

# RBSA Advisors LLP

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## CERTIFICATE FROM INDEPENDENT CHARTERED ENGINEER

Report Ref No: RAL2425AMDREP10001

Date: 08/10/2024

To:

### **The Board of Directors**

#### **Hyundai Motor India Limited**

Plot No. H-1, SIPCOT Industrial Park  
Irrungattukottai, Sriperumpudur Taluk  
Kancheepuram District - 602 105  
Tamil Nadu, India

#### **Citigroup Global Markets India Private Limited (“Citi”)**

1202, 12th Floor  
First International Finance Centre, G-Block  
Bandra Kurla Complex, Bandra (East)  
Mumbai 400 098  
Maharashtra, India

#### **HSBC Securities and Capital Markets (India) Private Limited (“HSBC”)**

52/60, Mahatma Gandhi Road, Fort,  
Mumbai 400 001  
Maharashtra, India

#### **J.P. Morgan India Private Limited (“JPM”)**

J.P. Morgan Towers, Off C.S.T Road  
Kalina, Santacruz East  
Mumbai 400 098  
Maharashtra, India

#### **Kotak Mahindra Capital Company Limited (“Kotak”)**

27BKC, 1st Floor, Plot No. C – 27 ”G” Block  
Bandra Kurla Complex Bandra (East)  
Mumbai 400 051  
Maharashtra, India

#### **Morgan Stanley India Company Private Limited (“Morgan Stanley”)**

18F, Tower 2, One World Centre  
Plot 841, Senapati Bapat Marg  
Mumbai 400 013  
Maharashtra, India

(Citi, HSBC, JPM, Kotak and Morgan Stanley are collectively referred to as the “**Book Running Lead Managers**” or the “**BRLMs**”)

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**Re: Proposed initial public offering of equity shares of face value of ₹ 10 each of Hyundai Motor India Limited (the “Company”) by way of an offer for sale by existing shareholder(s) of the Company (such offer for sale, the “Offer”)**

I on behalf of M/s. RBSA Advisors LLP, confirm that I am a duly registered chartered engineer with the Institution of Engineers (India) bearing registration number M-145536-7 (certificate of registration enclosed herewith as **Annexure I**), and that I am duly authorized, competent and qualified to issue this certificate. Further, I confirm that the aforementioned certificate of registration is valid as on date hereof and will remain valid until the completion of the Offer.

Pursuant to the engagement letter dated March 20, 2024 vide reference number. RBSA/AMD/Offer/20032024/R1, we have been requested by the Company to examine, verify, certify and confirm certain details for the manufacturing plant(s) including installed and production capacity details as of and for the three months period ended June 30, 2024, June 30, 2023 and as of and for the financial years ended March 31, 2024, March 31, 2023 and March 31, 2022 (“**Relevant Periods**”) of the Company identified in **Annexure II** hereto, to be included in the Materials (as defined below). Additionally, we have also been requested by the Company to examine, verify, certify and confirm certain details in relation to the details and the certifications given by governmental regulatory agencies for the manufacturing plant(s) of the Company, as on the date of this certificate.

Based on the information, explanations and representations provided to us by the Company along with the basis of working and assumptions followed, wherever applicable, examination and verification of the manufacturing plant(s), physical inspection of the equipment and based on our verification of the relevant records, approvals/submissions made to governmental or regulatory authorities, review of actual manufacturing data at each manufacturing plant(s) and documents of the Company, we, M/s. RBSA Advisors LLP, hereby certify the following as true, fair, complete, accurate and not misleading.

The Company manufactures products in the automobile segment. Details of the installed production capacity of the Company’s manufacturing plant(s), and the capacity utilization, during the Relevant Periods are enclosed as **Annexure II** and **Annexure III** hereto. Additionally, we certify certain other particulars in relation to the manufacturing plant(s) of the Company, details of which are appearing in **Annexure III** of this certificate. A list of manufacturing plant(s) is enclosed at **Annexure IV**. A report on the facility located at three locations is enclosed as **Annexure V**. A list of key points about the manufacturing plant(s) at Chennai are included in **Annexure VI**.

The information relating to the installed, annual average available capacities, actual production and the capacity utilization of the manufacturing plant(s) during the Relevant Periods in the **Annexure II** is based on a number of assumptions and estimates, including expected operations, availability of raw materials, expected unit utilization levels, downtime resulting from scheduled maintenance activities, downtime resulting from change in stock keeping units for a particular product, unscheduled breakdowns, mould changeover, as well as expected operational efficiencies. These assumptions and estimates include the standard capacity calculation practice of Indian automobile industry calculations and explanations provided by the management and the period during which the plant(s) operates in the Relevant Periods. In particular, the following assumptions have been made in the calculation of the installed and annual average available production capacities of the Company’s manufacturing plant(s) and are certified by us:

- Past experience in the management of manufacturing products.
- Available orders on hand for the products.
- Raw material consumption and the availability of raw materials to estimate the production of each product.
- The product mix that the Company and its subsidiaries can make in a given stream or given plant.

Installed and the annual average available capacity is worked out on the basis of three shifts wherein two each being

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8.5 hours long and one being 7 hours long for 293 days in a financial year and the sum total of various different products for which the manufacturing plant(s) is capable of manufacturing and is already manufacturing as per the **Annexure II**.

## MANUFACTURING PLANT(S)

We have been provided access to the list of manufacturing plant(s) of the Company. We have done physical visits of all the plant(s) i.e. Hyundai Motor India Ltd., Plant #1 and Plant #2, Sriperumpudur, Tamil Nadu. Upon reviewing the documents, we confirm the following:

As of the date of this certificate, the Company has a total of 3 manufacturing plant(s) (2 operational plant(s)). A list of manufacturing plant(s) is enclosed at **Annexure IV**.

A report on the facility located at three locations is enclosed as **Annexure V**. A list of key points about the manufacturing plant(s) are included in **Annexure VI**.

As per the documents and records provided by the Company, the Company does not have any manufacturing plant(s) outside India.

We represent that our execution, delivery, and performance of this certificate has been duly authorized by all necessary actions (corporate or otherwise).

We confirm that the information provided by us is complete, true, correct, adequate, not misleading in any material respect and is adequate to enable investors to make a well-informed decision.

We further confirm that we are an independent entity with no direct or indirect interest in the Company and its subsidiaries except for provision of professional services in the ordinary course of our profession. Further, we are not in any way connected with or related to the Company, subsidiary/joint venture/associate, its promoters, promoter group, its key managerial personnel, its senior managerial personnel, its directors, or directors of its subsidiary/joint venture/associate, its group companies or directors of its group companies, the Book Running Lead Managers or their affiliates.

We hereby confirm that the information in this certificate and the annexures, including any extracts thereof, may be reproduced in the draft red herring prospectus ("**DRHP**") to be filed with the Securities and Exchange Board of India ("**SEBI**"), BSE Limited ("**BSE**"), National Stock Exchange of India Limited ("**NSE**", and together with BSE, the "**Stock Exchanges**"), the red herring prospectus ("**RHP**") and the prospectus ("**Prospectus**" and together with the DRHP and RHP, the "**Offer Documents**") to be filed with the Registrar of Companies, Tamil Nadu at Chennai ("**RoC**") and thereafter with SEBI and the Stock Exchanges or any other document(s) to be issued, published or filed in connection with the Offer, including any publicity materials, corporate presentations and roadshow presentations (all such materials together with the Offer Documents, the "**Materials**").

We agree to keep the information regarding the Offer strictly confidential.

We consent to be named as an "expert" as defined under Section 2(38) read with Section 26(5) of the Companies Act, 2013, as amended and the rules framed thereunder, in the Materials. Further, we confirm that we are not, and have not been, engaged or interested in the formation or promotion of the management of the Company. The following details with respect to us may be disclosed in the Materials:

<b>Name of Organization</b>	M/s. RBSA Advisors LLP
<b>Name of Engineer</b>	Mr. Shah Jignesh Hemendrabhai
<b>Address</b>	912, Venus Atlantis Corporate Park, Anand Nagar Main Road, Prahladnagar, Ahmedabad-380008
<b>Telephone Number</b>	+91-79-40506000

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<b>E-mail</b>	Jignesh.shah@rbsa.in
<b>Website</b>	www.rbsa.in
<b>Membership No.</b>	M-145536-7

We undertake to immediately inform the Company and the Book Running Lead Managers, and the legal counsels to each of the Company and the Book Running Lead Managers, in writing of any changes or qualifications or any material developments in respect of the matters covered in this certificate until the date when the Equity Shares issued pursuant to the Offer commence trading on the Stock Exchanges. In the absence of any such written communication from us, the above information contained in the Materials and certified herein should be taken as true, correct, accurate and updated until the date when the Equity Shares issued pursuant to the Offer commence trading on the Stock Exchanges.

We confirm that we shall not withdraw this consent before delivery of a copy of the DRHP, RHP and Prospectus or Offer Documents to the SEBI and the Stock Exchanges.

Further, we also give our consent to include this certificate as part of the '*Material Contracts and Documents for Inspection*' in the Offer Documents, thereby making it available to the public for inspection.

This certificate may be relied upon by the Company, the Book Running Lead Managers, and the legal counsels to each of the Company and the Book Running Lead Managers. We hereby authorize you to deliver this certificate to SEBI, the Stock Exchanges, the RoC and any other governmental or regulatory authority as may be required. We hereby consent to this certificate being disclosed by the Book Running Lead Managers, if required (i) by reason of any law, regulation or order of a court or by any government or competent regulatory authority, or (ii) in seeking to establish a defense in connection with, or to avoid, any actual, potential or threatened legal, arbitral or regulatory proceeding or investigation.

