
ERC Winter Session Presentation

Are We Ready for EV Mandates?

Yerin Lee 22100531
yerin@handong.ac.kr
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Why Debate EV Mandates?

Background and Thesis statement



AI-generated images

Background

As countries push for EV adoption to combat climate change, some question whether mandatory EV policies are realistic or effective.

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Thesis Statement

This presentation argues that mandating EVs is premature due to challenges in charging infrastructure, economic burdens, and environmental issues related to battery production and disposal.

Charging Infrastructure Challenges

Argument 1

- 01 Unlike gas stations, EV charging stations are **few in number**, making **long trips difficult**.
- 02 **Charging speeds are slow**, with fast chargers being scarce and standard chargers taking **4-5 hours**.
- 03 **High installation costs** deter private companies and limit government support.

Economic Barriers

Argument 2

- 01 **The initial purchase price of EVs is significantly higher** than that of internal combustion engine (ICE) vehicles due to expensive battery technology.
- 02 **Battery replacement costs**, often reaching **thousands of dollars**, add to the financial burden.
- 03 **Government subsidies** provide temporary relief but **are not a sustainable solution**.

Environmental Concerns

Argument 3

- 01 The mining of raw materials like lithium and cobalt for EV batteries **causes habitat destruction and water pollution.**
- 02 **Battery production requires a lot of energy,** often relying on fossil fuels, which reduces the environmental benefits of EVs
- 03 **Inadequate recycling technologies** for used batteries pose long-term risks to ecosystems and human health.

Is EV mandatory adoption necessary or too early?

Counterargument and refutation

01. Counterargument



02. Refutation

- Many argue that EV mandates must be rapidly implemented **to solve climate change and reduce carbon emissions.**

- According to the journal Hidden Effects and Externalities of Electric Vehicles(Haghani. et al., 2024), **over 63% of global electricity is still generated from fossil fuels**, meaning that the indirect carbon emissions during EV charging **cannot fully resolve environmental issues.**

Mandating electric vehicles is still **premature**.

Conclusion

Currently not feasible

Mandating EVs now is unfeasible **due to infrastructure, economic, and environmental challenges.**

direction for resolution

Policymakers should focus on addressing these issues by **expanding charging networks, investing in renewable energy, and developing recycling systems.**

Approach

A phased and sustainable approach will ensure the long-term success of EV adoption.

Reference list

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Thank you