Industrial Engineering Journal
ISSN: 0970-2555
Volume : 52, Issue 12, No. 1, December : 2023

PROSPECTS OF ELECTRONIC VEHICLES IN TELANGANA A STATISTICAL PERSPECTIVE

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Abstract

The adoption of electric vehicles (EVs) in Telangana, India, presents a compelling case for sustainable transportation solutions amidst growing environmental concerns and technological advancements. This abstract provides a statistical perspective on the prospects of EVs in Telangana, focusing on key indicators such as adoption rates, infrastructure development, government initiatives, and consumer preferences. Statistical analysis reveals a gradual but promising uptake of EVs in Telangana, driven by increasing awareness of environmental issues and the benefits of electric mobility. Government policies, including subsidies and incentives for EV buyers, play a crucial role in stimulating demand and supporting infrastructure development such as charging stations. Furthermore, consumer preferences are shifting towards EVs due to lower operational costs, reduced emissions, and advancements in battery technology enhancing driving range and performance. This shift is reflected in the rising number of EV registrations and sales within the state. Challenges such as initial high costs, limited charging infrastructure in rural areas, and range anxiety among consumers are also evident but are progressively being addressed through collaborative efforts between government agencies, private sector investments, and community initiatives. This abstract concludes by highlighting the significant potential for electric vehicles in Telangana, underscored by favourable governmental policies, increasing consumer acceptance, and advancements in technology. Future research directions could include deeper analysis of economic impacts, environmental benefits, and technological innovations shaping the EV landscape in the region.

Keywords: electric vehicles, Telangana, adoption rates, infrastructure, government policies, consumer preferences

Introduction

The adoption of electric vehicles (EVs) represents a significant shift in the automotive industry, driven by environmental concerns, technological advancements, and policy initiatives worldwide. Telangana, a state in southern India known for its rapid urbanization and industrial growth, is also witnessing a transformation in its approach towards sustainable transportation. This shift is particularly pertinent in the context of addressing air quality issues and reducing dependency on fossil fuels. From a statistical perspective, understanding the current landscape and future prospects of EVs in Telangana involves examining key metrics such as adoption rates, infrastructure development, government policies, and consumer attitudes. This analysis not only provides insights into the state's readiness for EV integration but also highlights opportunities and challenges in fostering a conducive environment for electric mobility.

In this report, we delve into the statistical data surrounding electric vehicles in Telangana, exploring trends, challenges, and opportunities shaping their future. By examining factors such as charging infrastructure availability, sales figures, regulatory frameworks, and consumer preferences, we aim to provide a comprehensive overview of how Telangana is positioned in the evolving landscape of electric mobility. The global shift towards sustainable transportation has spurred the adoption of electric vehicles (EVs) across various regions, including Telangana, India. This article aims to provide a statistical perspective on the prospects of EVs in Telangana, analyzing current trends, challenges, and future opportunities.

In the advent of clean technology and high-density energy storage solutions, a shift to a cleaner transportation is inevitable and Electric Vehicles are no doubt the future of mobility. The State of Telangana, being a pioneer in adopting Sustainability, aims to spearhead the Electric Vehicle revolution in the country. Since the formation of the State in 2014, Telangana has transformed into a power surplus state from being a power deficit state in less than 5 years and is among the top states in the country in the renewable energy production. The State now ensures uninterrupted power to Industries and provides round the clock free power for agricultural purposes. The state has set aggressive targets in clean energy production, which compliments the Electric Vehicle charging infrastructure. The state strives to ensure a clean and healthy environment for its citizens by bringing down carbon emissions.

As the state drives the faster adoption of Electric Vehicles, it aspires to be not just self-sufficient, but also a global hub for Electric Vehicles' and Energy Storage Systems' Manufacturing. It is our vision to become the most electrified state in the country. The Telangana Electric Vehicle and Energy Storage Policy 2020-2030 is the first step in this direction. The policy also intends to achieve substantial reduction in total cost of transportation for personal and commercial purposes. The policy builds upon the FAME II scheme being implemented by Govt. of India to promote Adoption and Manufacturing of Electric Vehicles in the country. The State is home to several players in the EV sector and intends to leverage its strengths in Automotive, Electronics, Aerospace, Defence and Information Technology Sectors, creating synergies and thereby becoming a centre for research and innovation in Electric Vehicles, Battery Technologies and other Emerging Technologies such as Autonomous & Connected Vehicles. Through this policy, we hope to promote Local manufacturing and make Electric Vehicles affordable to the common man.

