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**EV
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**VOLVO'S ELECTRIC
TRUCK EXCELS IN
RANGE &
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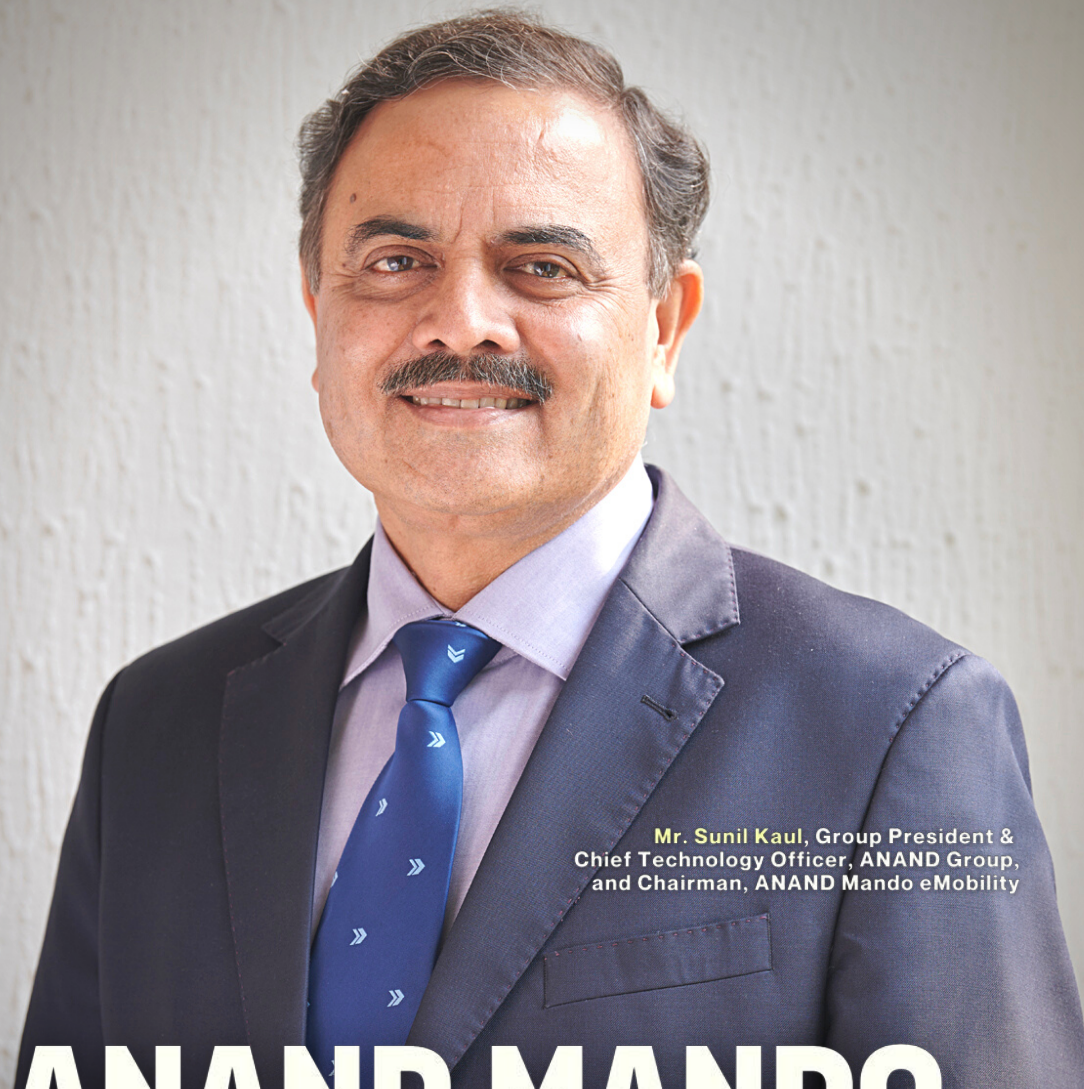
*2022.. A big year
for EVs in India*



