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# VASUKI INDICUS

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "VASUKI INDICUS". THIS TOPIC IS RELEVANT IN THE "ENVIRONMENT" SECTION OF THE UPSC CSE EXAM.

## WHY IN THE NEWS?

Recently, scientists have said that fossil vertebrae unearthed in Gujarat are the remains of the largest snake that ever lived, which was longer than the T-rex. The fossil has been named after Vasuki, the snake king associated with Lord Shiva. Scientists from IIT-Roorkee discovered 'Vasuki Indicus' in 2005, and it was recently confirmed as a giant snake.

## ABOUT VASUKI INDICUS:

- IIT Roorkee Scientists named the fossil species Vasuki Indicus.
- The fossils were found in Kutch, Gujarat in 2005.
- The researchers discovered 27 vertebrae from the snake, some of which looked like large pythons and would not have been venomous.
- They estimate the snake's length to be 11-15 metres (about 50 feet) and must have weighed 1 tonne.
- It belonged to the **extinct Madtsoiidae snake family**, which lived between the Upper Cretaceous and the Late Pleistocene.
- It lived in India more than 47 million years ago.
- It was a slow-moving predator catching its prey by squeezing, similar to anacondas and pythons.

## WHAT IS MADTSOIIDAE?

- The name "Madtsoiidae" is derived from the genus Madtsoia, which is the type genus of this family.
- Madtsoiidae is a family of extinct snakes that lived during the Cretaceous period.
- They were large constrictors, some reaching lengths of up to 6 meters (20 feet) or more.
- They are known from fossil remains in various parts of the world, including Africa, South America, and Australia.

The discovery of Vasuki Indicus is a significant milestone highlighting India's biodiversity richness. This finding is not just about adding another species to the list of India's biological treasures; it's about deepening our understanding of how life on Earth has evolved and how continents have shifted over millions of years.

**This discovery is pivotal for several reasons:**

1. It contributes to our knowledge of the evolutionary process, offering insights into how species adapt and evolve.
2. It sheds light on continental shifts, as the distribution and diversity of species like Vasuki Indicus can reveal a lot about the geological and climatic changes that have shaped the Earth.
3. It underscores India's critical role in the origin and diversification of various species, particularly reptiles, highlighting its significance in the global ecological and evolutionary narrative.

Overall, Vasuki Indicus is not just a testament to India's rich biodiversity but also a key to unlocking secrets of the Earth's past, offering invaluable insights into the natural world.

**MAINS PRACTICE QUESTION:**

**Q. Explain the importance of phylogeography in uncovering the historical processes that shape current biodiversity patterns.**

[Amit pradhan](#)

## ELECTRIC VEHICLE POLICY OF INDIA

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "ELECTRIC VEHICLE POLICY OF INDIA". THIS TOPIC IS RELEVANT IN THE "POLITY and GOVERNANCE" SECTION OF THE UPSC CSE EXAM.

**Why in the News?**

In a notable development, the Indian government has approved a strategic policy with the aim of establishing India as a key manufacturing hub for electric vehicles (e-vehicles). This endeavour seeks to enhance the country's technological capabilities and supports the broader objective of strengthening the 'Make in India' initiative. This initiative stipulates a minimum investment threshold of ₹4,150 crore.

**KEY FEATURES OF INDIA'S NEW ELECTRIC VEHICLES POLICY**

- **Duty Reduction on Electric Vehicles Imports:** The policy reduces the customs duty rate to 15% for Electric Vehicles (EVs), specifically for **Completely Knocked Down (CKD)** units valued at USD 35,000 or higher, applicable over a period of 5 years.
- **Maximum Import Allowance:** Under the specified conditions, if the investment surpasses USD 800 million, a maximum of 40,000 Electric Vehicles (EVs) can be imported, with an annual

cap of 8,000 units. Additionally, companies can carry forward any unused import quotas from previous years.

- **Duty restrictions:** The overall duty exemption for imported Electric Vehicles (EVs) will be restricted to either the investment amount or Rs 6484 crore, whichever is lesser, aligning with the incentive provided under the Production Linked Incentive (PLI) scheme for Automobile and Auto Components.
- **Import Limit and Investment Requirements:** Despite permitting imports with reduced duties, the policy caps the number of Electric Vehicles (EVs) imported annually at 8,000 units. Manufacturers must invest a minimum of Rs 4,150 crore (approximately USD 500 million) to qualify for duty concessions. Notably, there is no upper limit on investment, aiming to encourage significant capital inflow into the sector.
- **Manufacturing and Value Enhancement Criteria:** To stimulate domestic manufacturing, firms are obligated to establish operational facilities within a span of 3 years. Furthermore, they must achieve a minimum Domestic Value Addition (DVA) of 25% within this timeframe, with an increase to 50% within 5 years from the date of receiving the approval letter from the Ministry of Heavy Industries. DVA signifies the percentage of value that reflects an economy's contribution to goods and services produced for export.

