

Mapping the Evolution of Parliamentary Conversations on Air Pollution: A Focus on India's National Clean Air Program and Electric Vehicles

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Global and India-focused literature on air pollution has largely emphasized measuring air pollution and understanding technical ways to address it. The literature has also exposed air pollution as a key factor for increased mortality rates among other public health issues. Any sustained action on air pollution would require legislative action by elected representatives. Despite the importance of legislative action on air pollution, little work has been done to track whether Indian lawmakers are pushing for action on combating air pollution. We fill this gap by analyzing how Indian Members of Parliament have raised two key issues related to air pollution in the Indian parliament – the National Clean Air Program and Electric Vehicles. We find that the members from the House of the People (Lok Sabha) outperformed in asking questions on air pollution as compared to the Upper House (Rajya Sabha) with the total number of questions asked in Lok Sabha at 53 and in Rajya Sabha at a mere 19. Overall, this work shows that although air pollution is gaining traction in the Indian parliament, we still have long ways to go before it becomes one of the key issues for Indian lawmakers.

Keywords: *Air pollution, Parliament, Electric vehicles, clean air, National Clean Air Programme, NCAP*



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1. Introduction

Parliaments stand as the central decision-making bodies in any democracy. They are meant to make the democratic system run smoothly for the benefit of the larger public. Laws and legislations are drafted by the members of Parliament (MPs), and it is through the legislative interventions that they attempt to express their visual acuity of the urgent and important issues of the people happening in the country (Bailer, 2011; Martin, 2011). However, media outlets generally do not focus on reporting progressive issues raised by parliamentarians. They often prioritize the coverage of political matters, including debates that take place in parliament. Particularly, when one searches for keywords on environmental issues raised by Parliamentarians across common search engines such as Google and Bing, one cannot expect to track the debates raised by them in the Parliament through the reported content. For instance, upon searching for keywords “air pollution”, “Parliament” and “MP Rajya Sabha Odisha” with the search filter for “past one month”, only one media report came in the results which were an op-ed. In order to track the environmental issues raised by parliamentarians one will have to investigate the individual social media handles. Thus, there is a significant gap in the access to precise information on the issues being raised by parliamentarians and this paper emphasizes bridging the gap by analyzing parliamentary questions raised by members of parliament for a period of 8 months.

For the purpose of this paper, we have picked up the subject of air pollution. The international concern for environmental protection entered a new era in June of 1972 when India and other countries met at the United Nations Conference on the Human Environment in Stockholm (UN General Assembly, 1973). It was hoped that through sustained international cooperation, the countries would be able to enact laws to preserve the environment. India was one of the countries to have responded to the call and since then it has reaffirmed its commitment to the international platforms. However, despite ailing with an enormous pollution burden, India’s statutory system has not been able to address the problem at scale (Abraham et al., 2020). The role played by Indian lawmakers in mitigating the threat of deteriorating air quality has been limited so far. It is evident in the fact that a decades-old act, namely the Air (Prevention and Control of Pollution) Act, 1981 (“the Air Act”), governs the air quality management in India and despite there being stringent limitations on regulations under it, it has seen no amendments in recent years. Parallelly, the threat posed by air pollution becomes evident with the staggering number of 1.4 billion people reported

to be residing in areas that exceed the particulate pollution levels mandated by the World Health Organization. The new Air Quality Life Index report released by the Energy Policy Institute of the University of Chicago lays focus on the magnitude of the issue (*Air Quality Life Index, 2023*). Globally, it has been reported that the average resident's life has been reduced by 1.83 years because of the average yearly increase in particle pollution. This alarming statistic underscored the severity of the issue surrounding deteriorating air quality (UChicago, 2018). Moreso, according to IQAir's historical data from 2018-2022, India also happens to be the 8th most polluted nation in the world (IQAir, 2023). This makes the matter of air pollution as serious as any chronic illness because it has a long-term impact, and the degradation might not be felt in present times, but its effects will be far-reaching.

The policy efforts to reduce air pollution in Delhi have been frequently driven by judicial action since the 90s while the executive merely responded to the emergencies. It is through this action that some significant changes were brought about in Delhi. As the air quality recorded improvements in Delhi, it was followed by political will (Narain et al., 2006). The genesis of the conversations on air pollution in the parliament can be traced to the 2019 general elections to map the impact of the national policy action on air quality. It is considering the two major political parties including the issue of air pollution in their election manifestos and the promise of recognizing the gravity of the issue beyond Delhi-NCR.

