PUNE
AFC
ALTERNATE FUEL CONCLAVE

02-05 April 2022
Pune, India

Leading the New Era of Green Mobility

CONCLAVE REPORT

Government of Maharashtra

MIDC

MAHARASHTRA POLLUTION CONTROL BOARD

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Mahratta Chamber of Commerce, Industries and Agriculture

PUNE AFC
ALTERNATE FUEL CONCLAVE
02-05 April 2022

INDEX

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  Mahratta Chamber of Commerce, Industries & Agriculture (MCCIA)
- **Content development and design:**
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One mission.

Zero emission.

DAY-WISE SUMMARY

- **DAY 1**
- Date: **02 April, 2022**
- Place: **Sinchan Nagar Ground, Pune**

India's largest EV Exhibition

- India's largest EV exhibition at Sinchan Nagar inaugurated at the hands of Mr. Aditya Thackeray, Environment Minister of Maharashtra.

- The exhibition witnessed a huge crowd of 16,000+ visitors in four days. More than 80 exhibitors displayed their alternate fuel concepts, EV bikes, cycles, motorcycles, cars, and buses.

- Banks and financial institutions along with the Regional Transport Office (RTO) Pune helped visitors to book their electric vehicles.

The Exhibition

87

Total number of entities participated

150+

Total number of stalls registered

16,000

Total number of registered visitors

5,000

Total number of test rides

2,200

Total number students from over 40 educational institutions visited during 4 days

DAY-WISE SUMMARY

- **DAY 2**
- Date: **03 April 2022**
- Place: **Sinchan Nagar Ground, Pune**

India's largest EV Rally in Pune

- India's largest EV rally was held in Pune city. Transport Minister of Maharashtra, Mr. Anil Parab, flagged off the rally

- 400+ electric vehicles, including scooters, cycles, bikes, cars, three-wheelers, and buses participated in the rally

- EVs covered a distance of 28 kilometres to help users overcome range anxiety

The rally covered some of the iconic locations in the city

The Rally

The route

400+

Vehicles registered for rally

500+

Number of participants in the rally

28 km

Distance covered

DAY-WISE SUMMARY

- **DAY 3**
- Date: **04 April 2022**
- Place: **J. W. Marriot, Pune**

Exchanging Ideas

- Mr. Uddhav Thackeray, Chief Minister of Maharashtra, inaugurated the conference in presence of people's representatives, policymakers, industry players, and entrepreneurs.

- Panel discussions on future of Indian mobility, zero-emission commercial fleets & public transport and enabling investments in future mobility and fireside chats with business personalities like **Mr. Sanjiv Bajaj** and **Mr. Adar Poonawalla** captured the minds of the audience

The Conference

450

Delegates registered for the conference

13 **Sessions held in the the conference**

65 **Speakers**

5 **Ministers visited the exhibition**

13 **CGS Participated**

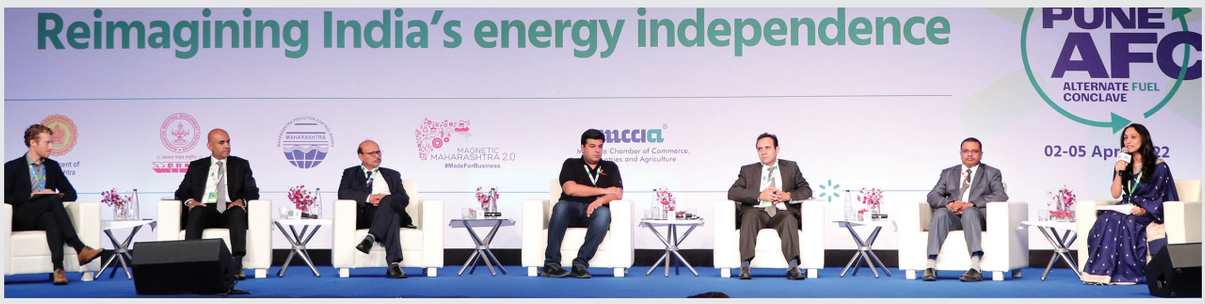
More power to alternate fuel

- Roundtable discussion of Consul Generals of various countries highlighting initiatives taken by their respective countries

DAY-WISE SUMMARY

- **DAY 4**
- Date: **05 April 2022**
- Place: **J. W. Marriot, Pune**

Taking the Torch ahead



- Panel discussions on enhancing EV production, financing e-mobility transition, building infrastructure and fuelling growth with clean energy captivated the audience

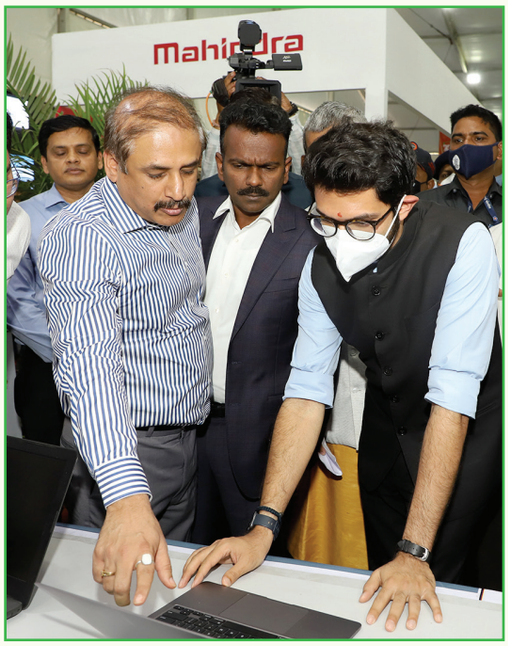
- A special Editors Roundtable session focussed on auto industry and Pune region and a fireside chat with **Mr. Anish Shah** of Mahindra Group enlightened the gathering

- EV Readiness Plan and E-Bus Report for Pune and a joint declaration by Municipal Commissioners of 10 cities of Maharashtra was released at the hands of Mr. Aditya Thackeray, Environment Minister of Maharashtra, in the valedictory session

Exhibiting the green eMotions

Although it was the beginning of a scorching summer day on 02 April, the Sinchan Nagar Ground in Pune was all geared up to go green with several electric vehicles being exhibited by entrepreneurs and big corporations. The EV exhibition was inaugurated by Environment Minister of Maharashtra **Mr. Aditya Thackeray** in the presence of other dignitaries including various senior government officials. The exhibition was a massive hit with thousands of students, professionals, and elderly citizens visiting the venue for a test ride of their favourite electric vehicle. Visitors were offered financial assistance for booking the vehicles, registering the vehicle with the RTO and taking it home at the earliest.


