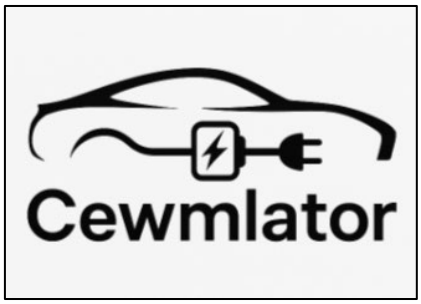
Strategic Case Study Examination
November 2025 – February 2026
Pre-seen material



Context Statement

We are aware that there has been, and remains, a significant amount of change globally. To assist with clarity and fairness, we do not expect students to factor these changes in when responding to, or preparing for, case studies. This pre-seen, and its associated exams (while aiming to reflect real life), are set in a context where current and on-going global issues have not had an impact.

Remember, marks in the exam will be awarded for valid arguments that are relevant to the question asked. Answers that make relevant references to current affairs will, of course, be marked on their merits.

Contents

Introduction

Cewmlator is a quoted company that manufactures electric cars. All of Cewmlator's products are powered by rechargeable batteries that are linked to electric motors.

You are a senior manager in Cewmlator's finance function. You report directly to the Board and advise on special projects and strategic matters.

Cewmlator's head office is located in Duxland, a developed country that has an active and well-regulated stock exchange. Duxland's currency is the D$. Duxland requires companies to prepare their financial statements in accordance with International Financial Reporting Standards (IFRS).

Electric cars

Electric cars first became commercially available for purchase at the end of the 19th century. They ceased production in the 1920s because technological advances in petrol-powered cars made them more popular. Petrol-powered cars then dominated the market for almost a century because they offered greater convenience in terms of performance and range.

There was very little interest in electric cars throughout the 20th century, although electricity was used to power other types of vehicle in specific applications where those vehicles could be operated close to an electrical source for recharging. For example, forklift trucks, used to move inventory in warehouses, have been powered by electricity for many years. They can operate efficiently indoors without creating harmful emissions that might affect drivers and warehouse staff.

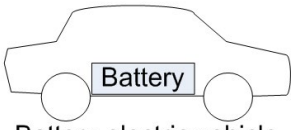
Commercial production of electric cars did not recommence until the 2000s, when a small number of manufacturers launched new models.

Motorists now face a choice between cars that are fitted with internal combustion engines (ICE), fuelled using petrol or diesel, or electric cars that can be driven by electric motors or a combination of ICE and electric motors in various configurations.

Interest in replacing ICE cars with electric cars was driven largely by concerns about the environment. Growing numbers of motorists were interested in switching to electrical power because they perceived it as being cleaner. Governments had also committed themselves to reducing emissions from all sources, including road transport, and many have threatened to introduce legislation that will forbid the sale of new ICE cars after a specific date.

Types of electric car

There are several different types of electric car (EV). Some manufacturers produce both ICE and EV and some produce EV exclusively.



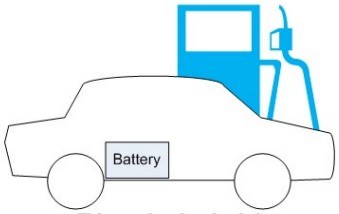
Battery electric vehicle

Battery electric (BEV) cars are powered entirely by electricity. The cars have large batteries that are recharged by plugging them into an electrical source.

BEV cars can be recharged at their drivers' homes, using either a domestic electrical socket or a home charging point. They can also be recharged at public charging points.

BEV cars produce no emissions when they are being driven. Their electric motors are quiet. Unfortunately, they are difficult to recover if they run out of charge when they are not at a recharging point. This is because they cannot be towed and so must be lifted onto a low loader or trailer and carried to the owner's home or a public charging point.

A BEV's range will vary, depending on the size and weight of the car and the capacity of its batteries, as well as the manner in which it is driven. Range can be as little as 160 kilometres or as much as 600 kilometres.



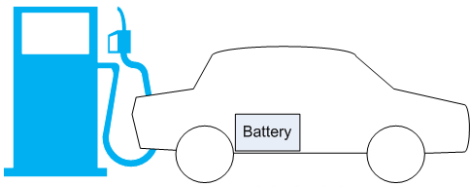
Plug-in hybrid

Plug-in hybrid (PHEV) cars are powered by a combination of both electricity and petrol or diesel, with the driver being able to choose between power sources. They have smaller batteries than BEV cars, but they also have fuel tanks to power their internal combustion engines.

The batteries on PHEV cars are charged by plugging them in to recharge in the same way as for a BEV.

A PHEV may be able to manage 60 kilometres on its battery, which could be sufficient for a daily commute. Drivers may also reserve their battery power for any sections of their journey that involves city driving.

PHEV cars can switch to their internal combustion engines if they run out of battery power and they can be refuelled quickly with petrol or diesel during long journeys. They usually have smaller fuel tanks than those on ICE cars, which means that they have to be refuelled frequently over long distances. There is also a weight penalty associated with carrying both electric and ICE propulsion units.

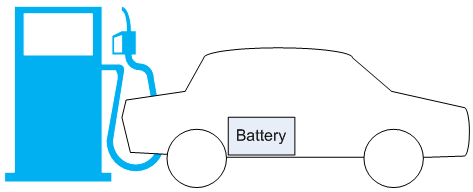


Hybrid

Hybrid (HEV) cars use a petrol or diesel engine to generate electricity, which is used to keep the battery charged while the car is underway. These cars cannot be plugged into external power sources for recharging.

The batteries on HEV cars are too small to enable them to be driven for more than a few kilometres unless the internal combustion engine is running. Those internal combustion engines are used exclusively to generate electricity. HEV cars cannot be driven on petrol or diesel, other than through the electrical power that they generate.

Hybrids produce lower emissions than ICE cars because they use fuel more efficiently.

