

EVolution: Aligning the Just Energy Transition in the Electric Mobility Ecosystem with the G20 Framework

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Introduction

In the global battle against climate change, the transformation of transportation systems into cleaner and more sustainable modes becomes a crucial strategy to reduce carbon emissions and limit global warming to 1.5°C. India, as an active participant, is currently in the process of transitioning to electric vehicles (EVs). However, it faces several significant challenges that require resolution for a seamless transition.

CUTS, in collaboration with Friedrich-Ebert-Stiftung (FES) India office, hosted a series of podcasts under the initiative “Aligning the Just Energy Transition in the Electric Mobility Ecosystem with the G20 Framework.” The podcasts will help in creating awareness, generating interest, and facilitating discussions on the potential of Just Energy Transition in the green mobility sector in India.

This initiative involves monitoring G20 deliberations, actively engaging with both direct and indirect stakeholders, and notably, including perspectives often marginalised in Just Energy Transition (JET) dialogues, such as those of trade unions. The project employs a multi-level approach, starting at the local level and expanding to regional, national, and international levels, to promote inclusivity and provide comprehensive insights into the challenges and opportunities surrounding JET and green mobility within the G20.

A central component of the project consists of a series of four informative podcasts that delve into critical facets of green mobility. These podcasts serve as constructive dialogues, firmly grounded in real-world challenges and solutions, with the objective of offering actionable insights and promoting wider adoption of electric vehicles. The topics explored in this podcast series span a wide spectrum, including Green Mobility in the G20 Dialogue, Cross-Country Collaboration in the Green Mobility Space, Gender Issues in Sustainable Transportation, Greener EV Charging Solutions, Job Creation in Sustainable Mobility, and Scaling Up Workforce Reskilling/Upskilling Initiatives.

Additionally, op-eds published in local and English print media would amplify the project's objective, extending its reach to a wider audience and influencing public opinions and policies.

Episode 1: Gender Inclusivity in the Mobility Sector

August 01, 2023

Introduction

The podcast on “Gender Inclusivity in the Mobility Sector,” delved into the intricate dynamics of gender within the context of EVs. The discussions revolved around the multifaceted factors contributing to gender gaps in EV ownership, the socio-technical influences that shape purchasing decisions, and the role of market strategies and advertising in perpetuating gender stereotypes. It analysed the presence and roles of women in the EV sector while envisioning a more inclusive future. Furthermore, it highlighted successful initiatives and ponders the policy adaptations necessary to address gender differences in the mobility sector.

Participants

- Pawan Mulukutla, Executive Director-Integrated Transport, Clean Air, and Hydrogen, WRI India
- Sonal Shah, Founder, The Urban Catalysts
- Manisha Sharma, Senior Research Associate, The Urban Catalysts
- Mandvi Kulshreshtha, Program Adviser, FES-India Office (Host)

Key Discussion Points

Mandvi set the agenda of the podcast by stating that “Gender Inclusivity in the mobility sector” would be examined through two lenses. Firstly, as women being users of EVs, whether as private users or business owners and secondly, as women participating in the manufacturing of EVs.

Manisha responded by emphasising the importance of transportation systems that consider the needs and preferences of all diverse genders, including men, women, trans individuals, and those with intersecting identities such as women with disabilities and elderly women. She explained that this approach recognises that individuals within different gender groups have unique travel patterns and specific requirements.

She further highlighted the differences in travel patterns between men and women and quoted international literature that suggests women typically travel more; however, this was not the case in India. She validated her statement by stating that in India, specifically in three Tier 2 cities in Bihar, a unique scenario emerged that did not align with the international trend. Household surveys revealed that women undertook 37 per cent fewer trips than men, opting for more sustainable modes of transportation, including public transport, intermediate public transport, or walking. Surprisingly, women also accounted for 60 per cent of all walking trips, and while 20 per cent of the total trips were by intermediate transportation, an overwhelming 60 per cent of intermediate public transport users were women in this category as well. These findings highlighted significant variations in travel

behaviour within the female demographic. These findings were from Tier 2 cities, where data availability is a concern; however, the results would likely be somewhat similar in Tier 1 cities as well, considering that women use more sustainable means of transport.

She remarked that even within various groups of women, variations in travel patterns were observed based on income, occupation, and marital status. In 2020, The Urban Catalysts conducted a survey of 800 resource-poor women in Delhi and 400 online surveys of women who had slightly higher incomes than the former group of women. Data assessment revealed that women predominantly undertook work-related trips, and the peak travel times of different groups of women varied, not aligning with the peak travel times of public buses. Furthermore, distinctions in peak travel times existed among different groups of women themselves. Despite being the primary mode of transport, public buses often could not accommodate the distinct travel patterns of women due to differences in their peak hours of mobility. This disparity in peak hours of work and bus services led women to opt for relatively costlier alternatives, such as auto rickshaws. In places like Delhi with free public transportation for women, auto rickshaws are a more expensive alternative.

In the context of safety during travel, a collaborative effort between Urban Catalysts and GIZ yielded insights through comprehensive surveys conducted across Ernakulam, Kozhikode, and Trivandrum Kerala, with more than 1,200 participants. The findings revealed a concerning trend—a disproportionately higher incidence—74 per cent of young girls aged 18 to 20 years, faced sexual harassment, more so than their older counterparts. Consequently, a substantial number of these younger female travellers restricted their journeys, with a marked majority refraining from travelling after 7 p.m. These observations highlighted the urgent need for interventions that address safety concerns, particularly among the more vocal and forthcoming younger demographic.

Manisha also shared the experiences of trans men and trans women using the public transportation system. In-depth focus group discussions with members of the communities revealed that they faced widespread harassment from fellow commuters, including unwanted stares and disrespectful behaviour. These experiences made it difficult for them to effectively utilise public transportation systems. Unfortunately, a non-acceptance environment within the transportation sector had negative consequences, including reduced access to job and education opportunities for this community. She emphasised that this is why it is crucial to broaden the conversation about gender mobility to include all diverse groups, creating a fairer and more inclusive transportation environment.

Mandvi agreed with Manisha's statement about integrating all genders into the discourse surrounding EVs and acknowledged the scarcity of data on this integration. However, she clarified that, for the purposes of that podcast discussion, the discussions would focus entirely on women and stated that gender-responsive e-mobility is a distinct topic deserving its own podcast discussion. She highlighted that there were over a million EVs currently in use, which accounted for roughly 2 per cent of the total vehicles, and pointed out the absence of data about women who owned EVs.