EVO
ELECTRIC


Mahindra


EKA E9
BE SMART, GO ELECTRIC


RapidX


प्रादेशिक परिवहन कार्यालय, पुणे
(RTO PUNE)

Rallying for a pollution-free future

It was quite an unusual Sunday morning in Pune on 03 April, when more than 400 electric vehicles, including mostly e-scooters, e-cycles, and e-bikes along with e-autos, e-buses, took to the road to deliver a message. The range anxiety and performance anxiety around EVs proved to be a 'myth' as proud owners of these vehicles covered a distance of over 28 kilometers, starting from Sinchan Nagar Ground to Empress Garden, MG Road, Pune Regional Transport Office (RTO), College of Engineering Pune (COEP), Jangali Maharaj (JM) Road, Fergusson College (FC) Road, Model Colony, Deep Bungalow Chowk, Om Super Market, ICC Trade Towers (MCCIA office), Savitribai Phule Pune University and back to Sinchan Nagar ground. Minister of Transport and Parliamentary Affairs, Govt. of Maharashtra, **Mr. Anil Parab** and Pune Police Commissioner **Mr. Amitabh Gupta,** IPS, flagged off the EV rally in the presence of other dignitaries.


Pune will lead.
India will follow.
PUNE AFC


MH14CL2024


PUNE AFC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MH14CL2024


India's Biggest Electric Vehicle Rally
PIAGGIO


#PUNEAFC

KEYNOTE

Pune AFC: A step towards a more sustainable future

Mr. Aditya Thackeray

Minister for Environment and Climate Change, Tourism, and Protocol, Government of Maharashtra.

Pune has been at the forefront in the automotive industry in India. When we look at the culture, heritage, knowledge, and innovation ecosystem in Pune, the city has always been the harbinger of change and revolutionary ideas. I am happy that we are taking a step ahead and very aptly organising the Alternate Fuel Conclave in Pune.

Working on climate change and the environment is no longer just the work of the ministry. We are here to set policies, but it is citizens who need to imbibe and implement these actions on the ground. All ministries need to work in sync to convert policies into action. That is why we have instituted the 'Maharashtra Council of Climate Change' to give a direct guiding principle of environmental work for sustainable development and to audit ourselves in terms of urban and rural development, transport, industry, forests, etc.

Maharashtra received the 'Inspiring Leadership' award at the COP 26 (The 2021 United Nations Climate Change Conference, Glasgow) for taking the lead in climate change. Urbanisation is increasing rapidly in our 43 'AMRUT' cities, having more than a total of 6.5 crore population. Over 50 per cent of Maharashtra is urbanised and these cities are in the 'Race to Zero*'. Clean mobility is our target, for which municipal commissioners of major cities in our state are working together.

After the introduction of the Electric Vehicle (EV) policy, there has been a 496 per cent rise in the EV uptake in Maharashtra. Earlier, just over 2,000 electric vehicles were being sold in a year, but in 2021-22, more than 22,000 EVs were sold. We are also working on schemes to replace old autorickshaws with e-autos.

Public transport in Maharashtra will witness a transition to electric, biofuel or hydrogen fuel cell operated buses. The green industry is going to take a huge jump from the situation it is in today, and we can lead and create revenue and jobs for our people.

The first edition of the Pune Alternate Fuel Conclave (Pune AFC) is certainly going to be the torchbearer of change as far as green mobility in India is concerned. The thoughtfully planned conclave has a good mix of vehicles on display, ground activities, panel discussions, one-on-one chats, and participation of ministries, related deparments, administration, industries, experts, professionals, academia, and key stakeholders. The honorable Consul Generals representing about 15 countries highlighted the importance of this conclave. We plan to organise more such conclaves on different topics in different cities across Maharashtra.

All of this is moving towards setting the goals for the Maharashtra Council of Climate Change. Our environment and surroundings are changing; temperatures are rising with unseasonal rains becoming a common feature. As a human race, we need to decide about sustainable development. We need to work on our targets actively. On-ground action needs to be taken to achieve real sustainable change.

**Race To Zero is a global campaign to rally leadership and support from businesses, cities, regions, investors for a healthy, resilient, zero carbon recovery that prevents future threats, creates decent jobs, and unlocks inclusive, sustainable growth.*

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FOREWORD

Mr. Subhash Desai

Minister of Industries and Mining, Government of Maharashtra

Maharashtra has always taken the lead in innovation. New investments are coming to the state. In the last two years, MoUs worth over Rs. three lakh crores have been signed and about two lakh employment has been generated in the state. All these investments are for different sectors including EV manufacturing, data centres, green energy, biofuels, and electronics. Maharashtra is increasing its footprint and we are inviting investors to join our journey towards sustainable growth.

Maharashtra is one of the first states in India to introduce its own EV policy and companies from India and abroad are actively investing in e-vehicle manufacturing. We are aware of the challenges; but despite those we will take this cause forward. We are also encouraging the development of charging infrastructure to further fuel the growth of EVs.

Maharashtra is aiming to become a trillion-dollar economy, and I am sure with the advent of new technology and new horizons being opened by various departments, we will reach the target soon. The biofuel, hydrogen fuel, and EV revolution will play a greater role in this journey.

Dr. P. Anbalagan, IAS

Chief Executive Officer, Maharashtra Industrial Development Corporation (MIDC)

The world is facing tremendous challenges in the form of climate change. Vehicular carbon emissions are the largest contributor to air pollution in urban areas. Especially in inland cities, where there is no natural disposal, pollution due to vehicles emissions is going to pose a great danger. We need to take urgent steps to avoid this catastrophe.

Maharashtra's EV policy incentivises not only the customers who are going to buy the vehicles, but also the production units and charging infrastructure-enablers. It is a smart beginning of sustained efforts towards adoption of alternate fuels and clean mobility.

In the past, we have witnessed the coming together of all start-ups, academia, and other stakeholders in the civil society to discuss a roadmap for creating a sustainable clean energy ecosystem in Maharashtra. The Pune AFC has surely served as a platform to build synergy and help the government implement policies for adoption of clean, green, and sustainable sources of energy.

Mr. Ashok Shingare, IAS

Member Secretary, Maharashtra Pollution Control Board (MPCB)

We all agree that growing air pollution because of vehicle emissions is now a critical concern. There is a need of cleaner transport technology for cities. That is where electric vehicles are coming in as quite a relief. Affordability and being environment-friendly are few of the reasons why India is switching to EVs. The Maharashtra state government has also taken up various policy initiatives and efforts in terms of developing the entire ecosystem around electric vehicles.