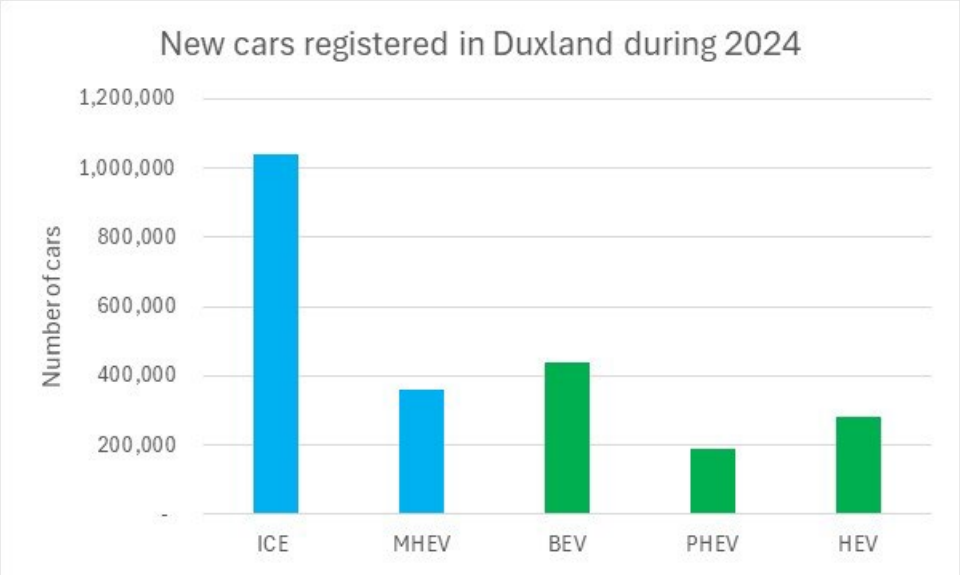


Mild hybrid

Mild hybrid (MHEV) cars have an electric motor that is connected directly to a petrol or diesel engine. The motor assists the internal combustion engine when the car is accelerating, boosting performance and saving fuel compared to an ICE car. The motor assists the engine to turn over when the car is cruising at a steady speed, again using less fuel. The motor reverses and generates electricity when the car is slowing down. That electricity is used to charge the car's battery.

MHEV cars cannot run on their electric motors alone. They use electrical power to supplement the internal combustion engine. Most cars' brakes convert kinetic energy into heat energy, which causes them to slow down. The electric motors in MHEVs convert much of the kinetic energy into electrical energy instead of heat, a process called "regenerative braking". That improves fuel efficiency slightly in comparison to ICE cars, but it is debateable whether MHEVs should be classified as electric cars given that they make very little use of electricity.

ICE cars, excluding MHEV, accounted for 45% of new car registrations in Duxland. If MHEV are classified as ICE, then non-electric cars accounted for 61%.

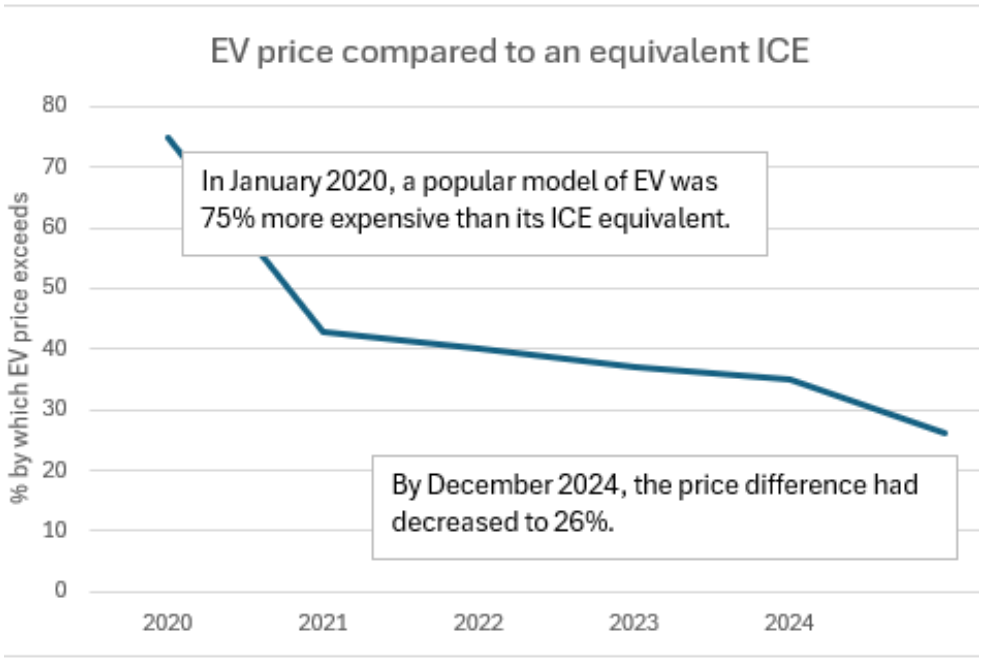


The shift away from ICE

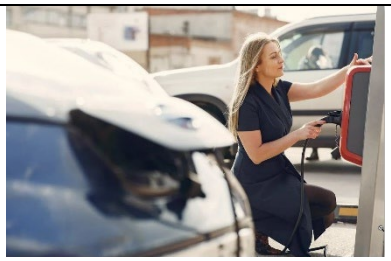
Many governments, including Duxland's, have set targets for a ban on the sale of new ICE cars after 2030. That will not prevent the use of ICE cars purchased prior to the ban, nor will it prevent drivers from buying used ICE cars on the second-hand market.

It had been expected that the prospect of a ban on ICE cars would encourage manufacturers to develop and promote EVs, perhaps ceasing production of ICE cars altogether, long before 2030. That seems unlikely to happen because demand for ICE cars remains high and there is insufficient demand for EVs to bring about a more rapid switch. Electric cars raise issues that many motorists regard as serious disadvantages compared to ICE.

Purchase price	EVs are generally more expensive than ICE cars. Manufacturers must recover the development costs of new models of EV. The cars themselves often require additional components. Batteries are costly and some forms of EV require both electric motors and internal combustion engines. The price differential between EV and ICE cars has fallen, but it remains significant.