Mandvi further enquired about the key factors that had contributed to the gender gap in e-mobility or EV ownership in India. Sonal pointed out the complexities surrounding EV ownership and usage, with a particular emphasis on gender considerations. She presented

the work she had done on asset ownership in partnership with a membership organisation and provided insights into the critical role that gender played when discussing the ownership of assets, especially in the context of commercial and public service vehicles like e-rickshaws and electric buses. One noteworthy finding from her observations pertained to the gendered travel patterns within the domain of EV asset ownership. Research findings indicated that women who operated EVs restricted themselves to shorter routes, approximately 48 per cent shorter than the routes chosen by male e-rickshaw operators. This difference in travel patterns could be attributed to women's preferences for routes that were closer to their residences or houses, enabling them to effectively manage both household and remunerative work. Furthermore, women EV operators typically worked seven hours per day for remunerative work, allocating three hours to unpaid domestic household chores. These findings highlighted the need for the development of supportive care infrastructure and tailored financing mechanisms that account for the “distinct travel patterns” and “responsibilities of women” engaged in EV ownership.

Sonal also mentioned the safety concerns and harassment that discourage women e-rickshaw drivers from accommodating more passengers, mainly men, in the front seat with them. Consequently, this gender-related constraint leads to women earning significantly less—25–30 per cent less than male e-rickshaw drivers even with equal distance covered. This income disparity underscored the importance of implementing inclusive policies that take into account safety concerns and economic implications associated with gender-specific modifications to EVs.

Furthermore, she pointed out that the challenges women encounter in professions involving driving “demand specific” attention. Encouraging women to pursue driving, particularly in the field of public electric transportation, requires providing proper financial subsidies, establishing supportive care infrastructure, and offering institutional support as well.

Mandvi concurred with Sonal and cited the initiative by the Delhi Government that waived driving license fees and eased the height restrictions to become a public bus driver, aiming to encourage more women participation.

Additionally, Sonal spoke about the potential of incentives offered on electric two-wheelers for increasing the number of women as drivers in the automotive sector. Electric two-wheelers that operated at speeds below 25 kilometres per hour. This exemption has the potential to appeal to women, as it simplified the process and reduced a potential barrier to entry for female users and owners.

Sonal also pointed out that charging infrastructure and safety were also vital components of the gender-inclusive EV ecosystem. The availability of home-charging options for EVs could enhance women's perceptions of safety and security, as they could avoid travelling to petrol pumps for refuelling.

Mandvi raised a question to Manisha on the role of marketing and advertising in shaping societal perceptions and expectations regarding gender roles in electric two-wheelers and three-wheelers. Manisha highlighted the significance of diversifying marketing in the electric mobility sector. Currently, advertisements predominantly feature male drivers, reinforcing the idea that these vehicles are for men. This lack of representation may deter women from

using or pursuing careers in electric mobility. To challenge these stereotypes, Manisha stressed the need to depict women in various roles within the industry through advertising. Such portrayals can encourage gender diversity and inclusivity in the sector, promoting opportunities for women. Therefore, media outlets should actively support gender-inclusive narratives that highlight women's contributions and capabilities in the EV industry.

Mandvi highlighted a seemingly contradictory scenario where statistics showed that six out of 10 new recruits in the EV sector were women. However, the specific positions and the extent to which they were breaking gender stereotypes remained unclear.

In response, Pawan acknowledged the complexity of the issue. He mentioned that obtaining precise data on this matter was challenging due to a lack of comprehensive information. Nevertheless, he provided valuable insights into where women in the EV sector might be concentrated, suggesting that many of them could be working on shop floors, primarily involved in the manufacturing and assembly lines.

Pawan emphasised the importance of conducting a comprehensive mapping of the entire value chain within the automotive industry. This mapping exercise would play a pivotal role in identifying various roles and skill requirements, shedding light on the specific positions where women are currently working and their contributions in the EV sector.

Furthermore, he highlighted the critical challenge of bridging the gap between the skills offered by training institutes and the skills demanded by both the formal and informal sectors of the EV workforce. Women in the informal sector often encountered difficulties in accessing information and training opportunities. To address this, he proposed two potential solutions: first, raising awareness through campaigns, and second, utilising digitisation.

Pawan acknowledged the intricate nature of this transition process. On one hand, certain roles in the EV sector require a multidisciplinary approach and broader skill sets, which makes it essential to cater to diverse talent pools. On the other hand, jobs in the informal sector may require a deep understanding of specific tasks. Thus, addressing this gender diversity challenge requires well-designed and structured programmes that accommodate the unique needs and capabilities of women. This ensures their meaningful participation and contribution to the industry.

Mandvi raised two critical sub-questions during the discussion. Whether there was sufficient industry-academic collaboration in the sector and the challenge of skilling programmes catering only to workers within the formal sector, leaving out those in the informal sector, such as repair shops and service providers.

Pawan remarked that while collaborations did exist between institutes and the industry in the EV sector, there was still room for expansion and enhancement. He concurred with Mandvi's emphasis on the need for transformative ideas and shared an innovative example from Colombia. In Bogota, authorities establish learning centres at mass transit access points, providing opportunities for people of all ages and backgrounds to acquire skills. This initiative effectively broke entry barriers by offering free access to learning centres. He

suggested that this model could be adapted and piloted in certain areas to provide gender-inclusive opportunities.

Pawan further emphasised the importance of addressing the root causes of gender disparities in the workforce, such as the challenges women face when re-entering the job market after career breaks. He stressed the need for a diagnostic approach that considered the varying career trajectories of women and took into account their specific needs and circumstances.

Sonal corroborated and stated that women constituted 47 per cent of incoming students in science, technology, engineering, and Math (STEM) courses, underscoring the growing presence of women in education. However, she expressed concern that the increased educational participation was not translating into equivalent opportunities for women in the workforce. She represented unemployment data from 2019–2020, showing that the highest unemployment rates were among women with diplomas, graduates, and postgraduate degrees, ranging from 23 per cent to 26 per cent. In contrast, non-literate women had the lowest unemployment rates. Sonal emphasised the need to sensitizes original equipment manufacturers (OEMs) to recruit female candidates and create gender-inclusive workplaces to address these disparities.

Pawan concurred with Sonal's observations and pointed out the significance of acknowledging women's roles as caretakers in society. Society often overlooks these roles, and addressing this aspect is vital for any meaningful discourse about the transition and gender inclusivity in the workforce. He expressed concern about the mismatch between education, skills, and job opportunities and emphasised the need to consider the caretaking role of women. He highlighted the importance of providing women with flexibility in terms of timing and location to enable them to participate effectively in the workforce.

Sonal raised a point about the potential that the EV sector holds for women in technical roles related to data analytics and public transport operations. These roles often come with regulated working hours, making them lucrative to women.