Making constructive changes to the existing environmental policies are the foundation for a successful future. Adopting environment-friendly practices, such as using electric vehicles, public transportation, and bicycles may help us get rid of toxic smoke from vehicles. E-mobility is an important aspect in Maharashtra Pollution Control Board's (MPCB) goal to achieve a cleaner environment. MPCB will work with and support enterprises in the battery swapping area and with those in providing 'Mobility-as-a-Service' (MAAS).

PREAMBLE

Dr. Sudhir Mehta

President,
Mahratta Chamber of Commerce, Industries and Agriculture (MCCIA)

India has been looking at the next sunrise industry, after Information Technology (IT), for jobs, exports, wealth, etc. With the largest opportunity in manufacturing globally over the next two decades, I believe that the Electric Vehicles (EV) and Hydrogen Fuel Cell Vehicle industry will be the next sunrise industries. Electric buses and hydrogen-fuelled buses will completely transform the transportation system in India and the world.

The Alternative Fuel Conclave showcased how Pune is a forward-thinking city. We have the DNA, the opportunity, and the talent to become a global EV hub in the coming decades. It will be possible only with a collaborative approach, government support, and citizen participation.

Pune has a unique position in creating an ecosystem for that. Pune has the confluence of the software and hardware industry with an abundant talent pool and research institutions. Pune can drive the electric and hydrogen mobility transition. I must praise the Environment Minister of Maharashtra, Mr. Aditya Thackeray, for his leadership, vision and passion for an environment-friendly and EV-empowered future.

Mr. Prashant Girbane

Director General,
Mahratta Chamber of Commerce, Industries and Agriculture (MCCIA)

We have to reduce the use of petrol, diesel and its imports to conserve the environment and achieve self-sufficiency in energy security of the country. Alternate Fuel is the only appropriate solution to this. The sector is developing and evolving rapidly. The Maharashtra government and the Central government have taken policy initiatives to make this transition smooth in our state and the country.

Maharashtra Government, and especially the Environment Minister, Mr. Aditya Thackeray's initiative to hold a conference on alternative fuels in Pune will prove to be a turning point in this historic journey. The transformation of the automotive industry in the coming decades due to electric, hydrogen fuel and bio-fuel will have an enormous impact on Pune too. Start-ups, MSMEs, and automotive industry in Pune are gearing up to deal with challenges in this journey.

The Pune AFC has helped to position Pune as the city which will lead the transition from conventional fuels to alternative fuels. This is important not just for Pune, but for all of Maharashtra and for India. Once again, Pune, Maharashtra, will lead the journey from the front.

EXHIBITION INAUGURATION

Pune will lead the EV revolution, and India will follow: Aditya Thackeray

Pune has traditionally been an automotive and manufacturing hub. Also, a large number of start-ups and conglomerates have their production facilities in and around Pune. In addition, futuristic industries are coming in Chakan, Talegaon, and other parts of Pune district to further work on green mobility. Pune is certainly leading the green mobility revolution and it will be great for India as rest of the country is inspired and follows suit.

On the auspicious day of Gudhi Padwa (2 April, 2022), the Sinchan Nagar ground in Pune wore a festive look with several entrepreneurs, founders of start-ups, officials from large companies and several government departments, who were upbeat about the inauguration of the Alternate Fuel Vehicle Exhibition under aegis of the Pune Alternate Fuel Conclave (Pune AFC) at the hands of the Cabinet Minister of Environment, Climate Change, Tourism and Protocol, Government of Maharashtra, Mr. Aditya Thackeray. An initiative by the Government of Maharashtra, the Pune AFC was organised by Maharashtra Industrial Development Corporation (MIDC) and Maharashtra Pollution Control Board (MPCB), in association with Mahratta Chamber of Commerce, Industries and Agriculture (MCCIA).

As Mr. Aditya Thackeray arrived at the exhibition venue, a traditional welcome to all the guests with balloons released in the sky marked the inauguration session even more joyful and buoyant. Mr. Ashish Kumar Singh, IAS, Additional Chief Secretary (Transport & Ports) Maharashtra EV policy; Dr. P. Anbalagan, IAS,

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We are making it mandatory for offices, malls and commercial complexes to have 30 per cent of their parking slots with charging points.

- Mr. Aditya Thackeray

Chief Executive Officer of MIDC, Mr. Ashok Shingare, IAS, Member Secretary of MPCB; Mr. Vikram Kumar, IAS, Administrator and Commissioner, Pune Municipal Corporation; Mr. Rajesh Patil, IAS, Administrator and Commissioner, Pimpri-Chinchwad Municipal Corporation; Mr. Sudhir Mehta, President, MCCIA; Mr. Prashant Girbane, Director General, MCCIA, and other dignitaries were present.

Mr. Aditya Thackeray inaugurated the exhibition by cutting the ribbon. He then headed to visit the stalls at the exhibition and interacted with several start-ups and entrepreneurs. Six two-wheeler EVs and a bus by EKA Pinnacle Industries Ltd. was launched at his hands inside the hangers.

Mr. Prithviraj Chavan, Former Chief Minister of Maharashtra; Mr. Anil Parab, Minister of Transport, Government of Maharashtra; Mr. Nitin Raut, Energy Minister, Government of Maharashtra and Mr. Uday Samant, Minister of Higher Education And Technical Education, Government of Maharashtra also visited the exhibition over the four days.

Citizens willing to buy e-cycles, e-bikes, and e-cars were given an option to walk in and buy the vehicles. The exhibition also had stalls by banks for financial assistance and Regional Transport Office (RTO) to provide on the spot registrations. More than 80 companies and brands exhibited their products and services at the exhibition.

One of the exhibitors, Mr. Triloknath Yadav, Director, Exerval Private Limited, said he was happy to participate in this exhibition. "I have about 20 years of experience in e-mobility and technology. Pune AFC is one of the biggest EV events organised in India and it will provide impetus to EV adoption among citizens."

Post-inauguration, Mr. Aditya Thackeray also addressed the mediapersons. Mr. Thackeray said, "We are working on alternate fuels like electricity, biofuel, and hydrogen fuel-based mobility. Pune has traditionally been an automotive and manufacturing hub. In this context this conclave is being organised in Pune."

