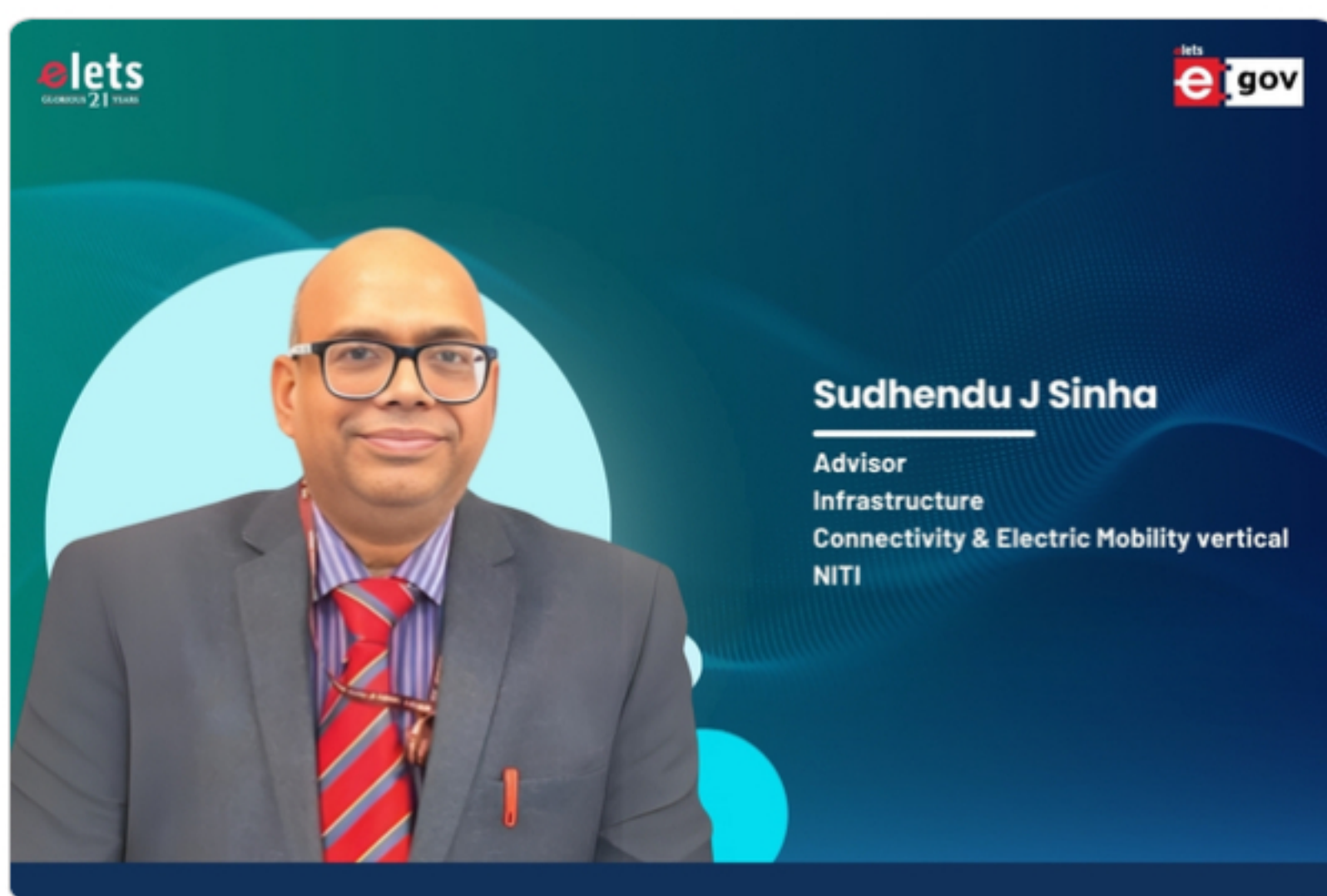


Accelerating India's Electric Vehicle Revolution



Take a moment and listen

NITI Aayog is at the forefront of India's electric vehicle (EV) transformation, spearheading over 50 initiatives across the EV ecosystem, including instrumental State EV Policies. Through the National Mission on Electric Mobility and Battery Storage, NITI Aayog collaborates with multiple ministries to drive infrastructure development, vehicle deployment, and industrial growth while fostering international partnerships to bolster investments in India's burgeoning EV sector, shares **Sudhendu J Sinha, Advisor – Infrastructure, Connectivity & Electric Mobility, NITI Aayog, Government of India**, in an exclusive interview with **Nisha Samant** of **Elets News Network (ENN)**. Edited excerpts:

How can we enhance awareness among both manufacturers and consumers regarding the benefits and viability of electric vehicles, particularly addressing concerns around affordability?

In addition to affordability, reliability must be ingrained in the minds of customers. Indian consumers seek value for money. Both traditional and digital media campaigns can effectively spread awareness. NITI Aayog coordinates consumer awareness drives like 'Shoonya' and 'e-FAST,' utilising various media channels to instil pride in users to save both costs and the environment. These initiatives specifically focus on raising awareness about cleaning up the delivery ecosystem and freight electrification.

Moreover, battery prices have recently decreased, making **electric vehicles** (EVs) more affordable. As India advances in its battery technology goals, prices will further decrease, providing a positive signal to consumers.

Peer-to-peer feedback is crucial in this emerging market, where users are sceptical of the product's utility and performance. Initiatives such as 'Shoonya' gather experiences of gig workers, showcasing them through videos and reels to inspire confidence among others. Softer forms of awareness, such as integration in movies and series, can amplify the message on a broader scale.

EVs contain only about 20 parts compared to an internal combustion engine's (ICE) 200 parts, creating significant potential for democratising the industry among both large and small manufacturers. This presents an opportunity for existing and emerging manufacturers to scale up production. With fewer moving parts, EVs require less servicing, reducing overheads and production costs for both consumers and manufacturers.

Also Read | India's Electric Vehicle Revolution Charging Ahead

Increasing demand for EVs will incentivize manufacturers to invest in this growing sector and capitalise on its benefits. Manufacturers see EVs as a ripe market for growth.

Considering the emphasis on making India a manufacturing hub for EVs, what specific initiatives is NITI Aayog undertaking to attract investment and promote innovation in the manufacturing sector?

NITI Aayog oversees more than 50 initiatives across the entire EV ecosystem, including State EV Policies. The National Mission on Electric Mobility and Battery Storage, chaired by the CEO of NITI Aayog, operates as an inter-ministerial body steering the dynamics of this ecosystem. Various ministries have been assigned specific roles to foster industry and overall EV ecosystem growth. The Ministry of Housing and Urban Affairs (MoHUA) focuses on developing infrastructure, while the Ministry of Road Transport and Highways (MoRTH) concentrates on vehicle deployment. The Ministry of Heavy Industries (MHI) manages the industrial aspect of the ecosystem.

Under flagship schemes such as FAME and PLI, both demand-driven and direct manufacturing incentives are supported to boost production. Battery manufacturing is of utmost priority, with an emphasis on sustainable business models, particularly in the recycling sector. NITI Aayog also collaborates with foreign governments like the US, Germany, and the UK to facilitate investments in India's EV sector.

In your view, what are the critical steps needed to upscale and innovate the Indian 2-3 wheeler automotive industry to meet global standards of quality and desirability?

To elevate the Indian 2-3 wheeler automotive industry to global standards of quality and desirability, several critical steps are being taken. Globally, the most reputed think tanks have provided crucial technical assistance through initiatives overseen by NITI Aayog. Countries such as Germany, the UK, and the US have formalised commitments in their agreements with India, resulting in initiatives like NDC-TIA, GEF, ZEV-TC, and Transport breakthrough.

Additionally, the National Mission led by NITI collaborates with the Department of Science and Technology (DST) and the Bureau of Indian Standards (BIS) to establish comprehensive indigenous standards. The most recent milestone includes mandating an Indian charging standard across all charging stations, alongside other essential regulatory norms.