This paper thus attempts to follow two threads; firstly, to account for the total number of instances where parliamentarians took up the issue of air pollution and its programmatic impact through the National Clean Air Programme and Electric Vehicle (EV) adoption.

National Clean Air Programme (NCAP) was launched as a one-of-a-kind national programme to address the issue of growing air pollution at a pan-India level. It came into existence in January 2019 as a national strategy aimed at Air Pollution prevention, control, and mitigation. NCAP had set long-term goals to be achieved in a time-bound manner by 2024, to reduce the nationwide Particulate Matter (PM) concentration by 20-30 percent. Recently, these targets were updated with the objective of achieving a 40% reduction in PM concentration levels (as per 2017 levels) by 2026 (PIB, 2023). The core of the programme is a collaborative and participatory strategy with a focus

on all causes of pollution, involving pertinent Central Ministries, State Governments, local bodies, and other stakeholders (Saumy, P. 2019).

Additionally, to promote an EV ecosystem in the country, to provide a clean alternative to the sector and meet the target of carbon neutrality by 2070 (Hossain, M.D.S., *et al.*, 2023). The government has been proactively promoting Electric Vehicles (EVs) through various means like incentivizing them to boost their sales to augment the EV infrastructure and move India's subnational energy demand towards carbon neutrality. Additionally, modeling analyses show that by 2070, India's subnational level CO₂ emissions from road passenger transport could be cut by more than 80% because of net-zero technology (Hossain, M.D.S., *et al.*, 2023).

2. Methodology

2.1 Tools Available to Parliamentarians

Parliamentarians act for the hopes and aspirations of the people they represent (ToI, 2022). Their mandate is to contribute to the improvement of the social and economic well-being of their electorate by participating in the lawmaking process and by playing a brief developmental role too. Parliamentarians can play a crucial role in bringing their constituents' concerns to national forums, assessing the effectiveness of government actions in addressing both domestic and international climate change challenges, and ensuring that policies are consistent and long-lasting. In India's democratic system, parliamentarians have a range of tools at their disposal which can be utilized to ensure accountability from the government. A **parliamentary question (PQ)** is one such tool that elicits information from various government ministries on matters of collective significance (Lok Sabha, n.d.). Each record contains the name(s) of the Member(s) of Parliament who raised the question, the Minister to whom the question is addressed, the type of question, starred or unstarred, and the response of the concerned minister along with the questions and annexures if needed.

2.2 Data Collection

Data was compiled on the issue of air pollution raised by parliamentarians across party lines during the Monsoon Session 2022, Winter Session 2022, and the 1st leg of Budget Session 2023 spanning

over 8 months. It is imperative to note that for comparison, the BS 2023 is not considered since the questions had only been tracked till 6th February. Using Parliamentary Questions (PQs) the records were **filtered using specific keywords** such as 'National Clean Air Program (NCAP)', 'NCAP Funding', 'Grants' 'Central Pollution Control Board (CPCB)', and 'Electric Vehicles (EV)', 'waste management', 'E-waste', 'Hazardous Waste', 'Battery Waste', 'Air Pollution', 'Urban Local Bodies', 'ULB's', and 'XV Finance Commission', for both houses i.e., the Lower house which is Lok Sabha and the Upper house which is the Rajya Sabha. Each record includes the question's serial number, the name of the Member(s) of Parliament who raised it, and the Minister to whom it is addressed.

2.3 Data Analysis

After collating the information from Lok Sabha and Rajya Sabha websites, the questions were subjected to inductive coding to identify **7 topics, out of 143 questions** retrieved in the search results. Keywords used were as follows, 'National Clean Air Program (NCAP)', 'NCAP Funding', 'Grants' 'Central Pollution Control Board (CPCB)', and 'Electric Vehicles (EV)', 'waste management', 'E-waste', 'Hazardous Waste', 'Battery Waste', 'Air Pollution', 'Urban Local Bodies', 'ULB's', and 'XV Finance Commission'.

Table 01: The 7 topics (*As shortlisted after keywords search*) identified from reading the retrieved parliamentary questions. Sub-category represents the topics coming under the aegis of the said. Out of these 7 topics, 2 were listed for analysis- NCAP and Electric Vehicles since they had the greatest number of questions. (Klauer, et al., 2008). Out of the total 143 retrieved questions, 72 questions fell under the first 2 topics covering over 50% of the topics.