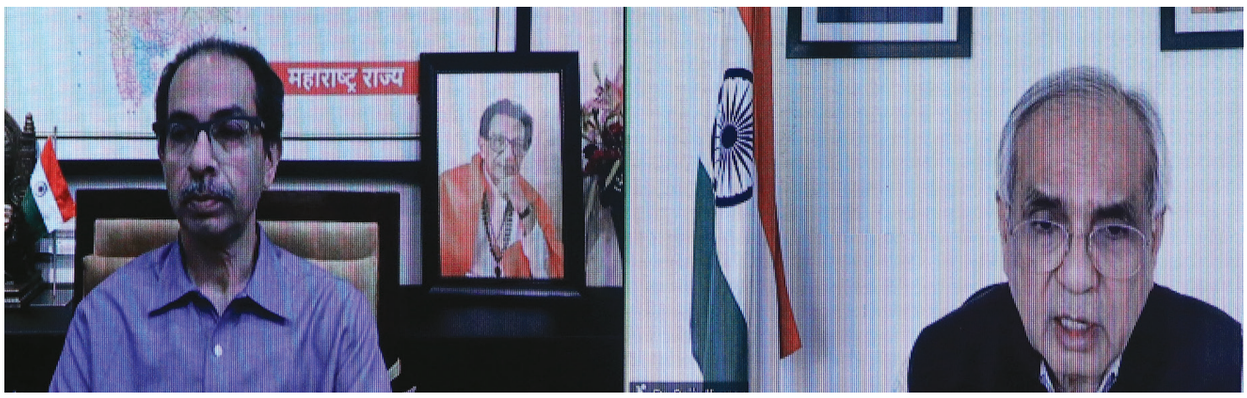
"While visiting the stalls, I realised that most of the start-ups and conglomerates have production facilities in and around Pune. Several companies are planning to expand and start new production facilities in Maharashtra. Industries coming in Chakan, Talegaon and new electric vehicles being launched in Pune is certainly a big thing for all of us," Mr. Aditya Thackeray stated.

Commenting on the charging infrastructure, Mr. Aditya Thackeray said, "EV percolation is happening in Maharashtra and we will see a large number of charging stations coming up in the state in the near future. The battery technology is also advancing rapidly and we are making it mandatory for offices, malls, and commercial complexes to have 30 per cent of their parking slots with charging points."

The EV exhibition under the Pune AFC brought together stakeholders across the EV ecosystem and helped raise awareness about the need for clean mobility.

CONFERENCE INAUGURATION

Maharashtra has always shown the way ahead



After an exciting start to the Pune Alternate Fuel Conclave (Pune AFC), with the EV exhibition at Sinchan Nagar Ground and India's largest EV rally to beat the range-anxiety, the two-day conference at J. W. Marriot, Pune began with an equally jubilant and insightful agenda setting session on 4 April, 2022. Eminent industrialists and government officials shared their perspectives and vision during this session.

Mr. Uddhav Balasaheb Thackeray, Chief Minister, Government of Maharashtra; Mr. Subhash Desai, Minister of Industries and Mining, Government of Maharashtra; Mr. Aditya Thackeray, Minister of Environment and climate change, Tourism, Protocol, Government of Maharashtra; Mr. Nitin Raut, Minister of Energy, Government of Maharashtra; Ms. Aditi Tatkare, Minister of State (MoS) Industries, Government of Maharashtra; Mr. Rajiv Kumar, the Vice Chairman, NITI Aayog, Government of India; Mr. Dr. P. Anbalagan, IAS, CEO, MIDC, and Dr. Sudhir Mehta, President, MCCIA participated in the inaugural session.

The conference hall was full to its capacity as prominent business personalities, entrepreneurs, policymakers, influencers, Consul Generals representing several countries, and media representatives from the country ensured their presence for this one-of-its-kind conclave. Mr. Uddhav Thackeray, Mr. Rajiv Kumar and Ms. Aditi Tatkare addressed the audience virtually.

Addressing the audience, **Mr. Uddhav Balasaheb Thackeray** said, "As the Chief Minister of Maharashtra, I am proud that different ministries of my government have come together to organise this conclave. Entrepreneurs and investors should

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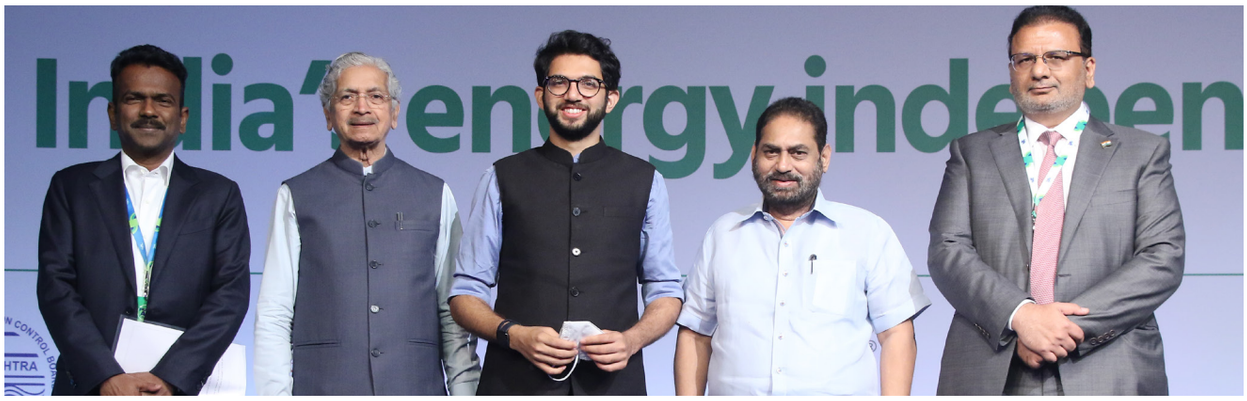

also feel that they should come to Maharashtra for ease of doing business. We have taken several steps to remove barriers in the way of investors and to make their drive smooth. We are confident that we will fulfil the expectations of the NITI Aayog from Maharashtra state. Maharashtra has always shown the way ahead and the country will accept our initiatives in the alternate fuel space."

Mr. Rajiv Kumar emphasised on seizing the opportunity of the EV revolution to make it the engine of growth and employment generation in the country. "Research and Development is the most important aspect for alternate fuels. The industry must join hands with academia and think tanks. We need to build trust with all the stakeholders, who are working towards one goal. Maharashtra government must ensure that Pune city becomes a leading example of industry and academia coming together," he added.

