a. EV Repair and Maintenance

The job roles/functions involved in servicing a car can be broadly categorised into 3 main domain areas, namely Diagnostics, Electrical/Electronics and Mechanical. The proportion mix of job roles within the 3 domains will shift as the vehicle populations transit to EVs. EVs are fundamentally different from ICE vehicles, with battery engine systems instead of fuel-based systems. Their components involve high voltage power and electrical circuit boards that require new sets of electrical skills to handle and understand.

Therefore, technicians that maintain and recover EVs will have to learn to isolate main electricity supply before working on the various components to ensure safety, understand the usage of diagnostic tools to read fault codes and comprehend OEMs' instructions for component replacement processes. The battery systems will be different from ICE systems such as the lack of requirement for oil changes and transmission fluid changes. Examples of job roles include EV technician, EV service recovery technician.

The relevant skills required to perform these tasks include battery system maintenance, electric drivetrain systems maintenance, high voltage system maintenance and some mechanical skills for body works, brakes, steering suspension system maintenance and others.

Given this niche set of skills needed, an emerging job role for would thus be an EV Technician/ EV Technical Specialist, with illustrative persona provided in Figure 14.

EMERGING JOB ROLES IN ELECTRIC VEHICLE - EV SPECIFIC

EV Technician/ EV Senior Technician/ EV Technical Specialist

JOB DESCRIPTION

The EV Technician/ EV Senior Technician/ EV Technical Specialist performs general servicing and/or specific EV component replacements and maintenance. He/ she also conducts preventive maintenance activities for EV and their component and schedules maintenance operations.

KEY RESPONSIBILITIES

- Perform general servicing and preventive/ corrective maintenance of oifferent subsystems for EVs (electric driverain, battery engine) and mechanical components (air conditioning, body work, brake, steering and suspensions)
- Preparation of work activities, perform
 projected activities and majorage to the control of the contro
- assigned serving and maintenance tasks
 Perform general housekeeping of workshop

tools, equipment and safety

Emergency breakdown assistance and recovery

SKILLS AND REQUIREMENTS

- Battery system maintenance or replacement Conduct regular testing and inspection to maximise battery life, maintain optimum battery performance and replace faulty battery modules
- Electric component replacement Replace electrical components such as temperature and voltage sensors.
- Electric drivetrain systems maintenance Maintain electric drivetrain systems
- High voltage system maintenance Maintain and conduct proper diagnostic testing on high power voltage systems.
- High voltage workplace safety and health Proper handling of equipment and implement safety processes in high-voltage work environments

The EV Technician/ Senior EV Technician/ EV Technical Specialist performs general and/or specific EV component replacements and maintenance. He/she also conducts preventive maintenance activities and coordinates maintenance operations. The technician prepares work activities, perform assigned servicing and maintenance tasks of different EV components, perform general housekeeping of workshop tools and equipment and adheres to Workplace Safety and Health (WSH) procedures. The technician also operates recovery support vehicles and on-board equipment to assist on-the-road EV breakdown assistance and recovery. The senior EV technician assigns daily work tasks and provides technical guidance and on-the-job coaching.

EXAMPLE OF HIRING COMPANIES

- Towor Transi
- Tesla
- BYD
- Hyundai

EDUCATION AND EXPERIENCE

- undergone EV specific vocational training programmes and obtained high-voltage
- Specialize in electrical, automotive and/ or
- mechanical engineering Experience in ICE-based vehicle repair and

Source(s): SSG Skills Framework, Company careers portals, KPMG Analysis

Figure 14: EV Technician/ EV Senior Technician/ EV Technical Specialist Persona



Document Classification -