



## Unit 10B

# The Circular Economy in the Transport Sector

## Transport – Vehicle and Transportation

### Electric Vehicles and Hydrogen Vehicles

#### 1 Introduction

Unit 10B provides resources for vocational trainers seeking to incorporate the circular economy into their courses in the Transport Sector, focusing on vehicles and transportation. This unit explores the shift away from internal combustion engine vehicles and to the introduction of electric and hydrogen vehicles within the automotive industry. Focusing the movement on a low carbon economy and the shift from fossil fuels to renewables being the primary energy carrier. This unit explores electric and hydrogen vehicles and the concepts of resource recovery to improve and extend the lifecycle of critical materials.

#### 2 Learning Outcomes

<b>Knowledge</b>	Understand the environmental impact of electric vehicles and how circular economy approaches can be integrated to ensure the full benefits of EVs
<b>Skills</b>	Identify circular economy approaches and opportunities within the electric vehicle industry
<b>Competencies</b>	Apply circular economy principles to electric vehicles
<b>EQF Level</b>	This content is mainly suitable for EQF Level 4

#### 3 Lesson Plan

Method	Description	Suggested duration in minutes (total minutes)
<b>Brainstorming session</b>	Brainstorming where you as a trainer write down definitions, notions and connotations ought to be used for future discussions and references. You can Continue the brainstorming session with the following questions if needed: <ul style="list-style-type: none"> <li>• What are the main benefits of in shifting from a high carbon to a low carbon economy? And how important is the automotive/transport industry in achieving this?</li> </ul>	15



<b>Presentation by trainer using PPT</b>	Overview	30
	Unit Learning Objectives	
	Climate change, the circular economy and energy	
	EU Transport Emissions	
	Electric Vehicles	
	Discussion Points	
	Alternative Circular Solutions	
	Lifecycle	
	Case Study – Carwatt	
	Discussion Points	
	Alternative Materials	
	Repair and Maintenance	
	Discussion Points	
	Hydrogen Vehicles	
<b>Assessment</b>	Quiz	15

## 4 Quiz

### 1. What is a critical raw material?

Answer: An economically and strategically important material, their supply is high-risk

### 2. Which transport mode contributes the most CO2 emissions

Answer: road transport

### 3. What circular economy method does the automotive industry focus on?

Answer: Repair and recovery