

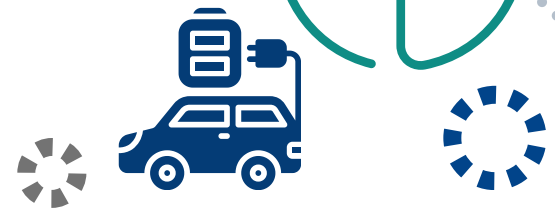


ELECTRIC VEHICLE CAREER PATHWAYS REPORT

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Electric Vehicle Career Pathways

The EV Career Pathways report provides pathways for those interested in transitioning from traditional manufacturing or **internal combustion engine vehicle (ICE-V)** production jobs to **electric vehicle (EV)** careers with transferable skillsets. With such a strong automotive manufacturing landscape, Windsor-Essex is the ideal region for those currently employed in traditional automotive manufacturing jobs to transition into EV careers of the future.

To provide a comprehensive overview of potential career opportunities within the EV sector, this report will categorize roles into five distinct domains. These categories will serve as groupings to identify and understand various pathways available in Windsor-Essex's burgeoning EV sector. Each category will be accompanied by an overview and definitions to facilitate a clearer understanding of the roles encompassed within them.

The following are the five major categories:

- **Manufacturing**
EV Manufacturing refers to the process of producing EVs on a large scale, involving the assembly of various components and subsystems to create a fully functional EV.
- **Maintenance**
EV Maintenance refers to the regular upkeep, servicing, and repairs required to keep EVs in optimal operating condition.
- **Scientific Research**
EV Scientific Research refers to the systematic investigation and study conducted by scientists, researchers and experts in various fields to advance the knowledge and understanding of EVs.
- **Design and Development**
EV Design and Development refers to the process of creating and refining EVs.
- **Infrastructure**
EV Infrastructure refers to the network of charging stations, support systems, and associated technologies that enable the charging and operation of EVs.

Electric Vehicle Career Pathways

Maintenance

EV maintenance refers to the regular upkeep, servicing, and repairs required to keep EVs in optimal operating condition. It involves a range of activities aimed at ensuring the safety, performance, and longevity of EV components and systems. EV maintenance is typically performed by trained technicians or authorized service centers and includes preventive maintenance, inspections, software updates, and occasional repairs or component replacements.

The following transitions to EV careers in maintenance can be made by those with automotive knowledge and experience. Each of the below career pathways represents a classic manufacturing or an ICE-V production job transitioning (➤) to multiple potential EV careers with transferable skillsets.

Maintenance Technician – 7321 ► EV Maintenance Technician, Battery System Maintenance Specialist

ICE-V Maintenance Job Description

Maintenance Technician:

- ICE-V Maintenance Technicians ensure vehicles are running smoothly. They use their skills to check and fix problems with the vehicles' engines and other important parts. These technicians perform regular inspections, change fluids, and replace worn-out components to keep the cars in good shape. They use tools and knowledge to troubleshoot and repair any issues they find.



Transferable Skills

- **EV Maintenance Technician:** Equipment troubleshooting, preventive maintenance expertise, mechanical and electrical repairs, diagnostic tool utilization, familiarity with manufacturing regulations and standards, adaptability, problem-solving skills, teamwork, communication abilities, process optimization experience, and an understanding of maintenance procedures.
- **Battery System Maintenance Specialist:** Equipment troubleshooting, preventive maintenance expertise, mechanical and electrical repairs, diagnostic tool utilization, familiarity with manufacturing regulations and standards, adaptability, problem-solving skills, teamwork, communication abilities, process optimization experience, and an understanding of maintenance procedures.

Upskilling/Training

- **EV Maintenance Technician:** Upskilling requires developing expertise in electric powertrain systems, battery diagnostics, charging infrastructure, and high-voltage safety protocols, while training in areas such as EV-specific maintenance procedures, battery maintenance, and electric motor troubleshooting.
- **Battery System Maintenance Specialist:** Upskilling involves acquiring proficiency in battery system diagnostics, thermal management strategies, cell balancing techniques, and high-voltage safety protocols, while training in areas such as battery chemistry, pack maintenance procedures, and electric powertrain integration.

