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CIVIL SERVICES ACHIEVERS' POINT
A ONE STOP SOLUTION FOR UPSC/APSC/SSC & BANKING

ANSWERWRITING PRACTICE- ESSAY

TOPIC-

The future of petrol after electric cars and the geopolitical changes it will result in. (1000-1200 Words, 125 marks)

MODEL ANSWER:

Oil has played a pivotal role in shaping geopolitics for more than a century. But the rise of electric vehicles and shift toward cleaner fuels means that the world's dependence on oil could begin to shrink, with both expected and unexpected consequences.

Electric Vehicle (EV) sales have been growing at a rapid pace—between 40 percent and 50 percent per year. Even conservative forecasts show significant growth in EV adoption over the next several decades, with some projections showing EV penetration rising high enough to flatten oil demand from 2020 to 2030. Oil demand could fall steadily thereafter.

This shift could occur much faster than mid-range forecasts predict. The world's largest independent energy trader has predicted peak oil demand in 15 years and signaled it intends to focus on clean fuels and power trading. Many of the international oil companies (IOCs) now are getting involved in EV markets or supply chains. Several of the world's largest economies, including France and the UK, have set phase-out targets for internal combustion engine vehicles, and car companies collectively have announced that they are investing more than US$100 billion new EV models. It's also worth noting that most forecasts have consistently underestimated EV deployment and other clean energy technology adoption rates.

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A rapid transition away from the internal combustion engine to EVs could be highly disruptive, especially against the current backdrop of rising trade barriers and resource nationalism. Countries' lack of preparedness for a high-EV scenario could increase the risk of geopolitical tensions in the future.

For all its economic promise, a fast shift to EVs would have geopolitical repercussions in several key areas. In each case, EVs could serve as a catalyst for greater cooperation or a source of conflict.

First, on trade. The integration of international EV markets may heat up trade tensions given the potential disruption of existing industries particularly in the European Union (EU), United States, and Japan, where car manufacturing is a significant source of jobs and growth. Countries that fall behind in EVs and batteries could respond by imposing tariffs and other barriers, mirroring the trade disputes that have unfolded over the past several years with solar photovoltaics.

On the other hand, EV costs must decline rapidly to meet their full growth potential in a way that delivers a transport sector that is compliant with the Paris Climate Agreement. This implies a deepening of global supply chains as well as regulatory and market integration which could prompt a rise in "green" free trade agreements.

Second, on energy security. If electrification reduces oil demand, public revenues from oil could decline in producing countries, many of which are in regions already at risk of instability. As EVs start to eat into oil demand it could also rebalance the geopolitical dynamic between energy producers and consumers, including the United States and China. China classified New Energy Vehicles (NEVs) as a "strategic emerging industry" in 2010 and is investing in EVs not only to lead a new technology market, but also to reduce its reliance on the United States to protect its global oil supply.

Third, on access to resources. Without major technology breakthroughs, EVs will lead to increased demand for cobalt, nickel, lithium, and other strategic minerals. It is possible that access to these elements will be used, as oil has

been, for energy "statecraft." If U.S. control of oil supply choke points has long been recognized as a vulnerability for oil importers including China, China has in turn identified the growing demand for minerals needed for clean energy technology as a geostrategic opportunity. Some of the largest reserves of raw materials required for lithium ion battery production are found in fragile states with poor governance records, like the Democratic Republic of the Congo, home to most of the world's cobalt. Without a coordinated effort to build capacity in these countries, the risk of instability and conflict will rise.

Finally, EVs will have ripple effects with complex geopolitical and possibly even human security implications that are difficult to predict. The adoption of electric cars could wipe out US$19 trillion in revenue from the oil industry by 2040. That is a risk not just for oil producing states but for institutional investors globally, including pension funds, which means it also poses a financial risk for consumers.

China and the EU have both signaled that they see electric vehicles as a strategic priority and a way to reduce their exposure to volatile oil markets. According to estimates from Benchmark Mineral Intelligence, China and the EU will have the highest EV market share in 2028. China currently leads the world with roughly 200 gigawatt hours of lithium ion battery cell production capacity. It is set to have six times that amount by 2028. At that time, the United States could still lag behind where China is today.

The G20 Energy and Environment Ministers met recently to discuss energy transitions and sustainable growth, but electric mobility was notably absent from the agenda. Despite this oversight, the G20 remains an obvious venue for this dialogue. The G20 should commit to setting up a process to handle emerging tensions, which can be complemented by G20 members' actions. Our report sets out six key recommendations:

G20 energy ministers should establish a task force on trade and electric vehicles.

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G20 trade task force should launch a working group on harmonizing regulatory approaches on EV standards.

The United States, EU, China, Japan and Korea should pledge to increase support to international R&D initiatives such as the Electric Vehicle Initiative, including more funding for next generation battery technologies.

The EU and China should stress test their security and economic strategies against a high EV scenario.

The EU should work more strongly with countries with deposits of EV metals and minerals to improve resource governance through capacity building and technical assistance.

The EU should work with the International Monetary Fund to assess the risk that EVs pose to the macroeconomic stability of oil producers.

As with any transition there will inevitably be bumps along the way, but the move toward electric vehicles can be managed well or poorly. With greater attention from the international community, EVs can enhance energy security, improve air quality, reduce climate risk, and strengthen global rules-based international cooperation.