### CURRENT EV MARKET IN INDIA

- The electric vehicle (EV) market in India is experiencing notable expansion, with sales increasing by more than 45% in 2024 despite alterations in regulations.
- By the conclusion of 2023, the total number of registered EVs exceeded 1.5 million units, marking a considerable rise from slightly over 1 million in the preceding year. This surge in EV registrations has propelled India's overall EV market penetration to 6.3%, showcasing significant advancements in EV adoption.
- Domestic automakers in India actively invest in electrification endeavours, spurred by the government's intention to eliminate subsidies gradually.



### Other Government Initiatives to Boost EV production

- **FAME scheme:**
  1. The FAME (Faster Adoption and Manufacturing of Electric Vehicles) initiative is a government program in India designed to stimulate the uptake of electric vehicles.

2. This scheme offers incentives to purchasers of electric vehicles, particularly targeting public and commercial transportation sectors such as electric three-wheelers (e-3W), electric four-wheelers (e-4W), and electric buses. Additionally, privately owned registered electric two-wheelers (e-2W) are eligible for these incentives.
3. Approved by the Union cabinet in 2019, the FAME II scheme has a total budget of Rs 10,000 crore. Its objective is to accelerate the adoption of electric and hybrid vehicles by providing upfront incentives for their purchase and by establishing the necessary charging infrastructure to support electric vehicles.

- **PLI scheme:**

1. In June 2021, the Department of Heavy Industry introduced the **Production Linked Incentive for Advanced Chemistry Cell Battery Storage (PLI-ACC Scheme)** to attract domestic and international investors to invest in large-scale Advanced Chemistry Cell (ACC) manufacturing facilities in India.
2. The total payout of the PLI-ACC Scheme amounts to INR 18,100 crore, which will be disbursed over a period of five years after the production facility becomes operational. According to the policy, manufacturing facilities must commence operations within two years to qualify for subsidies. Furthermore, the Bid Documents specify that a 60% domestic value addition must be achieved within five years thereafter.

- **Battery Swapping Policy:**

1. The Finance Minister announced the government's plan to implement a Battery Swapping Policy to establish uniform standards for batteries used in Electric Vehicles (EVs) nationwide.
2. This regulation is expected to facilitate the adoption of EVs, particularly in sectors requiring prompt services, such as deliveries and inter-city transportation. Swapping a depleted battery for a fully charged one is considered a more efficient alternative to on-the-spot recharging, which can be time-consuming.

- **EV30@30 campaign:**

- India is one of the few nations endorsing the worldwide EV30@30 initiative, which seeks to achieve a minimum of 30% of new vehicle sales being electric by the year 2030.

### **Hurdles in the adoption of Electric vehicles**

- **High Initial Costs:** Electric vehicles generally have higher purchase prices than petrol and diesel alternatives. Although pricing gaps are narrowing with advancements in batteries and manufacturing technologies, affordability remains a critical issue for many buyers.
- **Limited Charging Infrastructure:** The lack of adequate charging infrastructure, especially in rural and semi-urban areas, makes it inconvenient for EV owners to recharge their vehicles. Range anxiety, or the fear of running out of charge without access to a charging station, is a major concern for potential buyers.
- **Battery Range Worries:** Customer concerns around EV range anxiety discourage purchases. Technological developments improve battery capacity, charging speeds, and overall vehicle range; however, continued efforts are needed to educate customers on the benefits of electrification.

- **Performance Anxiety:** Traditionalists might hesitate to buy EVs because they perceive differences in handling, acceleration, and overall performance compared to internal combustion engines.
- **Regulatory Framework:** While there are government incentives and policies to promote EV adoption, there is often a lack of consistency and clarity in regulations related to taxation, subsidies, and incentives. A stable and supportive policy environment is crucial for attracting investments and fostering innovation in the EV ecosystem.
- **Supply Chain Challenges:** The EV supply chain in India, including the manufacturing of components like batteries and electric motors, is still in the nascent stages. Building a robust domestic supply chain is essential for reducing costs and ensuring a steady supply of EVs.

### Way forward for India

- **Improve Affordability Through Subsidies and Tax Benefits:** Subsidized loans, waived registration fees, reduced toll charges, free parking spaces, and income tax breaks can all help lower upfront costs.
- **Governments must aggressively invest in building charging stations in urban and rural areas.** This includes partnerships with private sector firms and the rapid deployment of fast chargers using renewable sources of power where possible.
- **Foster private sector involvement to encourage innovation in lightweight, high-energy-density batteries.** Provide incentives and tax benefits to support research and development efforts in battery technology.
- **Raising awareness about the environmental benefits of electric vehicles, improving charging speed, offering attractive financing schemes, and showcasing model vehicles can mitigate concerns around performance anxiety and range anxiety.**

### Prelims Based Question

**Q1. Which of the following is a major advantage of electric vehicles compared to conventional internal combustion engines?**

- (a) Higher fuel efficiency
- (b) Lower initial cost
- (c) Lower emissions
- (d) Longer refueling time

**ANSWER: C**

### Mains based Question

**Q1. Discuss the supply chain challenges faced by the EV industry in India and outline policy measures to strengthen the domestic supply chain and reduce dependency on imports for EV components**