All capitalized terms not defined herein would have the same meaning as attributed to it in the DRHP.

Yours truly,

RBSA Advisors LLP  
Shah Jignesh Hemendrabhai  
Chartered Engineer  
Registration Number: M-145536-7  
Place: Ahmedabad  
Date: 08/10/2024

Cc

## Legal Counsel to the BRLMs

**Cyril Amarchand Mangaldas**  
Level 1 and Level 2, Max towers,  
Plot No. C-001 /A/1, Sector 16 B,  
Gautam Buddha Nagar, Noida – 201 301,  
Uttar Pradesh, India

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## **International Legal Counsel to the BRLMs**

### **White & Case**

31F, One IFC,  
10 Gukjegeumyung-ro,  
Yeongdeungpo-gu, Seoul, Korea

### **Legal Counsel to the Company**

### **Shardul Amarchand Mangaldas**

Express Towers, 24th Floor,  
Nariman Point, Mumbai - 400 021,  
Maharashtra, India

## **International Legal Counsel to the Company**

### **Latham & Watkins**

29F, One IFC,  
10 Gukjegeumyung-ro,  
Yeongdeungpo-gu, Seoul, Korea

**Annexure I**



## Annexure II

S. No.	Name of the entity that owns the manufacturing plant	Manufacturing Plant	Location	Products manufactured	Installed production capacity as of Apr'24-June'24	Installed production capacity as of March 31, 2024	Installed production capacity as of Apr'23-June'23	Installed production capacity as of March 31, 2023	Installed production capacity as of March 31, 2022
					(in unit)	(in unit)	(in unit)	(in unit)	(in unit)
1.	Hyundai Motor India Limited*	Unit 1	Chennai	Exter	97,000	396,000	85,000	354,000	342,000
2.				Venue					
3.				Venue N Line					
4.				Creta					
5.				Creta N Line					
6.				Alcazar					
7.				Tucson					
8.				Ioniq 5 EV					
9.		Unit 2	Chennai	Exter	98,000	415,000	99,000	416,000	416,000
10.				Grand i10 Nios					
11.				i20					
12.				i20 N Line					
13.				Aura					
14.				Verna					
<b>Total Installed Capacity</b>					195,000	811,000	184,000	770,000	758,000

\* Please note Unit 3 (Situated at Talegaon, Pune, Maharashtra) was recently acquired by the company and is not currently operational.

- Plant Capacity calculation considered for 293 Working Days @ 21.92 Working Hours/Day for the year Fiscal 2022, Fiscal 2023 and Fiscal 2024.
- Plant Capacity calculation considered for 69 and 70 Working Days @ 21.92 Working Hours/Day for three month ending 30<sup>th</sup> June 2024 and 30<sup>th</sup> June 2023 respectively.
- The annual installed capacity is 824,000 units as on June 30, 2024

## Annexure III

The following table sets forth the installed production capacity, actual production volumes, and capacity utilization of the Company's manufacturing plant(s) calculated on the basis of total installed production capacity and actual production volumes as of for the periods indicated below:

Plant <sup>(1)</sup>	Three months ended June 30, 2024			Fiscal 2024			Three months ended June 30, 2023			Fiscal 2023			Fiscal 2022		
	Installed capacity <sup>(3)</sup>	Production volume	Capacity utilisation (%) <sup>(2)</sup>	Installed capacity	Production volume	Capacity utilisation (%) <sup>(2)</sup>	Installed capacity	Production volume	Capacity utilisation (%) <sup>(2)</sup>	Installed capacity	Production volume	Capacity utilisation (%) <sup>(2)</sup>	Installed capacity	Production volume	Capacity utilisation (%) <sup>(2)</sup>
Chennai Unit #1	97,000	98,250	101.29	3,96,000	4,08,150	103.07	85,000	91,225	107.32	3,54,000	3,50,342	98.97	3,42,000	2,89,308	84.59
Chennai Unit #2	98,000	85,150	86.89	4,15,000	3,79,350	91.41	99,000	89,475	90.38	4,16,000	3,76,958	90.61	4,16,000	3,16,792	76.15
<b>Total installed capacity</b>	<b>1,95,000</b>	<b>1,83,400</b>	<b>94.05</b>	<b>8,11,000</b>	<b>7,87,500</b>	<b>97.10</b>	<b>1,84,000</b>	<b>1,80,700</b>	<b>98.21</b>	<b>7,70,000</b>	<b>7,27,300</b>	<b>94.45</b>	<b>7,58,000</b>	<b>6,06,100</b>	<b>79.96</b>

Note: Please note that the installed capacity for Fiscal 2025 is only for the period from April 1, 2024 till June 30, 2024. The Capacity utilization is calculated based on the proportion of the installed capacity that is being used.

The increase in installed capacity from 758,000 units in Fiscal 2022, to 770,000 units in Fiscal 2023 and to 811,000 units in Fiscal 2024 was a result of certain efficiency enhancement measures such as including equipment upgrades, increased deployment of robotics and process optimisation undertaken by the Company. This, in turn, has led to an increased capacity in the Body shop, Paint shop, and subsequently the Assembly shop

<sup>(1)</sup> calculations assume 293 working days at 21.92 working hours per day for Fiscals 2022, 2022 and 2024, and calculations assume 69 working days and 70 at 21.92 working hours per day for the three months ended June 30, 2024 and June 30, 2023 respectively;

<sup>(2)</sup> production volume divided by installed capacity;

<sup>(3)</sup> the annual installed capacity is 824,000 units as on June 30, 2024.

### Notes:

- The information relating to the installed capacity as of the dates included above is based on various assumptions and estimates that have been taken into account for the calculation of the installed capacity. These assumptions and estimates include the standard capacity calculation practice of the automobile industry after examining the calculations and explanations provided by the Company. The assumptions are also based on the past experience of the Management of the Company to manufacture the products. It also depends on the Product Mix that the Company has used to manufacture the various products in a stream in a plant. The assumption is also based on the three (3) shifts that the Company is running for (8.5+8.5+7) hours a day. The assumptions and estimates taken into account include the following: (i) Number of working days in a fiscal year – 293 (excluding scheduled preventive maintenance days); (ii) Number of shifts in a day - 3; and (iii) Number of daily hours – 21.92.
- It is assumed that the production capacity calculations are based on continuous operation, assuming that the manufacturing facility operates for the full duration without any significant interruptions or downtime.
- The calculations assume that the production capacity is based on optimal operating conditions, where all equipment and machinery are functioning at their highest efficiency levels and the workforce is working at their maximum productivity.
- It is assumed that the production rates remain relatively stable throughout the designated time frame considered for calculating the production capacity. This assumes a consistent demand for the vehicles and a steady workflow without significant fluctuations.
- The calculations assume standardized production processes and consistent product specifications. This means that the cars being manufactured are of the same model, with minimal variations in features or customizations.
- The calculations may assume that the production capacity takes into account planned maintenance schedules and regular downtime for maintenance, repairs, and adjustments. This helps account for the time required for upkeep without impacting the overall capacity.
- It is assumed that the necessary resources, such as raw materials, components, and energy supply, human resources are readily available to support the production process. Adequate supply chain management and coordination are presumed to ensure uninterrupted production.



8. The calculations may assume specific work shifts, such as standard eight-hour shifts or multiple shifts per day, to determine the production capacity. The assumptions consider the working hours available within the designated time frame for manufacturing operations.
9. The calculations assume that the production processes are optimized and efficient, with minimal waste and high production yields. This assumes that the company has implemented measures to enhance production efficiency and minimize defects or rework.
10. The information relating to the actual production as of the dates included above is based on the examination of the internal production records and explanations provided by the Company, the period during which the manufacturing facilities operate in a fiscal year, expected operations, availability of raw materials, downtime resulting from scheduled maintenance activities, unscheduled breakdowns, as well as expected production efficiencies.
11. Production Capacity is an important factor that needs to be calculated to determine equipment size, satisfy contractual requirements, aid supply chain management, benchmark against competitors, and obtain operating permits/licenses/approvals from various regulators/government/agencies. There is no single way to measure the capacity and there are numerous factors to be considered, many of which are unique to a specific process or facility.
12. Capacity utilization has been calculated based on actual production during the relevant fiscal year/ period divided by the aggregate installed capacity of relevant manufacturing facilities as of the end of the relevant fiscal year/ period. In the case of capacity utilization for the three months ended June 30, 2024, the capacity utilization has been calculated by dividing the actual production for the period pro-rata annualized installed capacity. (Apr'24~Jun'24 is considered for 69 Days).
13. During our visit, it was observed that the Transmission #1 line was operating on a 2-shift schedule, while the rest of the plant was on a 3-shift schedule. However, for the purpose of calculation for the subject exercise, 3 shift operation for all the plant(s) is considered.
14. During our observation, we noticed that the general assembly line #1 and # 2 is manufacturing one vehicle each in approximately every 60 seconds.
15. The capacity of the paint shop and body shop exceeds the current production requirements of the assembly plant, taking into account any downtime.
16. In determining the Installed Capacity, we have taken into account the records of the Production done by the Company for each of the Products at the Plant.
17. The production is also based on the demand for each product which is manufactured by the Company.
18. We have verified the production data vis a vis the sales data which are fed into the system for each product to determine the production capacities.
19. In the course of this exercise, relied upon the hardcopy, softcopy, email, documentary, and verbal information provided by the client without further verification with an assumption that the information provided to us is reliable, accurate, and complete in all respects.