Range and charging	The average car journey in Duxland is 15 kilometres. Only 1% of journeys exceed 150 kilometres. Despite that, many motorists are nervous about switching to BEV cars because of concerns about range. Car manufacturers advertise the ranges of their cars on fully charged batteries, but range can be affected by driving styles and road conditions. An electric car may be suitable for a motorist's daily commute, but they could prove impractical for longer journeys.  Arrangements for charging BEV and PHEV cars can be complicated. Batteries need to be plugged into an electrical power source using a cable. That is rarely a problem for owners whose homes are at ground level and have off-street parking such as a garage or drive that allows for a connection to be made. Home charging can be carried out by plugging the car into a normal domestic electrical socket, but charging would be slow. Alternatively, motorists can install rapid chargers that enables them to charge their cars much more quickly. A rapid charger costs roughly D$1,500 to install, although there can be additional costs if their home electricity supply requires modification to deal with the additional current drawn by the charger. For most motorists, the cost of charging an EV at home will be less than the cost of petrol or diesel fuel for a typical ICE car.



Motorists who do not have off-street parking will have to recharge their BEV and PHEV cars at public charging points. These can be found in car parks, motorway service stations and other public spaces that are accessible to cars.

The use of public charging points is more expensive than recharging at home. Running a BEV or PHEV using public charging points can cost more than petrol or diesel for a comparable ICE.

There are concerns about the availability of public charging points. There tend to be plenty in areas of high demand, but access can be limited in areas where none of the companies believe that there would be sufficient revenue to justify the cost of installing charging points.

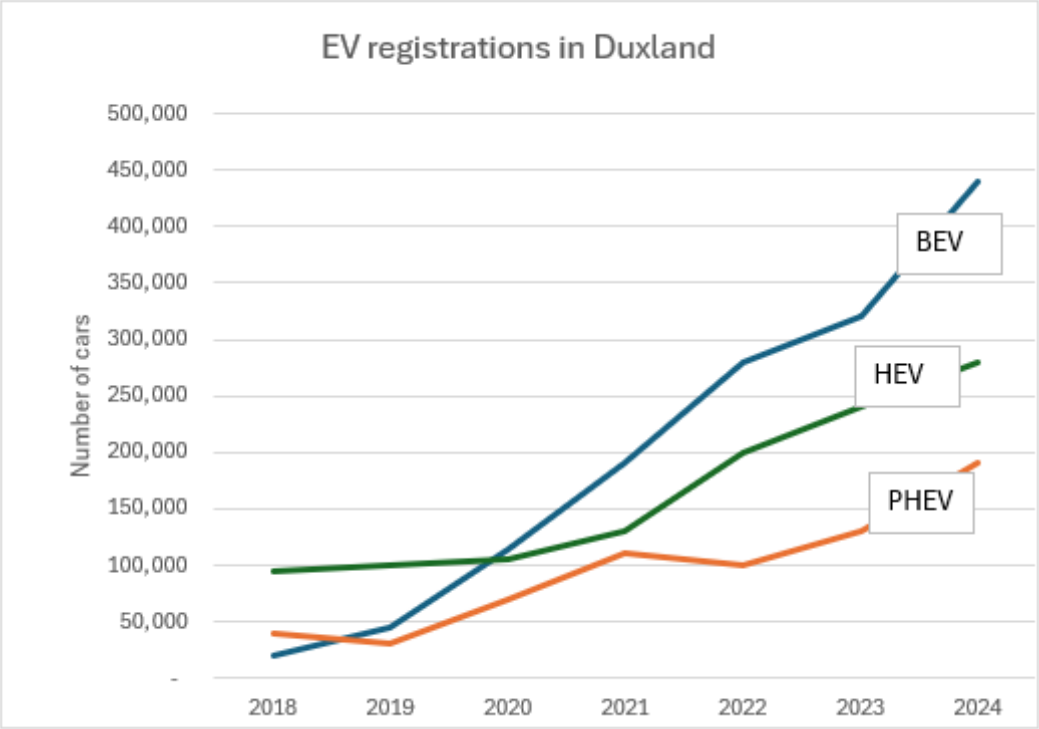
There are two main categories of public charging points: slow/fast and rapid/ultra rapid. Slow/fast points require 7-9 hours to charge an EV battery from 20% to 80% full. Rapid/ultra rapid points can achieve this in as little as 25 minutes.

80% of BEV owners have home chargers. Most of those tend to use their home chargers, although a significant minority of owners are forced to use public charging points for 20% to 50% of their needs. The remaining 20% of owners must rely entirely on public charging points.

Rechargeable batteries tend to degrade over time, which means that cars' ranges tend to decrease over time. That raises concerns about the resale value of EVs whose batteries have degraded to the point where they can no longer offer an acceptable range.

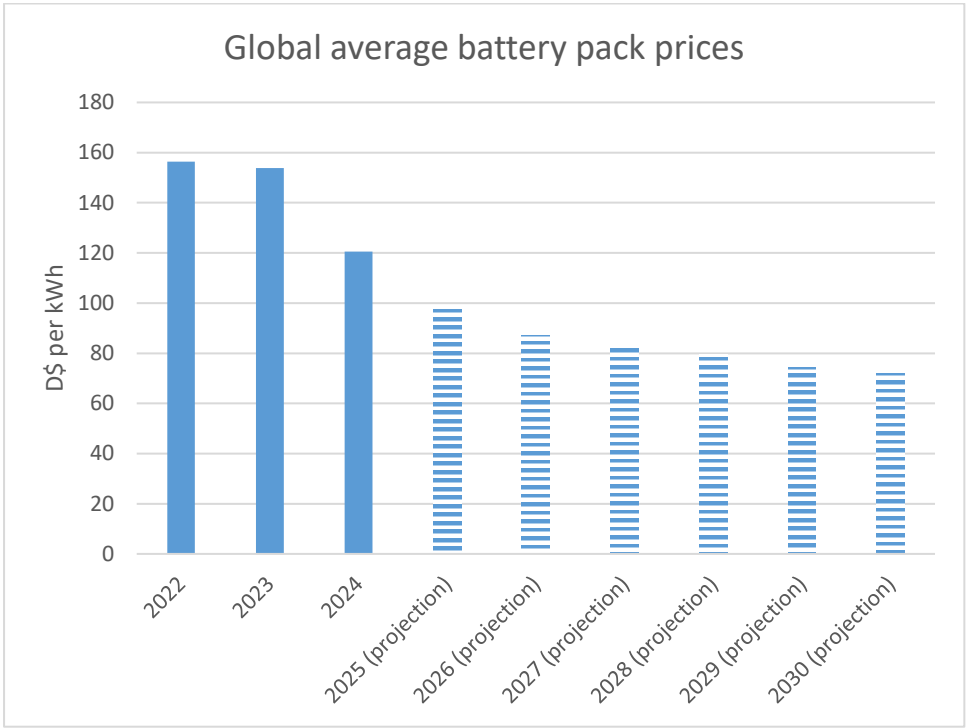
Electric car market

Despite their potential drawbacks, sales of EV have increased rapidly.