Mandvi spoke about the impact of culture shifts in the automotive industry and the emergence of startups in the EV sector. Whether these changes could compete with each other and how it might affect women's participation in the workforce. In response, Pawan Provided insights into the challenges and distinctions between manufacturing and startup environments within the EV sector. He emphasised that manufacturing required a significant degree of discipline and precision, given the complexities of assembling and ensuring the safety of EVs. He also underlined the importance of attracting and retaining diverse talent without compromising the industry's quality standards.

Additionally, Mandvi enquired about the existence of unions or workers' organisations specifically dedicated to women in the mobility sector, asking about the presence of any such initiatives from the panellists. Sonal answered it by sharing an interesting observation about some manufacturing plants in the EV sector becoming women-only workplaces, especially in regions like southern and western India.

Pawan cautioned against a potential risk associated with this strategy, namely, the association of low-paying jobs with women and niche roles with men. He highlighted the importance of breaking these stereotypes to ensure equality and inclusivity in the workforce.

Mandvi raised the issue of the treatment of women as job seekers versus entrepreneurs in the EV sector and enquired whether differences existed in their access to opportunities and how the industry embraced them. Pawan addressed this by pointing out that the dominant trend leaned towards women being job seekers in the sector rather than entrepreneurs. He highlighted the challenging nature of setting up a startup and emphasised the need for programmes that encourage women to become founders and co-founders. Pawan stressed upon the importance of shifting the culture to create an environment where women are both job seekers and job creators.

Sonal agreed with Pawan and cited the COVID-19 pandemic as a significant factor driving women towards secure job opportunities due to the uncertain economic scenario. She suggested incentivising gender balance on corporate boards through public procurement, which could encourage women in leadership positions and facilitate women's participation in both new and existing businesses.

Mandvi asked if there were any examples in India, particularly at the state level, where women's entrepreneurship was actively encouraged and supported through incentives. Pawan answered it by speaking about the We-Hub initiative in Telangana, which actively promoted women's entrepreneurship, including the EV and automotive sectors. He commended their efforts in extending support to rural women entrepreneurs and emphasised the need to redefine success, focusing on solving societal problems rather than chasing startups.

Sonal further added to this by sharing a positive experience with the Women's Entrepreneurship Platform created by Niti Aayog, which provides valuable support and resources for women entrepreneurs.

Mandvi summarised the key points discussed during the session and highlighted the need for a comprehensive portal to access information on various opportunities and initiatives. Important areas of focus being gender inclusivity, skill set mapping, utilisation of digital infrastructure, documentation of best practices, considering multiple roles of women in policy formulation, and supporting women-led entrepreneurs.

Wrapping up the session, Pawan proposed integrating a gender lens into the EV framework, highlighting the potential for gender inclusivity and new opportunities within the automotive and EV sector, encompassing various vehicle types. He noted that the convergence of EV adoption and gig economy policies in 10 states open doors for gender diversity, creating prospects for women to participate meaningfully in this evolving industry.

Mandvi concluded the session with a vote of thanks to participants.

Episode 2: Role of Trade Unions in Ensuring a Just Transition in India's Mobility Sector

September 05, 2023

Introduction

The podcast on "Role of Trade Unions in Ensuring a Just Transition in India's Mobility Sector," delved into the pivotal role played by trade unions in steering India's mobility sector towards a just and sustainable future. As India's mobility sector undergoes a transformative shift towards sustainability, trade unions take centre stage as guardians of workers' rights and job security. This podcast highlights the way trade unions advocate for fair wages, safe working conditions, and skill development, ensuring that the workforce seamlessly adapts to evolving roles driven by electric vehicles, autonomous technologies, and digital platforms. It also discusses the ways trade unions actively collaborate with the government and industry to design reskilling programmes, establish social safety nets, shape policies, and facilitate constructive dialogues.

Participants

- Amarjeet Kaur, General Secretary, All India Trade Union Congress (AITUC)
- Anup Srivastava, Program Adviser, FES India Office
- Frederik Moch, Head of Department for Structural Policy, Industry, and Services, The German Trade Union Confederation (DGB)
- Gautam Mody, General Secretary, New Trade Union Initiative (NTUI)

Key discussion points

Anup Srivastava begins the discussion by highlighting the ongoing major transformation within the global automotive industry, particularly its efforts to transition towards alternative and less energy-intensive options. India, as the world's third-largest automobile production market, has been making substantial investments in electric mobility. This strategic shift has been primarily motivated by factors such as the escalating cost of oil imports, heightened levels of air pollution, and international commitments to combat global climate change. However, the complexities of this transition are intricate, given the significant workforce associated with the automotive sector. While government estimates suggest approximately 19 million individuals are employed directly and indirectly by the industry, industry estimates are considerably higher, standing at around 32 million. He emphasised the importance of a just transition that ensures a sustainable economy without adversely affecting workers and their livelihoods.

Anup then raised a question to all the panellists regarding the role of trade unions in advocating for workers' rights and job security amid the transition to EVs.

Amarjeet Kaur stated that innovation is not new and highlighted the necessity for workers to continually upskill as innovations reshape their respective industries. Trade unions have a

role in uniting and organising workers while advocating for their continued employment and protection of livelihoods, along with ensuring social security provisions.

She addressed the challenge of unionising new categories of workers, particularly those in app-based employment, where traditional workplace structures may not apply and stressed upon the importance of trade unions identifying emerging issues, engaging with employers, labour departments, and policymakers, and advocating for the inclusion of existing rights while proposing new legislation to protect the rights of these evolving worker groups.

The Need to assess and adapt existing training institutions to accommodate the changing demands of the job market was also highlighted. She called for a review of syllabi in technical training institutes to ensure they reflect current job requirements and technological advancements. Trade unions should demand these changes from policymakers and government institutions responsible for training.

Moreover, the absence of "tripartite consultations," which constitute a forum involving the government, employers, and trade unions, in addressing the challenges posed by these transitions is also a missing link. She pointed out that the Indian labour conference had not taken place for eight years, hindering collective efforts to facilitate a "just transition" and emphasised the importance of such discussions, especially in the context of new developments like the rise of app-based applications and the transition to electric vehicles, where there is a lack of opportunities for negotiation and dialogue.

Anup then invited Gautam Mody to share his insights on the role of trade unions in advocating for workers' rights and job security in transitioning to EVs.

Gautam began by emphasising that the concept of a just transition originated within the trade union movement. He spoke about the importance of a just society in both economic and political terms, highlighting that India currently lacks both economic equity and a fully functioning democracy, which complicates the notion of a just transition. He agreed with Amarjeet's perspective that training and re-training cannot solely be addressed on the supply side, suggesting that the government and employers must play pivotal roles in promoting and supporting training initiatives. Industrial training is a dynamic process that responds to evolving technologies and should not be approached as a purely academic exercise.

