

M M FORGINGS LIMITED

SVK TOWERS, A 24/25, THIRU VI KA INDUSTRIAL ESTATE, GUINDY, CHENNAI- 32
Phone: 91-44-71601000 E-Mail: corporate@mmforgings.com CIN L51102TN1946PLC001473

Date : 01 September 2022

The Deputy General Manager Corporate Relationship Department. Bombay Stock Exchange Limited, Rotunda Building, P.J.Towers, First Floor, New Trading Wing, Dalal Street, MUMBAI -400 001	National Stock Exchange of India Ltd 'Exchange Plaza', Bandra - Kurla Complex, (E), Mumbai - 400 051
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Dear Sirs,

Ref.: NSE : security code- MMFL -EQ; BSE : Security Code -522241

1. Please find enclosed the Press release of the acquisition of Abhinava Rizel Private Limited.
2. Kindly take it on records.

Thanking you,

Yours faithfully,
For M M FORGINGS LIMITED



J.SUMATHI
COMPANY SECRETARY





MM FORGINGS LIMITED

Corporate Office: SVK Towers, 8th Floor,
A25 Industrial Estate, Guindy, Chennai - 600032, India

1st September 2022,
Chennai

MM Forgings Limited secures significant majority stake in EV Powertrain startup Abhinava Rizel as part of its transformation strategy

As part of its transformation strategy to become a leading player in the growing electric vehicle (EV) segment, MM Forgings Limited (MMF) has made an investment to secure an 88% equity shareholding in Abhinava Rizel Private Limited (Abhinava Rizel) (www.abhinavarizel.com) on a fully diluted basis. Further, MMF will provide the necessary financing to establish the manufacturing facility and other product development initiatives. On an aggregate basis, MMF expects to invest Rs.200 crores (~US\$25mn) in this initiative. More importantly, MMF's involvement will also provide significant technical and managerial expertise to accelerate Abhinava Rizel in its growth path.

The founders of Abhinava Rizel, BVN Madhu, Karthik Donthula and Shivam Bhatia (alumni of SRM Institute of Science and Technology), have been jointly developing EV motor and powertrain technologies since 2017. As a result of the team's work, Abhinava Rizel has 8 patents filed and an additional 10 patents under filing in respect of EV motor and powertrain technologies.

Abhinava Rizel's motors are based on proprietary hybrid topology radial flux architecture between SynRM (Synchronous Reluctance Motors) and PMSM (Permanent Magnet Synchronous Motors), combining the best of both technologies. Together with this combined capability, and well-developed thermal management techniques, thermal efficiencies achieved are around 25% higher over conventional traction motors. This enables significantly reduced use of magnets, copper, aluminum, steel, etc., with zero compromises in performance.

Abhinava Rizel has multiple patented innovations whose incorporation in design yields around **15% improved overall drive cycle efficiency** over conventional traction motors. This means that a typical EV user can travel 15% more distance on every charge, or EV OEMs can use around 15% smaller battery pack for a given range, making EVs affordable to a wider market. Abhinava Rizel is also developing gearboxes and innovative controllers using Gallium Nitride (GaN) and Silicon Carbide (SiC) technologies to soon provide integrated (3-in-1) "Controller+Motor+Gearbox" solutions to their customers across all segments of automotive and off-highway spaces.

Abhinava Rizel is currently partnering with automotive manufacturers in India and the investment by MMF will be utilized to establish its initial manufacturing facility in Oragadam, Tamil Nadu. More importantly, MMF's significant technical and managerial expertise will launch Abhinava Rizel in its path of accelerated growth.

Commenting on the investment, Mr. Vidyashankar Krishnan (Vice Chairman and MD of MM Forgings Ltd) said, "MMF is the supplier of choice for leading global automotive companies across the spectrum of vehicle configurations, especially in the passenger and commercial



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transportation automotive segments. These relationships have grown over time and MMF has secured the preferred supplier status through a combination of innovation, joint development, cost competitiveness, and above all high integrity in delivery and service. Given the growing presence of EVs across the overall automotive market, MMF is seeking attractive investment and partnering opportunities to pivot itself and become a significant industry participant in this emerging sector.

