

HEATWAVES/ EXTREME TEMPERATURE



FLEET OPERATIONS PROTOCOL



Trigger Points

- High Battery Temp Warning (BMS)
- HVAC or Cooling Failure Alert
- Voltage/Current Fluctuation Warning
- Thermal Alarm (Battery/Electrical System)



Responsibility

Depot Manager

Control Room

Depot Supervisors

Driver

A. PRE-OPERATION CHECKS (BEFORE DISPATCH)



Responsibility:

Depot Supervisors

- ✓ Conduct battery diagnostics using BMS temperature data.
- ✓ Verify coolant levels and battery thermal management systems.
- ✓ Check tyre inflation (heat can cause blowouts).
- ✓ Ensure HVAC systems are fully functional for passenger comfort.
- ✓ Confirm dashboard indicators and signaling systems are operational.
- ✓ Ensure availability of fire extinguishers.

B. PREVENTIVE ACTIONS



Responsibility:

Driver

- Report unusual smells, performance drops, or warning lights immediately.
- Carry emergency water supplies for crew and passengers.
- Optimize speed to reduce battery strain and overheating risk.
- Check availability of first aid kits in buses.

C. MONITORING & REPORTING



Responsibility:

Driver

- 🔍 Check dashboard for HV battery overheating warnings.
- 🔧 Inspect tire pressure (heat can cause blowouts).
- 🔥 Report any smoke, odor, or abnormal heat from battery or electrical systems.
- 📞 Inform Control Room of critical issues-

D. OPERATIONS COORDINATION



Responsibility:

Depot Manager

- 📍 Track all vehicles and prioritize routes with shaded stops.
- 🕒 Suspend or reschedule trips during peak heat hours if risk is high.
- ❄️ Ensure bus cooling systems and depot ventilation are functional.
- 📞 Coordinate with Control Room for rerouting and passenger safety.

D. EMERGENCY ACTIONS - SOPs



Responsibility:

Control Room

Fleet Operation SOPs for Control Room

- Maintain constant communication with drivers and depot managers.
- Share heat alerts and safe parking locations.
- Track battery temperature data and prioritize buses showing alerts.



Responsibility:

Depot Manager

Fleet Operation SOPs for Depot Manager

- Instruct drivers to park in shaded areas and keep ventilation.
- Account for all vehicles via GPS and monitor battery health.
- Suspend or reschedule trips during peak heat hours if risk is high.
- Ensure bus cooling systems and depot ventilation are functional.
- Coordinate with ECC for technical support if overheating occurs.
- Prepare standby buses for redeployment if any bus is grounded..



Responsibility:

Driver

Fleet Operation SOPs for Driver

- Report unusual smells, performance drops, or warning lights immediately.
- Optimize speed to reduce battery strain and overheating risk.

If Temperature Alert Triggers Enroute:

- Stop bus in safe, shaded area if overheating warning appears.
- Switch HVAC to maximum cooling if battery allows.
- Inform Control Room immediately with location and passenger load and take action basis the guidance from control room.
- Keep passengers calm and hydrated. Evacuate passengers if smoke or severe overheating occurs.
- Do not restart bus until cleared by Depot Manager / Control Room.

HEATWAVES/ EXTREME TEMPERATURE



DEPOT OPERATIONS PROTOCOL



Trigger Points

- **Heatwave Alert** Issued by IMD or local authority.
- **Extreme temperature warnings** (above safe operational limits).

A. COOLING & VENTILATION



Responsibility:

Maintenance Team

- Activate additional ventilation systems in parking bays.
- Deploy temporary shading structures or reflective covers over buses.
- Monitor ambient depot temperature; restrict indoor charging if unsafe.

B. ASSET PROTECTION



Responsibility:

Electrical Safety Lead

- Activate climate control for battery storage and spare parts.
- Ensure dedicated air-conditioning (AC) systems to maintain temperatures within OEM-specified limits
- Maintain fire safety readiness with extinguishers and heat-triggered alarms.

C. PRE-CHARGING MEASURES



Responsibility:

Charging Operators

- Inspect charger cooling systems and ensure ventilation.
- Avoid charging during peak heat; prioritize early morning or night.
- Check connector insulation and cables for heat damage.

D. MONITORING AND REPORTING



Responsibility:

Safety Officer

- Monitor battery and charger temperature sensors.
- Initiate emergency power shutdown if overheating risk escalates.
- Avoid contact with damaged or overheated battery units.
- Report status to Depot Manager and Control Room.



Responsibility

Depot Manager

Electrical Safety Lead

Charging Operators

Maintenance Team

Safety Officer

D. EMERGENCY ACTIONS - SOPS



Responsibility:

Depot Manager

Depot Operation SOPs for Depot Manager

- Activate Emergency Response Protocol.
- Announce heat safety instructions via PA system.
- Suspend charging and maintenance during peak heat.
- Relocate buses to shaded parking zones.
- Maintain communication with Safety Officer and Control Room.



Responsibility:

Charging Operators

SOPs for Charging Operators

- Inspect. charger cooling systems and ensure ventilation.
- Activate BMS-integrated temperature control to reduce charging rate if battery overheats
- Maintain thermal monitoring logs during charging sessions.
- Keep chargers out of direct sunlight or use reflective shielding.



Responsibility:

Electrical Safety Lead

SOPs for Emergency Power Shutdown procedure if fire risk persist

- Access main electrical room or emergency power panel.
- Wear PPE (insulated gloves, boots) Locate emergency shutdown switch (marked red or labeled).
- Activate shutdown (turn main breaker OFF).
- Check indicator lights confirm power OFF.
- Communicate status to Depot Manager and Control Room.
- Lock electrical room and post "POWER OFF – DO NOT OPERATE" signage.
- Wait for clearance before restoring power (after inspection).