

Date: - 24<sup>th</sup> May, 2023

<b>BSE Ltd.</b> Regd. Office: Floor - 25, Phiroze Jeejeebhoy Towers, Dalal Street, Mumbai-400 001.	<b>National Stock Exchange of India Ltd.</b> Listing Deptt., Exchange Plaza, Bandra Kurla Complex, Bandra (East), Mumbai - 400 051
BSE Scrip Code: 543300	NSE Scrip: SONACOMS

**Subject: - Disclosure of Investor Presentation under Regulation 30 of SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 regarding entering high voltage Motor & Inverter Market**

Dear Sir / Madam,

This is in references of earlier investor presentation filed by the Company on 16<sup>th</sup> May, 2023 regarding **"Sona Comstar entering high voltage Motor & Inverter Market"**. In this regard, the exchange has asked for the covering letter addressing to them, therefore the Company hereby again attaching the earlier investor presentation along with this covering letter for **"Sona Comstar entering high voltage Motor & Inverter Market"**.

This is for your information and record.

Thanking you,

**For Sona BLW Precision Forgings Limited**

**Ajay Pratap Singh**

**Vice President (Legal), Company Secretary and Compliance Officer**

Encl: as above



# Entering High Voltage Motor & Inverter Market

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16 May 2023

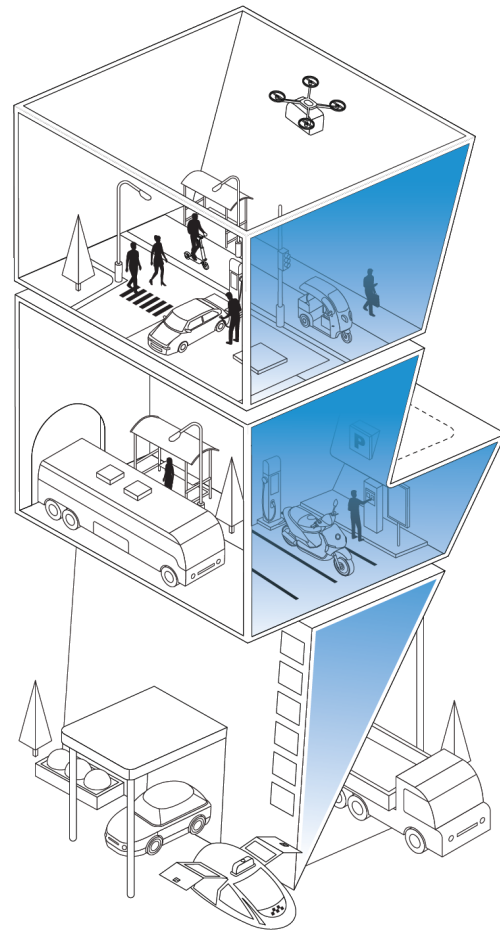
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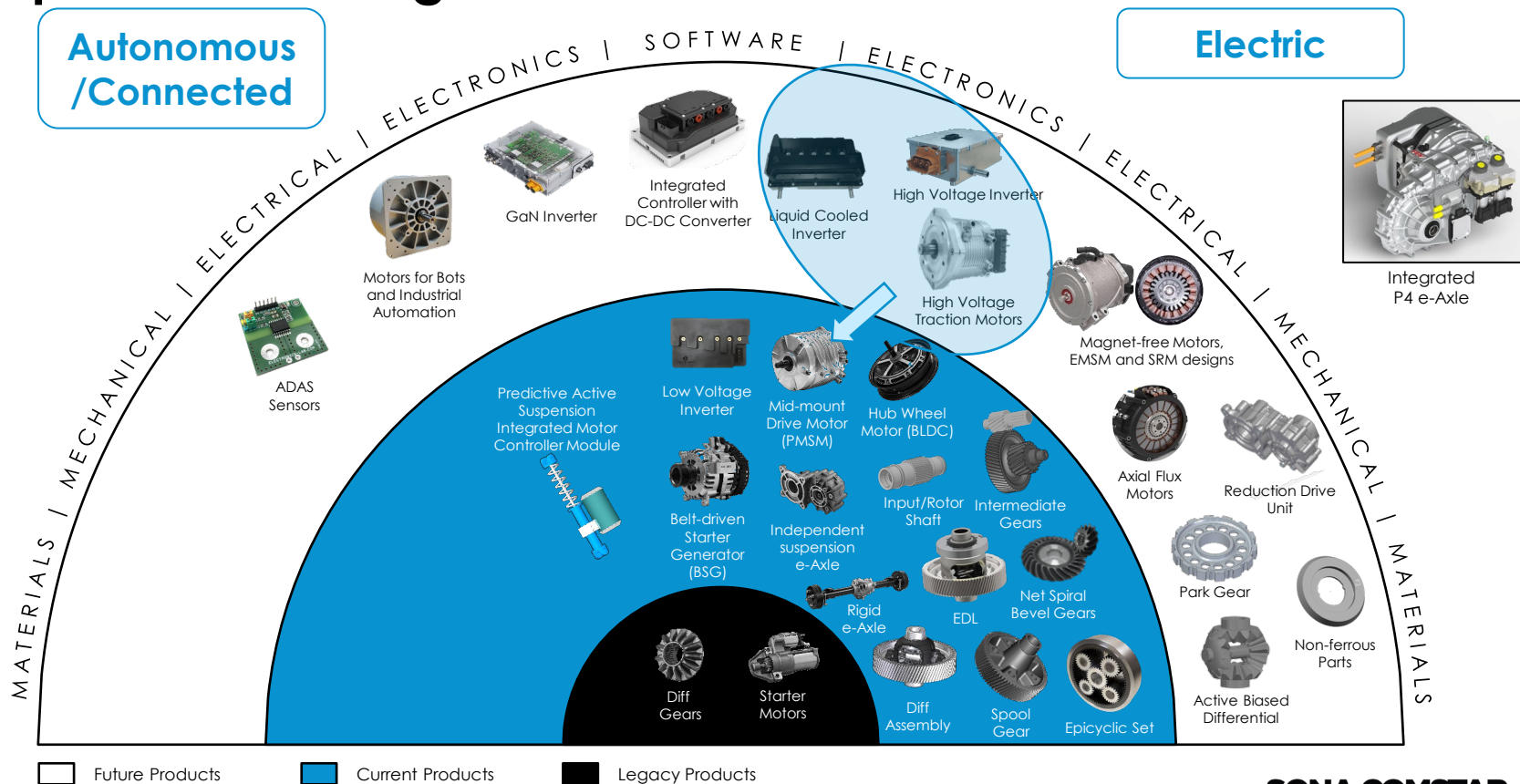
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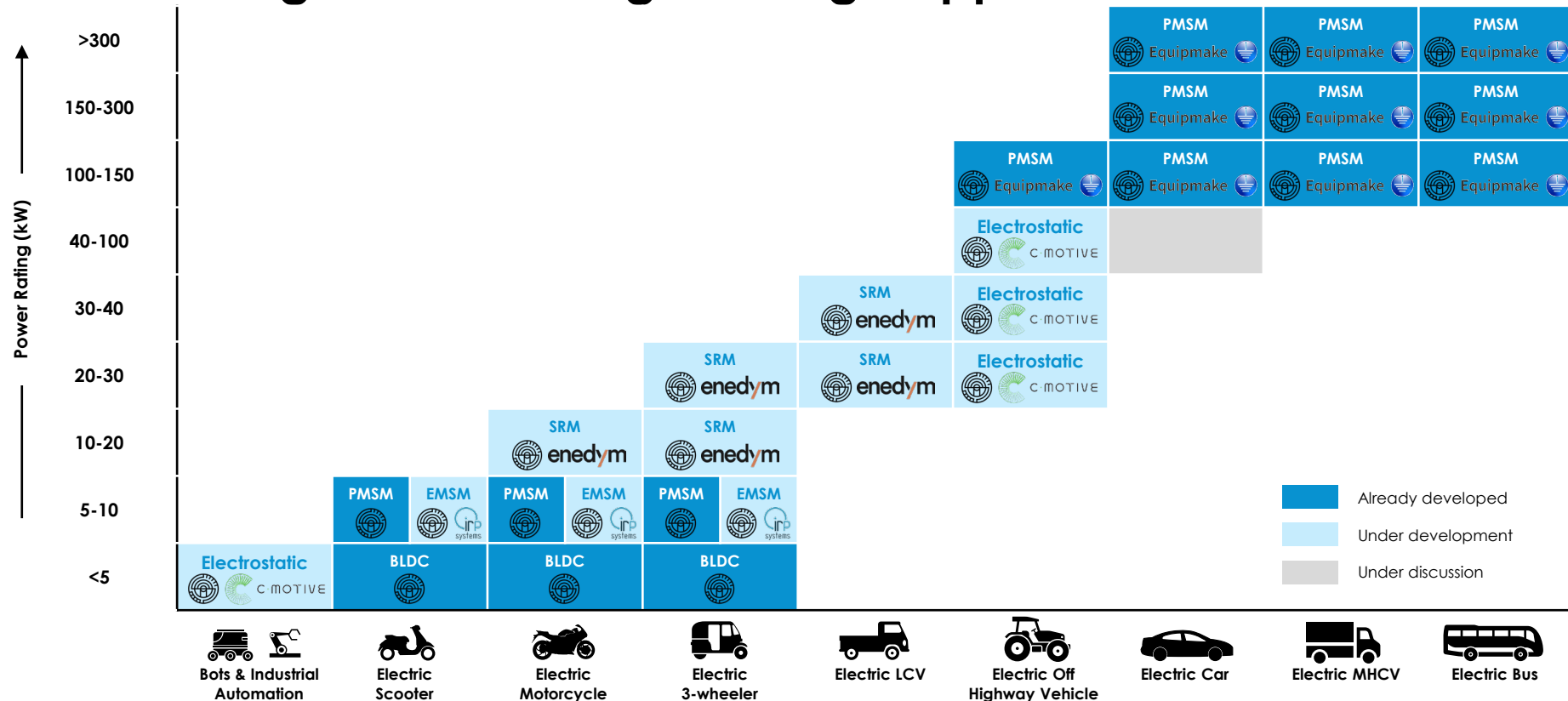
# We are adding High Voltage Traction Motors and Inverters to our product offerings

