile delivery businesses and independent delivery facilities. Kshitij Bajaj, Founder & CEO of Dandera Ventures, commented, "OTUA raises the bar for everything that last-mile delivery drivers and fleet owners have come to expect from a cargo EV. From world-class and industry-leading driver ergonomics and safety to outright performance in terms of range, volume, and capacity, OTUA is the first cargo EV to offer an uncompromising vision of transitioning to sustainable mobility for the global logistics and last-mile delivery industry."

OTUA could be ruling the 3-wheeler EV

industry in India for a while now. It boasts the highest volume and load-carrying capacity of any electric cargo 3-wheeler. OTUA can carry upto 900 kgs and run upto 165 km per charge. To widen its customer base, OTUA offers many variants ranging from Rs. 3.5 lakhs to Rs. 5.5 lakhs. It's also working on a subscription-based model, which will soon be available for retail purchases. The most impressive thing is that OTUA is fully 'Made in India' from the parts to the batteries.

Kanav Manchanda, Founder & COO of Dandera Ventures, said, "Both OTUA, and Dandera, have been developed to set new standards in the EV industry. Where the OTUA is primed to be India's most sophisticated EV, its rollout is also planned in a manner that enables efficient adaptability. The future is ours for the taking."

In the financial year 2021 alone, commercial outlets sold 2,19,450 units of e-three-wheelers. According to the Vaahan database of the government of India, 47% of net 3-wheelers sold were electric. These statistics favor the growth of the commercial 3-wheeler EV industry in the coming years, and OTUA could be one of the top sellers in this category.

Castrol Study Highlights Key Insights on EV Readiness for Stakeholders

Castrol's new global study called 'Switching ON the rEVolution: The road to EV readiness for markets, carmakers, and consumers' reveals an analysis of forecasts versus the reality of the global automotive industry. According to the survey, 97% of automotive companies say they'll be able to meet government-set targets for mobility transition. But, only 40% seem well equipped to experience a smooth transition from ICE vehicles to EVs. 66% of all surveyed companies are willing to prioritize the transition and increase their R&D budget.

In the last 7 years, the R&D allocation of companies has doubled and is expected to undergo a 10% increase by 2025.

In the Indian consumer base, the survey found that 44% want their next vehicle purchase to be electric. This is due to concerns regarding carbon footprints, urban air pollution, and low maintenance costs of EVs. Castrol cited obstacles in this transition, the major ones being battery costs, lack of charging infrastructure, and lack of competent tech people. In India, it will be a while before the appropriate number of charging spaces get established because 73% non EV users feel a lack of fast-charging stations. Companies are partnering up to broaden the EV charging network and manufacturing or technological collaborations.

Castrol mentioned improving the EV battery life and vehicle range and bringing down upfront costs will help India enter a greener future. Government-supported incentives and infrastructure initiatives will also be supportive of the change.

Sandeep Sangwan, MD of Castrol India Limited, said, "In India, the transition to EVs might take place sooner in the two-wheeler and three-wheeler space compared to four-wheelers. Castrol India is keen to support the transition to EVs, and we are working with our industry partners to bring forth the next generation of technologies."

Kinetic Green Launches Zing High-speed Electric Scooter

Kinetic Green energy and power solutions limited, one of India's most important manufacturers of electric transportation, launched the electric 2-wheeler 'Zing HSS' (Zing High-Speed Scooter). It's inspired by modern styling elements and has several useful features. The Zing HSS has a range of 125 km with a single charging session and a powerful 3.4 kWh lithium-ion battery to provide a great riding experience to consumers. Riders can switch between multiple speed modes and have a comfortable ride with the 3-step adjustable suspension and regenerative braking system. It also comprises a built-in part failure indicator to save customers from unnecessary trouble. Kinetic has performed various tests on the Zing HSS to ensure the safety standards are met.

Kinetic Green has sold 45,000 units of the two Zing models launched in 2021. It has gone a step further to enhance the affordability of e-2-wheelers by partnering up with IndusInd Bank, IDFC First Bank, Sriram City Union, and others. This brings Zing Hss's price down to 85,000 INR.

Sulajja Firodia Motwani, Founder & CEO of Kinetic Green, said, "The launch of Zing electric scooter is a testament to our commitment of offering world-class EV technology, and I am extremely proud to launch this model with best-in-class range of 125 km and features. The company has aggressive plans to expand the portfolio with multiple offerings in high-speed scooters and our revolutionary e-Luna on the way for 2022-2023. Kinetic group has tremendous experience in two-wheeler space, in developing advanced yet affordable two-wheelers like Kinetic Luna and Kinetic Honda scooter, and Kinetic Green is committed to deliver a lot of excitement in the electric two-wheeler space in coming years."

Zing HSS has brought 500 crores in revenue for Kinetic Green. Hence, venturing into the electric 2-wheeler segment has been profitable for it.

Mahindra Unveils Its First Electric SUV- The XUV400

On the event of World EV Day, Mahindra, India's leading EV manufacturer, launched the XUV400, the first EV car from Mahindra, featuring the twin peaks logo. This car stands out because of its look, features, and performance. XUV400 was built incorporating global partners' expertise (from South Korea) in system calibration and vehicle validation. It has micro-controllers for Smart Vehicle Control Unit and the battery management system. Mahindra has optimized this SUV adhering to global safety standards.

The spacious SUV comes with exciting features and promises an enjoyable experience. It's the widest e-SUV in the C-segment category and the first passenger vehicle made in India in the non-luxury category with the fastest acceleration. The SUV takes 8.3 seconds to reach a speed of 100 km per hour and can go as fast as 150 km per hour. Once fully charged, it delivers a range of 456km. It comes with a powerful Lithium-ion battery pack of 39.4kW, which lasts a long time. Using the 50 kW DC fast charger, 80% charge can be attained with mere 50 minutes of charging.

Describing the development process of the XUV400, R.Velusamy, President, Automotive Technology & Product Development, M&M Ltd., commented, "We started the development of the XUV400 by leveraging Mahindra's R&D capability with teams spread across Bengaluru, Pune, and Chennai. We have tested the vehicle globally under extreme weather conditions, along with testing of its fast-charging compatibility (CCS) in multiple geographies to ensure seamless experience for our customers."

Mahindra is conducting the 'XUV400 Fun Fest' across 16 major cities in November 2022. Test drives will be available in December, and customers can book this car in January 2023.

Ola Sells 10000 Units of S1 E-scooter within 24 Hours

One of India's leading EV companies, Ola Electric, marked its latest launch with an electric 2-wheeler: the Ola S1. 10,000 units were sold within 24 hours of launch, and Ola will start delivering them from September 7th across India. Customers can book the second reserve of S1s starting from 2nd September via Ola's app and Ola Electric's website.

After heading successful launches in the e-2-wheeler space, Ola unveiled the S1 on August 15. The S1 boasts an ARAI-certified 181 km range, 101 km in Normal Mode, 128 km in Eco Mode, and 90 km in Sports Mode. It has a 3kWh battery, bringing the ownership cost down by 40%. Some suggest it may be as affordable as the Honda Activa and one of the fastest two-wheelers with a top speed of 95 km per hour. The S1 comes in attractive colors, including Porcelain white, Jet black, Liquid silver, Neo mint, and Coral glam. Ola will start delivering its limited-edition Khaki S1 Pro scooter on September 7th.

The S1 arrives with all the in-demand MoveOS features like Music Playback, Companion App, Reverse Mode, and Navigation tools. Ola plans on announcing the MoveOS 3 this NOVEMBER with many new and interesting features like proximity unlock, moods, digital key sharing, documents, and so much more.

S1 is currently priced at 99,999 INR, with several financial options offered by Ola's partners, like loan processing fee waiver and EMI starting at 2999 INR. Ola is steering ahead in the e-two-wheeler segment with this launch.

Rising EV Penetration to Drive Significant Investment in Battery Cell Manufacturing: ICRA

With more than two-thirds of manufacturers prioritizing mobility transition, the adoption of electric transport will only scale in the upcoming decade. Global power players and leading innovators have all hopped into the EV segment and are currently taking steps to ensure a smooth transition from ICE vehicles to EVs. This growing demand for EVs brings along manufacturing responsibilities for companies in the battery segment. An EV operates with fewer parts than an ICE one, but its battery is crucial in terms of functioning and pricing. The persistent issue with EVs is range anxiety which can be mitigated only with a powerful battery. ICRA estimates investments in battery manufacturing to surpass 9 billion USD post-2030.

35-40% of an EV's price is due to its battery. Therefore, investment in battery manufacturing is key to accelerating EV penetration. India is not self-sufficient in cell manufacturing, and Original Equipment Manufacturers (OEMs) depend on imports. Local manufacturing needs to rise to support the transition, and cell manufacturing units should be closer to OEMs to increase process efficiency. Local sourcing will also guarantee better cell performance in Indian climatic conditions.

The Government of India has also worked with the leading EV companies to incentivize Advanced Chemistry Cell (ACC) storage per the PLI (Product-Linked Incentive) scheme. These schemes emphasize expanding domestic manufacturing, infrastructure, and storage capacities.

R&D experts are considering multiple cell

chemistries, and the most popular one is Lithium Nickel Manganese Oxide, but Lithium Iron Phosphate may replace it in the time ahead. New technologies and chemistries are in the developmental phase and will be commercially ready slowly.

Switch Mobility Is All Set To Take E-Bus and E-LCV Market by Storm with 'Net Zero' Goal

Switch Mobility Ltd., is eyeing the EV segment and has formulated detailed strategies to take the e-bus and e-LCV market by storm. Switch's first bus platform for India, called 'EiV 12' was recently launched and is receiving good market response. 115 of these were tested on over 9 million km to ensure they're ready for the Indian roads. Its powertrain, battery pack, and power electronics are the same as the E1 model. The biggest benefit is scalability, which allows the bus to be designed with a range of 150-300 km, and even 500 km per day by using its double-gun charging system.

Switch boasts of the lowest TCO on its vehicles by utilizing local supply chains and component sources. India is and will be Switch's main market, and so it's looking to strengthen the charging infrastructure for EVs. It promotes open charging protocol, which means it will be sharing its charging infrastructure with its rivals and vice-versa.

