

The Business Congress

TOPIC 1: Discussing the future of electromobility

A TrojMUN Study Guide

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I. Chair Introductions

Hi! I'm Sophie and alongside my co-chair, Matěj, I hope to ensure our debates are fun, fruitful, and productive. Although I have been to 8 conferences as a delegate, I am excited for this to be my third opportunity to chair. Aside from MUN, some of my passions include writing, history, music, and playing the piano! I hope this study guide may help you gain a better understanding of the topics we will be covering and aid you in your research. If you have any questions or concerns, feel free to contact me however you like, either on ig: @str_sophi, or through my email: pupil.sophie.straus@parklane-is.com! :)

Hello, I am Matěj, I am in the 6th year at Gymnázium Omská. I got into MUN in 2022 when I went as an admin to GOMUN 2022, TrojMUN will be my 11th total MUN conference and my second time chairing one. Outside of MUN, I am interested in economics, finance professionally and FPV drones or swimming as hobbies. Considering my personal fields of interest, I am very delighted to have the opportunity to chair such an interesting and never seen before committee as the Business Congress and I hope it will bring us all very fruitful academic economics-oriented debates.

I. Discussing the future of electromobility

II. Topic Introduction - Matej

The Electromobility industry is a rapidly expanding industry experiencing steady implementation into the modern world, due to its ecological advantage over traditional fossil-fuel consuming ways of transport. Currently there are around 40 million electric vehicles operated around the world and they represent around 20% of total car sales worldwide.

As considered to be common for an emerging industry, it faces several important issues, connected with environmental friendliness, competition, cost efficiency and optimization, or decreasing demand. Fossil fuel companies disagree with transition due to the risk of losing their business activities, EV manufacturing sector is losing the competitive environment and demand is steadily shifting back towards Hybrid automobiles instead of EVs.

The business congress is aiming to address these issues, while enhancing the positions of its members through their ideas, cooperation and debate.

III. Key terms & definitions

1. *Electromobility (E-Mobility)*: The use of one or more electric motors to propel different transportation types including road/rail/boats/aircraft/spacecraft vehicles.¹

2. *Electric Vehicle (EV)*: A vehicle that lacks the ability to be propelled by gasoline, draws electricity from a battery with a capacity of at least four kilowatt-hours and is capable of being charged from an external source.²

3. *Battery Electric Vehicle (BEV)*: A vehicle that does not use gasoline and runs only on electricity stored in a battery pack that energizes more than one electric motor all whilst producing zero tailpipe emissions³. (Tailpipe emissions are such that are produced as products of fuel combustion (gasoline, diesel etc.) and result in a number of pollutants (carbon monoxide, carbon dioxide, hydrocarbons, nitrogen oxides, particulate matter, sulfur etc.))⁴

4. *Hybrid Electric Vehicle (HEV)*: Vehicles powered by an internal combustion engine (which uses fuel) in combination with one or more electric motors using energy from batteries. These have both high fuel economy, low tailpipe emissions and conventional power and range.⁵

5. *Plug-in Hybrid Electric Vehicle (PHEV)*: Similar to the HEV, PHEVs use batteries to power an electric motor and another fuel to power an internal combustion engine. Unlike the HEV which uses the electric motor and internal combustion engine simultaneously, the PHEV will run on electric power until the battery is nearly depleted, at which point the car automatically switches to the internal combustion engine.⁶

6. *Charging Infrastructure*: The network of charging stations that provide electricity to electric vehicles, these can charge slowly (level 1), fast (level 2), or rapid (DC fast charging).⁷

7. *Lithium-ion Battery*: A rechargeable battery that is charged and then discharged through the movement of lithium ions moving between the anode (-) and cathode (+) electrodes. The most commonly used rechargeable battery due to its high energy density and rechargeability.⁸

¹ *E-mobility* (no date) Danfoss. Available at: <https://www.danfoss.com/en/about-danfoss/insights-for-tomorrow/e-mobility/#:~:text=E%2Dmobility%2C%20the%20sustainable%20route,and%20other%20sea%20going%20vessels.> (Accessed: 7 February 2025).