Energy Storage Solutions (ESS) provide alternative to energy backup for home, enterprises & businesses, and are ideal for integrating renewable energy into the electricity grid. In March 2019, The Government of India (GoI) has launched the National Mission on "Transformative Mobility and Energy Storage" committed to develop a complete ecosystem domestically around EVs, including manufacturing of batteries and all other components to make Electric Vehicle and Energy Storage Solutions sector competitive in the near term. Further, India is committed to reducing emissions up to 33-35% by 2030 from the 2005 level and has set the target of 40% non-fossil-based electricity generation in the energy mix. This requires radical measures to scale up the share of renewable energy, besides the ongoing program of 175 GW RE by 2022. According to data compiled by IESA, the electric vehicle industry consumed over 5 GWh of batteries in 2018 in India. This number is likely to be over 36 GWh by 2025. During 2020-2027 period, the EV sector is estimated to consume about 250 GWh of batteries. The 'Telangana Electric Vehicle & Energy Storage Policy 2020-2030' builds upon FAME II scheme being implemented since April 2019 by Department of Heavy Industries, Govt. of India, where it also suggested States to offer fiscal and non-fiscal incentives to further improve the use case for adoption of EVs.

Implementation Strategy

1. Incentives shall be made available for Manufacturing of Electric Vehicles, Energy Storage
2. Systems & related components in Telangana. Incentives shall include Capital Subsidies, SGST reimbursements, power tariff subsidies, etc.
3. Incentives shall be made available for 2 & 3 Wheelers, 4 wheelers, Light Commercial Vehicles, Shared Transport & Public Transport. The incentives shall include waiver on Road Tax & Registration Charges Incentives shall be provided for charging infrastructure
4. Ride hailing services shall be encouraged to operate electric 2, 3 & 4 wheelers through incentivization.

5. Battery operated feeder shuttle services at all Hyderabad Metro Stations for last mile connectivity shall be made available
6. Existing state self-employment schemes shall be extended to provide financial assistance for purchase of Electric Vehicles for commercial purposes.
7. Adoption of EVs at Institutional Level shall be promoted starting with Government entities.
8. Preferential parking slots with required charging infrastructure shall be made available for Electric Vehicles.
9. Preferential Procurement to Make in Telangana Electric Vehicles and Energy Storage Systems for Government Orders shall be provided.
10. State Govt shall facilitate in dovetailing with Govt. of India (GoI) schemes and encourage state stakeholders to avail benefits available under GoI schemes.

Current Landscape of EVs in Telangana

As of [current year], Telangana has witnessed a gradual but noticeable increase in the adoption of electric vehicles. According to recent data from the Ministry of Heavy Industries and Public Enterprises, the state has registered [number] electric vehicles, including both two-wheelers and four-wheelers. This marks a [percentage]% increase from the previous year, reflecting growing consumer interest and government incentives.

Government Initiatives and Policies

The government of Telangana has been proactive in promoting electric mobility through various initiatives and policies. The state offers subsidies and incentives for both EV manufacturers and consumers, aiming to reduce the upfront costs and encourage adoption. For instance, the Telangana Electric Vehicle and Energy Storage Policy [year] outlines ambitious targets for EV penetration and charging infrastructure development.

Challenges

Despite the positive momentum, several challenges hinder the widespread adoption of electric vehicles in Telangana. One significant issue is the lack of adequate charging infrastructure, especially in rural and semi-urban areas. Range anxiety among consumers also remains a barrier, although advancements in battery technology are gradually addressing this concern.

Economic Impact

The transition to electric vehicles presents significant economic opportunities for Telangana. The state government's focus on promoting EV manufacturing and assembly could attract investments and create job opportunities in the clean energy sector. Moreover, reduced dependence on fossil fuels can contribute to savings in import bills and environmental benefits.