S.No.	Topics	S.No.	Topics
1.	National Level Policy <ul style="list-style-type: none"> - National Clean Air Programme (NCAP) and monitoring of Air Pollution - Funding towards Air Pollution Mitigation 		
2.	Waste Management <ul style="list-style-type: none"> - E-waste - Solid waste 	5.	Pollution Control Boards <ul style="list-style-type: none"> - Highly polluting industries
3.	Renewables <ul style="list-style-type: none"> - Solar and Wind - Carbon Emissions Trading 	6.	Environmental Norms <ul style="list-style-type: none"> - Amendments to Environment Protection Act
4.	Electric Vehicles <ul style="list-style-type: none"> - FAME Scheme - Funding under FAME 	7.	Miscellaneous subjects <ul style="list-style-type: none"> - Black Carbon - Pollution from crematoriums

In the next stage, the selected questions were read to be further segmented. Following the inductive coding methodology, these questions were categorized under 3 overarching themes. The first theme dealt with the information sought by MPs on the policy and programs; the second theme looked at the questions raised to clarify information pertaining to funds allocated, released, and utilized for the policy implementation; and the third theme focuses on the issues of compliance with the policy. The questions were categorized manually under the mentioned themes, session-wise (Saldana, 2021).

Although some questions were repetitive and could fit into multiple themes, we grouped them based on their titles to ensure consistency in categorizing the data. After grouping them under the themes, the questions along with the responses were downloaded and then the authors tried to analyze them **qualitatively**, understanding the meaning of the phrases and the responses received by the concerned Ministry. Subsequently, we analyzed both the questions raised by the Parliamentarians and the corresponding answers. We created charts to represent the number of questions raised in each session on a particular topic and the responses received, graphically illustrating the results. Furthermore, the limitations have been listed at the end of this paper.

3. RESULTS

3.1 Observations

3.1.1 Quantitative Observations

Out of 143 questions identified across the three sessions, 72 questions fell under the 2 narrowed down topics.

It is visible in the tables below that the number of questions during WS 2022 was less than that in MS 2022. However, the number of sittings during WS 2022 was also less compared to MS 2022.

Figure 01: Total number of parliamentary questions recorded across 3 sessions on NCAP and EV.

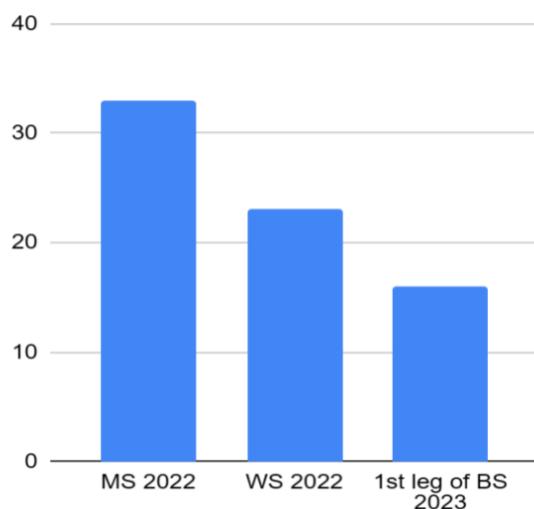
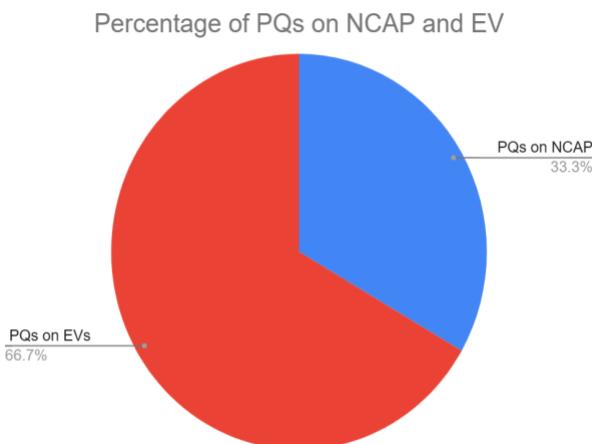


Table 02: Total number of sittings of the Parliament and the operational days. On average the total number of working days in a session was approximately 14.5 days

Session	Dates	Sittings
MS 2022 (PIB, 2022)	18.07.22 to 08.08.22 - 22 days	16
WS 2022 (PIB, 2022)	07.12.22 to 23.12.22 - 17 days	13

Figure 02: Percentage of questions on NCAP and EV represented in this pie chart. Compared to NCAP, the number of questions asked by members on EVs was more. While PQs on NCAP were 24, those asked on EV were double that, at 48. Upon thematically segregating the PQs under 3 categories, it was noted that most questions were asked seeking more information on the policy.



