

**Phased Manufacturing Program (PMP) for Electric Vehicles under PM E-DRIVE
(Vehicle Category eBuses)**

Sr.No.	PMP Component	PMP Requirement
1	HVAC/VAC (Heating, Ventilation and Air Conditioning System) (if fitted)	Manufacturing / Assembly Process: Assembly of HVAC/VAC which mainly includes fitment of blowers, fitment of electric compressor, fitment of chiller unit, heater (if provided), circulation vents, filter, control panel/unit, HMI console shall be domestically performed.
2	AC Charging inlet Type 2	Manufacturing / Assembly Process: Assembly of AC Charging inlet Type 2 which mainly includes contact pin fitment, cable integration, housing fitment shall be domestically performed.
3	DC Charging inlet CCS2	Manufacturing / Assembly Process: Assembly of DC Charging inlet CCS2 which mainly includes contact pin fitment, cable integration, housing fitment shall be domestically performed.
4	Traction battery pack	Manufacturing / Assembly Process: Traction battery pack to be assembled domestically. Assembly of traction battery pack which mainly includes cell-to-cell connections, bus bar fitment, sensors mounting, wiring and crimping, connector fitment, safety devices fitment, BMS and thermal management system integration, pressure release valves fitment, enclosure fitment shall be domestically performed. Import of battery modules shall not be permitted. Import of battery pack either in finished or CKD form (from single supplier) shall not be permitted.
5	DC – DC converter	Manufacturing / Assembly Process: Assembly of DC – DC converter which mainly includes integration of assembled PCB (PCBA), wiring and crimping, connector fitment, heat- sink fitment, enclosure fitment, software/firmware flashing shall be domestically performed.
6	Vehicle Control Unit (If fitted)	Manufacturing / Assembly Process: Assembly of Vehicle Control Unit (VCU) which mainly includes integration of assembled PCB (PCBA), wiring, connector fitment, heat- sink fitment, enclosure fitment, software/firmware flashing shall be domestically performed.
7	On Board Charger (if provided) along with IC-CPD charging cable (if provided)	Manufacturing / Assembly Process: Assembly of On-Board Charger along with IC-CPD charging cable which mainly includes integration of assembled PCB (PCBA), wiring, connector fitment, heat- sink fitment, enclosure fitment, software/firmware flashing shall be domestically performed.
8	Traction Motor	Manufacturing / Assembly Process: Assembly of traction motor which mainly includes magnet fitment, fitment of rotor assembly into motor, fitment of stator assembly into motor, shaft fitment, bearing fitment, enclosure fitment, connectors fitment, cables fitment shall be domestically performed.

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9	Traction Motor controller including inverter	Manufacturing / Assembly Process: Assembly of Traction Motor controller including inverter which mainly includes integration of assembled PCB (PCBA), high voltage connectors fitment, cables fitment, heat- sink fitment, enclosure fitment, software/firmware flashing shall be domestically performed.
10	Instrument Cluster	Manufacturing / Assembly Process: Assembly of Instrument Cluster which mainly includes integration of assembled PCB (PCBA), Display unit, wiring, connector fitment, heat- sink fitment, enclosure fitment, software/firmware flashing shall be domestically performed.

Note:

- 1) All other Components of electric vehicles (as per typical but not exhaustive) specified at **Annexure-1** shall be domestically manufactured/assembled. CMVR notified safety components shall be tested by the testing agencies notified under Rule 126 of CMVR, 1989.
- 2) In the case of integrated unit consisting of multiple PMP components (e.g. 3-in-1 combo unit consisting of DC-DC converter, on-board charger and motor controller including inverter), PMP verification for compliance shall be carried out separately for individual PMP component.
- 3) In case IC-CPD cable or any other home charging solution (e.g Type 2 wall-mount charger) is provided for charging the vehicle, then the price of the same is to be included in the ex-factory price of the vehicle.
- 4) The words 'Manufacturing & Assembly' will be used interchangeably and will mean the same thing. Definition of "manufacture" shall mean as defined in CGST Act 2017.
- 5) Direct or indirect import of finished PMP components or any other vehicle component (as per **Annexure 1**) shall not be permitted.
- 6) Guidelines for Verification of PMP compliance of EV Components (PMP and other vehicle components) shall be as per **Annexure-2**.
- 7) Consequences of Misrepresentation, Non-compliance and Fraud**
 - a) Vehicle OEM would be required to furnish an Affidavit cum Undertaking on Rs.500/- non-judicial stamp paper certifying that all data/ information submitted by them are true and correct and have been signed by Authorized Signatory.
 - b) It will be the responsibility of the vehicle OEM to ensure that all data submitted to Test Agency is true and correct. In case there is any change in any of the data impacting PMP compliance of any of the PMP or any of the other vehicle component and hence eligibility of the electric vehicle model, post obtaining eligibility certificate, it will be the responsibility of the vehicle OEM to bring the same to the notice of concerned Test Agency.
 - c) It will be the responsibility of the vehicle OEM to apprise the Testing Agency about any change(s) in electric vehicle model including change in supply chain/ sourcing e.g change in make, model, part number, technical specifications, supplier of PMP component or any of the other vehicle component post obtaining eligibility certificate, that may lead to an adverse impact on PMP compliance. In such case vehicle OEM shall seek extension of eligibility approval as per PM E-DRIVE Scheme from the test agency from which initial eligibility approval has been obtained.
 - d) In case Test Agency finds that vehicle OEM has resorted to misrepresentation/ suppression of material facts/ committed fraud of any kind, then Test Agency reserves the right to revoke the Eligibility Compliance Certificate issued to the vehicle OEM and make suitable recommendations to MHI for recovery of any incentive monies disbursed to the vehicle OEM.