For the e-LCV category, Switch Mobility is set to electrify its successful platforms on Ashok Leyland, called 'Dost' and 'Bada Dost' to enter into the e-LCV market within this financial year. Switch also subscribes to the 'net zero' vision and plans on attaining it in everything that it creates. That's why it will deliver of e-buses in Bangalore by using 80% renewable energy for their charging requirements.

Switch Mobility Ltd.'s CEO & COO, Mahesh Babu summarized their 'net zero' mission by saying, "Switch's target is to be a net zero company; we want to democratize zero carbon mobility where we want common people to use public transport in a more sustainable way which perfectly fits in to what the government and the industry wants to do."

TEMSA unveils Europe's First Electric Coach

Temsa unveiled its latest EV model at the IAA Transportation in Germany with the LD SB E, Europe's first electric coach. In the next three years, Temsa plans to up the proportion of EV production to 50%.

The LD SB E is available in two options of 12 and 13 meters, holding a passenger capacity of 63. It is well suited to provide a comfortable experience on all roads due to its 250 kW motor. The range can go upto 350 km, depending on external conditions. There are three battery power options, 210,280 and 350 kWh. A fully digital instrument panel is also available for convenient navigation.

Temsa has seen several successful EV launches, and this one is likely to follow the same route.

Hakan Koralp, TEMSA's Chief Sales and Marketing Officer explaining the status of EV manufacturing, said, "TEMSA is a global player that has brought many bus and midibus models to the sector since 1968 and managed to put them on the roads in nearly 70 countries of the world. When it comes to the number of vehicles TEMSA has produced so far in its facility, which is established on an area of 510 thousand square meters, it is over 130 thousand. As of the last quarter of 2020, TEMSA, which operates under the partnership with Sabancı Holding and the PPF Group, is now much stronger and more determined in global markets, together with its sister company Skoda Transportation, particularly with its electrification solutions."

TI Clean Mobility Launches Montra Electric 3-W

TI Clean Mobility is a part of 'Tube Investments of India: A Murugappa Group Company' and recently debuted in the EV space. It launched the Montra Electric 3W Auto in Chennai. Montra could disrupt the last-mile mobility segment with its stunning build, convenient features, and impactful performance. It has many functional features like a 10 kWh battery pack, double fork front suspension, and boot room for luggage. The range of this vehicle is 197 km with a single full charge. To further enhance the experience, it includes telematic systems in both English and vernaculars.

The company boasts several industry firsts with this vehicle. Montra has multiple drive modes for different situations and a 'Park Assist mode' that helps drivers navigate heavy traffic easily.

Mr. Arun Murugappan, Executive Chairman of Tube Investments of India, said, "Montra Electric 3W will mark a new phase of growth and innovation for us. We've invested our best resources and time to develop this product. We are excited to see customer reactions. At TI Clean Mobility, we strive to deliver products and solutions that makes business sense for our customers and us. With Montra Electric, we strive towards carbon neutrality. Electric 3W is one of the EV segments with the biggest growth potential. This segment is one that will have a significant impact on India's effort to achieve net zero carbon emissions by the year 2070."

Manufactured in TI Clean Mobility's

Ambattur facility, Montra will be accessible all over India in phases, starting with the South belt. It comes with a 2-year extended warranty and a price ranging from Rs. 3.02 lacs.

ZF Announces Major Business Wins, Electric Drives, First ProAI Supercomputer Applications for Evs

ZF demonstrated its advanced ProAI commercial vehicle supercomputer at IAA Transportation, 2022, in Germany. ZF has seen success with its commercial vehicles division and exhibited leading innovations at IAA that'll help manufacturers transform their methods. ZF announced the CeTrax 2, whose production will start in early 2023. It includes two high-performance motors, silicon carbide inverters, and a three-speed gearbox, which promote vehicle efficiency.

ZF will announce the series production of its new ProAI supercomputer that offers vehicle intelligence for all vehicle platforms. It has a processing power of one quadrillion operations per second. The next thing on the list is its Digital Fleet Orchestration Platform- SCALAR. It offers AI-generated decision-making algorithms and optimization for fleets to enhance safety and sustainability. The way SCALAR operates is simple, it takes vehicle data and runs it through AI-based algorithms to cater to a wide range of customer needs. SCALAR will help all stakeholders, including shippers and carriers, level up their MaaS(Mobility as a Service).

The final announcement ZF has to make at IAA is its scalable mBSP XBS braking system platform. It shows promising results with practical solutions like the OnGuardMAX emergency braking assist. With such stunning products, ZF had a brilliant year of innovation, which will translate into revenue in the upcoming years.

MIBA Ready to Plan Expansion in Indian Powertrain Components Market

Miba operates in the international automotive industry and provides premium friction solutions. It has a manufacturing facility in Pune, and Mr. Martin Liebl, a member of Miba's management board, recently visited the facility. He revealed their plans for expansion in the Indian market by setting up another facility in the same city. According to him, Miba aims to manufacture locally and strengthen its clutch button production capacity worldwide. India is a crucial market because of its enormous customer base and scope for evolution. Hence, Miba is keen on investing in appliances and gaining a powerful workforce in India. When India attains the peak of the transition to electric mobility, it will consolidate its position in the powertrain component market.

Miba's clutch buttons' design and manufacturing are meticulous and precise, making them capable of sustaining higher loads without compromising performance. The next phase in their design would be electrification. Martin detailed the challenges in switching to electric models for axles and Miba's plans for tackling them. On the topic of electric powertrains for India, he said, "For one, if the last mile which is being served today by the likes of Tata Ace goes electric, it will bring a big relief in cutting pollution in cities; also, this segment will be easy to electrify." The previous decade in India was great for Miba as it witnessed a 300% growth. The strategists at Miba predict a doubling in its growth rate by the end of this decade. Sturdy manufacturing processes and clever action plans are expected to drive Miba's success in the Indian auto components industry.

Neuron Energy Bags Deal to Supply Battery Packs To EVTRIC Motors

Neuron Energy, a startup in the Lithium-ion and lead-acid batteries manufacturing sector, recently announced its tie-up with EVTRIC Motors Pvt. Ltd., a prominent electric 2-wheeler manufacturer. This deal will help Neuron Energy generate INR 50 crores per year for the manufacture of 12,000 battery packs for EVTRIC.

Speaking on this collaboration, Mr. Pratik Kamdar, Co-Founder of Neuron Energy, said, "Neuron Energy has always been customer-driven, and our aim is to aid in the country's adoption of Electric Vehicles across two, three, and four-wheelers (LMV, HMV) segments. Our association with EVTRIC will help us expand the reach of our offerings and cater to a wider audience. Our batteries are safe and thoroughly tested, and we ensure to provide post-sales service support in case of any discrepancy to avoid any untoward incidents. We are hopeful that together we'll be able to transition more consumers from regular two-wheelers to EV, thus substantially reducing carbon footprint and build a greener future."

Neuron Energy has a strong and established network for the supply of batteries. It has outlets in Mumbai, Chennai, Kolkata, and Mumbai. Neuron makes batteries for rickshaws, scooters, material handling equipment, golf carts, etc. It's consistently working towards creating cleaner solutions for a sustainable tomorrow.

Another PLI scheme in the offing for more advanced EV battery tech

The Delhi Government, in a bid to encourage research on new technologies and innovations, is likely to notify another Production Linked Incentive scheme for more advanced EV battery technologies. The scheme is expected to launch by December this year.

According to ETAuto, at least six companies are in discussions with the policy-making body for the additional ACC PLI Scheme. The scheme is meant to target technology players who could not participate in the existing ACC PLI Scheme. The scheme will focus on the advanced technologies that may be introduced to the market after five years, including solid-state battery technology.

Randheer Singh, Director of Electric Mobility, Niti Aayog, said, "We wish to target those technologies which were unable to become a part of ACC PLI, including those which haven't been commercialized at GWh level yet."

The new scheme does not have a minimum investment parameter compared to the previous one. This will encourage startups and companies with financial limitations. In March, The Union government said that the PLI scheme for Automobile and Auto Components has successfully attracted a proposed investment of INR 74,850 Cr over five years. The scheme commenced from FY22-23.

The scheme is categorized into two. First is the Champion OEM Incentive Scheme, applicable for Battery Electric Vehicles and Hydrogen Fuel Cell Vehicles of all segments. The second part is the Component Champion Incentive Scheme for Advanced Automotive Technology Components of vehicles.

It is predicted that implementing the PLI scheme, which was launched to help the automotive industry overcome cost difficulties and create economies of scale, will facilitate the industry to move up the value chain into higher value-added products.

India: A digitally powered and sustainable tech innovation hub

Innovations cause development, and it transforms the world. Technology changes rapidly, and we end up becoming more modernized every day. Technologies such as EVs, and quantum computers, make our life easy, fast-paced and convenient. India is a country that is always hungry for new technological inventions and also looks forward to a sustainable future.

Paying much importance to green and sustainable energy, India has also launched the One Grid, One World (OGOWOS) initiative to create a global green energy grid. The main focus of this initiative is on wind and solar power. It plans to create a global grid that can transmit sustainable energy anywhere.

When we add EVs to this combination, we are looking toward a future without relying on ICE vehicles. With the increase in innovation in the EV sector, India will achieve its renewable energy targets. It will contribute to reducing global warming and climate change through technology and sustainable growth. The innovations in this department capture the vision against climate change, with emerging innovations like Vehicle to Grid systems such as wireless electric vehicles (EV), wireless charging, and ultra-fast charge capacity.

India is a few years shy of completing its 100 years of independence. In the next 30 years, India will have advanced technologically and will aim to become the home of sustainable energy.

Delhi Govt installs 1000 EV charging points under single window facility

In less than a year, the Delhi Government has completed the installation process of 1000 Electric vehicle (EV) charging points under the single-window frame.

Out of these, 682 charging points were installed at 315 locations by BSES Rajdhani Power Limited (BSES), 150 charging points were installed at 70 locations by BSES Yamuna Power Limited (BYPL), and 168 charging points were installed at 50 locations by Tata Power Delhi Distribution Limited (TPDDL).