This was followed by questions seeking compliance and performance-related information and lastly, seeking information on the funds.

Figure 03: Percentage of questions on NCAP and EVs divided into 3 thematic areas

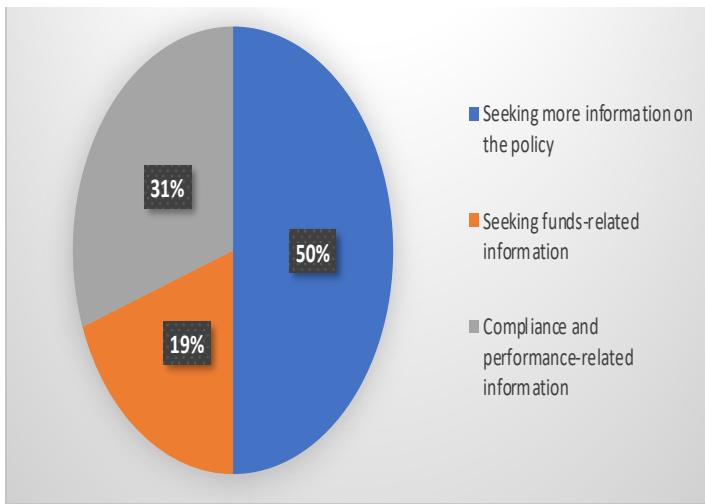


Table 03: Indicating the total number of parliamentary questions asked.

Thematic areas	No. of PQs
Seeking more information on the policy	36
Seeking funds-related information	14
Compliance and performance-related information	22

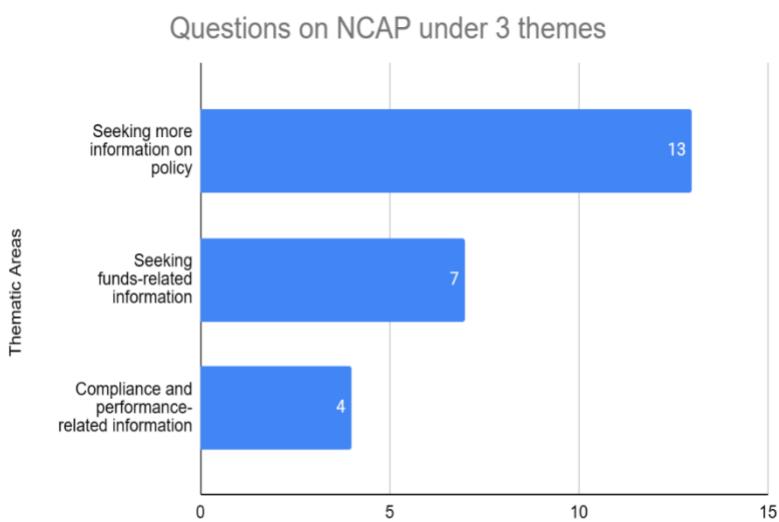
3.1.2 NCAP

A total of 24 questions were raised on the topic of NCAP during the 3 sessions for all 3 thematic areas. Within the thematic areas, it was noted that the questions on seeking more information were more than those for the other two themes.

Table 04: The table contains the number of questions on NCAP falling under the 3 thematic areas.

Questions on NCAP under the three thematic areas	
Seeking more information on the policy	13
Seeking funds-related information	7
Compliance and performance-related	4

Figure 04: Below is the graphical representation of the number of questions under NCAP for the 3 thematic areas.