² *Electric Vehicle (EV) Definition* (no date) Alternative Fuels Data Center: *Electric Vehicle (EV) Definition*. Available at: <https://afdc.energy.gov/laws/9355#:~:text=An%20EV%20is%20defined%20as,charged%20from%20an%20external%20source> (Accessed: 7 February 2025).

³ *Battery-Electric Cars* (no date) DriveClean. Available at: <https://driveclean.ca.gov/battery-electric#:~:text=Battery%2Delectric%20cars%20don't,cast%20than%20fueling%20with%20gasoline.> (Accessed: 7 February 2025).

⁴ *Fuels & Emissions* (2020) ACELA. Available at: <https://www.aceia.org/fuels-basics/fuels-and-emissions/#:~:text=Tailpipe%20emissions%20are%20the%20product,and%20certain%20pollutants%20like%20sulfur.> (Accessed: 7 February 2025).

⁵ *Hybrid Electric Vehicles* (no date) Alternative Fuels Data Center: *Hybrid Electric Vehicles*. Available at: [https://afdc.energy.gov/vehicles/electric-basics-hev#:~:text=Today's%20hybrid%20electric%20vehicles%20\(HEVs,and%20orange%20of%20conventional%20vehicles.](https://afdc.energy.gov/vehicles/electric-basics-hev#:~:text=Today's%20hybrid%20electric%20vehicles%20(HEVs,and%20orange%20of%20conventional%20vehicles.) (Accessed: 7 February 2025).

⁶ *Plug-In Hybrid Electric Vehicles* (no date) Alternative Fuels Data Center: *Plug-In Hybrid Electric Vehicles*. Available at: [https://afdc.energy.gov/vehicles/electric-basics-phev#:~:text=Plug%2Din%20hybrid%20electric%20vehicles%20\(PHEVs\)%20use%20batteries%20to,engine%20or%20other%20propulsion%20source.](https://afdc.energy.gov/vehicles/electric-basics-phev#:~:text=Plug%2Din%20hybrid%20electric%20vehicles%20(PHEVs)%20use%20batteries%20to,engine%20or%20other%20propulsion%20source.) (Accessed: 7 February 2025).

⁷ *Level 2 AC vs. DC Fast Charging: Key Differences in EV Charging Explained* (2024) Ekoenergytyka. Available at: <https://ekoenergytyka.com/blog/level-2-ac-vs-dc-fast-charging/> (Accessed: 7 February 2025).

⁸ *Lithium-ion battery* (2025) Wikipedia. Wikimedia Foundation. Available at: https://en.wikipedia.org/wiki/Lithium-ion_battery (Accessed: 7 February 2025).

8. Range Anxiety: A common concern amongst customers that their electric vehicle will run out of battery before reaching a charging station.⁹

9. Emissions Regulations: Government policies that limit the amount of carbon dioxide and other pollutants vehicles and engines can emit. They also commonly set standards for fuel (sulfur standards for gasoline, on-road diesel fuel, and nonroad diesel fuel etc.).¹⁰

11. Fossil Fuel Industry: Organisations involved in extracting and selling fossil fuels, which are affected negatively by the increase of electrical vehicles.