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Annexure-1

List of vehicle components other than PMP components

Sr. No.	Vehicle Component	Manufacturing / Assembly Process Requirement
1	Brake system including ABS	Assembly of Braking System including ABS which mainly includes Brake Pedal, Brake Pads/Brake Linings, Brake Disc/Brake Drum, Springs, Back Plate, Master Cylinder, Wheel Cylinder, Brake Caliper, Brake Fluid with reservoir, ABS ECU, electric compressor, cables, wires, Nuts/Bolts etc. shall be domestically performed.
2	Steering system	Assembly of Steering System which mainly includes Steering Wheel, Steering Column/Intermediate Shaft, Steering Knuckle, Steering Rack, Pinion/Gear, electric motor, controller, universal joints, Nuts/Bolts etc. shall be domestically performed.
3	Switches / Selection knobs	Assembly of Switches/Selection Knobs which mainly includes Housing, Contacts/Relays etc. shall be domestically performed.
4	Chassis	Assembly of Chassis which mainly includes Frame / I-Section/C-Section Beams, Mounting Baskets, Stiffeners, Nuts/Bolts/U-Bolts, Wheels, Axles, Suspension System/Leaf Springs, Differential etc. shall be domestically performed.
5	Reverse parking alert system (RPAS)	Assembly of Reverse Parking Alert System (RPAS) which mainly includes Ultrasonic Sensors, Housing/Enclosure, PCB/ECU, Buzzer, Wires, Connectors, Mounting Plate, Screws etc. shall be domestically performed.
6	Vehicle Alarm System/Immobilizer	Assembly of Vehicle Alarm System/Immobilizer which mainly includes alarm, control unit, key/fob, wiring etc. shall be domestically performed.
7	Vehicle Location tracking system/ Intelligent Trasport System (ITS)	Assembly of Vehicle Location Tracking System/ITS which mainly includes integration of assembled PCB (PCBA), GPS receiver, digital storage device, camera monitoring, announcing system, speakers, LED destination boards, wiring, enclosure fitment, software/firmware flashing shall be domestically performed.
8	Body control module (BCM) (If fitted)	Assembly of Body control module (BCM) which mainly includes integration of assembled PCB (PCBA), wiring, connector fitment, heat-sink fitment, enclosure fitment, software/firmware flashing shall be domestically performed.
9	Transmission / gear box	Assembly of Transmission/Gear Box which mainly includes Input & Output Shafts, Clutch system, Bearings, Gears, Propeller Shaft,

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Sr. No.	Vehicle Component	Manufacturing / Assembly Process Requirement
		Differential, Universal Joints, Shift Linkages, Shift Fork, Housing, Nuts/Bolts etc. shall be domestically performed.
10	Axles	<p>Front Axle:- Assembly of Front Axle which mainly includes Axle Beam, Drag Link, Drag Link Arm, Stub Axle, King Pin, Hub for front wheels, Track Rod, Nuts/Bolts etc. shall be domestically performed.</p> <p>Rear Axle:- Assembly of Rear Axle which mainly includes Axle Shaft, Differential, Hubs for rear wheels, Brake Drum, Brakes, Bearings, Housing Assembly, Nuts/Bolts etc. shall be domestically performed</p>
11	Suspension system	Assembly of Suspension System which mainly includes Leaf Springs, U-bolts, Shock Absorbers, Adjustable and Rigid Tension Bars, Air bellows/air springs (for air suspension), Nuts, Bolts, Washers etc. shall be domestically performed.
12	Horn	Assembly of Horn which mainly includes Diaphragm, Mounting Plate/Bracket, Electromagnetic Coil, Connectors, Relays, Wires, Nuts/Bolts shall be domestically performed.
13	Tires	Processes such as Rubberizing/Extrusion, Calendering, Curing, Tyre Building etc. shall be domestically performed.
14	Windshield	Assembly of Windscreen Safety Glass which mainly includes Float Glasses, PVB Material etc. shall be domestically performed.
15	Windscreen Wiping System	Assembly of Windscreen Wiping System which mainly includes Wiper Baldes, Washer Tank, Nozzles, Washer Pump, Tubes, Wires, Screws etc. shall be domestically performed.
16	Seats	Assembly of Seats which mainly includes Metallic Frame, Seat Foam, Cover, Mounting Plates/Brackets, Nuts/Bolts/Screws etc. shall be domestically performed.
17	Ignition Key/Button	Assembly of Ignition Key/Button which mainly includes Housing, Ignition Coil, Mounting Plates/Brackets, Wires, Connectors, Nuts/Bolts/Screws etc. shall be domestically performed.
18	Parking brake	Assembly of Parking Brake which mainly includes Brake Lever, Brake Lock, Brake Valve, Hoses/Tubes (for air connection), Mounting Plates/Brackets, Nuts/Bolts/Screws etc. shall be domestically performed.
19	Windows	Assembly of Windows which mainly includes Toughened Glass, Frame, Gaskets, Sliding Mechanism, Lock, Mounting Plates/Brackets,