Globally, 17 million EVs were sold in 2024. That constituted 25% of new car sales worldwide. The market share of EVs varies between countries, ranging from 12% to 85%. The global EV market is valued at D$250 billion.

It is hoped that demand will be stimulated over time because of reductions in production costs. For example, developments in the chemistry of EV battery packs are expected to increase the range of EVs and reduce the cost of making batteries.



Most car manufacturers have a long history of making ICE cars. Some, including Cewmlator, have ceased production of ICE in order to concentrate on EV.

The global market for EVs is dominated by three companies: Attomm, Dilson and Cewmlator. All three focus on EVs. Attomm and Cewmlator produce only BEVs. Dilson produces both BEV and PHEV cars.

Most of the smaller companies in the EV top 10 produce a range of different types of car, including ICE and MHEV, as well as EVs. Some smaller companies manufacture HEVs.

	% share of EV market by revenue
Attomm	16.7
Dilson	15.9
Cewmlator	15.4
Elchro	6.4
Gorriss	5.2
Khaptro	4.4
Laypout	3.6
Novtin	2.4
Runbort	2.2
Travtorr	1.9
Others	25.9
	100.0

Cewmlator

Cewmlator was established in 1952, manufacturing a range of ICE cars. The company was quoted on the Duxland stock exchange in 1968.

Cewmlator has always focussed on mid-market cars that are attractive to drivers, while offering value for money. The company has always been innovative in terms of introducing new technology into its models and its manufacturing processes. Cewmlator cars are designed to be enjoyable and exciting to drive, while ensuring the safety of its drivers and their passengers.

The company launched its first EV in 2012. This was an all-electric vehicle that offered a range of 219 kilometres. Cewmlator was one of the first manufacturers to sell EVs and the company quickly established a market niche, consisting primarily of customers who wished to drive sustainable vehicles that did not require fossil fuels.

By 2020, Cewmlator had phased out ICE cars, replacing them with BEV models that are designed to be the best in their respective classes in terms of range, performance and value for money.

Cewmlator Tynie 	Tynie is a small BEV, designed for urban commuting. It can carry two people and a limited amount of luggage. Tynie's range between charges is 143 kilometres.
Cewmlator Trapp 	Trapp is a small BEV that offers versatility without compromising on performance. It has room for five people and a large boot. The rear seats can fold down to create additional boot space. Trapp offers sporty performance on the open road and is small enough to handle urban driving with ease.

	Trapp's range between charges is 254 kilometres.
Cewmlator Twistx 	Twistx is a BEV sport utility vehicle, designed to suit the needs of a typical family. It can carry five adults in comfort and has a very large boot. The folding rear seats enable the car to carry a large amount of cargo when required. Twistx's range between charges is 375 kilometres.
Cewmlator Skkorch 	Skkorch is a BEV sports car. It has two seats and room in the boot for a weekend's worth of luggage. Skkorch can accelerate from 0 to 100 kilometres per hour in 3.1 seconds. Skkorch's range between charges is 400 kilometres.

All of Cewmlator's models are competitive within their market segments. For example, each model is in the top three within its segment for range. Cewmlator has a reputation for sound build quality and innovation. That reputation for quality is backed up by Cewmlator's warranty, which guarantees the car, including its battery, for 8 years or 160,000 kilometres. Any manufacturing defects that arise while the warranty is active will be corrected at a Cewmlator dealership free of charge. Batteries are replaced under warranty if the car's range decreases by 20% or more within 8 years from the date of purchase or 160,000 kilometres. The warranty cover on the battery is conditional on the car having been maintained and operated in accordance with the advice provided in the owner's handbook.

Almost every vehicle comes in several different versions. Each version, or trim, offers its own variety of features and equipment. Each of Cewmlator's models can be purchased in three trim levels:

- "Base" cars are designed to be as cheap as possible, with no unnecessary equipment or features. Some customers choose this level of trim to save money. Others do so in order to reduce weight and so extend range. For example, all Base cars come with fabric seats and thin carpets, which are lighter than the seats and carpets in more luxurious models. Base trim Tynie and Trapp cars are not fitted with sound systems, which consume electricity when they are in use. This trim is the most popular for Tynie, which is intended for short journeys.
- "Luxe" cars have better quality trim and additional features compared to Base. For example, Luxe cars have satellite navigation systems. Trapp and Twistx in Luxe trim have superior folding rear seats that offer a choice between three passengers and no additional boot space, two passengers and some additional boot space or one passenger and substantial additional boot space. Base trim Trapp and Twistx have rear seats that can only be folded down as a complete unit, with no scope for a more versatile seating arrangement. Luxe trim is the most popular for Trapp and Twistx because buyers of these models are prepared to pay a little more for additional comfort but are reluctant to pay for the most expensive trim.

- "Grande Luxe" cars offer a further step up in terms of trim and features compared to Luxe. Cars with this trim have leather seats and thick carpets. They have superior sound systems and additional driver features, such as reversing cameras that assist when parking. Most Skkorch cars are sold in Grande Luxe trim. The car is marketed as a luxury model that offers a superb driving experience and so customers tend to pay as much as

necessary to have all of the features that are available. Customers are also prepared to sacrifice a small amount of range in order to have the highest possible trim.

There are six Cewmlator factories, two in Duxland and one in each of four different countries, as shown below:

Factory location	Product
• Duxland Northern	Twistx cars
• Duxland Central	Skkorch cars
• Eastland	Batteries
• Farland	Electric motors
• Winland	Trapp cars
• Groveland	Tynie cars

All of Cewmlator's cars are powered by lithium batteries. The company has a major factory in Eastland that produces the batteries for all of its cars. Batteries for electric cars are large and heavy items that are designed and constructed to be built into the cars themselves. Each model of car requires its own specific size and shape of battery. Mining and transporting lithium for batteries is a significant source of the emissions associated with manufacturing EVs. Cewmlator's focus on BEVs means that its batteries are large, making it a major user of lithium and the other metals used in batteries.