Official statements have confirmed that RWAs have installed 59% of these chargers, 15% of EV chargers are set up in office premises, and 13% in E-Rickshaw parking. The Government will also offer Rs 60 Lakh as a subsidy on these 1000 charging points.

According to the Delhi EV policy, a subsidy of Rs 6000 can be availed per charging point for the first 30,000 slow charging points. The user has to pay a net cost after deducting Rs 6000, which includes the EV charger, installation, and maintenance costs for three years. After subsidy, these EV charges come down to as low as Rs 2500.

Since the Delhi EV policy was launched in 2020, more than 72,000 Electric Vehicles have been sold, out of which more than 41,000 EVs will be sold in the year 2022 itself. Nearly 10% of EVs are sold of the total vehicles sold each month. Delhi reached a 12.5% monthly EV contribution in March this year, the highest in India.

Delhi Transport Minister Kailash Gahlot said, "It is just the beginning as Delhi plans to install 18,000 charging points in the next three years, making it easier for the citizens of Delhi to opt for an EV instead of an ICE vehicle. By 2024, Delhi will have 1 out of every four new vehicles purchased as an EV."

Mobility, one of which is the single window facility for EV charger installation – the first such innovation anywhere in India.

This initiative is aimed at purchasing EV chargers in Delhi simple and hassle-free.

Battery swapping may impact the EV segment's innovation potential

In 2021, India's electric vehicle market was valued at approximately $7,025.56 million. It was anticipated to reach $30,414.83 million by 2027, registering a CAGR of 28.93% in terms of revenue during the forecast period (2022-2027), as per a report by Mordor Intelligence.

The Indian Government is implementing several programs and policies to encourage the adoption of electric mobility. This includes 100% FDI through the automotive route in the EV space, incubator programs, shared prototyping and small-scale manufacturing facilities, financial support via the credit Guarantee Scheme for Start-Ups (CGSS), tax breaks, and subsidies for consumers.

Niti Aayog released a draft in April 2022 on battery swapping for two and three-wheelers, considering the sector's potential to reduce nearly one gigatonne of carbon dioxide emissions by 2030. For those confused, battery-swapping means exchanging discharged batteries for charged ones. In this, swapping disconnects the vehicle from the fuel or the battery. However, in 2022, experts claim that battery swapping is a technical and market dead-end that will remove green investors from their funds rather than provide a viable solution to a problem.

Swapping comes with its own list of disadvantages, such as ownership complexities, standardization of batteries across vehicles required, which impacts optimization and curtails innovation, the number of batteries required for the vehicle will increase, and many more.

India is the world's largest two and three-wheeler manufacturer and exporter. With Make in India, MSMEs focus on product innovations and cost competitiveness. MSMEs manufacture more than 80% of auto components. Hence, the transition to EVs must also be in tandem with global markets, or the two-wheeler market will be too expensive for customers.

EV Battery Tech is fast evolving as investment pours into innovation

In the world of EVs, a Harvard-backed tech startup, Adden Energy, has made a breakthrough. They developed a battery unit capable of fully charging in only three minutes, lasting more than twice the current EV batteries. If advanced correctly, these new batteries can change the future of EVs.

The innovative sector concerning EVs is growing tremendously as more investments are flowing into battery technologies. Everyone is focused on an innovation that can overcome the battery-related hurdles faced by EVs today. Hence, more investments are flowing into EV battery technologies.

Here are a few new battery technologies that can shape the future of EVs.

Fluoride Cells

Today's batteries, from EVs to smartphones, are Lithium-ion cathode and graphite battery systems. Even though numerous battery system alternatives are being researched, most of them are less energy dense. This is not the case with fluoride cells. These batteries are not only much more energy dense than Li-on cells, with around a 10x energy density increase, but they are also cheaper.

Sodium-Ion Cells

Sodium is an element that is found in abundance on earth, with salt being the sixth-most abundant substance. This makes Na-ion batteries by far the cheapest alternative. Another plus point is that sodium can also be harvested as a by-product of desalination, the process where we derive potable water from seawater.

Organosilicon Electrolyte Batteries

Scientists have discovered that using organosilicon electrolyte solutions in Li-ion batteries makes them more stable, reducing the risk of thermal runaway and reducing the chances of fires.

Structural Battery Architechtures

Battery kits take up a significant proportion of the weight and cost of today's EVs. Hence, structural battery architectures can significantly reduce the cost and weight as they already have enough strength to support the structure of the EV.

Need for Technological Innovation in the EV industry

The invention of EVs has emerged as a ray of hope for the planet as it promises to eliminate the need for conventional fossil-fuels vehicles. The use of EVs is expected to make our world less polluted and will eventually help achieve zero emissions in another 40-50 years.

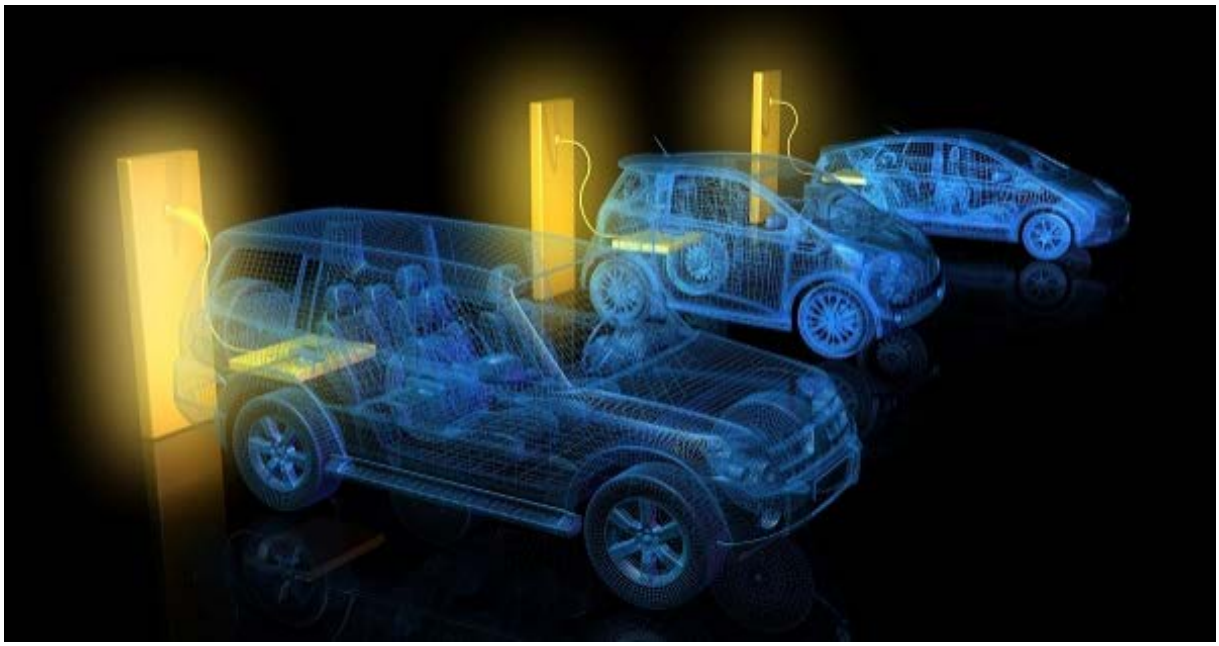
However, there is a difference between thinking and executing. For this to actually happen, there is a need to bring a lot of innovations and diversity into the electric mobility arena. India has registered a 333% year-on-year growth in EV sales, even though we have just made it out of the pandemic. This is proof of the public's interest and willingness to accept EVs as long as the new form of mobility.

The main reason EVs are still not the most popular commute mode is the challenge of charging these vehicles. Other vehicles depend on petrol or diesel, where refilling is easily available. An EV needs hours to be charged, a major drawback as this increases traveling time. However, innovating a technology where EVs can be charged faster and save time is the need of the hour. For this, we need a lot of clarity, policy framework, and standardization of tech to become universal.

EV batteries have been catching fire recently, making the public vary their use. Hence, there is a rising demand for safer, better, easily changeable, and more convenient tech, so we are switching from the existing Lithium-ion to Aluminium-graphite.

Suppose we want a greener energy efficient future; only buses and cars or transport systems such as autonomous vehicles are not enough. Micro-ability is required to cover the entire spectrum of future mobility. We need more diversity in this field, which is where e-cycles come in. They are affordable and convenient. They are safe to use; social distancing is natural when you use e-cycles; it is affordable for the masses and would not cause parking congestion.

The future is electric; we should accept it and take steps to innovate technology to make this new era sustainable and convenient.



Smaller, Faster charging batteries from Penn State will Turbocharge EV Revolution

The researchers at Penn State University have found a way to make smaller batteries for electric cars. Keeping the current massive price increase in mind, it is said to conserve precious resources. It also charges faster, which addresses the concern many people have regarding EVs and the number of hours it takes to charge.

According to the research, building a 90 kWh electric vehicle pack with a 300-mile cruise range is now possible. However, the use of massive batteries to alleviate range anxiety is ineffective for mainstream EV adoption due to limited raw material resource supply and high cost.

Fast-charging batteries enable the downsizing of EV batteries for both affordability and sustainability. However, fast charging of dense batteries remains a challenge.

The press release says that by 2035, the largest auto market in the United States, California, will effectively retire internal combustion engines. More EVs must be consumed. However, if new car sales shift to battery-electric vehicles, they must overcome two major drawbacks. Number one is they are too slow to recharge; second, they are too large to be efficient and affordable.

We hope that the new batteries from EC Power will actually perform as promised and cause a paradigm shift in the world of electric cars. The EV revolution is moving forward, and soon ICE vehicles will be replaced with fast-charging battery-enabled vehicles.

India and California to collaborate for innovation in zero-emission vehicles

Recently India and California entered into a collaboration for research and innovation in the field of zero-emission vehicles. With this, they aim to spur the development of its nascent EV industry and address climate change.