Mr. Aditya Thackeray, who envisioned this conclave, said, "Pune has always been at the forefront in the automotive industry. I am happy that we are taking a step ahead and an alternate fuel conclave is being organised here. Clean mobility is our target, for which all the municipal commissioners of major cities are working together. Public transport in Maharashtra will witness a transition to electric, biofuel, or hydrogen fuel cell operated buses. We need to work on our targets actively. On-ground action needs to be taken to achieve real sustainable change."

Mr. Subhash Desai encouraged investors and industrialists to invest in Maharashtra. He said, "In the last two years, about Rs three lakh crores plus worth MoUs have been signed and two lakh employment has been generated. All these investments are for different sectors including EV manufacturing, data centres, green energy, biofuels and electronics. The investments are coming from countries like the USA, the UK, Germany, Russia, Japan, Korea, and Singapore. Maharashtra is increasing its footprint and we are inviting investors to join this journey towards sustainable growth."

Mr. Nitin Raut informed about the steps taken by his Ministry. He said, "The future of mobility is shared, connected and electric. It is imperative to find replacements for conventional fuels and provide eco-friendly alternative fuels. To facilitate the increased use of green energy in the transport sector, MSEDCL is proactively taking an initiative to establish EV charging stations in the state. MSEDCL has also developed an app. I am confident that Maharashtra will embrace new sources of energy for sustainable growth."

Ms. Aditi Tatkare said, "There has been tremendous response to this initiative where the future of mobility and alternate fuel technology has been showcased. Such sustained efforts will help increase adoption of clean and sustainable mobility in our state and country as well."

Dr. P. Anbalagan said, "Pune AFC has given us a platform to undertake key steps towards our sustainability transition and fulfil our commitment towards a clean and green future. It is a smart beginning of sustained efforts towards the adoption of alternate fuels and clean mobility."

AGENDA SETTING SESSION

Topic: The Future of Indian Mobility

The panel discussed the present state and future of mobility. They deliberated on new technologies that are being used in the industry, and government policies that are enabling this.

Participants:

- **Mr. Ashish Kumar Singh**
  Additional Chief Secretary, Transport & Ports, Government of Maharashtra
- **Mr. Pramod Chaudhari**
  Chairman, Praj Industries Ltd.
- **Mr. Ravi Pandit**
  Chairman, KPIT
- **Dr. Sudhir Mehta**
  Chairman, Pinnacle Industries Limited
  President, MCCIA
- **Mr. Shekhar Bhide**
  VP, Mercedes Benz India Pvt. Ltd.

Session Moderator:

- **Mr. Amit Paranjape**
  Co-Founder, Reliscore

Mr. Ashish Kumar Singh on policies of the state government of Maharashtra to help the EV industry.

Mr. Ashish Kumar Singh, IAS
Additional Chief Secretary, Transport & Ports, Government of Maharashtra

We all agree that mobility is undergoing a major transformation. We have come up with an EV policy and we are also working on a hydrogen policy. Technology is in a state of flux, as is policy-making. Policies will get defined by how technology takes shape over time. Since technology and consumer adoption is changing very fast, policies, too, are dynamic. We are also coming up with aggregator guidelines similar to what the Delhi state government has issued.

Personally, I feel we will be technology-agnostic. We will allow all technologies to flourish. Our policy has demand and supply-side incentives. The policies are incentivising more renewables along with continuing to support what already exists in order to ensure a smooth transition.

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Mr. Pramod Chaudhari
Chairman,
Praj Industries Ltd.

Mr. Pramod Chaudhari on the role of biofuels today and where can they take us in the next 10 years

EVs are good for urban transport, but 60 per cent of the population of India is dependent on the rural economy. We also need to think beyond road transport, about sustainable aviation and marine fuels. Existing infrastructure for fossil fuels is easily adoptable for both liquid and gaseous biofuels. Also, lots of MSMEs are dependent on existing automotive companies and policymakers should take this into consideration and adopt policies which are appropriate for the country. How we influence or support the rural economy is an important criteria and for that the idea of bio-mobility comes into the picture.

Based on current declared policies, by 2025 about 30 to 40 per cent of petrol or diesel vehicles could be replaced by ethanol. We are also working on blending ethanol with diesel.

Mr. Ravi Pandit
Chairman, KPIT

Mr. Ravi Pandit on the role of hydrogen in transportation and use of biomass to get it

EVs can be battery-electric vehicles (BEV) or hydrogen fuel cell electric vehicles. BEVs are suitable for city commuters and light duty vehicles, but other solutions like hydrogen fuel cells are required for heavy vehicles like buses and trucks. We are working on domestic development of fuel cells, which will generate electricity using hydrogen and drive a vehicle. We have developed a truly made in India 'Hydrogen Fuel Cell E-Bus'. More interesting would be hydrogen coming from biomass. It will address the issue of pollution, import substitution as well as generate income for farmers. The auto industry is going to change as much in the next 10 years as it was since 1918. Green hydrogen can take care of intercity bus as well as truck travel.

Dr. Sudhir Mehta
Chairman,
Pinnacle Industries Ltd.;
President, MCCIA

Dr. Sudhir Mehta on his perspective of the EV and hydrogen fuel industry

EV and hydrogen fuel will be the industry of the future. With the largest opportunity in manufacturing globally in the next two decades, India also has a chance to leapfrog. About 40 to 50 per cent of the automotive industry in India will move towards hydrogen and e-mobility. The reasons behind this tsunami are:

1. We are the largest importer of fossil fuels,
2. We have a great depth of engineering and manufacturing experience in the automobile sector
3. Electric and hydrogen vehicles are as much software as they are about the hardware parts. Indian industry excels in both. Hydrogen and e-buses will completely transform the transportation system in India and also the world.