Autonomous  
/Connected

Electric



# In partnership with Equipmake, we are covering all the major vehicle segments with high-voltage applications



# Both Global and Indian BEV markets with high-voltage applications have strong growth projections



Data Sources:

1. IEA (2023), Global EV Data Explorer, IEA, Paris <https://www.iea.org/data-and-statistics/data-tools/global-ev-data-explorer>

2. CRISIL – Electric Vehicle Ecosystem Report

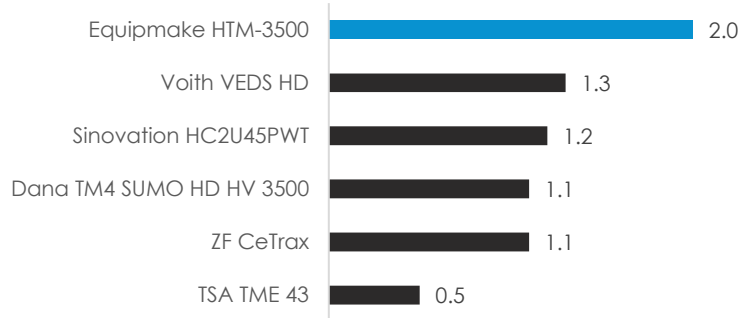
# Equipmake is one of the few high-voltage motor makers and their motors are amongst the best in the world in power density

## HTM - 3500

Power	: 400 kW
Torque	: 3,500 Nm
Speed	: 3,500 rpm
Weight	: 195 kg
Size	: 540 mm (dia) x 251 mm (w) x 607 mm (h)
Configuration	: Single or Coupled
Inverter	: With or without Inverter
Application	: Electric Buses and HCVs