We are excited about the capabilities developed by Abhinava Razel and believe MMF can accelerate its progress significantly. We expect the market for EV powertrains in India to gradually grow to ₹ 100,000 crores over the medium term. Through this investment, MMF expects Abhinava Razel to acquire a reasonably attractive share of the marketplace in step with the acceptance of its capabilities.

According to Mr. Krishnakumar Raman, President - Operations, MMF, "Abhinava Razel has the complete capability to rapidly customize and tailor its motors for a wide spectrum of customer requirements ranging from 48V to 800V and 2kW to 250kW+ of power. This capability covers the requirements of two wheeler, three wheeler, four wheeler and commercial vehicle market segment. The motors are currently under intensive testing at external test centres. That initial results have demonstrated a deviance of less than 3% from their digital designs, is a strong testament to the product capability and design skills of the team at Abhinava Razel. The current set of motors are currently under trials at multiple customers. We expect to convert these into significant supply volumes in the near future."

According to BVN Madhu, Co-founder, Abhinava Razel, "The current scenario is an opportunity for India to play a bigger role in the global EV transition. We believe in making India known for great engineering and technology by providing leading-edge EV Powertrain solutions across the world. We deeply care about this, and we are happy to join hands with MM Forgings which shares this very same zeal. Together, we intend to have the "spirit, speed and agility" of a startup with the "reliability and pedigree" which comes with MMF's 75 years of autocomp manufacturing to deliver optimum powertrain solutions to the global EV space. Exciting times ahead."

Karthik Donathula, the other Co-founder, Abhinava Razel commented, "At Abhinava Razel, we are greatly focused on building products with an innovation-driven approach and a strong scalable product portfolio, which specially caters to the challenging Indian conditions."

Shivam Bhatia, the third Co-founder, Abhinava Razel, is of the view, "We are a bunch of technology enthusiasts with a single-minded vision of making the world a better consumer of energy. We are delighted and grateful to partner with MMF who shares our vision and believes in focused innovation. As a team, which has the perfect blend of both worlds, we together will strive to bring India to the forefront of EV technology and develop great products for the whole world."

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**01st September 2022****Chennai****EV Powertrain startup “Abhinava Razel” secures US\$ 25mn funding from MM Forgings Limited**

Abhinava Razel Private Limited (Abhinava Razel) has secured an investment from MM Forgings Limited (MMF) for an 88% equity stake on a fully diluted basis. On an aggregate basis, MMF expects to invest close to Rs.200 crores (~US\$ 25mn) in this initiative, a strong commitment and vindication of the capabilities of Abhinava Razel, including the establishment of its manufacturing facilities.

The founders of Abhinava Razel, BVN Madhu, Karthik Donthula and Shivam Bhatia (alumni of SRM Institute of Science and Technology), have been jointly developing EV motor and powertrain technologies since 2017. As a result of the team’s work, Abhinava Razel has 8 patents filed and an additional 10 patents under filing in respect of EV motor and powertrain technologies.

Backed by Industry expert – Mr. KRA Nair (Angel Investor & Advisor), SRMIST Kattankulathur, NSRCEL IIM Bangalore, T-Hub Hyderabad, Startup TN, etc., the team at Abhinava Razel has developed EV motors based on a proprietary hybrid topology radial flux architecture between SynRM (Synchronous Reluctance Motors) and PMSM (Permanent Magnet Synchronous Motors), combining the best of both worlds. Together with this combined capability, and the well-developed thermal management techniques, thermal efficiencies achieved are around 25% higher over conventional traction motors. This enables significantly reduced use of magnets, copper, aluminum, steel, etc., with zero compromises in performance.