He highlighted the need to consider the interconnectedness of various sectors within the global supply chain when discussing transitions like the shift to EVs. Addressing the ecological crisis requires a broader perspective, including factors such as the sourcing of minerals and the environmental implications of manufacturing processes. He cautioned against simplifying the transition to EVs as a standalone issue without examining its global ramifications and pointed out the influence of multinational corporations in these transitions, citing the examples of General Motors and Ford withdrawing from India due to a reluctance to invest in environmental initiatives. This withdrawal resulted in the loss of thousands of jobs, highlighting the need for a global approach to just transitions that considers the interests of workers and their rights.

Frederik Moch stated that trade unions should serve as a strong voice for workers at various levels of action and highlighted the significance of "collective bargaining" in the context of adjusting to transitions and the role of strong unions in negotiating with employers'

organisations and companies to reach a collective agreement. He mentioned the necessity for trade unions to engage in the political arena by making proposals and participating in the creation of political frameworks and bringing the workers' voice into the political arena to ensure that politicians are aware of workers' issues. Additionally, collaboration with civil society organisations can be beneficial for specific issues. He underlined the guiding principle of a just transition and noted that while many organisations promote this topic; the trade union approach is distinct, focusing on representing the labourers' perspective and making workers' issues prominent in discussions.

Anup further enquired Frederik about instances from the trade union perspective where they had been actively engaged in inclusive processes during the transition and requested that to share examples from Germany in the automobile sector.

At the workplace level, Frederik highlighted the efforts of metalworkers' unions in negotiating collective agreements in the automotive sector to address the just transition. These agreements encompass measures to ensure job security, secure investments in factories for future EV production, and provide further education and training for employees adapting to changing work processes.

Frederik spoke of the importance of regional transitions, particularly in regions heavily reliant on the automotive industry. In response, the metalworkers' union established transition network councils to facilitate dialogue among stakeholders, including companies, work councils, and workers. This collaborative effort aims to shape regional transitions, generate innovative ideas, and create new value in affected regions.

On the government level, Frederik mentioned stakeholder dialogues, such as the "Alliance for Transformation", organised by the federal government in collaboration with trade unions and employer organisations. These dialogues address strategic issues related to Germany's industrial transition, including technological developments, securing skilled workers, and managing regional structural changes. The goal is to establish a reliable social partnership to find resilient solutions despite differences between employers and trade unions.

Anup led the discussion towards addressing the scaling requirements and skill development necessary for the transition to EVs. He mentioned the importance of ethical skill development and training programmes at the workplace and industry levels to equip workers with the knowledge and skills needed to remain employable within the industry. Anup invited Amarjeet again to provide her insights on the topic.

Amarjeet provided a comprehensive overview of the challenges faced by workers in India during the transition to EVs. She began by emphasising the absence of a safety net for workers in India, highlighting a stark contrast with developed nations that have robust social safety nets. This absence of a safety net in India leaves workers vulnerable, especially during times of job loss due to structural transitions.

She expressed deep concerns about the exclusivity of the proposed social security code in India, which effectively excludes a significant portion of the workforce from its coverage.

This exclusion raises questions about the adequacy of social security support for workers, particularly those impacted by technological changes and transitions.

Another important issue raised is the lack of a body that facilitated consultations and discussions on technological changes and workforce training in India. This body had been dormant for the past 11–12 years, meaning that there had been no tripartite discussions or consultations to address the evolving needs of the workforce during periods of technological change.

She highlighted the challenges faced by workers in the gig economy, emphasising the absence of comprehensive social security coverage for this segment of the workforce. While she acknowledged recent efforts in India, particularly in a state called Rajasthan, to address the social security issue for gig workers, she also pointed out implementation challenges, including the determination of responsible employers for contributions.

She spoke of the exclusivity of the Occupational Safety Code and expressed concerns about legislative changes that were rolling back labour rights and pointed out that existing protections for different categories of workers in India were under threat, and instead of enhancing policies for vulnerable workers, these policies were being subsumed.

On interventions and solutions, Amarjeet stressed upon the importance of trade unions focusing on labour rights, unionising workers, and advocating for tripartite consultation. This mechanism would allow trade unions to represent the experiences and challenges faced by workers during transitions, ensuring their voices were heard and their rights protected.

Frederik shared the ways Germany is addressing skill development and training for the transition to the EV industry within the automobile sector. He began by emphasising the differences between India and Germany, highlighting that the intention is not to compare but to share experiences. He mentioned that in Germany, trade unions have pushed for a "Supply Chain Due Diligence Act" to ensure that German companies operating globally, including collaborations in India, uphold labour rights and make commitments to labour-related progress.

On skill development and training, He explained Germany's dual training system, where young individuals receive training in both companies and schools on a specific job after completing their education. He highlighted the effectiveness of this system in providing skills and preparing young workers for the job market. He mentioned that trade unions in Germany are actively engaged in social dialogues within companies, leading to collective agreements on retraining programmes. They are advocating for work councils to have the right to request specific courses for workers within companies, recognising the increasing demand for skills in rapidly changing industries.

Frederik also shared an example from the mechanical engineering industry in Germany, where a project involving trade unions and employer organisation has implemented training programmes led by transition experts. These programmes aim to upskill workers and have been successful in encouraging workers to participate in training programmes to adapt to technological progress and industry transitions.

Anup then asked the panellists a closing question, seeking to understand the ultimate desires of common automobile workers in light of the ongoing industry changes. He began by directing his question to Gautam, who responded by acknowledging the positive steps taken, particularly the introduction of German law and due diligence measures. Gautam remarked that these measures represented significant progress compared to existing French law.

He, however, cautioned against viewing these legal advancements as the ultimate solution. Instead, urged that they be considered steps towards a more comprehensive goal: the establishment of an Indian Labour Organisation, a convention advocating for decent working conditions within the global supply chain. He emphasised that trade unions across the world, especially those involved in unionisation, were closely monitoring these developments and actively engaging in discussions.

He elaborated on environmental transition, highlighting its global nature and the varying paces at which it would unfold in different regions. Seeking a uniform transition is neither feasible nor desirable. He pointed out that some countries, including India, needed to further develop their productive capacities to effectively combat poverty and exploitation. While trade unions unequivocally supported this transition, Gautam emphasised the importance of recognising and respecting the diverse approaches and timelines that different nations would adopt.

He concluded by underscoring the significant potential for collaboration among countries and sectors and added that this potential existed irrespective of the specific trade unions, countries of operation, or national organisations, with which they were affiliated. He highlighted the need for mutual respect among trade unions and proposed that health and safety should serve as a foundational starting point for global collaboration and solidarity. This approach, he argued, should focus on establishing a common standard to ensure that all workers' lives are valued and protected, regardless of geographical location or corporate affiliation. Such an approach would help address the challenges posed by globalised corporations that often operate with varying standards across different countries.