Cewmlator's Farland factory produces all of the company's electric motors. Each model of car requires a motor that fits into the overall design and has sufficient power to achieve a satisfactory performance in relation to its size, weight and class.

Each model of car is manufactured at a factory that is configured to build a specific model. The factories are highly automated, which is common practice across the whole of the motor industry.

Particular care must be taken in designing and constructing electric cars because their bodies must be built around the batteries. Batteries cannot be removed from cars once they have been built, unless the car is completely dismantled. Rechargeable batteries can produce very high currents, which can cause electrical fires in the event of a short circuit. In addition to the potential fire hazard, it is difficult to rectify any errors in production.

Cewmlator's cars are sold through a worldwide network of 4,600 dealerships. These are independent businesses that are authorised to sell and to maintain Cewmlator cars.

Each dealership receives an allocation of cars and must maintain a satisfactory performance in terms of sales and customer feedback.

Each dealership provides:

- A showroom that has space to enable customers to see the cars that they are interested in. The dealership must also have space to accommodate demonstrator cars that are available to offer customers test drives under the supervision of sales staff.
- A team of sales advisers who can assist customers in choosing a car from the Cewmlator range.
- A workshop that has the necessary equipment and staff to maintain and repair Cewmlator cars.

Extracts from Cewmlator's annual report

Cewmlator's mission, vision and values

Our mission

Cewmlator's mission is to make the world a better place by providing desirable and sustainable motor vehicles.

Our vision

Cewmlator vision is to be the leading manufacturer of sustainable motor vehicles.

Our values

- Cewmlator is constantly innovating.
- Cewmlator is committed to enhancing sustainability.
- Cewmlator offers the highest quality in its products.
- Cewmlator pays attention to the needs and desires of its customers.

Cewmlator's Board of Directors

Suren Pillay, Non-Executive Chair

Suren had a successful legal career. He joined one of Duxland's leading commercial law firms after graduating with a law degree. He specialised in mergers and acquisitions and has been involved in the negotiation of many major contracts. Suren was promoted to partner at a relatively young age and served as the firm's managing partner before retiring.

Suren serves on the boards of several charities, most of which focus on environmental issues.

Suren joined Cewmlator's Board as Non-Executive Chair in 2023.

Ke Xue, Chief Executive Officer (CEO)

Ke has a BSc degree in chemistry. She worked as a research assistant after graduating but decided to pursue a career in industry. She has worked for several major manufacturing companies, including 5 years with a lithium mining company.

Ke joined Cewmlator in 2006, initially as a senior manager in research and development. She spent five years in charge of Cewmlator's Winland factory before joining the Board as Operations Director in 2018.

Ke was promoted to CEO in 2023.

Edwin Mit, Operations Director

Edwin has a Bachelor of Engineering degree in mechanical engineering and a Master of Engineering degree in design engineering. He had a varied career working for several leading manufacturing companies. He spent 6 years as operations director of a company that makes gearboxes for ICE cars.

Edwin joined Cewmlator's Board as Operations Director in 2020.

Professor Anna Pohl, Research and Development Director

Anna completed a doctorate in aeronautical engineering before taking up an appointment as a lecturer at the University of Central City. Her research focussed on designing vehicles to minimise wind resistance and so reduce fuel consumption. She had a successful academic career, being promoted to Professor in 2004.

Anna was recruited by a major motor manufacturer to take charge of their research activities in 2012. She was promoted to the manufacturer's board in 2016.

Anna joined Cewmlator as Research and Development Director in 2021.

Suhas Pathak, Finance Director

Suhas has a degree in economics and is a professionally qualified accountant. He completed his professional training while working for a major chain of car dealerships, initially working within a branch as assistant branch accountant before joining the Finance Department at the company's head office. He reached the rank of senior finance manager before leaving to join Cewmlator as Group Treasurer in 2015.

Suhas was promoted to Finance Director in 2019.

Stella Freeman, Sales Director

Stella has had extensive experience in sales. She studied for a diploma in marketing after leaving school before joining a chain of supermarkets as a sales analyst. She has since held several increasingly senior roles with a variety of major companies. Stella joined Cewmlator in 2020, initially to assist in the development of online marketing for the Group.

Stella joined Cewmlator's Board as Sales Director in 2023.

Professor Salem Hegazy, Senior Independent Director

Salem spent most of his career working in a variety of roles at Capital City University. He studied electrical engineering there before completing a doctorate. He taught at the University for the next 15 years, during which time he was promoted to Professor. Salem was Dean of the Faculty of Engineering for 9 years before he retired from full-time academic life. He remains active in education, chairing the Education Committee of the Duxland Institute of Electrical Engineers.

Salem was appointed to Cewmlator's Board as Senior Independent Director in 2021.

Professor Uzma Mussarat, Independent Non-Executive Director

Uzma had a career in journalism, specialising in business news. She spent 20 years in print journalism before moving to television news. Latterly, she was the Business Editor for the Duxland Television channel. Uzma received several prestigious awards in the course of her career. She is employed in a part-time capacity as a visiting professor of journalism at Capital City University.

Uzma joined Cewmlator's Board as an independent non-executive director in 2024.

Stamatios Katsorchis, Independent Non-Executive Director

Stamatios qualified as a lawyer before entering politics. He was elected as a member of Duxland's parliament in 2001. He was re-elected five times but was defeated in 2021. Stamatios served on several parliamentary committees while in office. These focussed on issues relating to sustainability. Stamatios chairs a major charity that promotes sustainable business practices.

Stamatios joined Cewmlator's Board as an independent non-executive director in 2025.

Board responsibilities

Ke Xue Chief Executive Officer			
Edwin Mit Operations Director	Anna Pohl Research and Development Director	Suhas Pathak Finance Director	Stella Freeman Sales Director
• Factory operations • Human resource management • Health and safety	• Research • Product development • Sustainability	• Financial reporting • Management accounting • Treasury	• Marketing • Dealership relations • Customer service • Public relations

	Board committees			
	Audit	Risk and CSR	Remuneration	Nomination
Suren Pillay Non-Executive Chair	♦	♦		♦
Salem Hegazy Senior Independent Director	♦		♦	♦
Uzma Mussarat Independent Non-Executive Director	♦	♦	♦	
Stamatios Katsorchis Independent Non-Executive Director		♦	♦	♦

Cewmlator's Chief Internal Auditor reports to the convener of the Audit Committee.