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Sr. No.	Vehicle Component	Manufacturing / Assembly Process Requirement
		Nuts/Bolts/Screws etc. shall be domestically performed.
20	Doors locks and hinges	Assembly of Door Locks and Hinges which mainly includes Metallic plates, Plastic parts, springs, levers, striker, mounting plates, mounting screws, Pins, Nuts/Bolts/Screws etc. shall be domestically performed.
21	Main Mirror and Rear-View Mirror	Assembly of Rear View Mirror which mainly includes Housing, Mirror Plate, Mounting Stem, Nuts/Bolts shall be domestically performed.
22	Safety Belt	Assembly of Safety Belts which mainly includes Webbing, Buckle, Latch Plate, Retractor/ELR, Mounting Plates, Seat Belt Tounge, Pretensioner (if fitted), Nuts/Bolts shall be domestically performed.
23	Bumper	Assembly of Bumper which mainly includes Cover, Reinforcement Bar, Absorber, Mounting System, Nuts/Bolts/Screws shall be domestically performed.
24	Infotainment System (if fitted)	Assembly of Infotainment System which mainly includes integration of assembled PCB (PCBA), Housing/Enclosure, Display Unit, ECU, Frames, Mounting System, Wires/Cables, Connectors, Nuts/Bolts/Screws shall be domestically performed.
25	Accelerator Pedal	Assembly of Accelerator Pedal which mainly includes integration of assembled PCB (PCBA), wiring, connector fitment, Housing/body, lever fitment, wires, sensor/angle encoder, Nuts/Bolts/Screws shall be domestically performed.
26	Wheel Rim	<p>Alloy Wheel Rims:- Processes such as Melting, Low/High Pressure Die Casting, Sprue Cutting, Heat Treatment etc. shall be domestically performed.</p> <p>Steel Wheel Rims:- Processes such as Steel Plate Cutting, Rim making, Disc making, Joining Rim and Disc, Combine Welding Process etc. shall be domestically performed.</p>

Note:

- 1) CKD import of all child parts of the components listed above (**Annexure 1**) from single import source shall not be permitted.
- 2) Direct or indirect import of finished vehicle component listed above (**Annexure 1**) shall not be permitted.
- 3) Test agency shall have discretion to verify assembly stations carrying out specified manufacturing and assembly activities at supplier's manufacturing plant for above listed components (**Annexure 1**), if required.

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- 4) Test agencies shall have discretion to seek further invoices down the supply chain line of the components listed above if needed to ascertain that applicant vehicle OEM complies the Manufacturing / Assembly Process requirements given above.
- 5) Test agency shall have discretion to seek information about additional vehicle component other than the above list as it may be applicable to the vehicle category or provided by vehicle OEM in the vehicle model applied for eligibility assessment as per PM E-DRIVE Scheme.

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Annexure-2

Guidelines for Verification of PMP compliance of EV Components (PMP and other vehicle components)

1) Activities qualifying indigenous source for EV component

Domestic sourcing of raw materials / child parts or Partial domestic and partial imported sourcing of raw materials / child parts and further domestic assembly of finished component shall qualify as indigenous source, hence complying to PMP requirements under PM E-DRIVE Scheme.

2) Activities determined as imported source for EV component

Domestic supplier importing finished component (indirect Import) or direct import from foreign source shall qualify as imported source, hence not complying with PMP requirements under PM E-DRIVE Scheme.

3) Verification methodology by test agencies

- a) Verification of vehicle OEM declared suppliers' GST invoices for each PMP component and other vehicle components as per **Annexure-1** (supplier invoice to vehicle OEM)
- b) Verification of GST classification of OEM declared suppliers as 'Manufacturer' on GST portal
- c) Visit to OEM declared suppliers' manufacturing / assembly plant (list of suppliers for plant visit will be at the discretion of Test Agency)
- d) Verification of OEM declared suppliers' assembly line as per submitted Manufacturing Process Flow Diagram (MPFD)
- e) Verification of assembly stations carrying out specified manufacturing and assembly activities at supplier's manufacturing plant.
- f) Test agency shall have discretion to seek further invoices down the supply chain line of the EV components if needed to ascertain that applicant vehicle OEM complies with the requirements of PMP under PM E-DRIVE Scheme.