## **DESCRIPTION OF THE PROCEDURE ABOUT INSTALLED PRODUCTION CAPACITY**

The procedure for calculating the installed production capacity for a car manufacturing company involves assessing various factors that contribute to the company's production capabilities. Here is a general list of the processes involved:

1. Define the measurement criteria.
2. Gather relevant data.
3. Calculate production per unit of time.
4. Review production efficiency.
5. Evaluate workforce capacity.
6. Analyze production floor space.
7. Consider technological factors.
8. Calculate the installed production capacity:

The Installed Capacities are measured by taking into account the following:

1. Number of production lines
2. Cycle time
3. Production shifts

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4. Utilization rate
5. Workforce capacity
6. Production efficiency
7. Preventive Maintenance
8. Available manufacturing space
9. Technological capabilities

Installed Capacity is the maximum average throughput that satisfies the below-mentioned constraints:

1. It takes into account the production restrictions imposed by the existing equipment, materials, and labor;
2. It is sustainable for an extended and specified period.
3. It assures product quality requirements are met and
4. It does not exceed the safe operating limits of the facility.

## Annexure IV

### List of manufacturing facilities

S. No.	Name of Company	Facility Location & Complete Address	Capabilities/Products Manufactured	Leased/Owned	Year of Commissioning /Acquisition
1	Hyundai Motor India Limited (Unit 1 and Unit 2)	Plot No. H-1, G5 and G6, SIPCOT Industrial Park, Irrungattukottai, Sriperumbudur Taluk, Kancheepuram District, Tamil Nadu - 602 105	<ul style="list-style-type: none"> <li>• Exter</li> <li>• Venue</li> <li>• Venue N Line</li> <li>• Creta</li> <li>• Creta N Line</li> <li>• Alcazar</li> <li>• Tucson</li> <li>• Ioniq 5 EV</li> <li>• Grand i10 Nios</li> <li>• i20</li> <li>• i20 N Line</li> <li>• Aura</li> <li>• Verna</li> </ul>	The manufacturing facility is established on 536.54 Acres of land parcel allotted by State Industries Promotion Corporation of Tamil Nadu. (SIPCOT, Tamil Nadu)	1997 and 2008
2	Hyundai Motor India Limited (Unit 3*)	A-16, Talegaon Industrial Area, MIDC, Pune, Maharashtra	NA	The manufacturing facility is located on 300 Acres of Lease land parcel allotted by Maharashtra Industrial Development Corporation (MIDC, Maharashtra) on 1 <sup>st</sup> Aug'2006 for a period of 95 years to General Motors India Private Limited. Subsequently, it was acquired by Hyundai Motor India Private Limited on December 28, 2023.	NA

\* Please note Unit 3 (Talegaon, Pune, Maharashtra) was recently acquired by the company and is not currently operational.

## Annexure V

### A report on the facility located at Irrungattukottai, Tamil Nadu

#### **1. Scope of Work and Sources of Information**

##### **Terms of Engagement:**

RBSA Advisors LLP (“RBSA”) has been approached by Hyundai Motor India Limited (“HMIL” or “Company” or “Client”) for an Independent Chartered Engineer Report for the existing facility of Hyundai Motor India Limited Situated at Irrungattukottai, Tamil Nadu for the Purpose of Proposed IPO.

The detailed scope of work is as under;

- Discuss and understand the basic process of the plant, number of shifts, number of batches etc.;
- Refer to the Process Flow Chart – showing Key Machines at each stage including major key parameters & capacity for machinery and/or product;
- Physical verification of manufacturing plant and key equipment;
- Collection of details related to the capacity of major machinery including detailed technical specifications;
- Review and Comment on the company’s installed production capacity of the existing facility;
- Comment on status of Approvals/clearances from various regulatory authorities;
- Study of the overall manufacturing process for determining the appropriate method of calculation of the installed capacity;
- Review of the installed machinery for the certification of the installed capacity and verification of the actual production and capacity utilization from the company’s respective accounting records, internal records, or other documents as deemed suitable;
- Analysis of Talegaon, Pune facility covers only comment on status of Approvals/clearances from various regulatory authorities;

##### **Deliverables:**

- Preparation of a draft report as per the scope of work mentioned and outlining our opinion/ estimation of values and cost vetting as well as the methodologies employed, and assumptions utilized in our analyses;
- Submission/ Presentation of the draft report and review of observations (if any) on our draft report.
- Preparation of Report (“Deliverable”) outlining our assumptions and bases as well as the methodologies employed, and assumptions utilized in our analyses.
- ICE certification will be issued at the time of DRHP filing and same will be updated before the RHP filing with the updated details as on that date.

RBSA will rely on the documents, list of buildings, plant & machinery, and technical specifications as received from the Client/Company to carry out the said exercise. Our team will be assisted by the Company team in locating & identifying the assets which will be done on a best judgment basis.

This Report is prepared on the basis of the following sources of information as provided by the Management:

##### **General:**

- A copy of Factory License and Approvals.
- A copy of commencement of production certificate for Unit #2.
- Product details.
- Sales data for Relevant Periods.
- Production data for Relevant Periods.

##### **Land & Building:**

- Sale Deed.
- Built-up area details.

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## Plant & Machinery:

- Fixed Asset Register (FAR) as on 31<sup>st</sup> December 2023.
- Capacity Utilization of the various shops.
- Manufacturing process layout.
- Plant installed capacity and Capacity utilization summary.

Discussions with the following personnel of the Client/ Company:

- Ms. Sri Lakshmi
- Mr. Narasimhulu M
- Mr. Umapathy

Some of the clarifications were provided by the Management personnel verbally, without further confirmations in writing. We have assumed that such verbal information or clarifications provided to us are reliable, accurate, and complete in all respects.

## 2. Site Inspection

### Plant Overview

- RBSA has been appointed for the Independent Chartered Engineer certificate for the existing Hyundai Motor India Limited facility Situated at Irrungattukottai, Tamil Nadu for the Purpose of the Proposed IPO.
- Site visit was conducted on 22-25<sup>th</sup> April, 2024 by Mr. Jignesh Shah & Mr. Devashish Mathur.
- During the site visit, we were accompanied by Mr. Umapathy (the company's representative) and shop technical person for the verification of said assets.
- During the site visit, it was observed that the General Assembly shop, Engine & Transmission shop, Paint shop, Body Shop, and Press shop were in working condition.
- Further, we have been informed by the company's representative that maintenance has been carried out at regular intervals and no major breakdown has been found since the commercial operation.
- During the site visit, we observed that plant machinery was well-maintained, neat, and clean and the shed structure was in good condition as well. The company has properly maintained each machine in proper and timely maintenance.

### Plant Layout



## Major Product Components:

Here are some of the key components typically used in Car manufacturing:

Car manufacturing involves a multitude of components, ranging from basic mechanical parts to sophisticated electronic systems.

Here are some key components commonly used:

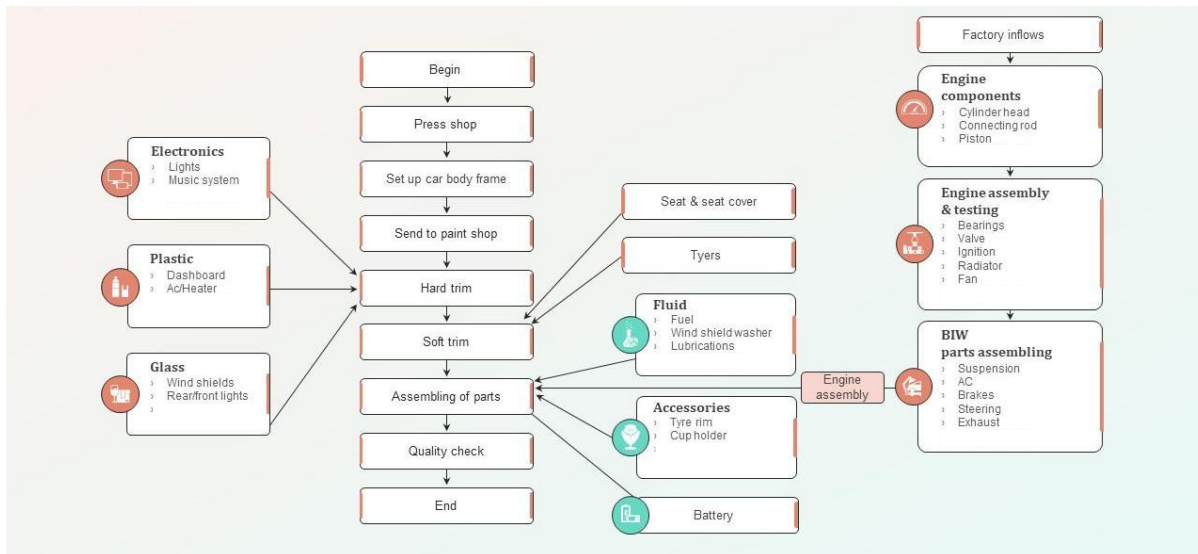
1. **Engine:** The heart of the car, responsible for generating power. It can be gasoline, diesel, electric, or hybrid.
2. **Transmission:** Transfers power from the engine to the wheels, allowing the vehicle to change speed and direction.
3. **Chassis:** The framework onto which other components are mounted. It provides structural support and determines the car's shape and size.
4. **Suspension System:** Consists of springs, shock absorbers, and linkages that connect the vehicle to its wheels, providing stability and a smooth ride.
5. **Braking System:** Includes components like brake pads, rotors, calipers, and brake lines, responsible for slowing down or stopping the vehicle.
6. **Wheels and Tires:** Provide traction, support, and allow the vehicle to move. Tires also play a crucial role in handling and safety.
7. **Body Panels:** The outer shell of the car, typically made of steel, aluminum, or composite materials. They give the car its shape and provide protection to occupants.
8. **Interior Components:** Seats, dashboard, controls, and other features that enhance comfort and convenience for passengers.
9. **Electrical System:** Includes the battery, wiring, fuses, and various electronic components like sensors, lights, infotainment systems, and safety features.
10. **Exhaust System:** Guides exhaust gases from the engine to the rear of the vehicle while reducing noise and emissions.
11. **Fuel System:** Delivers fuel from the tank to the engine, typically consisting of a fuel tank, fuel pump, fuel lines, and injectors.
12. **Cooling System:** Prevents the engine from overheating by circulating coolant through the engine block and radiator.
13. **Steering System:** Allows the driver to control the direction of the vehicle, comprising components like the steering wheel, steering column, and steering gear.
14. **HVAC System:** Heating, ventilation, and air conditioning system that regulates the interior climate for comfort.
15. **Safety Features:** Such as airbags, seat belts, anti-lock braking systems (ABS), traction control, and electronic stability control (ESC) to enhance occupant safety.