Educational Requirements

- **Maintenance Technician (ICE-V):** High school diploma or equivalent education and completion of apprenticeship.
- **EV Maintenance Technician (EV):** Diploma in automotive technology, electrical engineering technology, or related field.
- **Battery System Maintenance Specialist (EV):** Diploma in electrical engineering technology, electronics, or related field.



EV Maintenance Job Descriptions

EV Maintenance Technician:

- EV Maintenance Technicians keep EVs in good working condition. They use their skills to inspect, repair, and maintain the vehicles after they've been made. These technicians follow specific guidelines and use their expertise to fix any issues, replace parts, and ensure that the EVs are running smoothly.

Battery System Maintenance Specialist:

- Battery System Maintenance Specialists keep the battery packs of EVs in good condition. They use their skills to inspect, service, and repair the battery systems to ensure they work properly. These specialists follow specific guidelines and use their expertise to identify and fix any issues with the battery packs.

Automotive Parts Specialist – 7321 ► EV Parts Specialist, Battery System Parts Coordinator

ICE-V Maintenance Job Description

Automotive Parts Specialist:

- Automotive Parts Specialists have an extensive knowledge of different parts that make up an ICE-V's engine and other important components. They help customers find the right parts they need to fix their vehicles. These specialists understand how ICE-V engines work and can recommend the best parts for repairs.



Transferable Skills

- **EV Parts Specialist:** Parts identification, inventory management, supplier communication, quality control awareness, familiarity with manufacturing regulations and standards, adaptability, problem-solving skills, teamwork, communication abilities, process optimization experience, and an understanding of parts logistics.
- **Battery System Parts Coordinator:** Parts identification, inventory management, supplier communication, quality control awareness, familiarity with manufacturing regulations and standards, adaptability, problem-solving skills, teamwork, communication abilities, process optimization experience, and an understanding of parts logistics.

Upskilling/Training

- **EV Parts Specialist:** Upskilling requires developing expertise in electric vehicle components, battery systems, charging infrastructure, and high-voltage safety protocols, while training in areas such as EV-specific parts identification, battery replacement procedures, and electric powertrain integration.
- **Battery System Parts Coordinator:** Upskilling involves gaining proficiency in battery system components, cell technologies, thermal management considerations, and high-voltage safety protocols, while training in areas such as battery chemistry, pack integration standards, and electric powertrain parts coordination.

Educational Requirements

- **Automotive Parts Specialist (ICE-V):** Diploma in automotive technology, engineering, business administration, or a related field.
- **EV Parts Specialist (EV):** Diploma in automotive technology, engineering, business administration, or a related field.

- **Battery System Parts Coordinator (EV):** Diploma in supply chain management, logistics, business administration, or related field.



EV Maintenance Job Descriptions

EV Parts Specialist:

- EV Parts Specialists manage and replace the different parts needed for EVs. They use their skills to identify, source, and replace parts that might need fixing due to wear and tear. These specialists follow specific guidelines and use their expertise to ensure that the correct and high-quality parts are used.

Battery System Parts Coordinator:

- Battery System Parts Coordinators manage and organize the various parts needed for the battery systems in EVs. They use their skills to make sure the right parts are available when needed for repairs or replacements. These coordinators follow specific plans and schedules to ensure that the correct parts arrive on time and in the right quantities.

Storekeepers and Partspersons – 1522 ► EV Parts

Inventory Coordinator, Battery System Parts Specialist, Charging Equipment Parts Manager

ICE-V Maintenance Job Description

Storekeepers and Partspersons:

- Storekeepers and Partspersons take care of the parts and tools needed to fix cars. Their job is to organize the inventory, keep track of what is in stock, and help customers find the right parts for their vehicles. They may also assist with orders and deliveries.