It is a known fact that California has the world's most advanced zero-emission vehicle (ZEV) policies. The state also has an ambitious 100% ZEV mandate by 2035. As a part of the collaboration, a new India ZEV Research Centre is established by the research institute Davis Institute of Transportation Studies of the University of California.

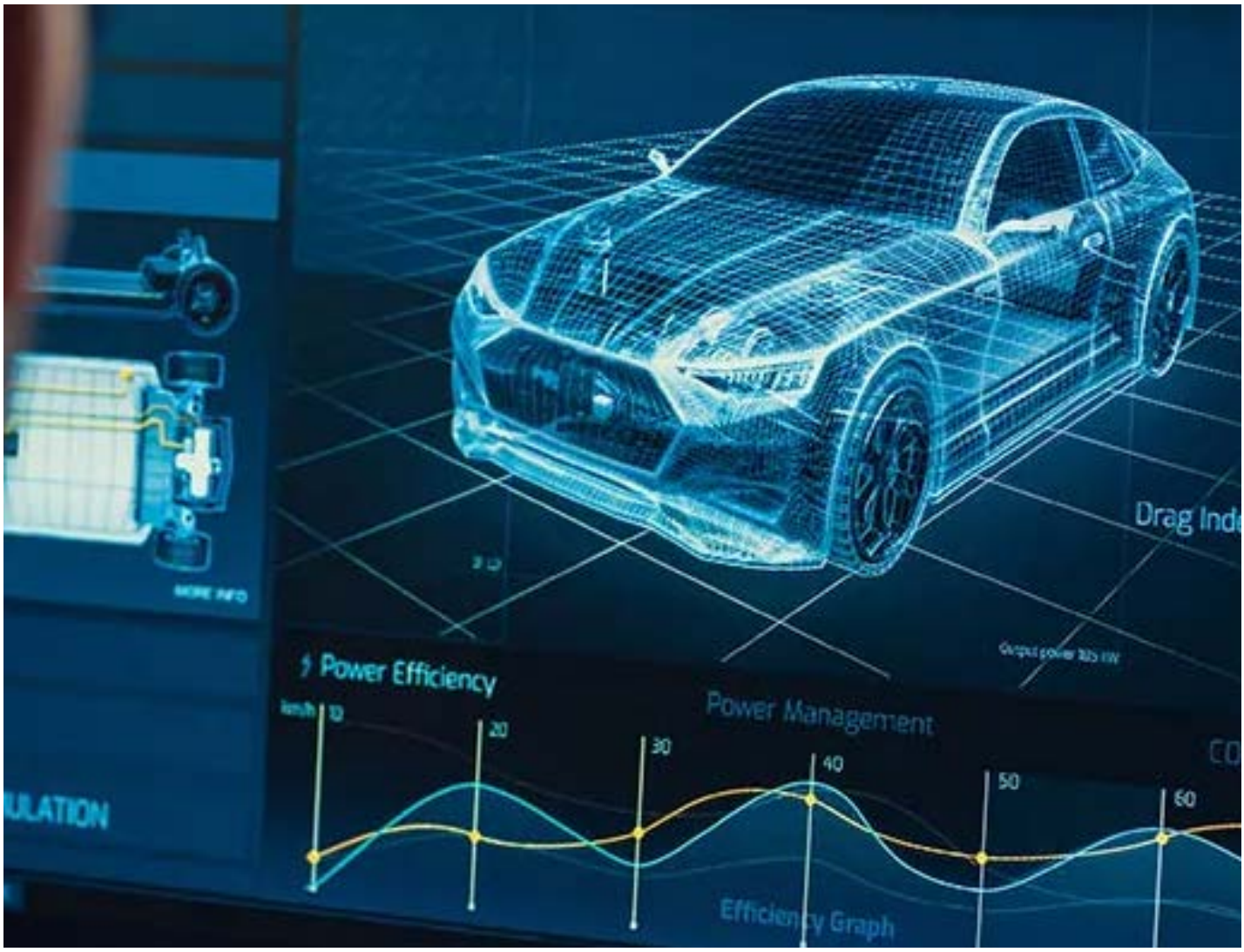
The collaboration, California-India ZEV Policy Programme, aims to support ZEV uptake in India and to increase the development of the EV industry in India, thereby contributing to India's industrial growth.

California-India ZEV Policy Programme was announced last week in Pittsburgh on the sidelines of the Clean Energy Ministerial attended by Union Science and Technology Minister Jitender Singh. Officials state that this partnership provides a unique opportunity for sub-national policy design as a lever for vehicle electrification. It also harnesses the role of states as key laboratories of innovation in both countries.

In 2023, India is set to host the Clean Energy Ministerial and the G20. This platform presents us with a unique opportunity to jointly accelerate ZEV transitions in both countries and to continue building on our commitment to addressing climate risks in the coming years.

While the two regions have unique differences, such as India's large portfolio of two and three-wheelers, there are also common challenges, such as electrification of the hard-to-abate segment, including medium and heavy-duty trucks.

The collaboration will showcase best practices in EV adoption in India on international platforms and enhance the process of ZEV transition.



The hidden innovations advancing EVs

India is still in the beginning phase of its EV revolution. However, the adoption and number of EVs sold are increasing at lightning speed. Evs are no longer an exclusive option for the selected few; they are here to save the future. It is the fastest-growing sector already. Its strong growth rate is expected to continue rising as the government implements various incentives and programs to push the sale of EVs.

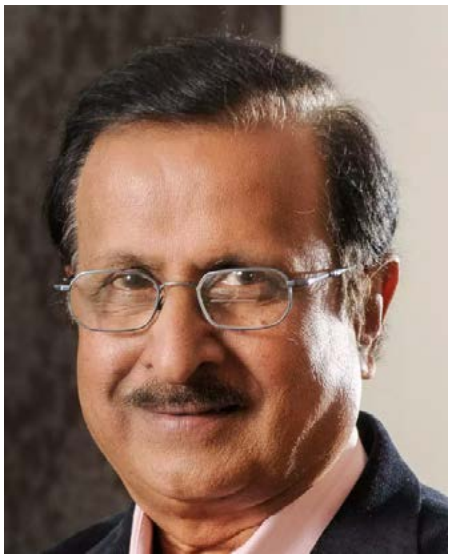
The recently developed technological forces that drive the EV revolution are becoming more subtle as they focus on lowering prices and enhancing manufacturing efficiency. The EV sector prioritizes issues such as reducing charging times and enhancing battery and motor capabilities to enhance torque speed and range.

EV designers and developers need to focus on the major issue: the charging time. If the time to charge the EV is shorter, drivers will spend less time waiting at charging stations. However, the charging inlet to the connections, wiring, battery contractors, and every component must be built to withstand greater temperatures associated with high-voltage fast charging.

Even with the subsidies, most people cannot participate in the EV culture. As per KPMG's analysis, users have limited access to private charging. We need an elaborate public charging infrastructure to speed up the EV adoption process in the country.

EV users consider battery performance a critical factor. They want to maximize their travel distance between charges to ensure that their batteries last as long as possible before needing replacement. Batteries must switch on and off during operational modes for a longer lifespan and protect against abnormal conditions. Indian battery makers are currently experimenting with tungsten, sulfur, zinc-manganese oxide, and other variations to make batteries cheaper, safer, and more durable.

A veteran of the car business Lakshminarayan is appointed as an independent director by EKA Mobility.



From NOVEMBER 1, 2022, Lakshminarayan will serve as an independent director on the board of EKA Mobility, an electric car and technology firm subsidiary of Pinnacle Industries Limited.

Lakshminarayan provides decades of expertise in leadership, notably in the international automobile sector. He has worked with organizations like Bosch and Tata Motors for over 35 years.

He spent more than 22 years with Bosch, serving as an executive board member and in senior roles in Germany and India. His current board memberships include ZF CVS (Ind) Ltd, TVS Automotive, TVS Automotive Solutions, TVS Electronics, Sansera Engineering, Wendt India, and Brose Automotive India, among many others, according to a press release from EKA mobility.

According to a press release, B Anil Baliga, a former vice-president of bus & applications at Volvo Eicher Commercial Vehicles (VECV), was recently named president. Lakshminarayan's appointment comes after Rashmi Urdhwareshe, president of SAE India and a former director of ARAI, was appointed to the board earlier this year.

Group14 Technologies elevates its roster of pioneers in the field of electric mobility by appointing Dr. Michael Steiner to its board of directors.

Porsche Dr. Michael Steiner is added to the board of directors by Group14 Technologies, bolstering its team of visionaries in the field of electric mobility as the business increases silicon battery manufacturing.

Porsche AG Executive Board Member for Research and Development Dr. Michael Steiner has been named to the board of directors of Group14 Technologies. This company manufactures and supplies innovative silicon battery technology internationally.

Dr. Steiner, a pioneer in the global automobile sector with decades of expertise at top automakers like Porsche and Daimler, joins Group14. Dr. Steiner's appointment comes after Group14 received a $400 million Series C fundraising in May 2022 headed by Porsche AG and included contributions from OMERS Capital Markets, Decarbonization Partners, Riverstone Holdings LLC, Vsquared Ventures, and Moore Strategic Ventures.

Amit Jain is promoted by Volvo Car India to the position of Head of Media for the Asia Pacific region.

Amit Jain, Director of Marketing and PR, has been promoted to a regional position within Volvo Car India, the firm said on Thursday. Except for China, Jain would be in charge of managing all digital media advertising in the Asia Pacific region in his new position as Head of Media. Beginning in August 2022, he will take on the new position and move to the Malaysian regional marketing offices of the business.

Jain will be in charge of the region's digital media activities, which include six nations where the firm has a direct presence: India, Malaysia, Thailand, Australia, Japan, & South Korea.

Jain is a marketing consultant with around twenty years of expertise, the organization claims. He joined Volvo Car India in 2017, and since then, he's played a key role in several brand projects and some of the business's most prosperous launches in India. The most recent one was the introduction of Volvo Car's first all-electric XC40 Recharge in India.

EV Connect Editor Kartikeya in conversation with

Dr Yogesh Bhatia

Managing Director & CEO, LML Emotion

Please tell us how is LML presently involved in India's EV journey and helping with the progress?