**TVS MOTOR
COMPANY ACQUIRES
SWISS' SEMG**



**HERO ELECTRIC AND
MAHINDRA & MAHINDRA
JOIN HANDS**



**Mr. Sunil Kaul, Group President &
Chief Technology Officer, ANAND Group,
and Chairman, ANAND Mando eMobility**

ANAND MANDO EMOBILITY

**AIMING FOR
STRONG PRESENCE
IN EV MARKET IN
INDIA**

EXCLUSIVE

**BYD's E6
ELECTRIC MPV!**

TESTED



ANAND MANDO EMOBILITY

AIMING FOR STRONG PRESENCE IN EV MARKET IN INDIA

The overarching motto of 'zero complaints', 'zero defects', 'zero accidents' of ANAND Group guides ANAND Mando E-Mobility which is the 2nd JV in India between ANAND Group and the South Korean company, Mando Corporation. Inaugurated in October 2021, their plant boasts of robust infrastructure and has already begun manufacturing 12-inch hub motors.

In an insightful chat with **Mr. Sunil Kaul, Group President & Chief Technology Officer, ANAND Group, and Chairman, ANAND Mando eMobility**, N. Balasubramanian & Sarada Vishnubhatla understand their plans in the near and long-term future, besides knowing what makes up the combined strength of ANAND Group and Mando Corporation.

At ANAND, the focus towards sustainability and environment as a value drive, has been seen in the Corporation maintaining assets without waste, encouraging innovation, nurturing talent and producing defect free parts. Hence addressing the pollution in cities through reduction of Greenhouse gases and reduction in dependence on Fossil fuels has been an easy transition. Electric mobility is not limited to battery electric vehicles but also encompasses sustainability through reduction in consumption of materials, improved efficiency of systems and vehicles. Eg. Making the vehicle go farther by about 15% on the same inputs. They are driven by their motto to 'be among the top 3 players' in every segment they enter. ANAND Group has always striven to grow more than the market by exceeding customer expectations. The growth has been inclusive - developing their supply partners through their unique initiative on transforming their company with tier 2 and tier 3 - Visionary Small and Medium Enterprises or VSME program.

The second JV in India between ANAND Group and Mando Corporation, ANAND Mando E-Mobility or AMeM, follows the same principles. Aiming to create a strong presence in the domestic EV market, AMeM will manufacture and market EV components and systems for 2-, 3- and 4-wheelers. They are leveraging existing synergies, expanding capabilities and capacities, while building on skills available across ANAND, through the benchmark Operating Engineer Model. The JV aspires to be with 30% of the market in the near future. An interesting fact is that AMeM has taken only 10 months from concept to production, which is by far the fastest for any company under ANAND Group. Through a very well-articulated strategy, the company has commenced series production of a 12-inch hub motor to cater to the super-fast growing medium speed scooter segment. A series of variants and newer models for scooters, motorbikes and three wheelers are in the works.



“We employ educated workforce with diploma in engineering as a minimum qualification straight out of polytechnics across India. It means that the average age of our workforce is 20 or 21 years. We train them to imbibe our quality standards and give them problem solving tools. They learn that our philosophy of ‘first time right every time’ as well as ‘flawless launch’ is extremely close to our hearts. Our policy is that no customer should experience a complaint”

Sunil Kaul, Group President & Chief Technology Officer, ANAND Group, and Chairman, ANAND Mando eMobility

Blueprint of a Market Leader

AMeM is a market leader in the making when it comes to e-mobility. They have invested in a gamut of infrastructure, which starts with a state-of-the-art R&D Test Validation Facility that includes 4 dynamometers, design software, and facilities to make prototypes. Mando Corporation has 2 full-fledged Engineering Centers in Gurugram and Bangalore to develop software with a combined strength of 350 people. These centers will support the development of motors and controllers in a comprehensive manner – mechanical/electrical/electronic and hardware & software. Both Mando Corporation and ANAND Group are highly customer-centric and that is why efforts are relentlessly on to give samples to customers as per their requirement within the shortest time possible.

Sunil Kaul, Group President and CTO, ANAND Group, and Chairman, ANAND Mando eMobility, shares: “AMeM brings robust designing capabilities, offers speed to product development and ensures quality. We make continuous efforts to develop our capacities. To ensure that each and every component that goes into the product has to be of defined quality without variation, we have strategized sourcing the parts from the best. Our suppliers know that we are in for the long-haul.”