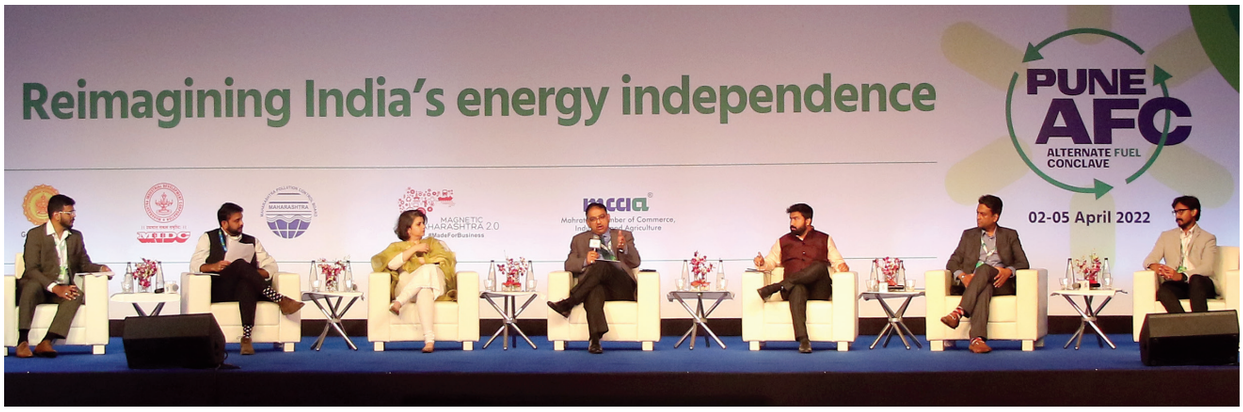
Mr. Shekhar Bhide
VP,
Mercedes Benz India
Pvt. Ltd.

Mr. Shekhar Bhide shares his perspective on EVs and its market penetration

Alternate fuels can be used directly in automobile or used to generate electricity and then stored in batteries to provide for automobiles. We have to look at the conceptualisation, design, development, manufacturing, sale and recycling of the EVs. We are building a prototype using EV technology, which is aiming to cross 1,000 kilometer in one single charge of the battery.

The government has set a vision of 30 per cent EV penetration by 2030, but I am confident it can cross the target and reach 50 per cent by that time. Maharashtra's EV policy touches two important aspects like road tax and registration, which will attract people to look at this technology. As far as industry growth is concerned, we will require multidisciplinary talent and need reskilling and upskilling.

PANEL DISCUSSION 1



Topic: Zero Emission Commercial Fleets and Public Transport

The panel discussed about how commercial fleets and public transport vehicles can be brought into the sphere of new age mobility, the major barriers to fleet electrification in the areas of policy, technology, and finance.

Participants:

- **Mr. Debashis Mitra**
  Business Head, AltiGreen
- **Mr. Anil G.**
  Co-Founder and COO, Bounce
- **Ms. Smriti Sharma**
  Head, Public Policy, Amazon
- **Ms. Sumit Mittal**
  Chief Finance Officer, GreenCell Mobility
- **Mr. Laxminarayan Mishra, IAS**
  Chairman and MD, PMPML

Session Moderator:

- **Mr. Kaustubh Gosavi**
  Consultant, WRI
- **Mr. Rohan Rao**
  Manager, WRI

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Mr. Debashis Mitra on impediments to finance alternate fuel and electrical fleets.

Mr. Debashis Mitra
Business Head, AltiGreen

Last mile transportation is pushing electric vehicles in a big way because it is coming from organised players.

For an EV, the operating cost is one-third and the capex difference is 10 to 15 per cent, but still there are bottlenecks in financing the alternate fuel vehicles. Higher interest rates are one such impediment.

To finance any electric vehicle, banks will ask for the resale value of the EV, which is still evolving. Instead of manufacturers, large operators can drive the change. Individual drivers can start getting attached to these operators. Leasing is completely missing today, and players can come up with leasing products, which are not available today.

Mr. Anil G.
Co-Founder and COO,
Bounce

Mr. Anil G. on innovative models like Battery-as-a-Service that will emerge in the Indian market

In EVs, the majority of the cost is of the battery and motor. The overall cost of acquiring an EV goes down drastically if the customer is not paying for batteries. It was very clear to us that electric vehicles will work; EV adoption will be higher only if it is on a battery-swappable solution. A lot of supply chain related issues still persist in India. Incentivising companies that can indigenise these key components is definitely a good directional step which will hopefully not only make EV affordable for India but also for the world.

Mr. Sumit Mittal
Chief Financial Officer,
GreenCell Mobility

Mr. Sumit Mittal shares his perspective on financing model of e-buses, barriers to fund public or private electric buses in India at scale

GreenCell Mobility, which is an e-mobility platform to boost adoption of electric vehicles, is currently focussing on the bus segment.

For large institutional capital to come into the sector, government policies should provide comfort to investors from both debt and equity side to participate in this growth story. Classifying electric mobility funding as a priority sector lending will prove to be a catalyst in this.

Government should support some Gross Cost Contracts (GCC) to make counterparties (municipal corporations) for government projects more financeable.

State transport corporations should adhere to the concession agreements. If it is adhered to, then we can see huge interest and intent from the lenders to participate in the sector.

Ms. Smriti Sharma
Head, Public Policy,
Amazon

Ms. Smriti Sharma on policy levers from the state that can be employed to accelerate the transition of fleets to cleaner, greener fuel options.

In 2019, Amazon co-founded the climate pledge. We have decided to achieve net zero carbon across our business by 2040.

Environmental solutions cannot be devised in a void. We will have to work together with the Industries, Transport and Labour Departments of the government because behind every electric or biofuel-laden vehicle is a person who is driving it. Governments should think about solutions more holistically.

Multimodal logistics parks relying on green miles and warehousing closer to the consumer is needed so that the transportation burden can be cut down. Besides financial incentives, non-financial incentives like the parking lot preferences for green vehicles in Maharashtra's policy are important.

A lot of innovations and charging infrastructure are happening in urban areas. We need to think about sustainable transportation solutions for the rural populations too.

Mr. Laxminarayan Mishra, IAS
Chairman and MD,
PMPML

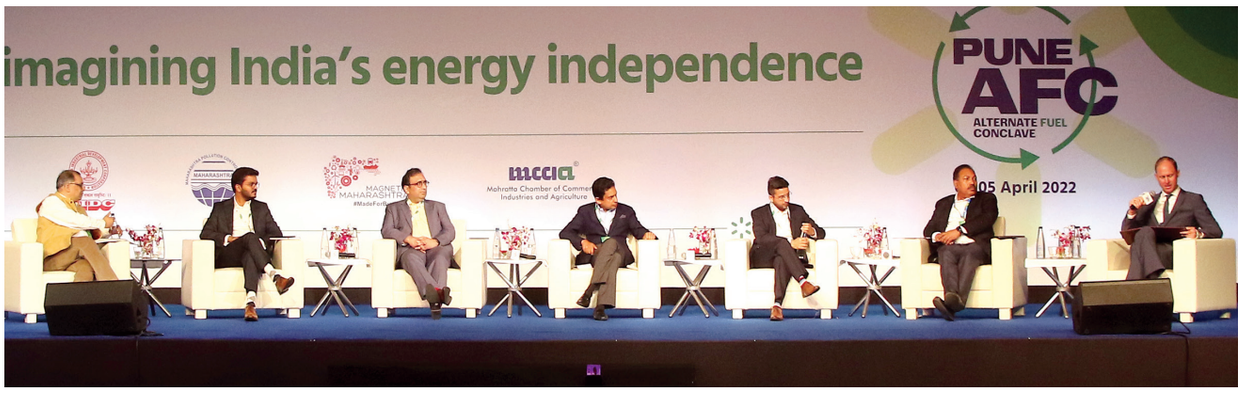
Mr. Laxminarayan Mishra on PMPML's plan to transition to electric buses.