Amarjeet responded to the question by Anup by highlighting several key points: Lack of effective tripartite dialogue in India, as the International Labour Conference (ILC) was not functioning as intended; Importance of being able to directly engage with the government in the ILC process to voice the concerns of trade unions; Weakening of the "National Productivity Council" in India over the past seven or eight years. This council used to be a platform for discussing productivity issues in the country and the role of trade unions in this context.

Additionally, Amarjeet mentioned the new conventions adopted by the International Labour Organisation (ILO) on occupational safety and how these conventions need to be ratified in India. She emphasised the need to align Indian laws with international labour standards, particularly in the context of the Fundamental Principles and Rights at Work (FPRW). Furthermore, Amarjeet highlighted the challenges faced by workers in industries undergoing transitions, such as the motor vehicle industry. Foreign companies collaborating with Indian counterparts often disregard labour laws, leading to workers being mistreated or losing their jobs when attempting to unionise. She stressed upon the importance of protecting

workers' rights and ensuring that labour laws are respected, especially in the transition to EVs.

She concluded by stating the need to strengthen the process of unionisation, raise awareness among workers, and engage with state governments to address issues related to skill training and workforce development. She further expressed a willingness to collaborate with international trade union organisations to share experiences and adopt effective strategies for the Indian context.

Frederik concluded by expressing the importance of dialogue and sharing experiences among trade unions from different countries. He emphasised the need for workers' voices to be heard globally, especially as capitalist forces operate on a global scale. He highlighted the necessity of establishing reliable international rules and the crucial role of trade unions in international negotiations, such as climate negotiations at the ILO.

Frederik also mentioned the potential for energy transition partnerships between donor countries and India and stressed that trade unions should advocate for these partnerships to include just transition measures. He cited an example of the DGP's engagement with the South African government to ensure that transition issues are central to such partnerships.

In his concluding remarks, Anup thanked the participants for addressing union concerns in the context of the transition. He emphasised the importance of considering various factors, including income guarantees, occupational health and safety, social protection, and workers' rights, in the transition process.

Episode 3: Innovative Finance Mechanisms as a Driving Force for Electric Mobility

September 12, 2023

Introduction

The podcast on "Innovative Finance Mechanisms as a Driving Force for Electric Mobility" delved into the critical role of innovative finance mechanisms in accelerating the adoption of EVs in India. With growing urbanisation and vehicular emissions posing significant challenges, EVs offer a sustainable and cleaner transportation solution. However, various obstacles, including high upfront costs and inadequate charging infrastructure, hinder widespread EV adoption. This podcast explores how government incentives, public-private partnerships, EV financing programmes, battery leasing, corporate fleets, international investments, and smart grid integration can drive the EV revolution. It also addresses key questions surrounding these mechanisms, offering insights into their long-term sustainability and scalability in India's pursuit of electric mobility goals.

Participants

- Suranjali Tandon, Associate Professor, National Institute of Public Finance and Policy
- Amit Bhandari, Senior Fellow, Gateway House
- Akash Sharma, Associate Fellow, CUTS International (Host)

Key discussion points

Akash commenced the discussion on "Innovative Finance Mechanisms as a Driving Force for Electric Mobility" by asking the panellists, Suranjali and Amit, about their experiences as co-chairs on the T20 taskforce on clean energy and transition, also requesting a description of the processes, mechanisms, and outcomes to understand the role their involvement played in contributing to consensus-building within the G-20. He also enquired about the shortcomings in achieving consensus.

Amit described the process of formation of the T20 process, which began in late 2022 with the formation of task forces on different panels, including energy and digital connectivity. These task forces engaged experts from different countries virtually, initially contributing ideas and policies to the T-20 outcome document. The G-20 process started in August of the same year with a meeting in Delhi, addressing renewable energy support and climate finance. Face-to-face discussions refined these points, while external contributors submitted numerous policy briefs for review. Overall, the process allowed for the incorporation of diverse ideas and facilitated collaboration with experts from various countries, revealing different priorities across nations.

Suranjali highlighted the promising deliverables found in the G20 Leaders' Declaration, pointing to inclusiveness and just transition as recurring themes, promoting the idea of progress while considering the needs of all. She stated that ideas generated within the T20

had influenced the G20 process and noted a broad consensus among developing and even some developed country participants about the measures taken by the global north and the importance of developing countries in shaping the narrative and presenting their priorities. This perspective aligns with the themes present in the G20 Declaration, which recognises the importance of considering national and development priorities alongside the challenges of the transition.

Akash enquired about the existing incentives and subsidies extended to both industries and consumers, with a specific focus on the impact of the first and second FAME on overall progress. Additionally, he sought insights into anticipated developments and policies within the framework of the third phase.

Talking about the significant role of subsidies in driving EV adoption in India, citing budgetary support, production-linked incentives, reduced Goods and Services Tax (GST) on EVs, and specific permits, Amit stated that, in 2022, India achieved over 1 million EV sales, with 2 million EVs on the road, constituting less than 1 per cent of total vehicles. He anticipated increased government support, potentially allocating ₹40–50,000 crores, especially for crucial components like battery manufacturing.

The global biofuel alliance and the Indian government's efforts in promoting biofuels and hydrogen for various modes of mobility were further highlighted by Akash, and asked whether the initial focus of electric mobility regulations in India on two- to three-wheelers and buses is shifting towards a scenario where cargo and freight transportation leans more towards hydrogen-based solutions.

Amit stated that India's early electric mobility regulations concentrated on two- and three-wheelers, as well as buses, and highlighted hydrogen as a prospective alternative to lithium batteries, aiming to overcome their limitations. Nevertheless, obstacles surfaced, particularly in hydrogen storage, with the conversion to a specific temperature proving challenging due to its inherent low-temperature state.

Shifting the focus to the role of public-private partnerships, Akash enquired about public-private partnerships and community-based funding for charging infrastructure, which have been significant impediments to the uniform expansion of electric mobility across India's regions.

Suranjali addressed the issue of electric mobility charging infrastructure, highlighting challenges in achieving comprehensive connectivity for EVs over long distances and noting a shortage of charging facilities, especially in rural areas. She cited estimates from the Confederation of Indian Industry, suggesting 1.3 million charging points based on a ratio of one station per 40 EVs. Emphasising the importance of public-private partnerships, she highlighted incentives for EV manufacturers to invest in charging infrastructure. However, she also raised concerns about pricing, unit costs, and potential subsidies, proposing financing models including incentives linked to land use, revenue-sharing, and government-provided loans for infrastructure creation, with the possibility of later transferring ownership to private entities. Overall, she emphasised the need for collaborative efforts from both the public and private financial sectors, as scaling up EV production requires a parallel expansion of supporting infrastructure.