LML is launching its EV offering in the H2 of next year, in the premium segment, with state-of-the-art product, which is a made in India, conforming to all the norms, laid down by GOI

Are the current policies enough to encourage the EV push and how do you seethe Make in India initiative?

Yes, the current policies are good enough to push the EV sales in India, however, it would be more appropriate, if long term sustainable and road map is shared.

What made you focus on the scooter market rather than the motorcycle market?

The current strength, of LML is in Scooter, and also LML has a great brand recall for a performance-oriented scooter. That is the reason why, it was prudent, that LML comes out with scooter first, followed by other models.

What segments of electric vehicles are you focusing on?

Our Primary current focus is on High Speed 2 wheelers

How do you see 2023 playing a key role in addressing the obstacles in India's EV journey?

We are expecting a good robust 4x growth in EV growth, supported by some excellent polices and guidelines, articulated by GOI.

What do you have to say about India's strategic imperatives – in terms of resource availability, infrastructure readiness, energy mix, consumer prices sensitivity, and value proposition?

India is a growing market, where, the entire ecosystem, is evolving to support this transition from ICE to EV.

The made in India drive is supporting the auto component makers, and charging infrastructure, which are the key enablers, in ensuring the robust growth that is planned in the coming years.

Although Indian consumers are quite price sensitive, although a big section of the society believes in total cost of ownership, which means, performance-oriented vehicles and willing to pay premium for the same.

What can we look forward to from LML in 2023?

State of the art scooter launch named star, which was a global hit back then, in form of EV.

Nikola chooses Michael Lohscheller to succeed him as CEO.

Nikola Corporation, a leader in zero-emissions transportation and energy infrastructure solutions, has named current Nikola Motor President Michael Lohscheller as Russell's successor. When Russell retires, Lohscheller will succeed as President, join the Nikola Board of Directors, and take over as CEO. Russell will continue to serve on the Board.

As of February 2022, Lohscheller has served as President of Nikola Motor. He has already made several noteworthy accomplishments, including a significant role in advancing the Tre battery-electric vehicle (BEV) into series production and hitting development milestones for the Tre fuel cell electric vehicle (FCEV).

Before Nikola, he was the CEO of Opel; he oversaw the company's growth into the leading brand of electric vehicles and led it to long-term profitability.

A veteran of the 20-year global automotive industry, Lohscheller has held several high-level positions, including Executive Vice President and Chief Financial Officer at Mitsubishi Motors Europe, Executive Vice President and Chief Financial Officer at Volkswagen Group of America, Chief Executive Officer at Opel Automobile GmbH, Member of the Board at PSA Group, and Global CEO of VinFast.

Mitsubishi Power has appointed Saudi Arabia's new CEO.

Adel Al-Juraid, a Saudi native, was named the new CEO of the Kingdom by Mitsubishi Power, a division of Mitsubishi Heavy Industries Ltd. that provides power solutions. With a focus on localization and the shift to clean energy following Vision 2030, Al-Juraid now oversees Mitsubishi Power's activities in the Kingdom and promotes commercial growth.

Al-Juraid will concentrate on growing Mitsubishi Power's presence in the power, oil, gas, and other important industrial sectors, building on the company's fifty years in the Kingdom. Al-Juraid will align the company's strategic initiatives with the Saudi national energy sustainability goals, human capital development, and economic growth.

Mark Stubbs, a seasoned automobile professional, joins EV Technology Group as Head of Design

Recently the appointment of Mark Stubbs as Head of Design by EV Technology Group Ltd. The most recent important recruitment for EV Technology Group as it continues with its expansion goals is the ex-Radford Motors executive who has worked as a designer for automakers like Ford, Bugatti, Nissan, and General Motors.

As Head of Design, Stubbs will oversee the strategic brands division of the EV Technology Group's renowned businesses. Currently, this includes trademarks like the Moke, which Moke International holds.

Alongside Chief Product Officer Dan Burge, he will work on products for the United States, a crucial area for the company where strong growth is anticipated over the next 12 months. At Radford Motors, the opulent coachbuilder established in 1948, Stubbs served as the company's founder and chief designer. At the prestigious Quail Lodge event in Pebble Beach in 2021, he prominently revived the brand with the Lotus Type 62-2.

Ramkripa Ananthan is now the Design Head of Ola Electric exclusively.

Ramkripa Ananthan has reportedly been hired as the Head of Design at Ola Electric, a manufacturer of electric scooters, with intentions to create passenger cars. According to insider information obtained by ETAuto, the designer, known as Kripa in the business, would be in charge of both Ola Electric's two-wheeler and forthcoming four-wheeler divisions.

According to one of the sources, the selection was made lately. With effect from April of this year, the former Head of Design at Mahindra & Mahindra began working with Ola Electric to provide design services through her design consulting business Krux Studio.

The hiring of Kripa is the most recent in a line of experienced business executives by Ola. Other notable individuals include John O'Connor (for the automobile project), a former executive at Tata Motors; Franco Bellillo (Head-Sourcing), a former employee of BMW and Beijing Electric Company; and YS Kim, a former senior executive at Hyundai and Kia (Global Head – Sales and Distribution).

Peter Vardy will be the first franchisee of Great Wall's Ora minimal EV brand.

The economical Ora electric vehicle (EV) brand from Great Wall has recruited Peter Vardy as its first franchised auto retail partner. Shortly after the UK market opens order books for the Ora Funky Cat hatchback in November, the AM100 auto retailer will operate its first dealership in Glasgow. Additional retail and aftersales shops, including one in Edinburgh, are scheduled to open in 2023.

Peter Vardy's nomination, according to Great Wall, is the first of several retail announcements that will be made in the subsequent weeks. With the addition of its new brand partner, Peter Vardy expands the portfolio of franchises it already has, which includes Porsche, Jaguar, Land Rover (JLR), BMW, and Mini. Additionally recently introduced was Peter Vardy Leasing by the organization's Mobility Division.

The different EV incentives, which are sponsored by Transport Scotland and managed by Energy Saving Trust, will also help Peter Vardy's Ora customers.

Mansoor Ahmed is appointed as the new president of Isuzu Motors International.

Mansoor Ahmed was named president of Isuzu Motors International FZE, replacing Yasuyuki Niijima. Niijima will continue to serve as Chairman of Isuzu Motors International FZE, the firm claims.

Mansoor Ahmed has extensive expertise spanning more than 35 years and has held several high-management positions in the Asian automotive industry. Ahmed served as the Senior Vice President for Strategy and Product Management at UD Trucks before joining Isuzu Motors International FZE. He has previously held positions at Tata Group and Volvo Group Trucks.

Isuzu's authorized regional distributor for the Middle East and Africa, South West, and Central Asia are Isuzu Motors International FZE.

Lee Collins, the creator of the Revilo Group, is appointed non-executive chairman of Cartime.

To boost productivity and customer happiness, Cartime Chief Executive Matt Kay has hired Revilo Group Founder Lee Collins as non-executive chairman.

The Manchester-based premium used vehicle reseller, highlighted in 2018, includes stores in Bury and Rochdale. Kay hired the former Hillendale Jaguar managing director more permanently since he had previously worked with him on operational improvements.

He brings a wealth of board-level experience and substantial automotive knowledge, including significant knowledge of Jaguar Land Rover (JLR), where he spent nearly ten years as chairman of the UK sales panel and regional chairman of their dealer council. Collins began his career as a vehicle salesperson at Lookers and now has 35 years of expertise in the automobile industry, holding franchises for Rover, Fiat, BMW, and JLR.

EV Connect Editor Kartikeya In conversation with

Flt. Lt AT Kishore

C.E.O, Vidhya Sangha Technologies Pvt Ltd.

Could you brief us about your career with the different industries and your journey so far?

First of all thank you for asking these questions, am happy to speak to all of you who are able to read this EV Connect Article and take these discussions forward. I would work on open avenues such as Renewable Energy, Electric Vehicles, Urban and Rural Technologies, and Aerospace and Defence Industries related TieUps.

My first day at work on 8th Jan 1998 I met IN Kishore, my senior of Bell Labs Innovations and Lucent Technologies is one of the best Industries I have served. Whenever anyone calls our Customer Technical Training Center, either they speak to AT Kishore or IN Kishore. Together, when IT industry at ITPL and infy, Wipro were booming, our team of four trainers, Aijaz and CS Rao who were also my IAF colleagues were delivering trainings of knowledge we obtained from our USA Orlando Florida and OHIO Dublin, nearly 10,000 training delivery hours to TATA TELE SERVICES alone before we were kept very busy on RCOM where we mentored 10,000 engineers for a decade to come until CDMA technology and the small phones were on every one's hands.

National Informatics Centre and Indian Airforce are next best, but not necessarily in this order. Alcatel Lucent that is now NOKIA has given me Long Service Award and General Management Accreditations. In the contemporary Industry Circles, my mentor and CEO Srinivasa Raju of UTL Technologies connected me to the Group Chairman Sh P Raja Mohan Rao who is one of our advisors of our start-up I founded. Other organizations such as Indovision and Nanocell gave me several national and international opportunities just as ALU and UTL TECHNOLOGIES giving me tremendous boost to my confidence levels on Wireless Technologies and Optical Fiber Communications plus Base Station Controllers, Application Servers of IP Multimedia Services, Offline, Online billing systems and VAS-BSS, OSS, NGOS and Etom, TM Forum and ISO, TL 9000 Standards

What are the challenges you have faced & how you have overcome them? What are the accolades & achievements you have received?

Accolades first, as it is fresh in memories always, our team in which I PLAYED key roles for global labs initiatives at ALU, got CEO appreciation and our 2B merged vision was made combined from Lucent and Alcatel approaches and I have played best part of shaping the strategy at regional and global learning functions of corporation.

My patent application pertaining to location based services is accepted and a book chapter on Precision Agriculture is published by Wiley's, my articles being published in CDG.ORG and my key notes delivered at Paris (SIP international forum) were memorable ones. I am part of IEEE as a Senior Member and current Vice Chair of IEEE Bangalore Computational Intelligence Society. Till date I have been asked to lead roles like Secretary and Publicity Chair, Industry Committee, and Sponsorship Chair roles along with TPC member to contribute to review and comments on many papers presented in international conferences for over a decade since 2011 and part of several key note sessions and panel discussions on diverse subject matters.