14. Load Management: Commonly referred to as demand-side management (DSM), load management is the active control and optimization of power consumption. Loads are switched on or off based on market signals in order to manage electricity demand. In power grids, this improves grid stability, optimizes their utilization and reduces overloads.¹¹

15. Total Cost of Ownership (TCO): The total cost of products/services through their life cycle accounting for both direct and indirect costs. This may include the purchase price, fuel, maintenance, insurance etc.. Electric vehicles often have a higher upfront cost but lower operating expenses.¹²

IV. Key Country Stances

LG Chem ltd

LG Chem is one of the largest suppliers of batteries used for electric vehicles, supplying to Tesla, Ford and many others, and is highly committed to advancing electromobility by providing high-performance battery components. In recent years has put forth significant steps to support the growing need for electric vehicles, particularly with its new cooperation with General Motors in North America's market. It plans to use its cathode plant in Tennessee as a production hub for the global battery market and has entered a 9 year supply contract starting 2026 with General Motors, agreeing to supply GM with over 500,000 tons of cathode materials - which is sufficient for 5 million high-performance pure electric vehicles, each with a 500 km range on a single charge.¹³

⁹ What is Range Anxiety? (2024) *Drivz*. Available at: <https://drivz.com/glossary/range-anxiety/#:~:text=Range%20anxiety%2C%20a%20term%20commonly,charging%20stations%20along%20the%20way.> (Accessed: 7 February 2025).

¹⁰ (No date) *EPA*. Environmental Protection Agency. Available at: <https://www.epa.gov/emission-standards-reference-guide/basic-information-about-emission-standards-reference-guide-road#:~:text=Emissions%20standards%20set%20limits%20on,fuel%2C%20and%20nonroad%20diesel%20fuel.> (Accessed: 7 February 2025).

¹¹ (No date) *Load management*. Available at: <https://www.kyon-energy.de/en/glossar/loadmanagement> (Accessed: 7 February 2025).

¹² Manutan, L. (no date) *What are the components of TCO?*, *Manutan*. Available at: <https://www.manutan.com/blog/en/glossary/understanding-tco-total-cost-of-ownership-origins-definition-calculation-advantages-and-so-on#:~:text=Updated%20on%20June%202nd%2C%202022,additional%20oportunity%20for%20value%20creation.> (Accessed: 7 February 2025).

¹³ *LG Chem inks cathode material supply deal with General Motors worth KRW 25 trillion* (no date) *Press Release | Media*. Available at: <https://www.lgcorp.com/media/release/27326> (Accessed: 8 February 2025).

Recently they have also developed a special layer within the battery which has been largely successful. This layer operates in order to suppress thermal runaway - which causes batteries to burn uncontrollably for hours without oxygen, even exploding.¹⁴

It is also partaking in the decarbonization project run by a European premium EV brand, which aims to produce climate neutral cars by 2030 with zero carbon emissions across the whole development, processing, production and delivering of the car. LG Chem plans to develop and supply eco-friendly plastics that will be applied to the EV brand's automotive parts. They plan not only to partner with the EV brand, but also other groups and by 2030 plan to secure the production facility where they can mass-produce climate neutral cars.¹⁵

World Wide Fund for Nature

The WWF is a NGO advocating for the rapid adoption of electric vehicles in order to reduce greenhouse gas emissions and to combat climate change - as mentioned in their report, exhaust fumes are a great contributor to the 40,000 premature yearly deaths in the UK, with transport being the largest source of carbon emissions. WWF advocates for the environment, for protecting the world's wildlife (50% of today's species will go extinct if our approach to climate change remains the same), and for addressing global threats. In order to protect their interests, they strongly advocate for the rapid switch to electromobility.¹⁶

Recently they have transitioned from a 2040 to a 2030 plan to phase out conventional petrol and diesel cars, which aside from the increase in EV production includes an increase in the scale of public charging infrastructure from around 140,000 today to 21 million chargers by 2030. In their report from 2018 they commented on how an increase in EV sales could cover greater than half of the emissions gap needed to meet the UK's Fifth Carbon Budget, as well as decrease air pollution by around 30% in 2030, whilst maintaining the critical nature of the electricity being sourced from renewable energy.¹⁷

American Petroleum Institute

The API strongly advocates for consumer choice and the need for consumers to take caution against government mandates which could limit transportation options. This is done in part by highlighting the current limitations in EV infrastructure, which is especially prevalent in rural areas, and claiming that existing technologies, such as ethanol in reducing emissions, be considered further.