Akash raised a question about the pricing challenges associated with electric vehicles compared to conventional vehicles. He highlighted the elevated costs, including financing, insurance, and registration procedures for EVs. Additionally, he sought strategies to mitigate this issue, specifically addressing the role of financial institutions, including non-banking financial companies (NBFCs) and banks, in enhancing consumer accessibility to EVs. Emphasising the imperative of establishing an equitable landscape, he also advocated for achieving cost parity or even a notable reduction in the overall financing expenses for EVs compared to internal combustion engine (ICE) vehicles.

Addressing the elevated pricing of EVs, particularly in relation to insurance costs, and attributing the higher expenses to perceived risks, Suranjali proposed a strategy involving engagement with financial institutions to communicate the technological stability of EVs, aiming to influence pricing dynamics. Concurrently, she mentioned ongoing initiatives such as tax incentives, reduced GST rates, and the deductibility of loans for EV purchases from individuals' income. These measures aim to alleviate the financial burden on consumers. Emphasising the necessity of such measures in restructuring costs for consumers, she also highlighted the fluidity of technology costs and anticipated adjustments in EV pricing as the technological market stabilises.

Amit highlighted the significant facet of EV finance concerning resale value in the context of vehicles with extended life cycles ranging from 20 to 25 years, such as trucks, and underscored the critical role that resale value plays in the consideration of costs and vehicle financing. He also stated the challenges faced by financial institutions due to the absence of a well-established resale market for EVs, thereby impeding their ability to provide competitive financing rates. Emphasising the imperative of creating a catalysing resale market for EV and renewable equipment, especially with the projected increase in their numbers on the road, he suggested that policymakers address this facet to facilitate robust EV financing. He also pointed out the substantial divergence in costs between electric and conventional trucks, with the former being two to two-and-a-half times more expensive. He also raised the question of whether this pronounced cost differential could impede uniform adoption within the cargo commercial sector.

Additionally, he contemplated the necessity for specialised financial mechanisms tailored to the trucking industry. He further expanded on the challenges associated with heavy electric trucks, particularly in contrast to lighter urban trucks. He stated that these challenges arise primarily due to the low energy density of lithium batteries compared to petroleum. Although the weight differences between an electric car battery and a fuel tank are negligible, the integration of a heavy battery into a truck necessitates significant compromises. He cited a research paper's calculation, indicating that a 35-tonne electric truck would require a 1,910 kg battery. This predicament compels the truck to decide between transporting its battery or its cargo, fundamentally disrupting the financial viability of transportation. He also pointed out that while these challenges might be less pronounced for lighter urban trucks, heavy batteries with limited lifespans remain a necessity. The continuous daily operation of commercial vehicles subjects their batteries to numerous recharge cycles, elevating replacement costs and contributing to the overall financial burden.

Akash further sought insights from the panellists on battery leasing and swapping initiatives and enquired about the influence of scaling up these programmes on the affordability and convenience of electric vehicle ownership, considering both cost and convenience factors. He also questioned the feasibility of extending these initiatives to the four-wheeler segment.

After pointing towards the emerging battery leasing and swapping programmes, Suranjali expressed concerns about the party responsible for replacing batteries at the end of their lifecycle. She suggested the need for public financial support and the development of financial instruments to hedge against replacement costs and emphasised the crucial requirement to devise appropriate financial structures, acknowledging the potential impracticality for end consumers to bear these expenses. She also pointed out the financial challenges associated with scaling up these programmes in India, stressing the need to address these aspects systematically.

Amit addressed the intricacies of battery swapping programmes, emphasising the imperative of standardisation for effective implementation. He pointed out practical challenges, especially with large EV batteries, exemplifying the weight of a Tesla vehicle's battery pack. He expressed reservations about the practicality of establishing high-tech infrastructure nationwide, particularly in smaller locations. He spoke of standardising vehicle designs and cautioned against excessive government interference in battery, chemistry, vehicle design, and refueling station design. Advocating for a cautious approach, Amit underscored the importance of observing the sector's evolution over time.

Akash enquired about the potential repurposing of EV batteries once their efficiency drops below 80 per cent, suggesting their application in grid storage and utility-scale systems. He sought insights on the necessity of a market facilitating the transition of batteries from EVs to utility-scale storage systems and the associated regulatory aspects. He also expressed concerns about the possibility of an unregulated market where individuals buy and sell these batteries, potentially leading to inefficient resource utilisation. He solicited the experts' thoughts on the structured, regulated, or unregulated nature of this transition.

Affirming the points about battery efficiency and the emergence of second-hand batteries in the market within three to five years of vehicle sales, Amit deliberated on the challenge of deciding whether to recycle these batteries immediately or repurpose them for other applications. He pointed to the critical role of the financial viability of India's power sector and the financial challenges faced by government-owned distribution companies, including unpaid electricity due to technical and commercial losses and subsidies for the farm sector. He further stated that this financial instability in the power sector presents a barrier to establishing a market for second-hand batteries. Stressing the need for power sector reforms to address financial viability issues, he concluded by emphasising the complexity of the matter, involving interconnected factors such as battery design, chemistry, and economic viability.

Akash raised a question on the role of innovative finance in expediting international funding or investment initiatives to accelerate the electric mobility market. He sought insights into the involvement of multilateral development banks and private capital markets in ensuring

effective allocation of funds to specific sectors. He also requested panellists for examples illustrating successful fund transitions from international agencies to particular sectors.

Suranjali highlighted financing aspects to accelerate the electric mobility market. Private sector investments by automobile companies, the potential role of green bonds, support for startups through venture capitalists and private equity, and the importance of validating technologies for scalability were a few of those. She also highlighted encouraging consumer EV adoption, mentioning platforms connecting borrowers with financial institutions and the significance of improved pricing, as well as the role of multilateral development banks in infrastructure development, particularly charging infrastructure, and the importance of international public finance in such projects. She emphasised the impact of disclosure frameworks on company operations, along with the use of incentives and subsidies to drive EV adoption. Suranjali referenced international facilities and collaborations like the UNEP-EBRD coalition to facilitate EV financing.

Amit emphasised the significant role of private equity in promoting the development of electric vehicles and startups within the sector. He pointed out that private equity investors actively pursue profit opportunities in the EV market, citing successful cases such as Ola Electric and Okinawa, which secured significant investments. Highlighting the agility and adaptability inherent in startups, he underscored the crucial role of private equity as a vital funding source. He recommended that the government consider implementing measures to encourage private equity investment in the EV sector, emphasising their responsiveness to market dynamics compared to government lenders.