### Power Density Comparison<sup>1</sup>

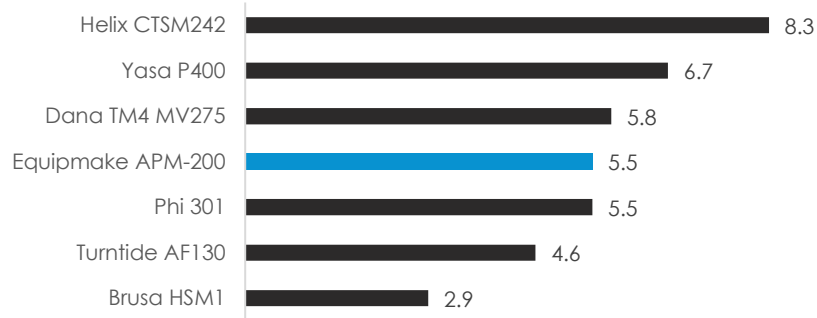


## APM - 200

Power	: 220 kW
Torque	: 450 Nm
Speed	: 10,000 rpm
Weight	: 40 kg
Size	: 318 mm (dia) x 247 mm (l)
Configuration	: Single or Coupled
Inverter	: With or without integrated inverter and/or gearbox
Application	: Electric Cars, MCVs and Tractors

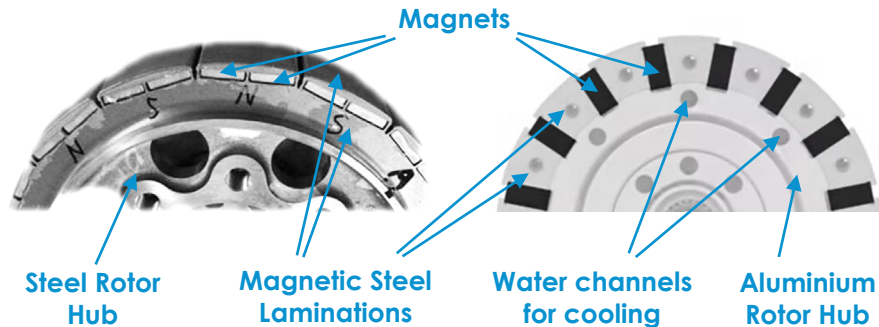


### Power Density Comparison<sup>1</sup>



# Equipmake's spoke motor architecture is a proven technology which is validated on road

## Conventional Architecture vs Spoke Motor Architecture



## Advantages of Spoke Architecture and Patented Rotor Design

### Aluminium Rotor Hub

Non-magnetic and cost-effective for manufacturing

### Effective Rotor Cooling

Integrated water channels for cooling; Increases specific performance; Can use low-cost magnets

### Concentrated Winding

Automated winding process for low-cost stator manufacturing

### Effective Use of Magnets

Reduction in magnet material results in high torque density and low magnet cost

## Tested and Delivered this technology to multiple customers



### First Group (UK)

Repowered 12 buses for First Bus; Secured another order for repower of a double-deck bus

### London Routemaster

Launch of customer trials of an Equipmake converted fully-electric London Routemaster

### Emergency One (UK)

Delivered bespoke EV drivetrains for Emergency One Fire Trucks; Secured further orders from them

### Agrale (Argentina)

Zero-emission powertrain fitted bus completed pre-service trials and started in-service trials in Nov-22

### European Electric Hypercar

Long-term contract to supply ASIL-D compliant motor drive inverter



# Equipmake has a strong pedigree and history of innovation



**Ian Foley**  
Founder & Managing Director

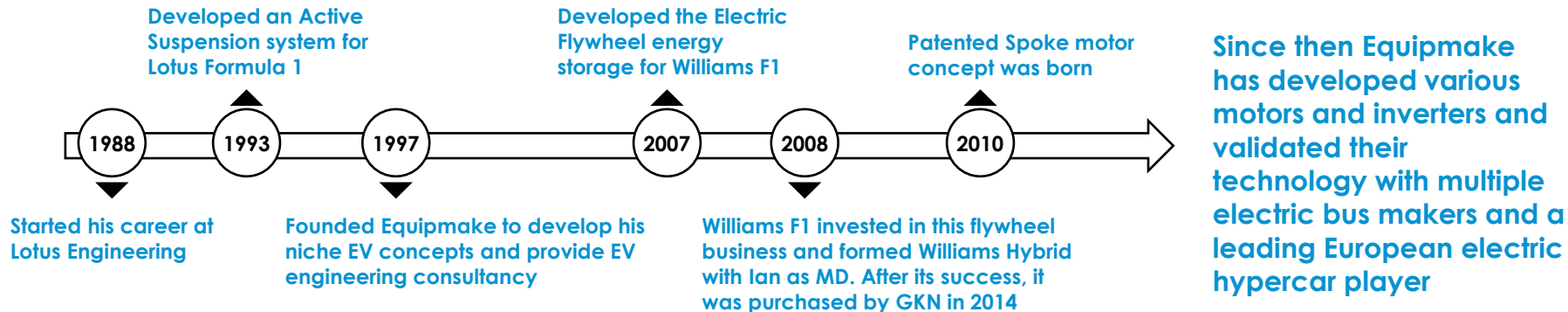
A highly-experienced engineer who has worked in global motorsport at the highest level – from Le Mans to Formula 1