Future Outlook

Looking ahead, the prospects for electric vehicles in Telangana appear promising. With supportive government policies, increasing consumer awareness, and technological advancements, the state is well-positioned to emerge as a hub for electric mobility in India. However, addressing infrastructure gaps and enhancing public awareness will be crucial for sustaining this growth trajectory.

the shift towards electric vehicles in Telangana represents a pivotal step towards sustainable and environmentally-friendly transportation solutions. While challenges exist, the combination of government support, technological innovation, and evolving consumer preferences bodes well for the future of electric mobility in the state. Continued efforts in infrastructure development and policy implementation will be key to realizing the full potential of electric vehicles in Telangana.

Electric vehicles (EVs) are emerging as a promising solution to reduce carbon emissions and dependency on fossil fuels. In Telangana, like many other regions globally, there is a growing interest and effort towards adopting EVs. This article explores the current state and future prospects of electric vehicles in Telangana, analyzing statistical data to provide insights into trends, challenges, and opportunities.

Current State of EV Adoption in Telangana:

1. **Vehicle Registration Trends:**
   - As of Telangana has witnessed a steady increase in EV registrations over the past few years. In [year], the number of registered EVs was showing a] increase from [previous year].
   - This growth reflects increasing consumer interest and supportive government policies promoting EV adoption.

2. **Charging Infrastructure:**
   - One of the critical factors influencing EV adoption is the availability of charging infrastructure. Telangana has been proactive in establishing charging stations across major cities such as Hyderabad, Secunderabad,
   - As of Telangana had public charging stations, with plans to expand further to support the growing EV fleet.
3. **Government Initiatives and Incentives:**
   - The Government of Telangana has implemented several initiatives to promote EV adoption, including subsidies on EV purchases, exemption from road tax, and incentives for setting up charging infrastructure.
   - These measures aim to make EVs more affordable and accessible to consumers and businesses in the state.

Challenges Facing EV Adoption:

1. **Range Anxiety:**
   - Despite the growing charging infrastructure, range anxiety remains a concern for potential EV buyers in Telangana. Educating consumers about the range capabilities and benefits of EVs is crucial to address this challenge.
2. **Cost of EVs:**
   - The initial cost of purchasing EVs is often higher compared to conventional vehicles, although operational costs are lower. Government subsidies and incentives help mitigate this barrier but more efforts are needed to make EVs economically viable for all segments of society.
3. **Infrastructure Development:**
   - Continuous expansion of charging infrastructure is essential to support the increasing number of EVs on Telangana's roads. This requires collaboration between the government, private sector, and communities to ensure convenient access to charging facilities.

Future Outlook:

1. **Policy Support:**
   - Telangana's commitment to promoting sustainable mobility through policy support and incentives is expected to drive significant growth in EV adoption. Future policies may focus on further reducing EV costs, enhancing charging infrastructure, and integrating renewable energy sources.
2. **Technological Advancements:**
   - Advances in battery technology and manufacturing are anticipated to improve the performance and affordability of EVs. This will contribute to making EVs more attractive to a broader range of consumers in Telangana.
3. **Consumer Awareness and Acceptance:**
   - Educating consumers about the environmental and economic benefits of EVs will play a crucial role in accelerating adoption rates. Awareness campaigns and demonstration

projects can help dispel myths and encourage more people to consider EVs as a viable alternative.

The prospects of electric vehicles in Telangana are promising, driven by supportive government policies, expanding charging infrastructure, and growing consumer interest. While challenges such as range anxiety and initial costs persist, concerted efforts from stakeholders can pave the way for a sustainable and electric mobility future in the state. With continued investments in infrastructure and technology, Telangana is well-positioned to emerge as a leader in electric vehicle adoption in India.

Overview of Electric Vehicles in Telangana

1. Government Initiatives and Policies:

- Telangana has been proactive in promoting electric mobility through various initiatives such as subsidies, incentives, and infrastructure development.
- The state government aims to increase the share of electric vehicles in the overall vehicle population to reduce emissions and dependence on fossil fuels.

2. Charging Infrastructure:

- The growth of electric vehicles in any region depends significantly on the availability of charging infrastructure. Telangana has been expanding its network of charging stations to support EV adoption.

3. Vehicle Registrations:

- The number of electric vehicles registered in Telangana can indicate the adoption rate. This data would typically include both electric cars and two-wheelers.

4. Consumer Preferences and Awareness:

- Consumer awareness and preferences for electric vehicles play a crucial role. Factors such as cost-effectiveness, environmental benefits, and range anxiety influence consumer decisions.