Pune Mahanagar Parivahan Mahamandal Limited's (aka PMPML, the municipal transport authority of Pune and Pimpri-Chinchwad) primary aim is to provide service to citizens. Pune was a pioneer in getting electric vehicles, and we have had 150 buses since 2018 which have covered more than two crore kilometres. 500 more e-buses will be added to the fleet over the next few months. The transition has been very smooth and it's a continuous process. We are also converting old diesel and CNG vehicles into e-vehicles.

Pune Metro will cover the majority areas of Pune and the neighbouring Pimpri-Chinchwad limits and instead of competing on the same routes, we are planning a feeder system, for which we require 300 smaller buses.

We have three fully dedicated electric charging stations at our bus depots. We also have initiated a tender process to set up public charging stations.

PANEL DISCUSSION 2



Topic: Enabling Investment in Future Mobility

This panel discussed opportunities to boost investment in Maharashtra and India for the clean mobility transition, fiscal and non-fiscal measures by governments at the central and state level, the role of international forums as well as foreign and domestic philanthropy in this transition, and challenges in raising venture capital in the EV sector.

Participants:

- **Mr. Baldev Singh, IAS**
  Additional Chief Secretary, Industries, Government of Maharashtra
- **Mr. Ashish Kundra, IAS**
  Principal Secretary cum Commissioner, Transport, Government of NCT (Delhi)
- **Mr. Randheer Singh**
  Senior Specialist, NITI Aayog
- **Mr. Shirish Sinha**
  Director, Children's Investment Fund Foundation (CIFF)
- **Mr. Uday Khemka**
  Vice Chairman, Sun Group
- **Mr. Darshan Shah**
  Vice President, Merisis Advisors

Session Moderator:

- **Mr. Clay Stranger**
  Managing Director, RMI

PUNE AFC ALTERNATE FUEL CONCLAVE
02-05 April 2022

Mr. Baldev Singh on the untapped potential to unlock new investments, present EV momentum in Maharashtra and its future.

Mr. Baldev Singh, IAS
Additional Chief Secretary, Industries, Government of Maharashtra

Maharashtra EV policy deals with the infrastructure side incentives, demand, and supply side incentives to set up manufacturing facilities in the state, including stamp duty exemption, electricity duty exemption, best connectivity (air, road and sea) and skilled workforce. MIDC is offering land along with capital subsidies to provide a conducive atmosphere for setting up EV industries in Maharashtra.

We have a single integrated digital platform for redressal of issues through MIDC, MPCB or the environment department, and fast-track clearances of all investment proposals which come to Maharashtra.

Five years from now, we see the EV sector maturing and addressing many concerns like disposal and recycling, life of the batteries, etc. We will probably have 40 per cent e-vehicles on the road, which will stabilize the sector and supply chain.

Mr. Ashish Kundra, IAS
Principal Secretary cum Commissioner, Transport, Govt of NCT Delhi

Mr. Ashish Kundra on fiscal and non-fiscal measures by the Delhi government to accelerate EV adoption, investment opportunities and lessons being learned in Delhi

Delhi started off with a policy which offered tax breaks, purchase incentives and we see some very positive and reassuring results. Over 10 per cent of the total sales in Delhi were of EVs in the last quarter. Investments in public charging infrastructure and subsidies for private charging infrastructure have given confidence to people that there will be no range anxiety. Over 4,000 permits have been issued for electric autos. We will include about 2,000 buses into our city fleet.

An electronic investment park, focused around electric mobility, is also coming up in the state. We are partnering with IIT Delhi to create a forum, where we have venture capital funds. The Delhi government seed money for start-ups and also tap into the Indian diaspora of IIT Delhi alumni who want to contribute by investing in this space.

Mr. Randheer Singh
Senior Specialist, NITI Aayog

Mr. Randheer Singh on the progress of advanced chemistry cell programme

The Advanced Chemistry Cell (ACC) is in the public domain now and we have now over a subscription for the program. The total available capacity is 50-gigawatt hours. Another program, a niche ACC program for technologies and chemistries, will be promoted. Companies are also interested in putting up cell manufacturing units within the country. The two main conditions for them are - within two years of the letter of award, they have to achieve a minimum of 25 per cent localization at cell level, and they have to achieve 60 per cent localization at the cell level within five years.

State EV policies also need to start focusing on the processing industry in clean metals. We are studying the potential locations in our country through spatial analysis, where clean energy metals that go into EV metals like lithium can be produced, processed, and recycled.

Mr. Shirish Sinha
Director, Children's Investment Fund Foundation (CIFF)

Mr. Shirish Sinha on the catalytic role of philanthropy and civil society in this transition, sensitive intervention points to help unlock more investment

The role of philanthropy is of building coalitions, complementarity, and collaborations. Philanthropy can strengthen and empower the domestic civil society organizations and think tanks to support the narrative of clean energy transition. Philanthropy can also bring catalytic development capital, which can actually influence and inform some of the financial mechanisms that are needed.

In India, we can play a role in terms of the impact in investing ecosystem work that is evolving much faster. The technical assistance work is linked to strengthening the capacities of the think tanks. It is essentially what philanthropy really can do. A lot of investments or philanthropic capital coming into the climate and energy space is from foreign philanthropies, but I think there is a huge space for domestic philanthropy to play this role.

Mr. Uday Khemka
Vice Chairman, Sun Group

Mr. Uday Khemka shares a global perspective on investments and the role of international forums in transitioning to clean mobility

India is rife with entrepreneurship and if any sector requires entrepreneurship today, it's the e-mobility sector. India is now full of innovations in software, hardware, robotics, AI, data science, etc. The e-mobility sector is all about creating an ecosystem of partnership. Technology helps you do that through the sharing of data, integration of APIs, etc.