Cewmlator's principal risks

Risk impact	Risk mitigation
Cewmlator is exposed to the threat of increased competition, particularly from manufacturers of ICE and hybrid cars that might decide to focus on BEV cars instead.	Cewmlator's Board pays close attention to product development. There is a full-time director of research and development. Cewmlator is constantly innovating to ensure that its product range remains attractive to customers.
Consumer preferences in relation to BEVs can change over time, particularly with regard to the availability of charging infrastructure and the capabilities of competing types of car.	Cewmlator works closely with regulators and the providers of charging facilities to encourage the development of infrastructure. The company also works hard to reinforce the message that BEV is the cleanest and most sustainable technology for cars.
Government policies relating to emissions and sustainability are constantly changing. These can affect demand for ICE and hybrid cars.	Cewmlator works closely with government agencies in order to remain informed about plans and proposals. Cewmlator takes care to ensure that government decision makers are aware of the economic and environmental impacts of their proposals.
Demand for Cewmlator's products can be affected by economic factors, such as interest rates and employment concerns. Adverse changes in the economy might lead customers to delay purchasing decisions or to buy cheaper alternatives to BEVs.	Cewmlator pays close attention to movements in relevant economic variables. These are considered when planning production. Cewmlator manages costs carefully in order to ensure that it offers value for money. The company also focusses on the benefits of owning and driving its cars so that buyers are prepared to meet the costs of ownership.
Cewmlator has a complicated supply chain, particularly with regard to the lithium that is used to make its car batteries. Any interruption to that supply chain could severely disrupt production.	Cewmlator maintains the closest possible relationship with its suppliers, whom it treats well in order to obtain priority in the event of shortages of materials or components. Cewmlator maintains inventories of critical materials and components in order to minimise the impact of any shortages.
Cewmlator operates on a global basis, with factories in several countries and sales through a global network of dealerships. The company is exposed to the impact of currency movements.	Cewmlator's Treasury Department is well resourced, with skilled leadership and access to all relevant data sources. The Board pays close attention to the Department's recommendations relating to both the passive and active management of currency risks.

Cewmlator's financial statements

Cewmlator Group
Consolidated statement of profit or loss
for the year ended 30 September

	2025 D$ billion	2024 D$ billion
Revenue	38.2	31.8
Cost of goods sold	(28.9)	(25.5)
Gross profit	9.3	6.3
Selling and administration	(1.2)	(1.1)
Research	(2.5)	(2.2)
Operating profit	5.6	3.0
Finance costs	(1.6)	(1.5)
	4.0	1.5
Tax expense	(0.9)	(0.3)
Profit for the year	3.1	1.2

Cewmlator Group
Consolidated statement of changes in equity
for the year ended 30 September 2025

	Share capital D$ billion	Currency reserve D$ billion	Retained earnings D$ billion	Total D$ billion
Opening balance	5.0	1.1	19.6	25.7
Currency gain		0.3		0.3
Profit for year			3.1	3.1
Dividend			(0.4)	(0.4)
Closing balance	5.0	1.4	22.3	28.7

Cewmlator Group
Consolidated statement of financial position
as at 30 September

	2025 D$ billion	2024 D$ billion
Assets		
Non-current assets		
Property, plant and equipment	27.5	25.0
Goodwill	5.3	5.3
Other intangible assets	7.4	6.3
	40.2	36.6
Current assets		
Inventory	5.3	4.7
Trade receivables	3.3	2.7
Bank	3.7	3.1
	12.3	10.5
Total assets	52.5	47.1
Equity		
Share capital	5.0	5.0
Currency reserve	1.4	1.1
Retained earnings	22.3	19.6
	28.7	25.7
Liabilities		
Non-current liabilities		
Borrowings	20.0	18.5
Current liabilities		
Trade payables	2.8	2.5
Tax liability	1.0	0.4
	3.8	2.9
Total equity and liabilities	52.5	47.1

Extract from sustainability report

<table>
<tr><td>Governance</td><td>Cewmlator's directors receive a report on sustainability at each Board meeting.

The Board Risk and CSR Committee is charged with monitoring sustainability issues related to operations.</td></tr>
<tr><td>Strategy</td><td>Cewmlator focusses primarily on the needs of the communities who are affected by the company's manufacturing processes and the effects of its products. That focus is at the heart of the company's mission statement.

Cewmlator also takes care to ensure that customers can be happy to own and use its products, knowing that their transportation needs are being met in a sustainable manner.</td></tr>
<tr><td>Risk management</td><td>Cewmlator works closely with governments in all key markets to ensure that there are no major surprises in relation to regulations relating to the manufacture and operation of electric vehicles.

Cewmlator acknowledges that the manufacture of an EV causes greater emissions than the manufacture of an equivalent ICE. This is mainly due to the need to make batteries. Cewmlator is working to mitigate the associated environmental concerns designing more sustainable batteries that have longer lives and that consume fewer scare resources over their lives.</td></tr>
<tr><td>Metrics</td><td>Cewmlator pays close attention to its consumption of energy and the associated emissions, including CO2e (carbon dioxide equivalents), in its manufacturing processes.

The company also tracks production waste.

<table>
<tr><th></th><th></th><th>2024</th><th>2023</th></tr>
<tr><td>Total electricity consumption</td><td>Millions of kWh</td><td>12.8</td><td>8.4</td></tr>
<tr><td>Intensity of CO2e emissions</td><td>Tonnes/million D$ of revenue</td><td>226.3</td><td>254.4</td></tr>
<tr><td>Intensity of manufacturing waste</td><td>Tonnes/million D$ of revenue</td><td>30.6</td><td>32.4</td></tr>
</table>
</td></tr>
</table>

Extract from competitor's financial statements

Attomm is a direct competitor to Cewmlator. It has a slightly higher revenue. Its product range consists of BEVs.

Attomm is based in Duxland. It is quoted on the Duxlandian stock exchange.