These are just some of the many components involved in car manufacturing, and each plays a critical role in the performance, safety, and functionality of the vehicle.

## Manufacturing Process

In a typical car manufacturing plant, the process begins with the design and engineering of the vehicle, followed by the sourcing of raw materials like steel, aluminum, and plastics. The manufacturing process involves several stages, including stamping, where metal sheets are pressed into shape to form body panels, and welding, where these panels are assembled into the car's chassis. Components such as the engine, transmission, and suspension are then installed onto the chassis, while the interior features are fitted into place. Next, the car undergoes painting and finishing processes to enhance its appearance and durability. Quality control checks are performed at each step to ensure standards are met. Finally, the completed vehicles are tested for functionality, safety, and performance before being shipped to dealerships for sale. This comprehensive process integrates precision engineering, advanced technology, and skilled labor to produce high-quality automobiles.

## Process Flow Chart



## Brief Process Description

### **Raw Material Incoming, receiving and Storage**

Right Quality material and sub-parts are received from the supplier at the company production facility in due time before it is consumed in the Manufacturing Process to arrange for suitable incoming documentation, inspection for adherence to quality, and sorting properly for presentation to the Operator at the line. Type of equipment used for efficiently managing raw materials:

- Automated Storage Retrieval system (ASRS), consisting of racks, pallets, Forklift trucks, material handling equipment, and mezzanine floor racking system.

### **Body Shop**

In a car manufacturing plant, the weld shop plays a crucial role in joining metal components to create the vehicle's structural framework. The process typically involves several stages: 1) Preparation: Components are cleaned and positioned for welding. 2) Welding: Various techniques such as MIG (Metal Inert Gas) or spot welding are used to fuse parts together. 3) Inspection: Welded joints undergo rigorous quality checks to ensure integrity. 4) Finishing: Smooth out welds and apply protective coatings if necessary. Throughout, precision, safety, and efficiency are paramount to ensure the structural integrity and longevity of the vehicle.

### **Paint Shop**

The paint shop is pivotal for giving vehicles their final aesthetic appeal and protection. The process involves multiple stages: 1) Surface preparation: Cleaning, sanding, and priming to ensure proper adhesion. 2) Painting: Application of basecoat, followed by optional layers of color and clear coat, often via automated spray booths. 3) Curing: Heat treatment to facilitate paint bonding and drying. 4) Inspection: Quality checks for color consistency, coverage, and defects. 5) Finishing: Polishing and detailing to enhance the paint's appearance. Precision and meticulousness are crucial to achieve flawless finishes and meet quality standards.

### **Vehicle Assembly**

The process involves assembling various components to create the final vehicle. The process typically includes: 1) Body assembly: Joining the frame, panels, and other structural elements. 2) Installation of drivetrain components: Engine, transmission, axles, and other mechanical parts are integrated. 3) Electrical and interior installation: Wiring harnesses, dashboard, seats, and other interior components are fitted. 4) Final inspection: Comprehensive checks for quality and functionality. 5) Testing: The vehicle undergoes performance, safety, and durability tests. 6) Packaging: Preparing the vehicle for shipment to dealerships or customers. Throughout, precision, efficiency, and quality control are emphasized to ensure a reliable and well-built vehicle.

## End of the Line testing

At the End of the line all the Static (appearance) Quality checks are done and ensure that meet the engineering specification. Then, the vehicle goes to the test track for testing. If the vehicle is clear then it will go to PDI, or if any issue is there then it will go to rework for rectification. Once all of this is done the vehicle will go for PDI (Pre-Delivery Inspection) before delivering to the FG storage area On a sample basis, vehicles will also be taken out on test tracks to test the performance of the vehicle

## Technical Specifications of Products

Sr. No	Model	Engine Displacement	Max Power	Boot Space	Body Type
1	Exter	1197 cc	81.80bhp@6000rpm	391 L	SUV
2	Venue	998 cc	118.41bhp@6000rpm	350 L	SUV
3	Venue N Line	998 cc	118.41bhp@6000rpm	350 L	SUV
4	Creta	1482 cc	157.57bhp@5500rpm	433 L	SUV
5	Creta N Line	1482 cc	157.57bhp@5500rpm	433 L	SUV
6	Alcazar	1493 cc	113.98bhp@4000rpm	180 L	SUV
7	Tucson	1997 cc	183.72bhp@4000rpm	540 L	SUV
8	Grand i10 Nios	1197 cc	81.80bhp@6000rpm	260 L	Hatchback
9	i20	1197 cc	86.76bhp@6000rpm	351 L	Hatchback
10	i20 N Line	998 cc	118.41bhp@6000rpm	311 L	Hatchback
11	Aura	1197 cc	67.72bhp@6000rpm	402 L	Sedan
12	Verna	1482 cc	157.57bhp@5500rpm	528 L	Sedan
Sr. No	Model	Battery Capacity	Max Power	Boot Space	Body Type
1	Kona EV	39.2 KWh	134.1 bhp	332 L	SUV
2	Ioniq 5 EV	72.6 KWh	214.56 bhp	584 L	SUV

## Plant Utilities

S.No.	Utility	Description and specification
1	Power Back Up	The company has a Government electricity line of 230 KV with approval of 50 MVA, the current demand for the plant is 45-48 MVA. For Emergency power backup - There are 2 DG sets of 380 KVA and 7 DG set of 1500 KVA
2	Compressor	12 x 132 Nm <sup>3</sup> /min and 4 x 60 Nm <sup>3</sup> /min
3	Cooling Tower	20 x 150 TR
4	WTP	5500 KLD
5	Solar Plant	10 MW
6	Propane	2 x 98 ton bullets
7	ETP	3920 KLD
8	STP	1770 KLD
9	LNG	Metering Station
10	Boiler	2 x 12 TPH and 1 x 5 TPH

- The company possesses an ample power backup capacity to meet the current demands of the plant, which is also well-suited for current production level.



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## Approvals

Sr. No.	Name of the approval/ registration/ license	Name of the entity to which the approval/ registration/ license has been granted	Issuing Authority	Registration/ Reference/ License Number	Whether obtained/applied for	Date of issuance/ renewal	Date of expiry
1	Panchayat Licence	Local Panchayat	The President, Local Panchayat	2023 - 2024/I/4/10/7/4	Obtained	Before February of every year	01st March of every year
2	Factory Licence	DISH [Director of Industrial Safety & Health]	JDISH	KPM05577	Obtained	31st December 2024	01st January 2025
3	DTCP Approval	DTCP	Assistant Director of Town and Country Planning	N.K No.3503/2012 SaMa3	Obtained in 2013, Modification approval in progress	Any Addition / Deletion / Modifications	Nil
4	BDO	BDO	Commissioner, Panchayat Union	N.K.No.2227/2016 Aa4	Obtained in 02.01.2017 [Only for HP]	Any Addition / Deletion / Modifications and HP Changes	Nil
5	Building Plan & Machinery layout	DISH [Director of Industrial Safety & Health]	DISH	NMT1/25177/2023	Obtained on 12.10.2023	Any Addition / Deletion / Modifications of Both Building & Machinery	Nil

Sr. No.	Name of the approval/ registration/ license	Name of the entity to which the approval/ registration/ license has been granted	Issuing Authority	Registration/ Reference/ License Number	Whether obtained/applied for	Date of issuance/ renewal	Date of expiry
1	Explosives Act	Propane Yard	Chief Controller of Explosives	S/HO/TN/03/23 (S2176)	Obtained	13-10-2023	30-09-2026
2		Liquid CO2		S/HO/TN/03/590 (S34556)	Obtained	03-10-2023	30-09-2026
3		R134A Refrigerant Gas		S/HO/TN/03/469 (S30332)	Obtained	03-10-2023	30-09-2026
4		Liquid Nitrogen Tank		S/HO/TN/03/567 (S34064)	Obtained	03-10-2023	30-09-2026
5		Liquid CO2		S/HO/TN/03/501 (S31208)	Obtained	01-02-2023	30-09-2024
6		Auto CNG Yard		G/HO/TN/07/4 (G45754)	Obtained	03-07-2019	30-09-2029
7		Engine QC CNG Yard		G/SC/TN/06/3015 (G54241)	Obtained	24-06-2019	30-09-2028
8		R1234 YF Refrigerant Gas Storage		G/SC/TN/06/2805 (G48825)	Obtained	29-11-2018	30-09-2028
9		Assembly Tank farm		P/HQ/TN/15/2783 (P15819)	Obtained	23-11-2022	30-12-2025
10		ETM Tank farm		P/HQ/TN/15/2179 (P153879)	Obtained	29-12-2021	31-12-2024
11		Boiler Tank farm		P/SC/TN/15/964 (P153882)	Obtained	15-11-2023	31-12-2026
12		R&D Tank farm		P/SC/TN/16/102 (P53184)	Obtained	28-12-2021	31-12-2024
13		GA Petrol station - Tank farm		P/SC/TN/14/4278 (P153766)	Obtained	28-12-2021	31-12-2024
14		ETM Tank farm		P/HQ/TN/15/4729 (P202892)	Obtained	17-11-2022	31-12-2025
15		Assembly Tank farm		P/HQ/TN/15/4595 (P192973)	Obtained	28-12-2023	31-12-2026
16		ETM Dynamo - Tank farm		P/HQ/TN/15/4728 (P203191)	Obtained	17-11-2022	31-12-2025