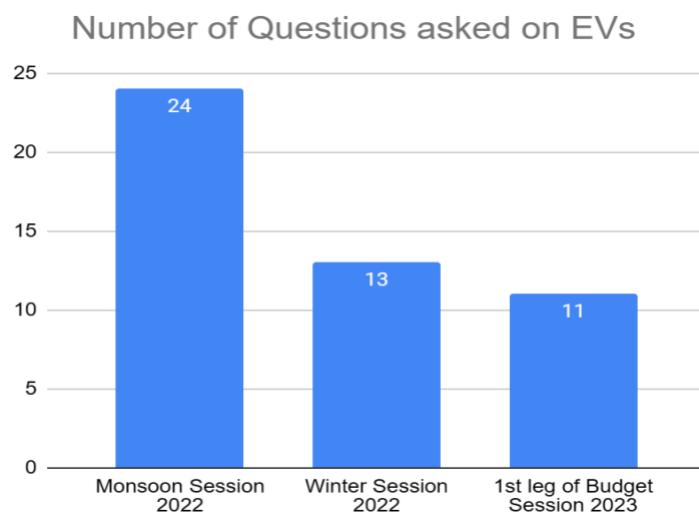
It was also observed that the nature of inquiry around seeking information on NCAP, in both houses, was ***particularly to understand the progress made by Non-Attainment Cities (NACs) under NCAP.*** There were inquiries on Air Quality improvements based on several metrics which was evident in the broader areas of questioning in both houses across the sessions.

3.1.3 Electric Vehicles (EVs)

Questions pertaining to EVs were the highest during the Monsoon Session 2023. A total of **48 questions** were raised by the Parliamentarians regarding the EVs in all 3 sessions. A maximum number of questions raised was during the **Monsoon session of 2022 (24)**, followed by the **Winter session (13)** and the 1st leg of the **Budget session 2023 (11)**.

There has been an increasing demand for electric vehicles in the country and government initiatives such as the National Electric Mobility Policy 2025, the Indian electric vehicle market is expected to grow by 47.09% between 2022 and 2027 (Energizing India, 2022). Despite the observed decrease in the number of questions, it does not necessarily indicate a decline in the demand for electric vehicles in the country. On the contrary, considering that the questions were tracked only in the first leg of the budget session, it is anticipated that the trend of inquiries and interest in EVs would have been increasing.

Figure 05: Total number of questions asked on EVs across the 3 sessions.



A record total of **18 questions** were raised in both houses to seek information on compliance and performance. Out of 16 questions, **12 questions** were raised during the **Monsoon session**, 10 in Lok Sabha, and 2 in Rajya Sabha.

Table 05: Tabular representation of the number of questions on the ascertained thematic areas.

Questions on EVs under the 3 themes		
Seeking more information on the policy	Seeking funds-related information	Compliance and performance-related information
23	7	18

3.2 Discussions and Analysis

3.2.1 NCAP

One of the most path-breaking achievements in reducing the ill impacts of Air Pollution has been the implementation of the **National Clean Air Program (NCAP)**. Under the NCAP, cities that failed to meet the **National Ambient Air Quality Standards (NAAQS)** from 2011 to 2015 were named **Non- Attainment Cities (NACs)**. The number stands at 132, out of which 8 cities were named **million-plus cities (MPSs)**, i.e., having a population of more than a million. The programme focuses on enhanced monitoring networks and raising awareness regarding the adverse impacts of Air Pollution through proper geographical mapping and ground action.

3.2.1.1 Seeking Information on details of policy (mechanisms within policy, rules of operation, and committees)

With a special focus on the growing instances of poor air quality, the members asked about the steps being taken to mitigate such episodes and reduce their occurrences through their questions. Considering the same, ***the members asked the maximum number of questions seeking detailed information on the NCAP***. During the Monsoon session of 2022, members from Lok Sabha enquired about the details of the ***number of Non-Attainment Cities (NACs)*** where ***source***

apportionment (SA) and emissions inventory (EI) studies¹ took place. This was followed by members posing questions on the status of recorded improvements in the ascertained NACs. Uniquely so, the members questioned whether the government was planning to undertake **assessment studies on the carrying capacity**, to address the issue of degrading environment in a specific area due to high population density. **This pointed towards the varying yet progressive perspectives that the members were equipped with when asking questions on the subject.** Further, upon careful examination of the government's responses in various sessions from both houses, it became evident that air pollution was primarily perceived as a challenge specific to urban areas. Interestingly, this perspective promoted a question in the Lok Sabha regarding the assessment of rural emissions and the impact of rural sources of air pollution. This inquiry aimed to ensure equal consideration for the other segment of the population that is equally affected by the decline of air quality. Besides this, members from both Lok Sabha and Rajya Sabha requested more information on whether the government saw merit in increasing the number of NACs directing to **the eagerness of members to include more cities from their constituencies under the programme.** Consequently, the members frequently asked about revising the **National Ambient Air Quality Standards (NAAQS)** to be well-calibrated with the current situation. Responses presented showed that in the years 2021–2022, 20 cities had achieved the NAAQS and the number went up to 42 during the Winter session. It was also noted that the government upon receiving such queries had also taken the matter into consideration and is now in the process of revising the NAAQS. Questions were also submitted on the utility of **Technology Assessment Cells (TACs)** under NCAP since they are said to be frequently used to evaluate the status of air pollution further explaining the willingness to scale them up.