Attomm Group
Consolidated statement of profit or loss
for the year ended 30 September

	2025 D$ billion	2024 D$ billion
Revenue	41.9	36.5
Cost of goods sold	(32.3)	(29.2)
Gross profit	9.6	7.3
Selling and administration	(1.4)	(1.3)
Research	(3.1)	(2.9)
Operating profit	5.1	3.1
Finance costs	(2.0)	(1.8)
	3.1	1.3
Tax expense	(0.7)	(0.3)
Profit for the year	2.4	1.0

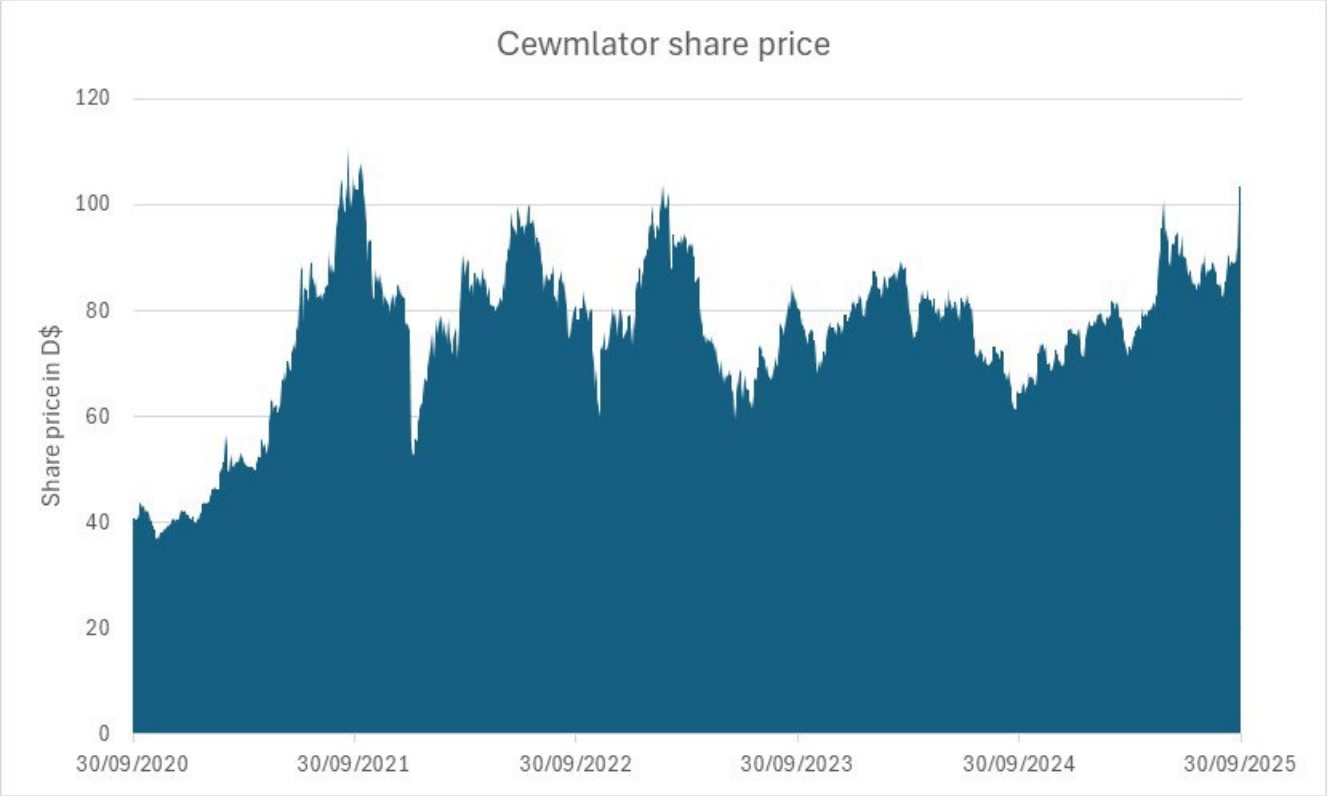
Attomm Group
Consolidated statement of changes in equity
for the year ended 30 September 2025

	Share capital D$ billion	Currency reserve D$ billion	Retained earnings D$ billion	Total D$ billion
Opening balance	8.0	1.9	20.8	30.7
Currency gain		0.5		0.5
Profit for year			2.4	2.4
Dividend			(0.3)	(0.3)
Closing balance	8.0	2.4	22.9	33.3

Attomm Group
Consolidated statement of financial position
as at 30 September

	2025 D$ billion	2024 D$ billion
Assets		
Non-current assets		
Property, plant and equipment	33.2	30.2
Goodwill	7.1	7.1
Other intangible assets	8.2	7.0
	48.5	44.3
Current assets		
Inventory	5.9	5.3
Trade receivables	3.6	3.1
Bank	4.1	3.1
	13.6	11.5
Total assets	62.1	55.8
Equity		
Share capital	8.0	8.0
Currency reserve	2.4	1.9
Retained earnings	22.9	20.8
	33.3	30.7
Liabilities		
Non-current liabilities		
Borrowings	25.0	22.0
Current liabilities		
Trade payables	3.0	2.7
Tax liability	0.8	0.4
	3.8	3.1
Total equity and liabilities	62.1	55.8

Share price history



Cewmlator's beta is 0.56.

News stories

Happy Comic

Readers' questions

Question: Where are the batteries in an electric car?

Martha, age 11

Answer: It depends on the type of electric car. Battery electric cars (BEV) need to have very big batteries because they are totally dependent upon battery power.

The battery in most BEVs is built into the floor, underneath the seats. In most BEVs, the battery consists of up to 800 individual cells that are held inside a sealed box. The cells are connected together so that they can all be charged simultaneously or used to power the car's motor (or motors).

The sealed box makes it impossible to see the batteries. It is sealed because the batteries create a voltage of at least 400 volts, which is high enough to be dangerous if the batteries are handled carelessly and without the correct equipment.

Question: How do rechargeable batteries work?

Noah, age 11

Answer: All batteries consist of three basic parts: two metal electrodes (the "cathode" and the "anode") and a liquid or paste called the "electrolyte", which separates the two electrodes. Connecting the cathode and the anode from the outside of the battery (perhaps by switching on the power in an electric car) causes a flow of electrons, which is just another term for electricity.

The external flow of electrons is driven by a flow of positively charged ions from the anode to the cathode. The ions are created by a chemical reaction inside the battery and they flow through the electrolyte. The chemical reaction inside the battery continues until the electrodes can no longer create or accept the positive ions.