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17	State govt. - Petroleum Usage Act	Petroleum Class - A Paint & Thinner	Kancheepuram District collector / DRO	_02/2012	Obtained	17-03-2022	31-12-2024
18		Petroleum Class - B Paint & Thinner		_02/2012	Obtained	17-03-2022	31-12-2024
19		Petroleum Class - A Paint & Thinner		_01/2012	Obtained	17-03-2022	31-12-2024
20		Petroleum Class - B Paint & Thinner		_01/2012	Obtained	17-03-2022	31-12-2024
21		Petroleum Class - A Paint & Thinner		Applied	Applied		
22		Petroleum Class - B Paint & Thinner		Applied	Applied		
23	State govt. - Solvent Usage Act	Propane - Solvent usage		01/2000/KPM	Obtained	01-01-2024	31-12-2025
24		Furnace Oil - Solvent usage		01/28/KPM	Obtained	01-01-2024	31-12-2025
25	Indian Boilers Act	Boiler - 1	Director of Boilers	T-12099	Obtained	29-08-2024	28-08-2025
26		Boiler - 2		T-11079	Obtained	27-10-2023	26-10-2024
27		Boiler - 3		T-6130	Obtained	12-04-2024	11-04-2025
28		Boiler - 4		T-8472	Obtained	29-08-2024	28-08-2025
29	Metrological act	Weigh Bridge Annual Stamping	Weight & Measure Dept.		Obtained		
31	Central Electricity authority	Rule 32 - Annual inspection	CEIG	HT Service no. 277	Applied for Renewal	01-04-2022	31-03-2023
31	Electricity rules	DG Registration Renewal	CEIG	KPM - 246	Obtained	2021	2024
32	Consent Renewal for Air & Water	Consent to Operate - Phase I (A& W)	Tamilnadu Pollution Control Board	2308250284226 / 2308150284226	Obtained	23-03-2023	31-03-2028
33		Consent to Operate - Phase II (A& W)		2308250284789 / 2308150284789	Obtained	23-03-2023	31-03-2028
34		Consent to Operate - Phase III (A& W)		2308250141210 / 2308150141210	Obtained	27-02-2023	31-03-2033
35	Hazardous waste Authroization	Hazardous Waste Authorization - Phase I		24HFC51017844	Obtained	20-09-2024	31-03-2029
36		Hazardous Waste Authorization - Phase II		20HFC31558168	Obtained	04-06-2020	03-06-2025
37		Hazardous Waste Authorization - Phase II		23HRZ55762993	Obtained	07-11-2023	31-03-2028

## Infrastructure – Details of Built-up Area

SI.NO	SHOP	PHASE 1 M <sup>2</sup>	PHASE II M <sup>2</sup>	TOTAL M <sup>2</sup>
1	Press Shop	13,125	8,300	21,425
2	Body Shop	27,660	28,200	55,860
3	Paint Shop	20,299	55,147	75,446
4	Assembly Shop	49,555	53,200	1,02,755
5	Engine Shop	42,115	47,600	89,715
6	Cylinder Head (As Door Line )	1,973		1,973
7	Bumper Shop (Part of P12 shop)	3,760		3,760
8	Old warehouse	18,000		18,000
9	A3 shop (Part of P12 shop)	3,240		3,240
10	Main office	3,505		3,505
11	Canteen 1 & 2	4,395		4,395
12	Canteen 3 & 4		6,137	6,137
13	Test track building	2,140	1,063	3,203
14	Boiler room	1,312	1,530	2,842
15	Waste water treatment plant	271	439	710
16	S/gear building	250	567	817
17	Security building	360	115	475
18	A & T center	1,386		1,386
19	PDI building	4,826	1,440	6,266
20	R & d building	5,200		5,200
21	Conveyor	577	1,236	1,813
22	Us & cc store	158		158
23	Recreation center	750		750

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24	Health care center	520		520
25	Waste matter shed		4,356	4,356
26	Kd warehouse		18,000	18,000
27	Chip treatment		1,800	1,800
28	Engine dynamo		940	940
29	Delivery centre		2,002	2,002
30	Repair shop		470	470
31	T & d building		3,925	3,925
32	Ccs building		1,571	1,571
33	Incinerator		756	756
34	Tyre storage shed		440	440
35	Engine shop iii		37,184	37,184
36	Aluminium foundry		9,000	9,000
37	New press		11,020	11,020
38	Bus parking access shed	646		646
39	Equipment maintenance shed	600		600
40	Fuel station shed	255		255
41	Transport office	408		408
42	Material gate 1 & 2 inspection shed	300	225	525
43	HMI quality center		2,002	2,002
44	Sports center		1,288	1,288
45	CNG shed		130	130
46	Fitment shop		600	600
47	Scrap management office		150	150
48	Ga centralized store	340		340
49	Union office toilet	11		11
50	Security dining room	25		25
51	Main gate toilet for security & women	14		14
52	Fuel station office room	20		20
53	Tea shed canteen 1	90		90
54	Tea shed canteen 2	45		45
55	Tea shed canteen 3		68	68
56	Tea shed canteen 4		39	39
57	Canteen 1 toilet for men & women	14		14
58	Canteen 2 toilet for men & women	14		14
59	Canteen 2 women rest room	30		30
60	Assembly # 1 qc checker room	185		185
61	As door line shed extension	160		160
62	Canteen 3 toilet for men & women		60	60
63	Body # 2 BIW shed		288	288
64	Dynamo oil storage shed		28	28
65	Canteen 2 hand wash shed	36		36
66	Fitment shop extension		214	214
67	Ncqd oil storage shed		20	20
68	Car parking shed		180	180
69	Paint # 1 expansion	1,760		1,760
70	Canteen 4 toilet		49	49
71	Body # 1 epcg shed	46		46
72	Ckd # 1 toilet extension	40		40
	Total	2,10,413	3,01,777	5,12,190

## Observations

- During the visit we observed that there are 5 main sections of the plant namely the Engine Shop, Transmission shop, paint shop, Body shop, and General assembly line.
- Once the vehicle is assembled, it is tested on a test track. The test track includes a variety of obstacles, such as curves, and bumps. The vehicle is also tested for its range and speed.
- The plant was using a variety of new technologies, such as robotic assembly, robotic transfer of material and automated quality control.
- The Transmission # 1 line was operating on a 2-shift schedule, while the rest of the plant was on a 3-shift schedule.

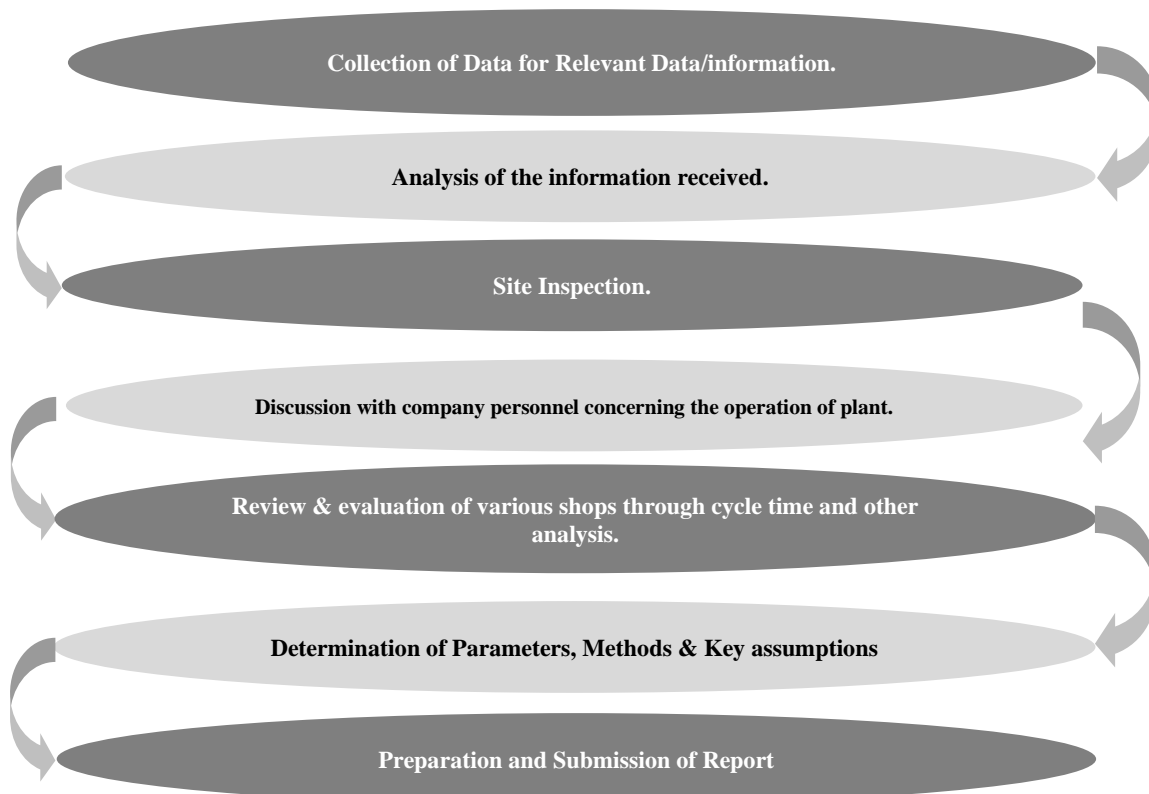
- The capacity of the Body Shop and paint shop exceeds the current production requirements of the plant, taking into account its potential for future growth.

