

## THEMATIC STEM D E B A T E

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Year 8 students – 29<sup>th</sup> November 2023

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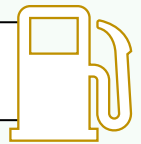
# Electric Vehicles: a must or a choice?



## Some questions to set you thinking!

### Internal Combustion Engines

- Is it right to question the use of combustion engine vehicles?
- Weren't these suitable for the past 100 years or so?



### Alternatives

- What are the alternatives, we can consider?
- What are the pros and cons of hybrids?
- Are biofuels or hydrogen-powered engines good enough?
- What about developing solar-powered cars?
- Or are Electric Vehicles (EVs) the only viable option?
- What makes them a good alternative?
- What makes them a bad alternative?

### Science

- What is the science behind EV's?
- What is the ultimate source of energy they use?
- Are there any limitations in the EV technologies used to date?
- What resources are needed to build an EV?
- Are there any environmental costs?
- What factors affect the efficiency of EV's?
- What voltage is required to charge a car efficiently at home and how does this affect families in different countries?
- How developed is the science of battery-charging solutions?

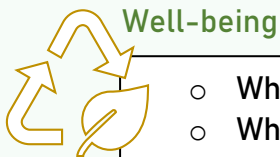


### Local Context

- Are EVs suitable for Malta's context, such as size and climate?
- How easy / difficult is it for Malta to shift to EVs?
- Is it the right time?
- Are EV's promoted and incentivised locally?

## Stakeholders

- What are scientists saying?
- What do International, European, and local policymakers have to say?
- What are other countries doing?
- What are NGOs saying?
- Are car-manufacturers on board?
- And what about consumers' opinions?

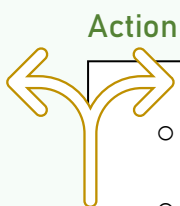


## Well-being

- What is the positive and negative environmental impact of EVs?
- What is the impact on noise pollution?
- What is the impact on people's health?
- What is the economic impact on families?

## Statistics

- What are numbers showing us?
- Which countries are leading the way?
- Which ones are considering a different option?
- What are their experiences? Is it all positive?



## Action

- Is there a leader / scientist / politician / activist, whether pro or against EVs with whom you share their point of view?
- Imagine you are politician or member of parliament. What proposals would you make or what decisions would you take?

Whilst you are encouraged to do your own research, below you will find a few suggested readings and videos to get you started.



## Read / Aqra:

### Electric vehicle facts for kids

[https://kids.kiddle.co/Electric\\_vehicle](https://kids.kiddle.co/Electric_vehicle)

### Kids are nagging their parents to buy electric cars, research reveals

<https://www.drive.com.au/news/kids-are-nagging-their-parents-to-buy-electric-cars-research-reveals/>

### Electric Cars: The Pros and Cons

<https://www.mossy.earth/guides/energy/electric-cars-pros-and-cons>

### The International Council on Clean Transportation

<https://theicct.org/>

### Transport and Environment Report 2022

<https://www.eea.europa.eu/publications/transport-and-environment-report-2022>

### CO<sub>2</sub> emission performance standards for cars and vans

[https://climate.ec.europa.eu/eu-action/transport/road-transport-reducing-co2-emissions-vehicles/co2-emission-performance-standards-cars-and-vans\\_en](https://climate.ec.europa.eu/eu-action/transport/road-transport-reducing-co2-emissions-vehicles/co2-emission-performance-standards-cars-and-vans_en)

### An Electric Future

<https://www.timeforkids.com/g56/an-electric-future-2/?rl=en-810>

### Should All Cars Be Electric?

<https://www.timeforkids.com/g56/should-all-cars-be-electric/>

### Seven disadvantages of electric cars

<https://www.carwow.co.uk/guides/choosing/disadvantages-of-electric-cars#gref>

### How Green are Electric Vehicles?

<https://www.nytimes.com/2021/03/02/climate/electric-vehicles-environment.html>  
<https://energysavingtrust.org.uk/advice/how-green-are-electric-vehicles/>

### In Norway, the EV future has already arrived.

<https://www.deccanherald.com/opinion/in-norway-the-ev-future-has-already-arrived-1217304.html>

## These Countries Are Adopting Electric Vehicles the Fastest

[https://www.wri.org/insights/countries-adopting-electric-vehicles-fastest#:~:text=The%20top%205%20countries%20with,%25\)%2C%20according%20to%20our%20analysis.](https://www.wri.org/insights/countries-adopting-electric-vehicles-fastest#:~:text=The%20top%205%20countries%20with,%25)%2C%20according%20to%20our%20analysis.)

## Karozzi tal-linja elettriċi godda mnedija mill-Malta Public Transport

<https://www.publictransport.com.mt/mt/news-details/new-electric-buses-launched-by-malta-public-transport>

## Il-karozzi elettriċi għaliex huma alternattivi tajbin għall-vetturi ta' kombustjoni konvenzjonali?

<https://www.eea.europa.eu/mt/help/mistogsijiet-frekwenti-faqs/il-karozzi-elettrici-ghaliex-huma>

## “Fis-snin li ġejjin, il-vetturi elettriċi mistennija jorħsu” – inġinier

<https://tvmnews.mt/news/fis-snin-li-gejjin-il-vetturi-elettrici-mistennija-jorhsu-inginier/>

## Il-vetturi elettriċi jizdiedu bi 17.8% fit-tieni kwart tas-sena

<https://tvmnews.mt/news/il-vetturi-elettrici-jizdiedu-bi-17-8-fit-tieni-kwart-tas-sena/>

## Vetturi bil-Mutur: It-Tieni Kwart tal-2023

<https://nso.gov.mt/mt/motor-vehicles-q2-2023/>



## Watch / Ara:

### Karozzi Elettriċi vs Tal-Fjuwil - X'iħammeġ L-aktar!?

<https://www.youtube.com/watch?v=i0oXV2BukKE>

### EV vs Gas for Teachers & Kids

[https://www.youtube.com/watch?v=P2x\\_iZWTotk](https://www.youtube.com/watch?v=P2x_iZWTotk)

### How green are EVs?

<https://www.youtube.com/watch?v=Fqk0rLJn05Q&t=236s>

### The Honest Pros and Cons Of Living With An EV

[https://www.youtube.com/watch?v=tWA\\_2jf3tPU](https://www.youtube.com/watch?v=tWA_2jf3tPU)

### Is Living with an EV Worth it? My Honest Thoughts.

<https://www.youtube.com/watch?v=9vmCYY6TzyQ>

### How an Electric Car Works? Its Parts & Functions [Explained]

<https://www.youtube.com/watch?v=tJfERzrG-D8>