Akash asked a question on the viability of mandating fleet owners of ride-sharing platforms such as Ola, Uber, and Rapido to transition their fleet into the electric, in both two and four-wheeler category, for services like product delivery and passenger commute.

Amit stated that the government should refrain from mandating quotas for ride-sharing platform fleet owners to transition to electric vehicles. He argued against such mandates, drawing from historical perspectives on government intervention in the economy prior to the 1991 economic reforms. Instead, he suggested using emissions norms as a regulatory basis rather than specifying EV quotas. He noted that, despite the growing popularity of EV, they do not yet strictly match the performance of traditional diesel and gasoline vehicles. He emphasised the potential inefficiencies and increased costs associated with forcing commercial users to adopt EVs through regulations, cautioning about adverse effects on logistics and the broader economy. He also advocated for a market-driven allocation of capital and encouraged government support for the transition to EVs without imposing quotas.

Suranjali highlighted the importance of implementing carbon pricing mechanisms as an important instrument for facilitating the transition. She mentioned the use of differential tax rates and the establishment of carbon markets. These measures can effectively limit excessive emissions and discourage continued reliance on fossil fuel-based vehicles. Furthermore, she expressed opposition to dictating the exact composition of vehicle fleets, indicating a preference for market-driven solutions over top-down mandates.

Akash questioned Amit about the potential impact of increased EV penetration on the power grid. He sought insights into whether the concentration of vehicle charging during specific times, such as late at night or in the morning, would affect the grid's stability and how integration with smart grid systems could enhance cost-effectiveness and overall efficiency.

In response, Amit addressed the impact of charging a substantial fleet of electric vehicles on the power system and its potential role in balancing renewable energy intermittency. He recognised the potential for EVs to serve as a means of storing excess renewable energy but also highlighted challenges, including the inability to charge vehicles with daytime-generated solar power, as well as concerns related to grid infrastructure and the financial viability of the power sector. He also highlighted the necessity for substantial investments in the power sector, specifically in grid infrastructure, for a successful transition to EVs. However, he pointed out significant obstacles stemming from the financial instability of the power sector, particularly its heavy reliance on coal. Additionally, he raised concerns about the potential shift of emissions from vehicles to power plants if widespread EV adoption occurred without addressing underlying issues in the power sector.

As concluding remarks, Akash sought perspectives from Suranjali and Amit on two potential interventions, on the policy, market, and financial level, to facilitate a just transition from ICE vehicles to an EV ecosystem meanwhile meeting 2030 targets.

Suranjali concluded by providing two key recommendations. She first advocated for the establishment of effective pricing mechanisms, such as voluntary carbon markets and taxes, to propel the transition in the mobility sector. The second recommendation underscored the importance of infrastructure development, particularly in scaling up charging facilities and advancing battery research and development (R&D) and manufacturing hubs, aligning with India's economic priorities. These measures are considered crucial for facilitating the transition to an electric vehicle ecosystem.

Amit also concluded with two valuable recommendations. The first is to make it easier for new and promising business ideas in the EV sector to raise capital, particularly by enabling funding for smaller ticket sizes and promoting angel funding for innovative ventures. The second recommendation involved leveraging gated infrastructure environments, such as airports, warehouses, and ports, to drive the adoption of electric vehicles. These controlled environments can generate substantial demand for EVs, facilitate technology testing, and assist in identifying and addressing various challenges associated with electric vehicle adoption.

Akash concluded the session with a vote of thanks to the participants.

Episode 4: Role of Startups in ensuring a just transition in automobile sector

October 26, 2023

Introduction

The podcast on "Role of Startups in ensuring a just transition in the automobile sector" explores the unique challenges faced by startups in the EV ecosystem. It delves into key issues in the sector, emphasising technical complexities, capital-intensive demands, and infrastructure gaps, including slow development and limited financing. The discussions also highlight the pivotal role of business associations in guiding startups and shaping policies. State EV policy priorities, such as comprehensive electricity supply policies and support for heavy-duty vehicles, are also addressed. However, despite these challenges, an undercurrent of optimism prevails, with projections estimating the Indian EV market to have a CAGR of 49 per cent between 2022-30.

Participants

- Yuvraj Sarda, Head of E-Mobility Solutions, Volvo Construction Equipment India
- Jaydip Mukherjee, Co-Founder & COO, Snap-E Cabs
- Sucharita Bhattacharjee, Policy Analyst & Deputy Head, CUTS International-Calcutta Resource Centre (Host)

Key Discussion Points

India has a very steep target of achieving 30 per cent EV market share by 2030. With the growth of the e-mobility space it will not only impact our economy positively but it will also bring change in social and environmental factors which will also contribute to the net-zero vision of 2070. Therefore, the EV market is also going to be a catalyst for green job creation because estimates reveal that it has the potential to create 5 million job opportunities by the end of the next decade. Given this context, the podcast commenced with a question posed by Sucharita to the two panellists, enquiring about the major challenges encountered by startups in the green mobility sector as it undergoes a transformative shift towards sustainability.

To this, Jaydip replied that e-mobility is a sector characterised by its substantial technical intricacies, capital-intensive nature, and infrastructure-centric focus. The initiation of a business within this domain is not merely a matter of conceptualization and presenting a business plan; rather, it demands a comprehensive understanding of the intricacies involved. Given India's historical trajectory of sluggish infrastructure development, compounded by the contemporary imperative of achieving net-zero goals, the sector confronts numerous challenges. Notably, there is commendable progress in policy formulation and the establishment of industry standards. However, a discernible gap persists between planning and execution, underscored by a pervasive lack of awareness among the public regarding policy implementations. Addressing these challenges, Jaydip

highlighted the imperative of greening the EV value chain, particularly in relation to EV charging. One particular concern is the prevalent reliance on fossil fuels for electricity generation, an issue demanding aggressive exploration of alternative, non-fossil fuel energy sources such as solar and wind power. Besides this, the intricacies surrounding the requisite investment for both vehicle deployment and charging infrastructure remain inadequately comprehended within the ecosystem. Despite these challenges, there exists a positive sentiment that India is moving in the right direction. This optimism stems from the proactive engagement of policymakers and Civil Society Organizations (CSOs), who have initiated outreach efforts and are actively soliciting feedback from stakeholders actively involved in the EV industry.

Yuvraj highlighted three additional challenges in the EV landscape. Firstly, India's low baseline for car ownership per capita, compared to the US, poses a challenge in motivating consumers to embrace electric cars. Thus, EV players need to offer value propositions extending beyond environmental concerns, emphasising factors like long-term cost-effectiveness and operational ease to appeal to the evolving consumer base. Secondly, financing in the Indian EV ecosystem is limited compared to Western counterparts like Europe and the US. Convincing investors to support sustainable initiatives in this nascent sector proves challenging, necessitating a re-evaluation of the perceived value in EV businesses. Thirdly, the complex technical nature of EVs requires a specialised workforce capable of understanding both specific domains and their implications in the broader context of electric mobility. The lack of this essential synergy poses a hurdle to the seamless advancement of the electric vehicle sector in India.