### **3. Capacity Estimation Analysis**

#### **Basis and Methodology**

1. Manufacturing Infrastructure:
  - Assessment of the manufacturing facility's infrastructure, including factory layout, production area, and equipment.
2. Production Processes:
  - Evaluation of the manufacturing processes, including assembly lines, component manufacturing, and quality control procedures.
3. Resource Availability and Utilization:
  - Assessment of the availability and utilization of key resources required for production, such as labor, machinery, equipment, and materials.
  - Verification of workforce capacity, including skilled labor, training programs etc.
4. Production Capacity Calculation:
  - Calculation of the production capacity based on factors such as cycle time, throughput, production rate, and effective production time.
  - Assessment of the facility's ability to meet the expected production volume within specified lead times.
5. Quality Control and Assurance:
  - Evaluation of quality control measures, including testing, inspection, and certification processes throughout the manufacturing cycle.
6. Documentation and Records:
  - Review of documentation related to production capacity, including production plans, process documentation, and quality records.
  - Verification of data accuracy and consistency in capturing production volumes, downtime, and performance metrics

#### **Procedure adopted for exercise.**



## **Facts, Observations, Assumptions and Limiting Conditions**

- In the course of this exercise, we have relied upon the hardcopy, softcopy, email, documentary, and verbal information provided by the client without further verification. We have assumed that the information provided to us is reliable, accurate, and complete in all respects. We reserve our right to alter our conclusions at a later date, if it is found that the data provided to us by the company was not - reliable, accurate or complete.
- The inspection, due diligence and condition assessment of the asset was made by individuals generally familiar with assessment of such assets. However, we do not opine on, nor are we responsible for its conformity to any health, safety, environmental or any other regulatory requirements that were not readily apparent to our team of experts during their inspection.
- Possession of this report or any copy thereof does not carry with it right of publication. No portion of this report shall be disseminated to third parties through prospectus, advertising, public relations, news or any other means of communication without the written consent and approval of RBSA.
- This report is further governed by our standard terms and conditions of professional engagement; offer or contract.
- We have been provided with the Fixed Asset Register (FAR) with Asset description, Classification, date of acquisition, closing gross block, and net block of the fixed assets as on 31<sup>st</sup> December 2023.
- It is assumed that the production rates remain relatively stable throughout the designated time frame considered for calculating the production capacity. This assumes a consistent demand for the car and a steady workflow without significant fluctuations.
- The information relating to the installed capacity as of the dates included above is based on various assumptions and estimates that have been taken into account for the calculation of the installed capacity. These assumptions and estimates include the standard capacity calculation practice of the automobile industry after examining the calculations and explanations provided by the Company. The assumptions are also based on the past experience of the Management of the Company to manufacture the products. It also depends on the Product Mix that the Company has used to manufacture the various products in a stream in a plant. The assumption is also based on the three (3) shifts that the Company is running for eight (8.5+8.5+7) hours a day. The assumptions and estimates taken into account include the following: (i) Number of working days in a fiscal year - 293; (ii) Number of days in a month - 30; (iii) Number of shifts in a day - 3; (iv) Number of daily hours – 21.92 and (v) Schedule preventive maintenance days - 11.
- It is assumed that the production capacity calculations are based on continuous operation, assuming that the manufacturing facility operates for the full duration without any significant interruptions or downtime.
- The calculations assume that the production capacity is based on optimal operating conditions, where all equipment and machinery are functioning at their highest efficiency levels and the workforce is working at their maximum productivity.
- The calculations assume standardized production processes and consistent product specifications. This means that the car being manufactured are of the same model, with minimal variations in features or customizations.
- The calculations may assume that the production capacity takes into account planned maintenance schedules and regular downtime for maintenance, repairs, and adjustments. This helps account for the time required for upkeep without impacting the overall capacity.
- We have verified the production data vis a vis the sales data which are fed into the system for each product and determined the production capacities.
- It is assumed that the necessary resources, such as raw materials, components, and energy supply, are readily available to support the production process. Adequate supply chain management and coordination are presumed to ensure uninterrupted production.
- The calculations may assume specific work shifts, such as standard eight-hour shifts or multiple shifts per day, to determine the production capacity. The assumptions consider the working hours available within the designated time frame for manufacturing operations.
- The calculations assume that the production processes are optimized and efficient, with minimal waste and high production yields. This assumes that the company has implemented measures to enhance production efficiency and minimize defects or rework. The production is also based on the demand for each product which is manufactured by the Company.
- The information relating to the actual production as of the dates included above are based on the examination of the internal production records provided by the Company, explanations provided by the Company, the period during which the manufacturing facilities operate in a fiscal year, expected operations, availability of raw materials, downtime resulting from scheduled maintenance activities, unscheduled breakdowns, as well as expected production efficiencies. The actual

production for the three months ended June'24 have been provided on an unannualized basis.

- Capacity utilization has been calculated on the basis of actual production during the relevant fiscal year/ period divided by the aggregate installed capacity of relevant manufacturing facilities as of at the end of the relevant fiscal year/ period. In the case of capacity utilization for the three months ended June 30, 2024, the capacity utilization has been calculated by dividing the actual production for the period pro-rata annualized installed capacity.
- The Report assumes that the Company complies/ complied fully with relevant laws and regulations applicable in all its areas of operations unless otherwise stated and will be managed in a competent and responsible manner. Further, except as specifically stated to the contrary, this Report has given no consideration to matters of a legal nature, including issues of legal title and compliance with local laws, and litigation and other contingent liabilities that are not recorded in the audited / unaudited balance sheet of the Company. We have made no investigation of, and assume no responsibility for the title to assets or liabilities against Company. No consideration has been given to liens or encumbrances against the assets, beyond the loans disclosed in the accounts.
- Our services are not designed to and are not likely to reveal fraud or misrepresentation by the Management or by external parties. Accordingly, we cannot accept responsibility for detecting fraud (whether by the Management or by external parties) or misrepresentation by the Management or any other person. While performing this assignment, we have assumed the genuineness of all signatures and the authenticity of all documents and/ or copies of documents shown to us. We have also relied upon the veracity of the representations made, and the information provided to us by/ on behalf of the Management. In no event shall we be liable for any loss, damages, cost or expenses arising in any way from fraudulent acts, misrepresentations or wilful default on part of the Client, Company, their directors, employees or agents. In no circumstances shall the liability of RBSA, its partners, its directors or employees, relating to the services provided in connection with the engagement set out in this Report will exceed the amount paid to such ICE in respect of the fees charged by it for these services.
- Our report can be used by the Client only for the purpose, as indicated in this report, for which we have been appointed and cannot be used or relied by the Client for any other purpose or by any other party for any purpose whatsoever. We are not responsible for the unauthorized use of this Report. We are not responsible to any other person for any decision of such person based on this report. Any person intending to provide finance / invest / divest in the shares / business of the Company or its other group companies, if any, shall do so after seeking their own professional advice and after carrying out their own due diligence procedures to ensure that they are making an informed decision. If any person (other than the Client) choose to place reliance upon any matters included in the report, they shall do so at their own risk and without recourse to RBSA. We shall not assume any responsibility to any third party to whom the Report is disclosed or otherwise made available. In no event, regardless of whether consent has been provided, shall we assume any responsibility to any third party to whom the Report is disclosed or otherwise made available.
- The fee for our services is not contingent upon the results conclusion of the engagement. This Report is subject to laws of India.
- This is a draft report for discussion/ confirmation of facts. The contents and findings of the draft are subject to additions, amendment or withdrawal. Our definitive findings and conclusions would be set out in final report.

## **Capacity Estimation**

The calculation of production capacity for a general assembly line in car manufacturing can be done using the following formula:

Production Capacity = (Available Production Time per Shift) / (Cycle Time per Unit)

- Available Production Time per Shift:
  - This refers to the total time available for production during a single shift.
  - It is calculated by subtracting any planned downtime (e.g., breaks, meetings, maintenance) from the total shift time.
  - For example, if a shift is 8 hours long and there are 30 minutes of planned downtime, the available production time per shift would be 7.5 hours (8 hours - 0.5 hours).
- Cycle Time per Unit:
  - Cycle time refers to the time required to complete one unit of production on the assembly line.
  - It includes all the necessary steps and operations involved in assembling a car.

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- The cycle time can be determined by measuring the time taken for each step in the assembly process and summing them up.
- For example, if the total cycle time to assemble a car is 20 minutes, the cycle time per unit would be 20 minutes.

By dividing the available production time per shift by the cycle time per unit, you can determine the production capacity of the assembly line. The result will be the number of units that can be produced during a single shift/day.

It's important to note that this formula provides an estimate of production capacity and assumes continuous operation without any disruptions or variations in cycle time. Additionally, factors such as efficiency, worker skills, equipment reliability, and variability in demand may affect the actual production capacity achieved in practice. Regular monitoring, analysis, and adjustments are necessary to optimize and maximize the production capacity of the assembly line.