Introducing EV-specific courses in premier educational institutions in collaboration with Centres of Excellence (CoEs) that we have opened at 16 of 23 IITs would significantly enhance the skills of India's next generation of engineers. Academia could take the lead in leasing advanced technologies to companies for commercialization, which would require consistent research and development initiatives.

How does NITI Aayog envision leveraging this unique opportunity presented by the EV revolution to position India as a global leader in manufacturing?

This is the best opportunity for India. EVs represent a new 'mobility revolution' across the world. Electric vehicles (EVs) differ significantly from internal combustion engine (ICE) vehicles across various dimensions. Developed countries had a head start in the ICE vehicle industry, while India, post-independence, was still striving with other priorities. Today's India is determined, with a clear objective to revolutionise transportation: making it common, connected, convenient, congestion-free, charged, clean, and cutting-edge – the mobility paradigm defined by none other than our Hon'ble Prime Minister at the global Move Summit.

Admittedly, India faces challenges such as the scarcity of critical minerals required for EV production. Yet, through Circularity Principles, we can bridge this gap and cultivate a robust ecosystem where MSMEs can complement the manufacturing base of large OEMs, thereby democratising the EV sector.

India, through its Global Value Chain initiative, aims to tap into the global market for automobile components and deliver world-class products in sectors that do not currently rely on critical minerals. The automobile and its ancillary industries employ a significant number of people and are among the highest tax-paying sectors, making a significant contribution to GDP. The growth of this sector will, therefore, uplift the entire economy and stimulate further growth within the industry.

With the grand aim of transitioning from a narrow “make in India, use in India, and throw in India” approach to one focused on producing ‘objects of desire’ with ‘world-class quality,’ how can the government, industry, and research institutions collaborate to drive this transformation?

In pursuing this transition, leveraging the 'Triple Helix theory' in practical application is of paramount significance. This theory posits that collaboration among government, industry, and academia can establish a sustainable chain of innovation in any sector. Globally, institutions serve as hubs of innovation and product development, often partnering with industry for commercialization. This symbiotic relationship incentivizes researchers with competitive compensation, enables academia to invest in cutting-edge research, and fosters a cultural shift towards research-oriented academia. In India, while the primary responsibility for innovation lies with the industry, significant progress has been made in recent years. This collaborative approach signifies a promising pathway toward enhancing India's capabilities in electric vehicle (EV) technology and innovation.

Can you share insights on NITI Aayog's long-term vision for integrating renewable energy sources with electric mobility, particularly in terms of grid stability, energy storage solutions, and reducing carbon emissions?

As mentioned earlier, NITI Aayog monitors over 50 initiatives and works with multiple countries in realising its climate commitments.

Also Read | Building smart and sustainable mobility solutions

In terms of grid stability, NITI emphasises the need for robust infrastructure to handle the intermittent nature of renewable energy sources like solar and wind. This involves enhancing grid flexibility through smart grid technologies and grid management systems. By synchronising the charging of electric vehicles (EVs) with periods of high renewable energy generation, such as during daylight hours for solar power, the grid can better accommodate fluctuations and optimise energy distribution.

Regarding energy storage solutions, NITI promotes the development and deployment of advanced battery technologies. This includes encouraging research and development in battery chemistry, manufacturing capabilities, and scaling up production to meet the growing demand for EVs and stationary storage solutions. Energy storage systems not only support grid stability by storing excess renewable energy but also enable EVs to serve as mobile energy storage units, enhancing overall grid resilience.

Thirdly, in tackling carbon emissions reduction, NITI supports policies that incentivize the adoption of EVs powered by renewable energy sources. This includes promoting renewable energy generation through incentives and regulatory frameworks that encourage the deployment of solar, wind, and other clean energy technologies. By transitioning from fossil fuel-powered vehicles to EVs charged with renewable energy, significant reductions in carbon emissions can be achieved, contributing to India's climate change mitigation efforts. I am confident that EVs, as a new mobility revolution, will be a 'game changer,' and I often say that it is not only about using clean vehicles. Rather, it is a watershed moment when, in partnership with industry, academia, research institutions, and global think tanks, we are rewriting the automobile history of India.