International Businesses require you to be polyglot and multi-lingual and French Language of Alcatel was a tactical issue when you were to slow down a bit to understand what they are conveying. I trained several services personnel in LANNION at the seat of the Alcatel factory and training centre for Technical Support on WCDMA.

We weren't doing great in 3G but Bell LABS had independently been doing marvellous job in invention of CUBE and smart antennae, to reduce the sizes of huge antennae in building tops. Leaving WiMAX to its natural destiny, 3GPP embarked upon Long Term Evolution and now were have OFDM based 4G that has evolved with numerology into 5G and work in progress for 6G deployments too. Technology Obsolescence is key problem to be confronted by NORTEL, Alcatel and with mergers and acquisitions, companies had to cut their man power and product portfolio too to suit to market needs. Product Market Fit was a known problem for big companies including Erstwhile Microsoft OS for Mobiles erstwhile Symbian and Blackberry. Fax is history now.

Before market neglects any product or solution or services, the task of leadership teams is to phase out old and bring in new based on continual feedbacks and customer engagement. We need probably more such initiatives like EV Connect to bridge the gap and connect with all to move forward.

Can you brief about services offered by Vidhya Sangha Technologies?

Business Consulting or Professional Mentoring in domains such as Wireless Industry, ICT domains such as Digital Sustainable Transformation, Drones use cases in Agri, supply chain and Multi UAV, Urban Air Mobility and Integrated Air Traffic Management, Bureau of Indian Standards, JS 55555 specifications as required for military applications, standards of IEEE, ITU and 3gpp.IPv6, BharatNet, VLE, CSC, Internships for various engineering branches as per new education policy letter and spirit, one credit, two , three or four credit courses for ECE, CSE Mechatronics, Mechanical Engg. Long term we have vision to fuse the three key terms of our company into one monolith.. Right now the focus drifts between Society, Education and technologies

As an open ended statement, we are hiring, including senior leaders and wish to partner and work with other industries in aerospace and defence including and not restricted to UAVs, EV and Renewable Energy.

Going forward, EduTech and innovations in applications pertaining to better collaborative Innovations and Research will be our focus areas. The company is startup as per Govt recognition and GEM Portal enabled, and with latest UDYAM registered and with its operational HQ at ITI Vinyas Doorvani Nagar, Bangalore

I am duty bound not to divulge beyond this as per existing NDA and MoU in true letter and spririt.

Can you talk about the

employment opportunities EV industry is capable of creating in the next 2-5 years period?

There is a trillion dollar economy globally as all fossil fuel based mobility is set to be phased out, eventually there will be a day when not a single vehicle will be powered by either air traffic fuel or kerosene, diesel. Renewable Energy and EV industries would merge eventually

In Bengaluru during 2022, we have seen more than 10 EV, RE events and one of the key events is happening at Gate6, Palace Grounds during 25th till 27th November 2022

As I met several EV company leaders during a few months, I feel the mood is upbeat and the Industry is poised to take off. Many Show rooms I INSPECTED in Karnataka, Telangana, TN and AP. I feel the opportunities are ripe and youth can grab at the right moment. We foresee about 40,000 to 1 Lac NEW jobs during 2023 alone and during five year period it may reach 10x to 100x of these numbers in sales and marketing alone. Being proactive and forward looking, Manufacturing and MRO industries too can see similar job avenues

How 5G, IOT can help the EV Industry?

This is very pertinent topic and highly contemporary question of our times. To set the stage for the current global wireless deployments, India is amongst Leaders to do so much ahead of USA and China too. Along with India, Finland, South Korea have been quite active in 5G roll outs already. As also demonstrated by honourable Prime Minister of INDIA, it is now possible for anyone to do a Telepresence with one of the parties or both sides to have hologram and sensors of 5G, IoT fusion can do wonders in Industrial Automation and Industry 5.0. EV industry is also benefitted by 5G IoT features such as ultra-low latency and high reliability technologies with ability to support mission critical applications and devices which provide enormous data rates sufficient for intelligent functions to manufacture EV's using advanced Robotics and AI, ML and Unleashing the power of AR, VR, mixed Reality and anyReality.5G AND 6G are going to use IoT even in Space and UAM. Therefore it makes sense to use EV everywhere including in Space.

Advanced Driver Assistance Systems which incorporate LiDAR, IR, Radars and EO infra are all dependent on 5G and advanced wireless systems like Beyond 5G, terrestrial and non-terrestrial synergistic use cases which leads to 6G wireless all welcome EV into their solutions and applications,

Would you like to empower the younger generations with your message?

As India is moving ahead as an economic power beyond France and Briton, yet lagging in Human Development Indices, and Hunger Index, a lot more is there to happen to position India as Vishwa Guru, its true role model since ages. Keep working harder to improve your technologies readiness levels (TRLs) in order to not only go to market (GTM) but easily but also to gain access to schemes such as Production Linked Incentives (PLI) in all your products, solutions and Technologies like mobile phones assembly, electronics and UAV to cite a few examples.

All emerging technocrats are eyeing INDIA and Indian Youth for their innovation, and creativity. I have recently participated in an UN Geospatial Sustainability Summit at Novotel and that had presence of thousands of international delegates who all respect India's role in shaping future of ICT and Sustainability of Planet to make it more liveable and connected.

All of you may get opportunities like me to work for MNCs, however I URGE you all to stay focussed on Make in India and Atmanirbhar Bharat. Jaihind

Charging the future: Challenges and opportunities for electric vehicle adoption

The price of batteries has dropped drastically over the last six years, yet battery pack sizes have become larger. An electric vehicle's overall battery pack cost has decreased more slowly than its cost per kilowatt-hour (kWh) to combat range anxiety. As a result, the price of installed batteries continues to preclude widespread customer acceptance. The constraints in establishing and maintaining a commercially viable charging infrastructure for EV batteries persist even if battery costs have captured the concern and the money of both automakers and the electronics sector (Samsung, LG, Panasonic, etc.). There are several commercial charging station layouts and various home charging equipment sorts, but there isn't a market leader in the meantime.

India's challenges adopting electric vehicles

It's good to hear that the market for electric vehicles is expected to expand, though. To fully benefit from the market, however, businesses and the sector must first surmount significant challenges. Let's examine these barriers:

1. Heightened anxiety

One of the most difficult issues. A concern before buying an EV that everyone has. The ability of the car to reach the destination before the battery runs out and the lack of charging infrastructure are two common concerns among EV buyers. In remote or less inhabited places, the infrastructure for charging is often inadequate.

2. Customer Protection

Though the technology is still in its infancy and gradually gaining acceptance, the repair and maintenance infrastructure is still quite small compared to ICE cars. One of the key reasons for this dilemma is a shortage of technicians knowledgeable about EV maintenance.

3. Big Initial Investment

Compared to ICE automobiles, electric vehicles initially cost a lot more. For instance, the charge of the Tata Nexon starts at 7.19 lakh rupees, while the price of the Tata Nexon EV starts at 13.99 lakh rupees.

4. The technology of Rare Batteries

In India, there are very few OEMs producing batteries from raw materials. The country's goal of becoming a center for EVs is adversely affected by this, along with the lack of critical minerals (cobalt and lithium) needed to make batteries. Currently, China and Korea are the nation's main manufacturing sources.

5. Lack of goods

Unlike an ICE, buying an Ev offers the user substantially fewer options. As an illustration, there are many superbikes (ICE) options but few (if any) mass-produced EVs.

Utility Adoption of Electric Vehicles: A

Massive Business Opportunity

Every consumer's home is already filled with them. They have access to crucial information for their use or to share with partners to develop packaged experiences since they have total transparency into customers' consumption behavior. They also know how to get things done since they have spent their whole "lives" negotiating the energy market with all its laws, regulations, regulatory bodies, and important actors. The possibilities are numerous:

Commodity-level

- Provide the energy needed for charging at home, work, and on the go
- Develop new pricing plans, rebates, and promotions as a regulated utility in direct collaboration with governmental organizations to boost transportation electrification (TE).

Strategic alliances

- Join forces with vehicle manufacturers, fleet managers, charging point operators, parking lot owners, and others.

Customer-facing

- Set up charging stations in public and at home
- A full-service e-mobility solution provider should expand into new markets, establishing, running, and maintaining EV charging networks, providing remote charging applications, integrating home and EV energy management, processing payments, and even providing EV purchase finance.

Taking the initiative

- Utilities are ideally situated to be a driving factor for EV adoption due to their extensive market knowledge and capacity for collaboration with legislative bodies.

Managing the Infrastructure

- The grid will be under more strain as the number of EVs rises. Utilities need to start preparing right away. They must collaborate closely with their regulatory organizations to create flexible rate structures that cover peak and off-peak charging, allow them to balance energy priorities during times of high demand, and take advantage of the numerous business opportunities within the EV charging infrastructure.
- Although EV energy needs won't have a significant overall impact, the grid's total kilowatt capacity will need to meet demand spikes at particular times and locations. Smart charging technology is increasingly being used in smart grid technologies to balance and vary power supply based on time and location for EV charging demands. It prevents the system from getting overwhelmed. The need for large infrastructure improvements and expenditures will be lessened by this flexibility, albeit they will still be required.

Wrapping up

The electric vehicle (EV) industry might greatly influence the transportation industry's future, which will also contribute to reducing global warming brought on by traditional cars' reliance on finite fossil fuels. This article discusses the market potential, obstacles, employment, and electric vehicle prospects.

There is a specification of the EV categories and associated terminology. By integrating with the smart grid and renewable energy, electric vehicles offer a significant opportunity to support a healthier and more environmentally friendly system.

The Electric Vehicle Dream Starts Gaining Momentum: Infrastructure Upgradation to Drive the EV Dream

India's latest major transformation has already been initiated in the automobile industry. "Electric mobility is the next big thing" is to be heard everywhere. Globalization necessitated keeping up with world developments, especially regarding energy sourcing and conservation. Currently, energy transition is a pressing priority world over. Hence, the EV revolution. All major manufacturing nations have dived in, keeping a coherent vision of infrastructure development and acceleration of research on electric mobility.