## Capacity Estimation Summary

Based on the analysis of the capacities of various shops on the preceding pages, the following represents the overall unit wise and shop wise capacity of the plant:

### Shop Wise Summary

Shop	Apr'22-Mar'23			Apr'23-Jun'23			Jul'23-Dec'23			Jul'23-Mar'24			Apr'24-Jun'24		
	UPH	Eff	Capacity UPH*Eff *Hrs	UPH	Eff	Capacity UPH*Eff *Hrs	UPH	Eff	Capacity UPH*Eff *Hrs	UPH	Eff	Capacity UPH*Eff *Hrs	UPH	Eff	Capacity UPH*Eff *Hrs
Body#1 -B11	58.0	95.0%	3,54,000	58.0	95.0%	85,000	59.0	95.0%	1,83,000	59.0	95.0%	2,74,000	59.0	95.0%	85,000
Body#1 -B12	10.0	90.0%	58,000	10.0	90.0%	14,000	17.0	90.0%	50,000	17.0	90.0%	75,000	17.0	90.0%	23,000
Paint#1-P11	58.0	95.0%	3,54,000	58.0	95.0%	85,000	58.0	95.0%	1,80,000	58.0	95.0%	2,69,000	58.0	95.0%	83,000
Paint#1-P12	0.0	95.0%	-	0.0	95.0%	-	10.0	95.0%	31,000	10.0	95.0%	46,000	10.0	95.0%	14,000
Assy#1 -A11	51.0	98.0%	3,21,000	51.0	98.0%	77,000	51.0	98.0%	1,63,000	51.0	98.0%	2,44,000	51.0	98.0%	76,000
Assy#1 -A12	10.0	98.0%	63,000	10.0	98.0%	15,000	14.0	98.0%	45,000	14.0	98.0%	67,000	14.0	98.0%	21,000
Body#2-B21	70.0	95.0%	4,27,000	70.0	95.0%	1,02,000	70.0	95.0%	2,17,000	70.0	95.0%	3,25,000	70.0	95.0%	1,01,000
Body#2-B22	0.0	95.0%	-	0.0	95.0%	-	0.0	95.0%	-	0.0	95.0%	-	0.0	95.0%	-
Paint#2	69.0	95.0%	4,21,000	69.0	95.0%	1,01,000	69.0	95.0%	2,14,000	69.0	95.0%	3,20,000	69.0	95.0%	99,000
Assy#2	66.0	98.0%	4,16,000	66.0	98.0%	99,000	66.0	98.0%	2,11,000	66.0	98.0%	3,16,000	66.0	98.0%	98,000
Eng#1	30.0	98.0%	15,000	-	-	-	-	-	-	-	-	-	-	-	-
Eng#2	60.0	99.0%	3,75,000	60.0	99.0%	94,000	60.0	99.0%	2,81,000	60.0	99.0%	2,81,000	62.0	99.0%	97,000
Eng#3	48.6	99.0%	3,04,000	48.6	99.0%	76,000	48.6	99.0%	2,28,000	48.6	99.0%	3,04,000	48.6	99.0%	76,000
TM#1	50.7	99.0%	3,17,000	50.7	99.0%	80,000	50.7	99.0%	2,38,000	50.7	99.0%	3,17,000	50.7	99.0%	80,000
TM#2	49.0	99.0%	3,06,000	49.0	99.0%	77,000	49.0	99.0%	2,30,000	49.0	99.0%	3,06,000	49.0	99.0%	77,000

Plant Capacity considered for 293 Working Days @ 21.92 Workings Hours/Day

Plant Capacity considered for 6300 Working Workings Hours for Engine & Transmission shops

The general assembly plant in a car plant receives inputs from three key sources: the Engine & Transmission Assembly plant, the body shop, and the paint shop:

- Engine & Transmission assembly plant: This plant assembles the Powertrain that will power the cars.
- Body shop: This shop welds the various components of the car together.
- Paint shop: This shop paints the cars to protect them from the elements and to give them a finished look.

The inputs from these sources are then combined in the general assembly plant to create a complete car. It is the stage where all the individual components come together to form the complete vehicle. The general assembly plant is responsible for assembling the cars to create the final product and testing them for shipping. Below is a summary of the shop wise production capacity of combined units:

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## Combined Shop Wise Summary

Shop	FY2022 Apr'21- Mar'22			FY2023 Apr'22- Mar'23			FY2024 Apr'23- Jun'23			FY2024 Apr'23- Mar'24			FY2025 Apr'24- Jun'24		
	Installed capacity	Production volume	Capacity utilisation (%)	Installed capacity	Production volume	Capacity utilisation (%)	Installed capacity	Production volume	Capacity utilisation (%)	Installed capacity	Production volume	Capacity utilisation (%)	Installed capacity	Production volume	Capacity utilisation (%)
Body #1	4,00,000	2,89,965	72%	4,12,000	3,52,778	86%	99,000	87,139	88%	4,48,000	4,16,465	93%	1,08,000	1,06,229	98%
Paint #1	3,42,000	2,89,743	85%	3,54,000	3,49,681	99%	85,000	85,353	100%	4,00,000	3,99,635	100%	97,000	97,933	101%
Assy #1	3,77,000	2,89,308	77%	3,84,000	3,50,342	91%	92,000	91,225	99%	4,03,000	4,08,150	101%	97,000	98,250	101%
Body #2	4,63,000	3,19,859	69%	4,27,000	3,76,795	88%	1,02,000	88,851	87%	4,27,000	3,66,080	86%	1,01,000	77,505	77%
Paint #2	4,21,000	3,19,732	76%	4,21,000	3,79,754	90%	1,01,000	90,355	89%	4,21,000	3,81,803	91%	99,000	85,719	87%
Assy #2	4,16,000	3,16,792	76%	4,16,000	3,76,958	91%	99,000	89,475	90%	4,15,000	3,79,350	91%	98,000	85,150	87%
Eng#1	1,85,000	40,946	22%	15,000	4,416	29%	-	-	-	-	-	-	-	-	-
Eng#2	3,75,000	2,54,656	68%	3,75,000	3,33,580	89%	94,000	1,00,442	107%	3,77,000	4,18,707	111%	97,000	1,00,519	104%
Eng#3	3,04,000	2,96,721	98%	3,04,000	2,92,562	96%	76,000	70,549	93%	3,04,000	2,82,273	93%	76,000	68,873	91%
TM#1	3,17,000	2,20,417	70%	3,17,000	2,62,934	83%	80,000	54,836	69%	3,17,000	2,72,783	86%	80,000	54,133	68%
TM#2	3,06,000	2,37,986	78%	3,06,000	3,23,034	106%	77,000	74,541	97%	3,06,000	3,18,685	104%	77,000	73,818	96%

The company produces only manual transmission for certain product types at their production facility in Chennai and procure assembled transmission assemblies for automatic transmission from group companies. Thus there is a deficit in the installed capacity of Transmission shop and installed capacity of Car assembly shop.

**Thus, the capacity of the Assembly plant as on June 30, 2024 is 8.24 Lakh units per annum.**

## Capacity Utilization

Based on the current capacity of the plant following is the capacity utilization of the plant:

Plant <sup>(1)</sup>	Three months ended June 30, 2024			Fiscal 2024			Three months ended June 30, 2023			Fiscal 2023			Fiscal 2022		
	Installed capacity <sup>(3)</sup>	Production volume	Capacity utilisation (%) <sup>(2)</sup>	Installed capacity	Production volume	Capacity utilisation (%) <sup>(2)</sup>	Installed capacity	Production volume	Capacity utilisation (%) <sup>(2)</sup>	Installed capacity	Production volume	Capacity utilisation (%) <sup>(2)</sup>	Installed capacity	Production volume	Capacity utilisation (%) <sup>(2)</sup>
Chennai Unit #1	97,000	98,250	101.29	3,96,000	4,08,150	103.07	85,000	91,225	107.32	3,54,000	3,50,342	98.97	3,42,000	2,89,308	84.59
Chennai Unit #2	98,000	85,150	86.89	4,15,000	3,79,350	91.41	99,000	89,475	90.38	4,16,000	3,76,958	90.61	4,16,000	3,16,792	76.15
<b>Total installed capacity</b>	<b>1,95,000</b>	<b>1,83,400</b>	<b>94.05</b>	<b>8,11,000</b>	<b>7,87,500</b>	<b>97.10</b>	<b>1,84,000</b>	<b>1,80,700</b>	<b>98.21</b>	<b>7,70,000</b>	<b>7,27,300</b>	<b>94.45</b>	<b>7,58,000</b>	<b>6,06,100</b>	<b>79.96</b>

Note: Please note that the installed capacity for Fiscal 2025 is only for the period from April 1, 2024 till June 30, 2024. The Capacity utilization is calculated based on the proportion of the installed capacity that is being used.

The increase in installed capacity from 758,000 units in Fiscal 2022, to 770,000 units in Fiscal 2023 and to 811,000 units in Fiscal 2024 was a result of certain efficiency enhancement measures such as including equipment upgrades, increased deployment of robotics and process optimisation undertaken by our Company. This, in turn, has led to an increased capacity in the Body shop, Paint shop, and subsequently the Assembly shop

- <sup>(1)</sup> calculations assume 293 working days at 21.92 working hours per day for Fiscals 2022, 2022 and 2024, and calculations assume 69 working days and 70 at 21.92 working hours per day for the three months ended June 30, 2024 and June 30, 2023 respectively;
- <sup>(2)</sup> production volume divided by installed capacity;
- <sup>(3)</sup> the annual installed capacity is 824,000 units as on June 30, 2024.