Abhinava Razel has multiple patented innovations whose incorporation in design yields around **15% improved overall drive cycle efficiency** over conventional traction motors. This means that a typical EV user can travel 15% more distance on every charge, or EV OEMs can use around 15% smaller battery pack for a given range, making EVs affordable to a wider market. Abhinava Razel is also developing gearboxes and innovative controllers using Gallium Nitride (GaN) and Silicon Carbide (SiC) technologies to soon provide integrated (3-in-1) “Controller+Motor+Gearbox” solutions to their customers across all segments of automotive and off-highway spaces.

Abhinava Razel is currently partnering with automotive manufacturers in India and the new investment by MMF will be utilized to establish its initial manufacturing facility in Oragadam, Tamil Nadu. More importantly, MMF’s significant technical and managerial expertise will launch Abhinava Razel on its path of accelerated growth.

Commenting on the investment, Mr. Vidyashankar Krishnan (Vice Chairman and MD of MM Forgings Ltd) said, “MMF is the supplier of choice for leading global automotive companies across the spectrum of vehicle configurations, especially in the passenger and commercial transportation automotive segments. These relationships have grown over time and MMF has secured the preferred supplier status through a combination of innovation, joint development, cost competitiveness, and above all high integrity in delivery and service. Given the growing presence of EVs across the overall automotive market, MMF is seeking attractive investment and partnering opportunities to pivot itself and become a significant industry participant in this emerging sector.



We are excited about the capabilities developed by Abhinava Rizel and believe MMF can accelerate its progress significantly. We expect the market for EV powertrains in India to gradually grow to ₹ 100,000 crores over the medium term. Through this investment, MMF expects Abhinava Rizel to acquire a reasonably attractive share of the marketplace in step with the acceptance of its capabilities.

With the tech developed from scratch through the first principles approach, Abhinava Rizel has the complete capability to rapidly customize and tailor its motors for a wide spectrum of customer requirements ranging from 48V to 800V and 2kW to 250kW+ of power. This very well covers the requirements of 2Wheeler, 3Wheeler, 4Wheeler, and Commercial Vehicle market spaces. The motors have been put under intensive testing at external test centers like ARAI, etc., and have logged great results with over 94% efficiency, expected torque-speed characteristics, etc. with a deviance of less than +/- 3% from their digital designs.

Commenting on this, Mr. Krishnakumar Raman, President - Operations, MMF, stated, “Abhinava Rizel’s motors are currently under trials with multiple customers. We expect to convert these into significant supply volumes in the near future.”

According to BVN Madhu, Co-founder, Abhinava Rizel, “The current scenario is an opportunity for India to play a bigger role in the global EV transition. We believe in making India known for great engineering and technology by providing leading-edge EV Powertrain solutions across the world. We deeply care about this, and we are happy to join hands with MM Forgings which shares this very same zeal. Together, we intend to have the “spirit, speed, and agility” of a startup with the “reliability and pedigree” which comes with MMF’s 75 years of autocomp manufacturing to deliver optimum powertrain solutions to the global EV space. Exciting times ahead.”

Karthik Donathula, the other Co-founder, Abhinava Rizel commented, “The global automotive industry is in the midst of its biggest change in decades. This is evident from the immense interest we are receiving from Indian OEMs and well-established startups. At Abhinava Rizel, we are greatly focused on building products with an innovation-driven approach and a strong scalable product portfolio, which specially caters to tough Indian conditions. Together with MM Forgings, we are excited to work with our customers and build a strong ecosystem”.

Shivam Bhatia, the third Co-founder, Abhinava Rizel, is of the view, “Electric vehicles are the future of transportation, and we believe innovation will be the key driver to accelerate this transition. At Abhinava Rizel, we are a bunch of technology enthusiasts with a single-minded vision of making the world a better consumer of energy. We are happy to partner with MM Forgings who shares our vision and believes in focused innovation. As a team, which has the perfect blend of both worlds, we together will strive to bring India to the forefront of EV technology and develop great products for the whole world.”

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