Luckily, India isn't far behind. In 2020, the National Electric Mobility Mission Plan was created by the government as part of its policies to encourage an EV transition. One scheme that particularly stands out in this regard is the FAME (Faster Adoption & Manufacturing of Hybrid & Electric Vehicles) scheme. A few state governments have formulated independent EV policies that bestow road tax and registration waivers on every EV consumer purchase. The Delhi government, for example, has established a separate entity for thrusting EV adoption, which is still in its inception stage in India.

Causes that justify the transition to electric mobility

Apart from sustainability, here are the benefits of EV adoption for a nation.

- New opportunities will certainly arrive with the shift to EVs. Companies that manufacture automobile parts can explore the making of motors, controllers, microprocessors, etc.
- A successful metamorphosis, i.e., one that is affordable and sustainable, will lead to a surge in demand for EVs, expanding the revenue of the automobile industry.

Adjustments and upgradations being made

India is taking its EV adaptation challenges quite seriously, as it should. Here's a quick update on the recent developments.

- The MoP (Ministry of Power) has amended its guidelines on the infrastructure required for charging facilities. It ordains at least one charging station should exist in a 3 km grid and at every 25 km on both sides of the highways.
- It also directs state governments to lay down an SNA (State Nodal Agency) for monitoring the installation, service, and maintenance of developed charging infrastructure.
- DISCOMs are likely to be the assigned SNAs for every state. The great changeover demands partnership among stakeholders like power distribution companies, urban development authorities, charging station operators, and transport boards.
- TATA Power, NTPC, and other third-party suppliers have already entered the game and started expending capital for these causes.

- The Ministry of Housing & Urban Affairs modified the Model Building Bye-Laws in 2016, which warrant the allocation of 20% parking space for EV charging framework in residential and commercial ownerships.

Concerns that show up with the transformation

India is making progress, but it can't be too optimistic yet. Aside from the known challenges of battery life and selling costs, several other challenges are cropping up as the adjustments are implemented.

- An increase in the EV count in India will result in a spike in the current load of power grids, which will demand the creation of new ones and upgrading the existing ones, surging costs.
- Unlike traditional vehicles, EVs need fewer parts to operate. This information is bad news for the spare parts manufacturers. Of course, the bigger players will adapt relatively easily. It's the smaller units that'll suffer. New opportunities always come with the scrapping of previous ones, so it will not wreck this industry but may disrupt it significantly.
- India's research and development facilities are weak and need improvement for making state-of-the-art batteries and cells. There's also a severe lack of incubators that push budding EV start-ups.

Future endeavors for resolving challenges

Many new improvements for resolving the above concerns are in discussion. Some of the ideas that seem interesting to take on are:

- Battery swapping- This cuts the recharge time to just a few minutes and eliminates the need for charging stations. Instead of having a chargeable battery, people can swap it for a new one. This helps in a lot of ways. Firstly, it requires no storage space; secondly, almost no time is consumed. The concept of swapping makes the whole experience of owning an EV less troublesome for consumers.
- However, nations would have to double down on manufacturing to keep up with the sales. Hence, opting for a hybrid model comprising both charging infrastructure and battery swapping is the best bet. The combination of these two will prove to be positively impactful for India's progress in its energy transition journey.
- Putting in place battery recycling systems is also on the table. Accomplishing this will require an amendment to the present e-waste management policies. Failure to do this could turn urban areas into huge landfills for EV waste.
- India plans to set up accelerators and incubators that rear start-ups in the infant stage and fast-track their progress from labwork to concrete results, quantifiable commercially.

The Road Ahead

Several regulatory restrictions have been laid out with the adaptation in progress. Despite the hardships, the parts manufacturing industry saw a 23% growth rate in the financial year of 2020-21, according to the ACMA (Automotive Component Manufacturers Association of India). Companies in the subordinate sectors have seen a healthy transition and are slowly establishing themselves as dealers in the technology of Electric Mobility.

The expected growth rate for the EV industry in India is a whopping 94.4% from 2021-30. These forecasts sound promising, but meeting those expectations will not be a cakewalk. There have been reports and statements from prominent people with decades of industry experience which are just as cynical as they're optimistic. So the road ahead for the EV revolution isn't without hardships. There is still a lot to figure out, specifically the infrastructure setup and EV waste management. If these few things are resolved satisfactorily, India has the potential to become one of the leading players in the global EV industry.

India's First-ever Electric Car Cross-country Journey Flagged Off At 2nd E-Mobility India Forum

At the E-Mobility India Forum 2022, Sushil Reddy, an IITB alumnus and Guinness record holder for the 'longest journey on an electric bicycle,' flagged off a 70-day long car journey along the Golden Quadrilateral of India. The 6000 km route consists of 36 cities and will start from New Delhi, supported by Messe Frankfurt. MG ZS EV is the car of choice because of its highly functional features. It is a 5-seater automatic electric car with a 50.3 kWh battery capacity, 461 km range, and a sunroof. The MG ZS EV also contains power windows, cruise control, central locking, and airbags on the driver, passenger, and side front seats.

This journey is the first of its kind in India, with a mission to increase general public awareness and interest in electric mobility. This step will be an impetus to the greater campaign of 'zero tailpipe emission mobility.' Sushil will cover all major Indian cities, including Kolkata, Chennai, Bangalore, and Mumbai, and end the journey in Delhi on 10 December 2022.

Commenting on the unique idea, Mr. Raj Manek, Executive Director and Board Member of Messe Frankfurt Asia Holdings Ltd and the organizer of E-Mobility India Forum, said, "Reducing India's dependence on fossil fuels will not only help in alleviating air pollution and combating climate change but also save the Indian economy billions in oil imports. Green vehicles are the future of automotive transportation. Messe Frankfurt India promotes and supports clean fuel initiatives through forums such as E-Mobility India Forum and NGV India Summit. We wish Sushil all the very best and stand alongside him in his journey to raise awareness about e-mobility in India."

Prominent organizations like MG Motor, Drive India, and Fortum Charge have also championed this cross-country journey.

Gulf Oil India Launches EV Fluids To Support Electric Mobility

Gulf Oil Lubricants partnered with Piaggio Vehicles Private Ltd.(PVPL) and Switch Mobility for a deal on EV fluids. As per the terms of the deal, PVPL and Switch Mobility will be sourcing their EV fluids from it. Gulf Oil has a complete range of fluids for passenger and heavy-duty commercial vehicles. In September 2021, it announced its product line-up comprising Gulf eLEC Coolant, Gulf eLEC Brake Fluid, Gulf Formula Hybrid, and Gulf eLEC Driveline Fluid.

Sanjay Hinduja, Chairman of Gulf Oil Lubricants India Ltd., commented on the collaboration, "As the automotive industry adds a new chapter with electric mobility, being the leading technology player in the lubricant space, it is our responsibility to drive the industry and to develop segment-leading products to support the EV sector. Acceptance of our products by marquee players like Piaggio Vehicles and Switch Mobility further augments our commitment to develop cutting-edge products for the EV sector."

The future looks promising for Gulf Oil as it plans to venture into the 2-wheeler batteries sector. It also has strategic partnerships with top indigenous players with global networks like Mahindra, Bajaj, and Ashok Leyland to boost India's e-mobility.

Causis E-Mobility Bags Contract From KDMC

Causis E-Mobility, one of the newest in the electric vehicle sector and part of the Causis Group Ltd., aims to disrupt the Indian commercial vehicle space with its groundbreaking technology. It bagged a twelve-year contract from the Kalyan Dombivli-Municipal Corporation for the supply of 107 e-buses. The product that helped seal the deal was EuraBus, a 9-meter e-bus with net zero emissions. The EuraBus has a European design, lightweight modules, great range, and long battery life. The electric battery eliminates the need for fuel and saves costs. EuraBus also has the least life-cycle cost of all e-buses, including maintenance and service costs.

Mr. Ravi Kumar Panga, the CEO of Causis E-Mobility, said, "We are happy to partner with KDMT in its efforts to provide mass transport sustainable e-mobility solutions. With the prices of fuel touching the limits of the sky and the ill effects the environment is facing, we are extremely happy that our buses will contribute highly in controlling hazardous emissions and contribute create a net zero emission environment through our environment-friendly electric bus, which also gives the travelers a comfortable and premium travel experience".

Causis is ideal for the job as it incorporates AI, efficient renewable technologies, and creative designs to create net-zero emission solutions in the EV industry.

M&M And Jio-bp Strengthen Ties By Setting Up Charging Network For The Upcoming E-SUV Launches

Mahindra & Mahindra, the top SUV manufacturing company in India, and Jio-bp are coming together to develop charging infrastructure for upcoming electric vehicle launches. Jio-bp aims to create India's largest EV charging and battery swapping points. Under this deal, it will establish EV charging stations at M&M dealerships and workshops nationwide, beginning with 16 cities in the first phase. All stations will have public access, so Jio-bp will directly contribute to national EV charging capacity. The Mahindra Group has been very active in the EV space and has exciting upcoming launches.The manufacturing expansion has to go hand-in-hand with the fast-charging facilities expansion. This partnership with Jio-bp will help Mahindra accomplish exactly that goal.

The charging network development will start from main target points in cities and along major highways to guarantee a hassle-free experience for EV buyers. This MoU between the country's greatest stakeholders will drive India closer to a reduced carbon footprint and, ultimately, net-zero emissions. There will be mobility solutions catering to small-scale vehicles and 3 and 4-wheelers. All EV owners and manufacturers will greatly benefit from this deal due to the strengthening of Indian EV infrastructure.

Tata Motors Launches First Electric Hatch Tiago.ev

Tata Motors is currently spearheading the transition to electric mobility in India. Its latest EV launch is the Tata Tiago.ev, a stunning car with best-in-class features and fresh designs to wow the Indian EV market. Tata received over 10,000 bookings in a single day and will start delivering from January next year. The prices begin from Rs. 8.49 lakhs exclusively for the first 10,000 customers. The booking charge is Rs. 21,000 and bookings are made through any registered Tata dealership or online.