As a partner, Mando boasts of a wide range of motors that have been developed based on proven concepts. This gives AMeM the leeway to modify the products as per Indian application needs. Sunil explains: “Our team develops the components locally, based on designs evolved in Mando Korea, then assembles and tests to seek same or better results than the sample identified for benchmarking. Only then do we begin manufacturing.”

Robust Beginnings

Manufacturing is AMeM’s core strength and the company has already started PPAP (production part approval process) with their suppliers, and their own manufacturing line. As of now, production stands at making about 150 motor orders per shift, which will see a probable hike up to 300 or 350. It will need their capacities to grow to 500-600 a shift, which soon will be turned into double shifts. As more machines get added, AMeM will up their capacity to over 1000 motors a day. In alignment with the burgeoning growth in the Indian EV market, especially in the 2-wheeler space, AMeM is all set to gain a strong foothold in the domestic market first and foremost.

Sunil elaborates on how VSME program works: “Every year, we select 25-30 suppliers and train them for about 6 months. In these training programs, we train them by demonstrating principles and practices of LEAN – which focuses on flow of materials and information, confirming quality is built in at every operation, ergonomics and how they can meet customer deliveries, while matching their own schedule and holding enough inventory. All this is done keeping quality as top priority in their processes. AMeM deploys a team of 5-6 people to help with the training and developing skills to realize ‘zero defect’ while maintaining quality.”





The company believes in not only demonstrating during the training but most importantly, handholding as they undergo the various pre-requisites. Sunil shares further: “We have been conducting this program for a decade now where we invite 25 companies every year. This keeps our connection deep with our suppliers and they realize that they are able to double their revenue within 3 years after undergoing our program.”

Encashing EV Boom

With the arrival of the EV boom, India is poised for interesting times. AMeM focused strategically on the 2- and 3- wheelers as their primary target segments during years 2022 and 2023. The company will scale up investments and operations and enter 4-wheeler segment during 2023 and 2024, based on the experience already gathered by then. As per Sunil: “The inflection point for 2- and 3-wheelers is already here, which may peak within 5 years. But the 4-wheeler and passenger vehicle segments may take about 3 years to reach their inflection point, post which they will witness a jump. The big CVs may show inclination more towards hydrogen fuel cell than EV, though cost could be a challenge for both the OEMs and the consumers in India. The situation will evolve further and in the next 3-4 years, we shall see a clearer picture, with biofuels and other alternatives offering solutions for the big CVs.”





ANAND Group and Mando have finalized business proceedings with 3 OEMs and are delivering samples to about 10 customers. He says: "Besides the 12-inch hub motor, we are also working on 10-inch motors for the 2-wheeler segment. By May 2022, we will be manufacturing mid-size motors for motorbikes and 3-wheelers with a capacity of 1.5-5 kilowatts. In the next 6 months, we will be developing up to 12-kilowatt motor."

"We want to complete our product range by going up to 40 kilowatts by 2023. This will cater to SCVs also besides 4-wheelers. We have developed 'concept' samples based on specifications from 2-and 3-wheeler manufacturers and by May 2022, we should have samples – off tool off production process, ready to go into series production", he added.

Skilling Team

AMeM takes particular care when it comes to skilling – be it on the shopfloor, or to help employees work on new products on the manufacturing side. Sunil says with pride: "We employ educated workforce with diploma in engineering as a minimum qualification straight out of polytechnics across India. It means that the average age of our workforce is 20 or 21 years. We train them to imbibe our quality standards and give them problem solving tools. They learn that our philosophy of 'first time right every time' as well as 'flawless launch' is extremely close to our hearts. Our policy is that no customer should experience a complaint", he adds.

AMeM's skill building exercise involves suppliers undergoing supplier audits which gives a complete picture of their systems, designing capabilities, flexibility, to meet the demand. Hence, they undergo special courses on artificial intelligence, data analytics and training in Six Sigma. With Sunil monitoring the workforce's journey into skill building and Six Sigma training as the one responsible for Excellence-in-Manufacturing, Innovation, Quality Culture, and Sustainability initiatives at ANAND Group, AMeM has already put their best foot forward. It is only a matter of brief time before AMeM emerges as one of the top e-mobility players in India.

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