Given the emphasis on technology and innovation evident in the responses, Sucharita further delved into the role of startups and entrepreneurs in leveraging these aspects to develop affordable solutions for the public. The focus was two-fold: making vehicle ownership more accessible and advancing an EV driven public transportation system.

In response, Yuvraj underscored the formidable challenges arising from India's vast geography and diverse climates, dismissing a one-size-fits-all solution as impractical. He emphasised the imperative for innovative approaches tailored to the diverse operating requirements of different regions. Addressing battery concerns, he cited incidents of EVs catching fire due to the unadjusted adoption of technology from China, emphasising the crucial need to not just adopt but also customise technology for India's unique climate. He acknowledged the necessity to enhance the robustness of electro-mobility technology, considering the demanding nature of Indian users and the country's intense operating conditions, deemed among the toughest globally. He highlighted the challenge presented by Indians' reputation for being demanding automobile users. Moreover, the value-conscious nature of the Indian market requires constant innovation. Consumers, comparing Internal ICE vehicles, Compressed Natural Gas (CNG) vehicles, and EVs, consider factors such as durability, range, operational costs, and upfront expenses. In response, innovations like battery swapping and alternative business models have emerged, showcasing the dynamic and adaptive nature required in the electric vehicle industry. To further drive down his point, Yuvraj cited the example of Exponent Energy, a company innovating not only on the battery side but also on the charger side, enabling a 15-minute charging norm. He concluded his statement by citing the myriad infrastructural challenges related to EVs that are compelling engineers to reassess technology paradigms. Simultaneously, entrepreneurs

are driven to devise innovative business models to overcome these challenges. This collective impetus stands as the primary driving force behind the incremental progress witnessed in the electric mobility sector in India.

Expanding on innovative business models, Jaydip highlighted Snap-E's strategy, which revolves around addressing consumer issues through a driver-centric approach. Additionally, facing the challenge of on-demand solutions for EVs as a fleet aggregator, they initially planned to introduce a scheduled ride option. This involved consumer providing ride details in advance to facilitate prearranged rides during the initial stages. He also emphasised Snap-E's commitment to broadening access to EV adoption by making its charging infrastructure accessible to the public and underscored the significance of technological innovations in ensuring a fully green end-to-end 360-degree EV value chain. In pursuit of this, he highlighted their collaboration with the Canadian company "Hygge Energy," mentioning their joint efforts in integrating solar energy for EV charging.

Moving on from technology and innovation, Sucharita shifted the focus of the conversation to gender inclusivity in the e-mobility space and enquired about the ways startups can contribute to this cause. In response, Jaydip shared Snap-E's pioneering initiatives, highlighting their corporate mandate of maintaining a 35 per cent female workforce. Additionally, he mentioned the establishment of a dedicated training centre exclusively for women, scheduled to be inaugurated by the Chief Minister of West Bengal in later in 2023. Additionally, Snap-E has implemented an accredited programme, endorsed by the Department of Technical Education in both West Bengal and India, to address the skill gap in the EV sector. What sets this programme apart is its innovative approach, reserving the initial 250 seats specifically for women participants. Those engaged in the programme not only receive financial compensation but also stand the chance to be absorbed into Snap-E upon its successful completion.

Yuvraj added to the discussion by highlighting the historical male dominance in the automotive sector, a consequence of the physical demands and mechanical nature of the roles. However, the evolution of the EV sector, with its diverse technologies, including electronics and software, has opened avenues for highly talented women. Startups, seeking top-tier talent for navigating these intricate technologies, now witness a notable presence of women, not only as engineers but also as founders contributing actively to the expanding landscape of the EV ecosystem.

The conversation then shifted to the vital role of business associations in streamlining the landscape for entrepreneurs and startups, improving access to finance, markets, and consumers. Jaydip remarked about the indispensable support these associations can offer by leveraging their influential connections in both industry circles and government bodies. This strategic positioning enables them to guide startups effectively through challenges and ensures business associations stay well-informed about the ground realities, fostering technology exchange and information sharing. Jaydip explained the necessity of such collaborations by recounting an incident where policymakers lacked awareness of diverse fast-charging technologies, costs, and their impact on grid loads. He stressed upon the imperative for close collaboration between startups and industry organisations to propel the sector forward.

Expanding on this, Yuvraj highlighted the significance of formal associations like Society of Manufacturers of EVs (SMEV) and Society of India Automobile Manufacturers (SIAM) in shaping policy aspects. These organisations actively contribute to the formulation of FAME policies by providing essential inputs to the department of heavy industry. Additionally, cross-cutting bodies like Confederation of Indian Industry (CII) and Federation of Indian Chambers of Commerce & Industry (FICCI) play a crucial role in incorporating electromobility as a vital component within the broader ongoing energy transition.

In addressing the final question of the podcast, Sucharita enquired about the two essential factors that state EV policies should prioritise.

Jaydip concluded by emphasising two key areas that his organisation has been advocating for with the government. Firstly, he highlighted the necessity of formulating a comprehensive policy regarding electricity supply for EV charging. He elucidated that the high costs associated with procuring electricity from distribution companies, coupled with substantial security deposits, constitute nearly 50 percent of the total investment required for installing a public charging station at a specific site. Therefore, he underscored the need for a substantial reconsideration of policies surrounding electricity and infrastructure. Secondly, recognising that a significant portion of funding in the EV sector comes from foreign aid. He also emphasised the imperative to reduce the elevated costs of borrowing and streamline the process by minimising intermediaries.

Yuvraj pointed out a gap in the current FAME policy. While FAME I and FAME II focus on passenger and last-mile vehicles, Yuvraj advocated for extending support to heavy-duty trucks, buses, construction and mining equipment, and tractors in FAME III. Despite their smaller scale, he emphasised their potential as low-hanging fruits due to their significant use and high diesel consumption, urging policymakers to consider their inclusion for comprehensive development in the EV landscape. He also highlighted the importance of incentivising the retrofitting and conversion of existing petrol, diesel, and CNG fleets into electric vehicles. Acknowledging the substantial number of ICE and CNG fleets currently in operation, he emphasised the necessity of supporting retrofitting initiatives until the trend shifts toward electric vehicles. Such an initiative would significantly encourage more individuals to transition to zero-emission vehicles without subjecting them to the financial inconvenience of purchasing new vehicles.

Sucharita concluded the session with a vote of thanks to participants.