3.2.1.2. Seeking Information on fund allocation, release, and Use

Coming to questions on seeking fund-related information, across the sessions, a **total of 7 questions** were asked by members seeking more information and clarity on the funding under NCAP. Under the **Fifteenth Finance Commission (XVFC) performance-based grants** are offered for the effective implementation of NCAP. It was seen that for the purpose of mobilizing resources under NCAP, parliamentarians attempted to augment their knowledge on fund allocation

¹ EI reports determining the quantities of pollutants released from various sources of Air Pollution in a particular region and members persistently sought details on the development of EI reports for NACs.

under NCAP and through the XVFC mandate. Through the inquiry on the volume of funds directed towards the implementation of targets under NCAP, the parliamentarians also emphasized the *status of state and UT-specific allocations*. Since, NCAP intends to proactively *mobilize resources from Urban Local Bodies (ULBs)* to bring together all the policies and programmes from the Centre, state, and local governments the nature of inquiry was thus, also on the lines of understanding the quantum of funds that had been converged through various schemes and programmes for the implementation of NCAP as conveyed through a question asked. The members also attempted to dwell into the operational details of the scheme through questions *seeking details of the mechanisms through which the performance-based grants were being released to MPCs*. By better understanding the funding for air pollution mitigation the members must be looking at availing the sources of funds to take development works in their respective constituencies on pollution mitigation. Additionally, *the questions being asked were more by members from the House of People as compared to the upper house*. Since, the House of People consists of members directly elected by the people, in contrast to the upper house where members are nominated, this observation holds significance. The increasing number of questions from the House of People reflects their will. Lastly, the members also probed about the overall picture of fund utilization under the scheme since its inception which somewhere showcases the inquisitiveness to be able to better comprehend the efficacy of and gauge the status of funding under NCAP since its inception.

3.2.1.3. Seeking Information on compliance issues and performance (of states in reducing AQI, of industries, of policy programmes, etc.) and "steps taken"

Lastly, going through the questions seeking compliance and performance-related details the number was lower compared to the other two themes. However, since the efficacy of NCAP is in the enhanced monitoring and public awareness, *the members certainly tried to seek detailed explanations on the improvements made under the programme* by enquiring about the number of cities out of the ascertained NACs where the *city action and micro-action plans were submitted and made public*. To that end, there was a question stressing *whether the NACs experienced any positive change in their air quality*. There was a question asked during the winter session in Rajya Sabha, which also pointed out whether the improvements made in reducing PM2.5 concentrations were being assessed in comparison with the international standards. This certainly underlines that the members were aware of the disparities which might still exist while gauging the performance

of the programme in the Indian context. Regarding monitoring air quality, the MPs also enquired whether any guidelines regarding the details of installation locations of Continuous Ambient Air Quality Monitoring Stations (**CAAQMS**) or Manual Monitoring Systems (**MMS**) and whether the government's intent to Standardize guidelines for low-cost monitoring sensors (**LCMS**)² was present. From the data updated during December 2022, 1296 CAAQMS and MMS comprised the country's ambient air quality monitoring network. Lastly, in complying with the mandate of the programme, the members asked whether its targets would be met in a timely manner.

3.2.2 Electric Vehicles (EVs)

3.2.2.1. Seeking Information on details of policy (mechanisms within policy, rules of operation, and committees)

During the Monsoon session 2022 in Lok Sabha, the Members of Parliament inquired about the *government goals to be accomplished through the Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME India)-II schemes, the National Auto Policy, and the National e-Mobility Programme*. In *Rajya Sabha 1 question* pertaining to EVs was raised which highlighted concerns with the pace and effectiveness of the government's efforts to promote the adoption of electric buses under the FAME scheme in the country. It also enquired more about the measures which were in place to proactively ensure the timely and efficient deployment of e-buses. The course of discussion on EVs changed during the Winter session of 2022. In Lok Sabha, the questions highlighted issues such as *sustainability, infrastructure, and the requirement for government assistance* within the sector. The parliamentarians' queries during the Winter session of 2022 sought details on the government's plans for better infrastructural support, particularly the manufacturing of batteries to reduce reliance on foreign countries. Additionally, questions on the *promotion of electric vehicles in India* and the steps being taken by the government to promote their manufacturing and sale, the implementation status of policies and schemes remained equally relevant. The topics covered were *financial assistance, charging infrastructure, rural areas, battery replacement, and convergence with state policies*. In Rajya Sabha, only *1 question* was

² CAAQMS, MMS and LCMS enable the monitoring of air quality at various levels of accuracy and for varying periods of time.

raised tending to shift the conversation by raising the topic of the ***safe disposal of lithium batteries*** and ***controlling pollution*** caused by such batteries.