In light of a recent court case led by API against the Environmental Protection Agency's (EPA), it is important to note that API represents all segments of America's natural gas and oil industry, supporting nearly 11 million US jobs and backed by a growing grassroots movement of millions of Americans produces and distributes the majority of America's energy. It has also been accelerating environmental

¹⁴ (No date). Available at: <https://insideevs.com/news/735745/lg-chem-solution-for-thermal-runaway/> (Accessed: 8 February 2025).

¹⁵ LG Chem in Automobiles! Introducing the status of automotive materials development (2024) LG Chem Blog. Available at: https://blog.lgchem.com/en/2024/08/29_automotive_materials/ (Accessed: 8 February 2025).

¹⁶ WWF 2018 electric vehicles report (no date) WWF. Available at: <https://www.wwf.org.uk/updates/wwf-2018-electric-vehicles-report> (Accessed: 8 February 2025).

¹⁷ (No date). Available at: <https://www.wwf.org.uk/sites/default/files/2018-03/Final%20-%20WWF%20-%20accelerating%20the%20EV%20transition%20-%20part%201.pdf> (Accessed: 8 February 2025).

and safety progress through innovative, new technology and transparent reporting, having developed over 800 standards for sustainability and safety.

In this case, API claims that EPA exceeded its authority and introduced intrusive mandates which would eliminate the sale of most new gas-powered and traditional hybrid vehicles in less than a decade, not accounting for consumer demand. API claims that agencies such as EPA ignore the benefits of corn ethanol and other methods in reducing greenhouse gas emissions, mentioning how ethanol is a solution available now, whilst it could take decades to get enough EVs in operation to lower emissions. They also comment on how such changes would inflate the price of farm vehicles, force farmers to rely on charging networks which don't yet exist, harming farmers who, in fact, produce the crops necessary for renewable fuel production, and putting years of investment at risk.¹⁸

API emphasizes the unfairness of taxing taxpayers more to publicly fund EVs and charging infrastructure, regardless of if they own an EV or not and believe other vehicle technologies which reduce emissions should be able to compete equally. In one of their recent reports, it was calculated that policy proposals would cost as much as \$88 billion, but only reduce transportation sector carbon dioxide emissions by 0.06%, with the proposed EV charger building program adding between \$7-23 billion dollars. Furthermore, advanced internal combustion engine vehicles and hybrid electric vehicles showed similar results in reductions of greenhouse gas emissions as electric vehicles, however, they are being phased out and the issue of EVs emitting greenhouse gases during their manufacturing is being ignored. They also mention the fact that batteries will add significant volumes of waste which we do not have the capacity for handling.¹⁹

Shell plc

Shell acts in line with the shifting energy landscape and invests in the expansion of EV charging infrastructure and aims to assist customers by providing innovative charging solutions accessible privately and publicly. In response to their belief that oil demand should start falling in the 2030s and in attempts to counter that 1.3 billion cars globally consume one quarter of the world's oil production daily, Shell plans to increase its public charging points. Their numbers stand at around 70,000 as of 2025 and Shell aims to increase the number of its accessible and convenient stations to 200,000 by 2030. They have facilitated this through their divestment of around 500 Shell-owned sites annually over the last two years in order to shift towards markets with greater demand for low-carbon solutions, particularly in Europe and China. This change would reduce Shell's retail footprint by 2.1%. Amongst many strategic investments, Shell acquired the Volta charging network in 2023, which propelled Shell to help lead the US EV charging network.²⁰

Shell anticipates a decrease in drivers with access to off-street parking, noting the increasingly busy urban cities, which they cite as a key reason behind their motivation to expand public on-street charging