**>20 years**

of experience in developing and integrating industry-leading innovative electric powertrains

**70 employees**

allowing Equipmake to continue innovating and developing new products



# Scope and Terms of our Licensing Agreement with Equipmake

## Products Covered

- EV Powertrains with power output between 100 kW to 440 kW
  - HTM 3500 motor and inverter, and its variants
  - APM 200 motor and inverter, and its variants

## Target Applications

- Electric passenger cars
- Electric passenger buses
- Electric commercial vehicles
- Electric off-highway vehicles including tractors

## Scope of Design, Sales & Manufacturing

- Equipmake will provide the validated design of the products
- Sona Comstar has exclusive rights to sell these products in the licensed territory of India, Thailand, and select South Asian markets
- Sona Comstar will manufacture the products in India and supply them to its customers in the licensed territory and to Equipmake for other markets

## License Fee & Royalty

- One-time fee for each motor
- Variable royalty payment

## Target SOP

- Production is targeted to start in 2025

# Appendix



# Data Sources for Motor Specs for Power Density Calculations

1. Voith VEDS HD - <https://voith.com/corp-en/drives-transmissions/voith-electrical-drive-system.html>  
<https://d2euiryvxi8z1.cloudfront.net/asset/445934742530/4d5e2414c0d9405f69e0ec1f1715fe32/vt2533-english.pdf>
2. Sinovation HC2U45PWT-MRA - <https://www.sinovation-ev.com/12m-coach-platform>
3. Dana TM4 SUMO HD HV3500-9p - [https://www.danatm4.com/wp-content/uploads/2019/04/TM4-SUMO-HD\\_Dana-TM4.pdf](https://www.danatm4.com/wp-content/uploads/2019/04/TM4-SUMO-HD_Dana-TM4.pdf)
4. ZF CeTrax - [https://www.zf.com/public/org/Product-Datasheet\\_CeTrax\\_EN\\_78313.pdf](https://www.zf.com/public/org/Product-Datasheet_CeTrax_EN_78313.pdf)
5. TSA ROAD-Motor TME 43-33-6 - [https://www.tsa.at/tsa\\_referenzen/solaris-trollino-metrostyle-for-salzburg/](https://www.tsa.at/tsa_referenzen/solaris-trollino-metrostyle-for-salzburg/)
6. Helix CTSM242-LV - <https://ehelix.com/products/ctsm242-electric-motor/>
7. Yasa P400 - [https://www.yasa.com/wp-content/uploads/2018/01/YASA\\_P400\\_Product\\_Sheet.pdf](https://www.yasa.com/wp-content/uploads/2018/01/YASA_P400_Product_Sheet.pdf)
8. Dana TM4 MV275 - <https://www.danatm4.com/products/electric-motors/mv275/>
9. Phi 301 - [https://www.phi-power.com/wp-content/uploads/2018/01/Phi301-Spec\\_Sheet-V1.2.pdf](https://www.phi-power.com/wp-content/uploads/2018/01/Phi301-Spec_Sheet-V1.2.pdf)
10. Turntide AF130 - <https://turntide.com/wp-content/uploads/2022/10/Tradeshaw-Component-Datasheets.pdf>
11. Brusa HSM1-10.18.22 - [https://www.brusa.biz/wp-content/uploads/2021/08/101\\_Datasheet\\_EN\\_HSM1-10.18.22.pdf](https://www.brusa.biz/wp-content/uploads/2021/08/101_Datasheet_EN_HSM1-10.18.22.pdf)