The Tiago.ev is fully automatic, seats 5, charges in 2.6 hours, has a 19.2 kWh battery capacity, and a range of 250 km and 315 km, depending on which battery the buyer selects. The most attractive features are a seven-inch touchscreen infotainment unit, rain-sensitive wipers, projector headlamps, automatic climate control, cruise control, a Harman sound system, and regenerative braking. Tata hasn't forgotten to include the safety measures like brake control, rear-view camera, dual front airbags, and even TPMS(Tyre Pressure Monitoring System). It comes in 7 variants to give customers an exciting range of options.

Mr. Shailesh Chandra, Managing Director of Tata Motors Passenger Vehicles Ltd., described its functioning and said, "It comes with two options of battery packs and four different charging solutions, enabling customers to choose the combination that best serves their mobility needs. With its thrilling yet easy-to-drive experience amidst a luxurious ambiance, the Tiago.ev is likely to become the favorite car of every family member."

The Tiago.ev uses Tata's Ziptron technology which is known for its effectiveness in the Indian climate conditions. An electric hatchback with highly functional features, luxurious interior layout, and 'Made in India,' Tata Tiago.ev provides the ultimate driving experience suited for India's diverse terrains.

SAR Group Creates India's Largest EV Technology Centre

The SAR Group mainly focuses on energy storage, home electricals, e-mobility, and clean tech. Recently, it established itself in the EV space with Lectrix EV. It has set up India's largest technology center for indigenous advancements in EV controllers and batteries, motors, drivetrains, and electronics of rechargeable batteries. The 1,00,000 square feet center is located in Manesar, Haryana, and has several state-of-the-art facilities, costing 300 crores. SAR aims to improve its R&D aspects with this center qualitatively.

The center boasts a dedicated BMS(Battery Management System) development space, a powertrain development lab, an electric battery and charger lab, and a vehicle control unit. Its engineering design hub has simulation provisions for test runs of tech innovations. The IoT lab in the tech hub helps SAR optimize the integration of EV parts and software. These solutions will drive SAR's expansion in the EV industry, starting with Lectrix EV. Lectrix has already launched electric scooters and plans on introducing more electric 2-wheelers this year. With the combination of the latest technologies, affordability, and design innovations, it is looking to disrupt the Indian electric 2-wheeler segment.

Speaking about its EV venture, Mr. K Vijaya Kumar, Managing Director & CEO of Lectrix EV, said, "SAR Group's entry into the electric two-wheeler segment is a natural extension. With advanced R&D capabilities and extensive experience amassed over 35 years in the energy storage and management space, we know how to get the 'heart' of an EV right. We are driven by a vision to remove the risk of EV adoption for the Indian consumers, and this technology center will be the fulcrum for this."

QUANTRON Partners With TMP Logistics For 500 Class 8 Trucks With FCEV Drive System

QUANTRON, the zero-emission electric mobility expert, has entered into a contract with TMP Logistics Group Ltd. and received an order for 500 class 8 trucks with an FCEV drive system. The deal was finalized at the Delegation of German Industry and Commerce (DGIC) and braced well by the German Embassy.QUANTRON offers Quantron-as-a-Service(QaaS) for the functioning of these vehicles, which are deliverable by 2024. QUANTRON is looking into consolidating zero-emission transport from third-party suppliers into its platform. It will then charge customers on a per-mile basis as per their Total Cost of Ownership9TCO).

Michael Perschke, CEO of Quantron AG, while describing this deal, said, "With our contribution of 500 heavy-duty FCEV trucks, we support the $8 billion hydrogen program funded by President Biden's Bipartisan Infrastructure Law and are pleased to spearhead the effort to help businesses and communities across the country benefit from clean energy and hydrogen investments."

QUANTRON sees huge potential in hydrogen solutions for heavy vehicles in the US market alone. This is because the TCO of EVs for commercial vehicles is far lower than ICE manufacturing costs. Research says nearly one-third of all class 4-8 vehicles will be electric within a decade. Hence, the data suggest that the agreement between QUANTRON and TMP Logistics happened befittingly.

EKA Mobility Collaborates With GoEgo Network For Setting Up EV Charging Infrastructure

EKA Mobility, part of Pinnacle Industries Ltd., is an EV company that has collaborated with GoEgo, the country's leading EV charging infrastructure supplier. This partnership aims to build a strong, functional, and efficient network of EV charging stations with round-the-clock accessibility for customers.

According to the contract, goEgo will officially provide charging solutions for the 9-meter buses of EKA. The EV charging stations will be ARAI(Automotive Research Association Of India) certified & OCPP(Open Charge Point Protocol) compliant. The charging stations are to accommodate 30kW, 60kW, and 120kW charging ports. A single charge will help EKA's buses attain a range of 200 kilometers.

Mr. Rishi Bagla, director of GoEgo, emphasizing the collaboration said, "While our passenger EV charging network has been growing quickly with our presence in housing societies, public car parks, educational institutes, charging parks, hospitals, and many more, our recent tie-up with EKA Mobility is a testimony to the fact that our charging solutions are universal and can be used by all types and sizes of EVs currently available in the market. As omnipresent and compliant charging ecosystems lack across the country, our partnership with EKA Mobility will guarantee EKA Mobility's customers a seamless charging ecosystem for their e-buses across India."

A developed EV charging network will certainly fast-track India's mobility transition and put EV owners at ease.

EV Connect Editor Kartikeya in conversation with

Nilesh Bajaj

CEO, Vayve Mobility

Please tell us about the journey of Vayve Mobility business. How did it all begin and how has the journey been so far?

Saurabh & I are IIT Bombay alumni. Saurabh has a PhD in Computer Networks and I have a M.Tech in Systems & Controls Engineering. Ankita is an MBA in Operations Management from NMIMS and Vilas has a Masters in Chemical Engineering from the University of Utah.

Saurabh & I started Vayve Technologies in 2014 for product delivery in High Performance Computing, Large scale IoT & Real-time systems. Ankita joined us in 2016 and we crossed 100 Cr of business in until 2020. Vilas has 26 years of global experience in business strategy and supply chain across multiple business units at the Procter & Gamble Company.

We together founded Vayve Mobility in 2021 with aim to redefine Urban Mobility by creating innovative electric vehicles driven by smart engineering and design. The move to shift operations to Pune was made for better access to automotive supply ecosystem.

What have been some essential learnings in the Covid times which you plan to implement going further?

Covid has exposed supply chain disruption challenges and laid out importance of developing local supply chain. Also supplier redundancy needs to be created in the system for seamless operations. Workplace culture of taking care of employees at office and at their homes especially in trying times of Covid to not only increase productivity but also create a sense of belongingness towards the company has come to frontline.

Kindly tell us about the different business models in use and the product types currently being provided by Vayve Mobility?

Currently the focus for new EVs by established OEMs is towards cars in bigger form factor and batteries to provide range of 500+km, these are being launched primarily with the thought of replacing fast-selling models with Electric Drivetrain. We, at Vayve, believe to enable the mass adoption of EVs- more practical and accessible vehicles need to be launched.

We are building an electric smart car for urban personal mobility. Eva aims to establish a new category of electric vehicles for personal mobility and accelerate mass EV adoption, starting in India. Eva seats 2

adults and one child, has a narrow body configuration (1m wide x 3m long) for nimble movement in traffic and for ease of parking. Built electric from the ground-up, the car is very efficient at 20+ km/kWh, uses proprietary modular battery design and has active liquid cooling for battery safety and longevity. An optional Solar Panel would add 3000+ km of Range every year.

Is there a significant untapped potential which can lead to growth rates in the future?

We are challenging how vehicles are thought about in a traditional sense. We are offering newer form factors and designing vehicles for a specific need in mind - your daily commute - which is not across cities, but within known distances - and our vehicles are highly optimised for this use case.

Micro mobility is touted to be the next big thing in Urban Mobility globally. This city car is designed to be export ready and would serve well in South-East Asian, European, Latin American, African and Middle Eastern Markets.

What technological breakthroughs can we expect from your company in the coming years?

We plan to vertically integrate and bring Battery Pack Technology, Motor- Controller and Motor in-house by 2025, considering these are most critical components in an EV giving us better control of product development cycle. Our company is working on ADAS Technology- backup cameras, blind-spot warning sensors, lane departure/ forward collision warning systems, adaptive cruise control, parking assist etc.

What are your EV goals and ambitions for the year 2023?

We plan to unveil Eva- personal smart city car in Delhi Auto Expo, Jan'23. Detailed engineering and validation activity would follow to submit the vehicle for homologation and conducting road tests by the end of 2023.

Parallelly in the next few months, our engineering team will be working on a taxi version with driver plus 4 passengers and 400 L luggage capacity. This will be on our signature chassis platform, optimized closely to its market and use case.

EV CONNECT

EV Connect Magazine's staff of reporters and editors is experienced and uncompromising. We ensure readers get the news they need the instant it happens. We never settle for how things have been done before. Instead, we are constantly seeking new and creative ways to serve the new citizens of our India.

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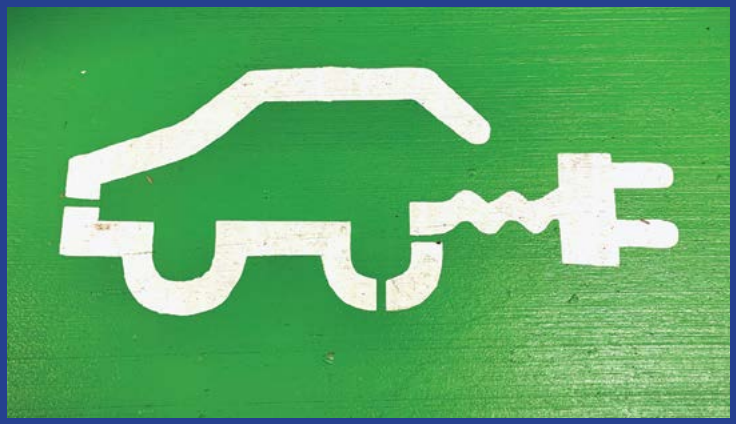

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