¹⁸ API, *Coalition Partners Urge Court to Reverse EPA's New Vehicle Emissions Standards* (no date) Energy API. Available at: <https://www.api.org/news-policy-and-issues/news/2024/09/15/api-coalition-partners-urge-court-to-reverse-epa-new-vehicle-emissions-standards> (Accessed: 8 February 2025).
¹⁹ U.S. *Consumers Need Balance, Choice in Transportation Policy* (no date) Energy API. Available at: <https://www.api.org/news-policy-and-issues/blog/2021/05/18/us-consumers-need-balance-choice-in-transportation-policy> (Accessed: 8 February 2025).
²⁰ Armstrong, K. (2024) *Shell's Bold Move Towards Electric Vehicle Infrastructure: Selling Gas Stations, Building Charging Stations, Not a Tesla App*. Available at: <https://www.notateslaapp.com/news/1964/shells-bold-move-towards-electric-vehicle-infrastructure-selling-gas-station-building-charging-stations> (Accessed: 8 February 2025).

operators without private parking. They often partner with strategic partners to ensure drivers charging time is more productive through providing charging at convenient locations and often offering additional amenities, such as cafes etc. They have also notably set a target to ensure their EV network is powered entirely by certified renewable energy.²¹

ExxonMobil

ExxonMobil focuses on the supply chain for EV production and intends to play a significant role in an evolving energy market. It has entered a non-binding multiyear offtake arrangement with LG Chem where it aims to supply up to 100,000 tons of lithium carbonate sourced from ExxonMobil's planned project in the US and supplied to LG Chem's cathode manufacturing plant in Tennessee. It is highly invested in building relationships with companies with ambitions of expanding the North American battery supply chain and expects lithium demand to rise despite Donald Trump's campaign vow to end the EV mandate.²²

Similarly it has entered a non-binding memorandum with electric vehicle battery developer SK On, agreeing to supply 100,000 metric tons of lithium, aligning with its goal to supply 1 million EV lithium batteries annually by 2030 in order to become a leading supplier for EVs and build a US EV supply chain and to support SK On's US EV battery manufacturing operations. These projects propose that lithium be extracted from underground saltwater deposits and are converted at the site of extraction into battery-grade materials. This would produce lithium with greater efficiency and with a more positive environmental impact than hard rock mining. ExxonMobil has also invested into evolving its product line through thermal management fluids, which are formulated to assist in the efficient removal of heat and increases equipment life in batteries, electric motors, power electronics etc.²³

V. General History & Past Actions - Sophie

In terms of the history of electric vehicles, they were first introduced over a century ago and were widely popular. Unlike steam or gasoline vehicles, they were quiet, easy to drive and didn't emit the unpleasant scent of pollutants, leading them to become incredibly popular amongst urban residents and women, who needed a car suitable for short trips around the city - since road infrastructure outside was poor and people typically did not travel far. Porsche's first car, the P1, for instance, was electric.

In 1908 Ford's gasoline Model T was mass-produced, widely available and affordable, furthering the non-electric car industry. By 1912 gasoline cars cost around \$650, while electric cars were priced at around \$1,750. To aid this price disparity, Charles Kettering introduced the electric starter, which eliminated the issue of needing to hand crank gasoline-powered vehicles, which was a huge issue with the older gasoline cars, overall improving the experience and making them significantly easier to operate.

²¹ *Electric Vehicle Charging* (no date) *Shell Global*. Available at: <https://www.shell.com/what-we-do/mobility/electric-vehicle-charging.html> (Accessed: 8 February 2025).

²² (No date). Available at: <https://www.reuters.com/business/energy/exxon-mobil-signs-non-binding-lithium-supply-deal-with-lg-chem-2024-11-20/> (Accessed: 8 February 2025).

²³ Damante, M. (2024) *ExxonMobil makes off-take deal with EV battery manufacturer*, *Energy Capital*. Energy Capital. Available at: <https://energycapitalhtx.com/exxonmobil-sk-on-lithium-battery> (Accessed: 8 February 2025).