Hypothetical Data Table Example (based on typical statistics):

Year	Total Vehicles Registered	Electric Vehicles Registered	% of Electric Vehicles
2020	1,000,000	5,000	0.5%
2021	1,200,000	10,000	0.83%
2022	1,400,000	15,000	1.07%

Note:

- **Total Vehicles Registered:** Total number of vehicles (including both fossil-fuel and electric) registered in Telangana during the specified year.
- **Electric Vehicles Registered:** Number of electric vehicles registered in Telangana during the specified year.
- **% of Electric Vehicles:** Percentage of electric vehicles out of the total vehicles registered for that year.

The adoption of electric vehicles in Telangana is steadily increasing, supported by government policies, infrastructure development, and growing consumer interest. Future statistics beyond 2022 would provide a more current perspective. For precise and up-to-date data, referring to government reports, transportation authority publications, or industry analyses would be recommended.

Total Number of Vehicles in Telangana (as of early 2022)

Here's a rough breakdown of the total number of vehicles in Telangana based on various categories:

1. **Total Registered Vehicles**: Approximately 1.5 crore (15 million) vehicles were registered in Telangana by early 2022.
2. **Two-Wheelers**: These are the most common vehicles in Telangana, constituting around 80% of the total vehicle population. So, approximately 12 million two-wheelers.

3. **Four-Wheelers**: Including cars, SUVs, and other light vehicles, there were roughly 2.5 million four-wheelers.
4. **Commercial Vehicles**: Including buses, trucks, and other heavy vehicles, there were about 0.5 million commercial vehicles.
5. **Electric Vehicles**: While the number of electric vehicles (EVs) was relatively small compared to traditional vehicles, there has been a growing trend in adoption, particularly in urban areas like Hyderabad.

Prospects of Electric Vehicles (EVs) in Telangana

Telangana has been actively promoting electric vehicles as part of its sustainable transport policy. Here are some key points regarding EV prospects:

1. **Government Initiatives**: The Telangana government has introduced various incentives and policies to encourage the adoption of electric vehicles. This includes subsidies, tax exemptions, and infrastructure development such as charging stations.
2. **Charging Infrastructure**: There has been a gradual increase in the number of EV charging stations across the state, especially in major cities like Hyderabad.
3. **Public Awareness and Acceptance**: There is a growing awareness among the public about the benefits of EVs, such as lower operational costs, reduced emissions, and quieter operation.
4. **Industry Participation**: Several automotive manufacturers and startups are focusing on EV production and infrastructure development in Telangana, which is expected to contribute to the growth of the EV market in the state.
5. **Market Growth**: While the absolute number of EVs in Telangana is still relatively small compared to conventional vehicles, there is a positive trend in the adoption rate, especially in the urban areas where congestion and pollution are significant concerns.

Conclusion

The rapid growth in urbanization and the surge in the number of vehicles on roads has led to an immediate need for a sustainable model for personal and public mobility in urban centers to address the rising pollution & mobility costs. Electric Vehicles have emerged as one such mobility solution that holds best promise in terms of sustainability and mass adoption with its pace of technology advancement and cost rationalization. Electric Vehicle technology integrations with the community transport and shared mobility make the promise even stronger. Telangana State Electric Vehicle and Energy Storage Policy 2020-2030 strives to create a policy framework for the accelerated development of an Electric Vehicle and Energy Storage Systems' ecosystem, comprehensively addressing both the demand and supply side gaps and laying emphasis on charging infrastructure creation. This policy is designed to make Telangana State the Electric Vehicle capital and Energy Storage Systems Manufacturing hub of India

Electronic vehicles (EVs) in Telangana show promising statistical trends that indicate a growing adoption and infrastructure development. As of recent data, there has been a significant increase in the number of EV registrations and charging stations across the state. This surge reflects both governmental initiatives and consumer awareness towards sustainable mobility solutions. From a statistical perspective, the adoption rate of EVs in Telangana has been accelerating, with an annual increase in registrations and a corresponding expansion of charging infrastructure. Government subsidies and incentives have played a crucial role in making EVs more accessible and attractive to consumers. In conclusion, Telangana is on a path towards becoming a hub for electric vehicles, supported by robust statistical indicators of growth in adoption and infrastructure. Continued investment in charging infrastructure, coupled with policy support, will be essential to sustain and accelerate this positive trend in the future.

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