**Annexure VI****A list of key points about the manufacturing plant at Irrungattukottai, Tamil Nadu**

We certify the following with respect to the Company's manufacturing plant at Chennai:

1. The Chennai Manufacturing Plant has a production capacity of 824,000 units as of June 30, 2024.
2. At Chennai plant, the company use water that is sourced primarily from six rainwater harvesting ponds and the plant has a green cover of 33% as of June 30, 2024.
3. Currently, the product portfolio includes 13 passenger vehicle models (including N Line models which are the passenger vehicle models that feature sporty performance features) across all major passenger vehicle segments including sedans (Aura and Verna), hatchbacks (Grand i10 NIOS, i20 and i20 N Line) and SUVs (Exter, Venue, Venue N-Line, Creta, Creta N-Line, Alcazar, Tucson and IONIQ 5).
4. Various passenger vehicle models have multiple engine fuel options across petrol, diesel, compressed natural gas (“CNG”) and EV along with diverse transmission options (MT, AMT, AT, DCT and iVT).
5. The Chennai Manufacturing Plant is optimised to manufacture the full range of 13 passenger vehicle models.
6. To enhance operational efficiency, the company have a common platform architecture across the two manufacturing plant(s) in Chennai and this enables it to manufacture eight different models in one plant and six different models in the other plant, with one model manufactured in both plant(s). As a result, based on market demand, selected models can be produced on multiple lines in parallel at the Chennai Manufacturing Plant. This flexibility of having a common platform architecture lowers the company’s product development costs, reduces the time-to-market, streamlines the manufacturing process, allows higher capacity utilisation and boosts agility in delivering new models.
7. The plant operates in three shifts over 293 working days per year, six days per week, and on an average, producing 131 passenger vehicles per hour, with a production rate of one passenger vehicle within 30 seconds.
8. As of June 30, 2024, over 2,000 critical machines were connected with technologically advanced systems and 743 robots.
9. The advanced manufacturing technology include integration of a vision system that confirms sealer application, enhancing efficiency and accuracy and the four-layer painting process which includes electro deposition, surfacer, basecoat and a premium topcoat finish.
10. The company design, manufacture, assemble and sell passenger vehicles and parts, such as engines and transmissions.
11. As of June 30, 2024, Bluelink™ was equipped with 72 features (2024 Creta) which increased from 35 features in May 2019 since Bluelink™ introduced.
12. IONIQ 5 is equipped with an 800V charging system. Using a 350-kW direct current charger, IONIQ 5 can be charged from 10% to 80% battery-life in approximately 18 minutes.
13. The Chennai Manufacturing Plant comprises two fully integrated plant(s) across 536.54 acres.
14. The Chennai Manufacturing Plant can produce 13 passenger vehicle models with different specifications depending on market demand.
15. The company also have two shops for manufacturing engines, two shops for manufacturing transmissions and one aluminium foundry.
16. Each paint shop can accommodate eight passenger vehicle models and paint using 12 colours on the same line.
17. Robots perform welding, assembly, painting, inspection, production facility organisation, component process management, ordering and transportation. This enables us to manufacture multiple passenger vehicle models at the same time.
18. The company’s passenger vehicles are based on five different platforms (four for internal combustion engine (“ICE”) passenger vehicles and one for EVs).
19. The Chennai manufacturing operations are highly automated.
20. The dedicated network deployed at the Chennai Manufacturing Plant connects seven shops and over 2,000 critical machines through more than 1,000 intelligent sensors. This network generates 20 billion data points annually and enables real-time monitoring of over 300 process parameters through 150 real-time dashboards.
21. At the Chennai Manufacturing Plant, the company source renewable power from an inhouse 10 MW solar power plant, the Indian Energy Exchange and other offsite power purchase arrangements, which has resulted in the Chennai Manufacturing Plant’s renewable energy utilisation rate to be 63% of the total energy needs as of June 30, 2024.
22. As of June 30, 2024, most of the company’s passenger vehicle models (6 models) can be customised with manual and electric TurnPlus.
23. As of June 30, 2024, most of the company’s passenger vehicle models (7 models) were offered with Bluelink™ as an

- optional feature.
24. The quality control systems of the company are based on HMC’s Global Quality Management System which monitors the quality of the products during all phases of the value chain, from development, production, sale to after-sales service. Seamless information flow across the organisation helps minimise the response time for any issues that may arise in the normal course of operations. The company then reorient and customise these technologies and features to meet local tastes, design and aesthetics.
  25. The Digital Vehicle Inspection System integrates the quality assurance process digitally by capturing quality assessment data and verifying it against established standards, involving multiple inspection checkpoints before final clearance.
  26. Company also use technologies such as 3D scanners, dynamo test beds, digital processes, among others to test their products.
  27. Few examples of the company’s manufacturing technology include: (i) an intelligent timer controller to reduce spatters and improve weld quality; (ii) a sealer vision system; (iii) sophisticated robot 3D scanners for dimensional quality measurement; (iv) a multimodal key jig for the floor assembly to facilitate space utilisation and provide flexibility in the manufacturing process; (v) welds with tip dressing system that utilises a colour sensor for improved accuracy; (vi) AI-powered cameras for auto zone safety monitoring; (vii) regenerative thermal oxidizer to control emissions, and (viii) multi-degree 3D gun sealer for underbody sealing and we inspect sealer application using vision deep learning technology.
  28. The Vehicle-to-load (V2L) technology is available in the IONIQ 5 model and provides charging sockets inside and outside the passenger vehicle allowing customers to charge or use their electric devices on the move. Each V2L socket provides up to 3.6 kW power.
  29. The company’s big data team analyses the data collected through sensors, telematics devices, and telecommunications, such as brake intensity during hard stops, which form the basis for improvements, upgrades, facelifts and new features.
  30. As of September 30, 2024, the company have ADAS in eight of their passenger vehicle models with Level 2 ADAS in six of their passenger vehicle models.
  31. Since the company's operations began in India in 1998, the company have introduced in aggregate 38 passenger vehicle models as of June 30, 2024.
  32. Below tables lists the sourcing medium of various parts by the company:

Parts and materials	Details of the parts and materials
Engines	The Company manufacture 1.2 Kappa, 1.0 and 1.5 Turbo Gasoline engines and CRDI Diesel engines, which are used in their passenger vehicles. 1.2 Kappa engines is a 1197 cc four-cylinder, in-line aluminium block petrol engine. 1.0 and 1.5 Turbo Gasoline engines are a 998 cc and 1482 cc four-cylinder petrol engine that has a turbocharger attached to it. A CRDI engine, or Common Rail Direct Injection engine, is a diesel engine that uses a fuel injection system that injects fuel directly into the engine cylinders at high pressure. If Company require engines in addition to those manufactured by them, they import engines from the Hyundai Motor Group and also from other third-party suppliers. To manufacture engines, they primarily source parts of an engine, such as catalytic converters assembly, turbo charger assembly, high pressure fuel pump and cylinder blocks, among others, primarily from their suppliers and Hyundai Motor Group entities. They source engines such as 1.5 Gamma & 2.0 Diesel form members of the Hyundai Motor Group.
Transmissions	The Company manufacture and use in their passenger vehicles manual transmission or AMT. If they require transmissions in addition to those manufactured by the Company, they import transmissions from the Hyundai Motor Group. To manufacture these transmission, they primarily source parts of a transmission, such as input-output shaft, speed gears, transmission case, clutch housing, among others, from suppliers primarily from their suppliers in India. For passenger vehicles that require automatic and other type of transmissions, the company primarily import these from within the Hyundai Motor Group and also from other third-party suppliers.
Trims	Refers to various internal or external features of the cars, such as bumper, windshield, console, headlining, covering shelves, etc. The Company primarily source trims from members of the Hyundai Motor Group in India and outside India. Based on their requirements, they source certain trims from third-party suppliers located in India and outside India.
Other parts and materials	Depending on the type of part or material, the Company source modular and other parts such as seats, doors, chassis, airbags, entertainment systems, motor, battery, steel and other materials from members of the Hyundai Motor Group in India and outside India. The Company also source certain parts and materials from third-party suppliers located in India and outside India.

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<b>Model</b>	<b>Engine</b>	<b>Transmission</b>
Creta	The company primarily manufacture the engine for diesel and turbo gasoline variants; and for gasoline variant source from Hyundai Motor Group.	The company primarily manufacture the transmission for manual variants of diesel and turbo gasoline variants; and for gasoline variant source from Hyundai Motor Group in India and for automatic variants import from Hyundai Motor Group outside India.
Alacazar	The company primarily manufacture the engines; and import a variant of the engine from third parties.	The company primarily manufacture the manual variants; and import the automatic variants from Hyundai Motor Group or third parties.
Venue	The company primarily manufacture the engine in India.	The company primarily manufacture the manual variants; and import the automatic variants from Hyundai Motor Group or third parties.
Tuscon	The company primarily import the engines from Hyundai Motor Group or third parties.	The company import the automatic variants from Hyundai Motor Group or third parties.
Exter	The engine is primarily manufactured by the Company	The company primarily manufacture the manufacturer all the transmissions
Grand I10 Nios/ Aura	The engine is primarily manufactured by the Company	The company primarily manufacture the manufacturer all the transmissions
I20	The company primarily manufacture a variant of the engine; and import or locally purchase the other variants from Hyundai Motor Group	The company primarily manufacture the manual variants; and import the automatic variants from Hyundai Motor Group or third parties
Verna	The company primarily manufacture the engines; and import a variant of the engine from third parties.	The company primarily manufacture the manual variants or buy from Hyundai group company and import the automatic variants from Hyundai Motor Group