Transferable Skills

- **EV Parts Inventory Coordinator:** Inventory management, parts handling expertise, data entry, familiarity with manufacturing regulations and standards, adaptability, problem-solving skills, attention to detail, teamwork, communication abilities, process optimization experience, and an understanding of parts logistics
- **Battery System Parts Specialist:** Inventory management, parts handling expertise, data entry, familiarity with manufacturing regulations and standards, adaptability, problem-solving skills, attention to detail, teamwork, communication abilities, process optimization experience, and an understanding of parts logistics.
- **Charging Equipment Parts Manager:** Inventory management, parts handling expertise, data entry, familiarity with manufacturing regulations and standards, adaptability, problem-solving skills, attention to detail, teamwork, communication abilities, process optimization experience, and an understanding of parts logistics.

Upskilling/Training

- **EV Parts Inventory Coordinator:** Upskilling requires developing expertise in electric vehicle components, battery systems, charging infrastructure, and sustainable sourcing practices, while training in areas such as EV-specific parts inventory management, battery pack components, and electric powertrain integration.
- **Battery System Parts Specialist:** Upskilling involves acquiring proficiency in battery system components, cell technologies, thermal management considerations, and high-voltage safety protocols, while training in areas such as battery chemistry, pack integration standards, and electric powertrain parts expertise.
- **Charging Equipment Parts Manager:** Upskilling requires developing expertise in EV charging equipment components, electrical systems, communication interfaces, and high-voltage safety protocols, while training in areas such as charging station parts inventory management, fast-charging technologies, and charging infrastructure compatibility.

Educational Requirements

- **Storekeeper and Partsperson (ICE-V):** High school diploma or equivalent education and on-the-job training.
- **EV Parts Inventory Coordinator (EV):** Diploma in inventory management, supply chain management, business administration, or related field.
- **Battery System Parts Specialist (EV):** Diploma in automotive technology, engineering technology, business administration, or related field.
- **Charging Equipment Parts Manager (EV):** Diploma in business administration, supply chain management, electrical engineering technology, or related field.



EV Maintenance Job Descriptions

EV Parts Inventory Coordinator:

- EV Parts Inventory Coordinators manage and organize the supply of different parts needed to keep EVs running smoothly. They use their skills to keep track of the inventory of parts, making sure they have enough in stock for repairs and replacements. These coordinators follow specific plans and use their expertise to ensure that the right parts are available when needed.

Battery System Parts Specialist:

- Battery System Parts Specialists manage and handle the various parts needed for the battery systems in EVs. They use their skills to identify, source, and replace parts that might need repairing or replacing over time. These specialists follow specific guidelines and use their expertise to ensure that the correct and high-quality parts are used for maintenance.

Charging Equipment Parts Manager:

- Charging Equipment Parts Managers manage and oversee the supply of different parts needed for maintaining the charging stations used by EVs. They use their skills to ensure that the right parts are available when needed for repairs and replacements. These managers follow specific plans and schedules to make sure the correct parts are in stock.

Motor Vehicle Body Repairer – 7322 ► EV Body Repair Technician

ICE-V Maintenance Job Description

Motor Vehicle Body Repairers:

- Motor Vehicle Body Repairers fix the outside parts of cars that might be damaged. They work on things like dents, scratches, and other problems on the vehicle's body. They use tools to complete this work and may also replace damaged parts and paint the vehicle if necessary.



Transferable Skills

- **EV Body Repair Technician:** Body repair expertise, welding proficiency, panel alignment knowledge, refinishing techniques, use of repair tools, attention to detail, familiarity with manufacturing regulations and standards, adaptability, problem-solving skills, teamwork, communication abilities, process efficiency, and an understanding of repair procedures.

Upskilling/Training

- **EV Body Repair Technician:** Upskilling involves gaining proficiency in electric vehicle body materials, structural repair techniques, battery safety protocols, and high-voltage system handling, while training in areas such as EV-specific body repair procedures, battery enclosure repair, and electric powertrain integration.

Educational Requirements

- **Motor Vehicle Body Repairer (ICE-V):** High school diploma and completion of apprenticeship or vocational training.
- **EV Body Repair Technician (EV):** High school diploma and completion of apprenticeship or vocational training.



EV Maintenance Job Description

EV Body Repair Technician:

- EV Body Repair Technicians fix and restore the exterior of EVs. They use their skills to repair any damages, dents, or scratches that the vehicle might have sustained. These technicians follow specific procedures to ensure that the repairs are done accurately and safely.