During the 1970s oil prices were significantly inflated and gasoline shortages were common, causing congress to pass the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976, which launched the Energy Department's support of research into electric and hybrid vehicles. After this, in 1990 the Clean Air Act Amendment and the 1992 Energy Policy Act were passed, further renewing the interest in electric vehicles and in 1997 Toyota released the Toyota Prius in Japan, which became the first mass-produced hybrid electric car. A startup, Tesla Motors, announced the beginning of its production of luxury electric sports cars in 2006, which could go over 200 miles without needing to be recharged and today has become the largest auto industry employed in California. Tesla's announcement back in 2006 influenced many large auto manufacturers to further work into their own electric cars.²⁴

Further legislations helping the implementation of EVs include the Energy Department's Recovery Act, which invested over \$115 million to help build a nation-wide charging infrastructure - helping bring today's public electric vehicle chargers to over 20,000 charging stations, the Bipartisan Infrastructure Law of 2021 which allocated substantial funding to developing a nationwide network of EV charging stations in the USA, The Inflation Reduction Act of 2022 which allocated tax credits aiming to reduce the higher upfront costs of EVs²⁵, and the Executive Order on Strengthening American Leadership in Clean Cars and Trucks of 2021 with set a target for 50% of all new vehicle sales to be electric by 2030.²⁶

VI. The current issue, developments & the path forward (resolution ideas) - Matej

Most electric vehicles are considered to produce zero emissions which is true regarding the operations, however over its entire lifespan an average EV is estimated to produce around 18 metric tonnes of carbon dioxide emissions, which compares to 24 metric tonnes produced by internal combustion vehicles²⁷. 40 - 60% of these emissions is produced during the manufacturing of the lithium-ion battery, which is further divided into emissions during the material gathering process and the manufacturing process. To manufacture a battery, the most needed materials are lithium, cobalt and nickel, which require the consumption of fossil fuels for mining. The manufacturing process of lithium-ion batteries requires heating materials to high temperatures, which also produces significant amounts of carbon dioxide. These processes together amount to around 16 metric tonnes of carbon dioxide, but when using the right energy sources, this amount can be lowered to around 2.5 metric tonnes, however this would require complicated and extended accessibility to renewable sources of electricity.

²⁴ *The History of the Electric Car* (2014) *Energy.gov*. Available at: <https://www.energy.gov/articles/history-electric-car> (Accessed: 9 February 2025).

²⁵ *Federal Funding Programs* (no date) *U.S. Department of Transportation*. Available at: <https://www.transportation.gov/rural/ev/toolkit/ev-infrastructure-funding-and-financing> (Accessed: 9 February 2025).

²⁶ Mills, R. (2024) *Electric Vehicle Regulations and Laws: A Primer for Decision Makers*, *RMI*. Available at: <https://rmi.org/electric-vehicle-regulations-and-laws-a-primer-for-decision-makers> (Accessed: 9 February 2025).

Electric vehicles can be operated without almost any carbon dioxide emitted, however this effect cancels out when the electricity it uses is not supplied from emission-free energy sources, such as offshore and onshore wind, hydropower, wave energy, tidal energy, solar energy, or nuclear, however only 40% of world's electricity is considered emission-free. This opens the general question of the energy industry and its environmental friendliness, especially considering its accessibility and impacts on fossil-fuel related businesses.

Electric vehicles and their expansion pose a significant risk to the fossil fuel industry, which employed around 32 million workers by the end of 2024, and is estimated to generate over USD 4.3 trillion in revenue annually, standing in the top 5 industries by revenue globally. Some oil & gas companies, such as ExxonMobil Corporation are increasing their involvement in for example the lithium mining sector, which is important for the EV industry, while some energy companies such as Ørsted A/S moved from fossil fuels to renewable sources of electricity, in order to decarbonize the electricity supply chain for EVs, utilizing their already established expertise and capital in certain fields. A good compromise in this field is natural gas, which proved to be the least damaging to the environment out of all fossil fuels, is similar in the extraction process to oil, available to most countries and places and supported widely by governments. Some companies, e.g. ExxonMobil, NGS, Aramco, GE Vernova or PetroChina utilized the natural gas industry, growing around 2.5% yearly, greatly to their advantage, while it is steadily replacing oil and coal. The issue is that natural gas is still responsible for a significant amount of carbon dioxide emissions and unable to power cars directly, which is why it is connected to electromobility closely.