Rechargeable batteries can be restored by applying a voltage to the cathode and anode that reverses the flow and recharges the battery.

Question: Is it true that EVs are faster than ICE cars?

Ryan, age 13

Answer: It is true that *some* EVs are faster than ICE. That is partly because of the way that electric motors perform compared to petrol and diesel. Electric motors can produce a lot of torque, even at low speeds. That means that BEVs can accelerate rapidly, even from a standstill. ICE cars depend a lot on changing gears to get them started and to accelerate to their top speeds.

PHEVs offer drivers a choice between electric and petrol or diesel. But most PHEVs can use both at once, which gives a really powerful combination.

The performance of all modern cars, whether ICE or EV, is controlled by computers that manage the amount of power that is available to the driver. These computers are called "electronic control units" or "ECUs". Most cars could be even faster if the software in their ECUs could be "tweaked" or altered. Tweaking the ECUs to increase the power available to cars' drivers would increase the fuel consumption of ICE cars and reduce the range of EVs.

Question: The satellite navigation system in my mum's car warns her about problems such as traffic jams on the road ahead. How does her car know that the road is busy?

Kuldip, age 11

Answer: When your mum bought her car, she almost certainly linked her smartphone to the car's wireless bluetooth system. That connection has a number of uses. The connection enables the car to receive updates about traffic conditions on the road ahead, enabling the satnav to recommend more efficient routes that will get her to her destination quickly and safely.

Car manufacturers also use these connections to update the software that manages the car's systems, such as the engine or electric motor. The car manufacturer might wish to change the software to improve the car's performance, perhaps improving the efficiency of the motor in an EV so that its range is extended. These updates are downloaded while the car is being driven, but they are not processed until the car has stopped and been switched off.

Most modern cars are in frequent communication with the manufacturers' data centres, either receiving information such as the traffic reports you asked about or transmitting information, such as the frequency and duration of journeys. This communication occurs automatically, whenever the car is being driven.

Question: What happens to old EVs? Are they recycled to make new ones?

Angela, age 12

Answer: Sadly, it is difficult to recycle EVs. ICE cars contain a great deal of iron and steel that can be recycled very easily. EVs consist largely of plastics and electronic waste that can be difficult to recover efficiently.

Far worse than that, the batteries in an electric car are made from a variety of metals such as nickel, cobalt and lithium that can be difficult to recover. That is unfortunate because the growing popularity of EVs might lead to a scarcity of those metals. There is also an

environmental concern with EV batteries. The manufacture of an EV is responsible for far more emissions than the manufacture of an ICE car, largely because of the battery. The battery is responsible for 45% of the emissions from an EV's manufacture and that is the part that is most difficult to recycle.

It is possible to recover metals, including nickel and cobalt, from old EV batteries by heating them to temperatures of 1,600 degrees Celsius. Unfortunately, that destroys the lithium in the batteries in addition to consuming a significant amount of energy.

Alternatively, it is possible to recover the lithium by crushing old batteries and treating the resulting mass with chemical solvents. Unfortunately, the crushing process uses a great deal of energy and the solvents are highly toxic, which can create environmental problems when they are disposed of after the lithium has been extracted.

Duxland Daily

Local governments reluctant to commit to the installation of public EV charging points

Many motorists are reluctant to switch from cars with internal combustion engines to EVs because of concerns about the range of BEVs and PHEVs (when using battery power) and the availability of charging points when their batteries require a top up. Many motorists cannot install chargers by their homes because they do not have access to off-street parking and so must rely on the availability of public charging points that enable them to keep their batteries charged.

Some drivers are keen to encourage the local governments responsible for the services in their towns and cities to provide charging points. They argue that the cost of doing so would not be excessive because it is possible to buy and install a domestic charger in a drive or garage for D$1,500. Sadly, the cost of a rapid charger that is sufficiently robust for use by the public is rather more than that:

	D$
Charger unit	15,000
Installation	5,000
Permits and approvals	4,000
Connection to electricity supply	20,000
Project management	16,000
Total	60,000

It may be some time before there is a public charging point at the end of your street.

Duxland Daily

Should you worry about battery degradation in your EV?

One of the features of rechargeable batteries is that their ability to hold a charge degrades over time. That is true of all rechargeable batteries, including those in mobile phones and laptop computers, but it is a particular concern for the owners of electric vehicles (EVs).

The most obvious sign of degradation is that the car's range decreases as it gets older, but degradation can also lead to longer charging times. Replacement batteries can cost D$20,000 or more, which is a concern for owners. It may be more cost-effective to scrap an EV that is otherwise in good condition rather than replace its battery.

Manufacturers guarantee the batteries in their EVs. The terms of those guarantees vary between manufacturers, but most agree to replace a battery if the EV's range decreases by 30% or more within 8 years of ownership. That suggests that degradation could be a problem for many owners despite the guarantee. For example, a new Attomm Slice has a range of 280 kilometres, but that could decrease to as little as 196 kilometres without being eligible for a replacement under guarantee. The range could decrease even further after the 8-year guarantee period has expired.

Duxland Daily

Where should you recharge your EV?

There are almost 80,000 EV charging points in Duxland, but they are owned and operated by 12 different companies. Some of those specialise in on-street charging in residential areas to cater for EV owners who cannot install charging points at home. Others focus on motorway service stations to attract motorists who are on long journeys. Some have a nationwide coverage across Duxland, while others prefer to have a regional presence.

If you wish to use any given company's charging points, then all you have to do is visit its website and create an account. That will require you to input your credit card details so that the company can take payment for any electricity that you use, but their systems are secure so you should be safe. Once registered, you can download the company's app onto your smartphone, which will enable you to scan the QR code on any of the company's charging points. Scanning the QR code activates the charging point, allowing you to plug in your car and recharge its battery. Payment will be taken from your credit card automatically when you unplug your car.

You can register with as many of these companies as you wish and can download multiple apps. It might be excessive to have all 12, but there is nothing to prevent that if you wish to have access to them all. There are no fees for having accounts.

The companies have different pricing structures. Prices in city centres tend to be lower because of competition, while those on motorways tend to be higher because drivers will pay more to be sure of completing their journeys.