3.2.2.2. Seeking Information on fund allocation, release, and Use

During the ***Monsoon session***, ***4 questions*** were raised in Parliament seeking information on the amount sanctioned and utilized to uptake EVs and its infrastructure in the country. Further, the questions raised by the ***MPs also sought details on the state-specific funds' details***. The concerns raised were specifically related to the setting up of electric vehicle charging stations and enhancing the charging infrastructure. Following the trend in the ***Winter session***, there was ***a question*** raised in Rajya Sabha specific to a state, seeking information related to ***funds disbursed under the Phase II FAME scheme***. There was a shift visible in queries coming to the 1st leg of the Budget session, with only one question seeking to enquire about the government's measures to increase the manufacture of electric vehicles, as well as on the subsidies for two-wheeler electric vehicles.

3.2.2.3. Seeking Information on compliance issues and performance (of states in reducing AQI, of industries, of policy programmes, etc.) and "steps taken"

With the growing market of EVs in India, creating a vast network of stations remains a daunting task. The questions raised in Lok Sabha grappled with the ***issues related to the FAME-India scheme's subsidies and incentives for EV manufacturers***. Inquiries also dealt with the monitoring of subsidies provided. While inquiries in Rajya Sabha were mostly on progress made under the FAME Scheme and retail sale of EVs. There was a shift in the trend regarding the questions posed in the parliament in Lok Sabha, during the Winters Session as questions raised mostly focused on the incidents of fires, constraints, and policy to promote EVs. In the Budget Session, it was observed that the ***3 questions raised in the Parliament focused on the declining sale of EVs and the steps being taken to promote EVs and develop their infrastructure***. Parliamentarians also showed curiosity about the incentives to turn India into a hub for EVs through their queries across the sessions.

4. Conclusions

The emergence of environmental concern as a prominent topic in media and public discussions is not a recent phenomenon. Throughout the last few decades, we have witnessed multiple instances

where environmental issues took the spotlight (Aggarwal, 2018). Air pollution is one such issue that gained momentum pan- India and made its way into the Indian political discourse and only recently became a crucial subject of discussions and convenings (Hindustan Times, 2019). A limited but expanding body of research focuses on the analysis of political speeches. Common methods employed in this research involved examining the occurrence of specific keywords or phrases, studying the utilization of expressions, and interpreting the text of speeches within the context of political advancements or qualitative classifications. Hence, we attempted to contribute to such a body of literature (Harish et al., 2021). However, our analysis revealed that inquiries pertaining to the National Clean Air Program (NCAP) and electric vehicles (EVs) have garnered significant attention from parliamentarians, and the nature of questions raised during each session has exhibited a changing trend.

The analysis of parliamentary discussions on air pollution, through an examination of responses to members' questions, revealed a notable increase in curiosity among members regarding the status of air quality monitoring in both urban and rural constituencies. The government's responses provided insights into the funding landscape, shedding light on the broader framework of national policies. This shift in the significance of the issue under scrutiny was evident, as policy agendas typically focus on solutions and long-term plans deemed worthy of attention and debate by parliamentarians and stakeholders.

5. Limitations of the Study

Below detailed are the limitations observed during this paper's analysis;

1. Considering the soft launch of the Lok Sabha website, often, information was not fully retrieved. Moreover, both the websites for Lok Sabha and Rajya Sabha experienced irregular updates resulting in inadequate coverage of the debates which were held in both Houses.
2. Additionally, the questions raised during parliamentary sessions often touched upon multiple themes, and to maintain consistency in categorizing the data, we relied on the primary topic of the question. The keywords used were mentioned in the methodology. However, this approach may have resulted in some questions being placed in inexact categories.

3. For ease of this study, despite there being more parliamentary interventions, only parliamentary questions were tracked.

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