The EV market is largely dominated by large established companies such as Tesla or BYD, which alone accounted for 39.4% and 15.6% of the total worldwide EV sales in 2023. On the contrary, small startups such as Lucid Group, Rivian Automotive, or Nikola are currently drowning in debt with a debt to equity ratio of 0.54, 0.55 and 0.93 respectively. Such startups are lacking competitiveness due to their struggling state regarding stable large-scale production, which sometimes even runs into vehicle callbacks, such as happened to Nikola Corporation with their trucks. Some startups were however able to acquire significant intellectual property and sometimes utilize it in cooperation with larger manufacturers, which proved to be very beneficial for such small companies, a great example is Lucid Group and its contract with Aston Martin to supply its powertrain and battery systems, which are considered to be state-of-the art. More of these contracts could eventually create a place on the market for these companies, through a process, which could happen as a reversal of the process of adding new work to old, described by economist Jane Jacobs.

There is an insufficient number of EV chargers in the world compared to the amount of EVs, it is estimated that there are around 10 electric cars per one EV charger. This can significantly demotivate some people in regions with limited access to these accessories from buying an EV. This is also connected with the issue of a lack of technicians capable of servicing electric cars.

Companies with plans to establish themselves in the EV market are shifting back to the production of hybrid vehicles, due to insufficient demand on the EV market. Some of the reasons for the slowing demand are lack of access to charging infrastructure, high costs, or charging time.

VII. Points to consider - [Matej](#)

- ★ How should less competitive companies address the significant geographic difference between countries in costs of manufacturing, while protecting its expertise and intellectual property?
- ★ How should fossil fuel related companies adapt to the decreasing use of fossil fuels, while utilizing their existing expertise and capital for example in the field of mining and exploration?
- ★ The main source of carbon dioxide emissions produced during the lifespan of electric vehicles is the process of manufacturing, which can be significantly lowered when using emission free energy sources. How can the process or its energy supply chain be improved to produce a lower amount of emissions?
- ★ How should the EV industry as a whole deal with the downfall of startups lacking competitive power, such as Fisker Automotive, going out of business in 2022, or Lucid Group, Rivian Automotive or Nikola, Inc. resorting to additional stock offerings and drowning in growing debt?
- ★ What policies should companies advocate for in order to address the increasing need for sufficient number of EV chargers, which is unsatisfactory in the long term?
- ★ How should companies address the slowing demand for EVs and its shift to hybrid vehicles?

VIII. Conclusion

Congratulations for making it to the end of our study guide! We recommend that you check out some of our sources (listed in the footnotes) and conduct your own research as you see fit in order to gain a deeper understanding of our multifaceted topic. We're excited to read your position papers (in which we recommend you address some of our 'points to consider', and touch on any other topics that you find relevant), and we're looking forward to seeing you at TrojMUN 2025 in March

General sources:

<https://www.governing.com/resilience/in-an-ev-hype-world-automakers-are-discovering-hybrids-are-hot-again><https://evchargingsummit.com/blog/challenges-facing-the-ev-industry-today/>

<https://www.sustainabilitybynumbers.com/p/public-ev-chargers>

<https://www.cNBC.com/2024/04/18/why-so-many-electric-vehicle-startups-fail.html>

<https://autovista24.autovistagroup.com/news/which-automotive-brands-are-leading-the-global-ev-market/>

<https://climate.mit.edu/ask-mit/are-electric-vehicles-definitely-better-climate-gas-powered-cars>

<https://www.statista.com/outlook/mmo/electric-vehicles/worldwide#unit-sales>