India has been reliable since 1947 in terms of credit and honouring commitments. We need to create tens of millions of jobs in the next 10 years. Investors care about sincerity and consistency of policy and leadership and we can see tremendous sincerity of focus at New Delhi and at the Maharashtra level. With the right kind of regulations in place, infrastructure capital can be attracted at a much cheaper rate than private equity capital.

Mr. Darshan Shah
Vice President,
Merisis Advisors

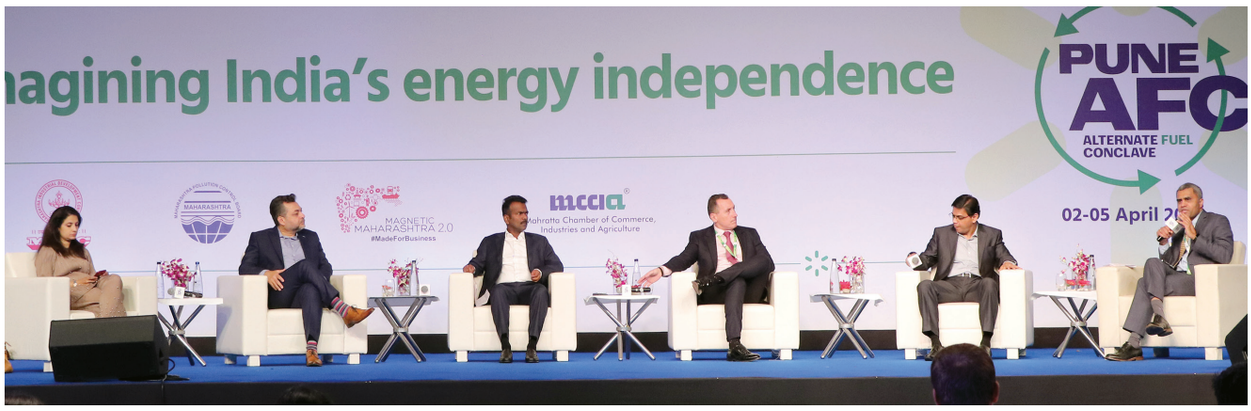
Mr. Darshan Shah on challenges in raising venture capital for start-ups and mature businesses and bridging the gap in investor confidence to bet forward on hardware and technology

A bunch of capital is now flowing into OEMs catering to the manufacturing of vehicles. It is basically assisting the last mile logistics. E-commerce companies are working hard to reduce costs, give better earnings to the drivers and create an impact.

We are seeing a lot of global and Indian capital flowing into the infrastructure space, be it battery charging or swapping. There are very less, or selected deep-tech focused funds who are investing in the battery technology segment. Today, most investors are not sure which model or chemistry will work. EVs are an asset heavy play, which is where I would like to see a lot of capital coming in. EV mobility is all about building assets. If you're looking to switch to e-mobility, there are limited fundees who are ready to invest in this hardcore infrastructure and build a long-term asset which will actually require infrastructure capital more than VC capital.

As we move forward, lithium-ion battery recycling and reuse will be the larger play that will eventually happen in the next few years. With the right kind of regulations in place, infrastructure capital can be attracted at a much cheaper rate than private equity capital.

PANEL DISCUSSION 3



Topic: Enhancing EV Production in India

In this panel discussion, industry stalwarts and official from the government shared their perspective on initiatives for enhancing EV production in India.

Participants:

- **Dr. P. Anbalagan, IAS**
  Chief Executive Officer, MIDC
- **Mr. Girish Wagh**
  Executive Director, Tata Motors
- **Mr. Balbir Singh Dhillon**
  Head, Audi India
- **Mr. Diego Graffi**
  Managing Director & CEO,
  Piaggio Vehicles Pvt. Ltd.
- **Ms. Sulajja Firodia-Motwani**
  Vice Chairperson, Kinetic Engineering Limited

Session Moderator:

- **Mr. Prashant Girbane**
  Director General, MCCIA

PUNE AFC ALTERNATE FUEL CONCLAVE 02-05 April 2022

Dr. P. Anbalagan on MIDC's initiatives to boost EV production in Maharashtra

Dr. P. Anbalagan, IAS
Chief Executive Officer, MIDC

We have received five proposals for electric vehicle manufacturing and two proposals are already sanctioned and land has been allotted. Half a billion dollar investment has already come in and another 750 million dollar investments are in the pipeline.

We are also planning to have a private equity fund for all the sunrise sectors. EV is going to be included in it, and we are looking at a budget of at least Rs. 500 crore to begin with.

We are granting mega project status to any company which is investing just about Rs. 100 crore instead of earlier provision of Rs. 1,500 crore. MIDC is working on the land allotment process and the single window clearance process.

We are setting up an EV Vendor Park spread over 250 acres in Talegaon near Pune. We are building a charging infrastructure of about 2,500 charging points in seven cities and highways.

MIDC is in the process of aggregating about around 10,000 acres for setting up a solar park with more than 3,000 MW capacity.

Mr. Girish Wagh
Executive Director,
Tata Motors

Mr. Girish Wagh on Tata Motor's state of EV production in India, how government policies are helping and areas of policy improvement

By 2030, the electric vehicle penetration in small commercial vehicles and buses should be upwards of 25 per cent and 20 per cent respectively. The purchasing cost parity is something which will still take time because batteries are imported. Thannkfully, the ownership cost or operating cost is much lower. Customers have three anxieties in their mind, viz. range anxiety, charging infrastructure availability, and vehicle performance.

Production Linked Incentives (PLI) scheme is a master-stroke for automotive OEMs and auto component makers, which is equal to more than Rs. 25,000 crores. The government is ensuring that key aggregates are localized. When car EV penetration crosses 15 per cent, the connected load will increase and then the entire distribution infrastructure that we have will have to be upgraded.

Mr. Balbir Singh Dhillon
Head, Audi India

Mr. Balbir Singh Dhillon on Audi's plan for EV production and his wish-list for improving the EV infrastructure

Globally, Audi has decided to become a fully-electric car company by 2033. About 15 per cent of our own sales should be electric cars by 2025. For us, demand is not the problem but, the supply is a challenge due to the prevailing global situation. We have launched five electric cars last year.

We represent the luxury segment, which is just one percent of the overall car segment. We continuously evaluate and as and when we reach a certain threshold limit where we see that the investments that we need to make are justified. That is when we jump in. It is not a question of 'if', it is about 'when'. Acceptability of electric mobility is really fast. We need high speed chargers on the roads, national highways, etc. Societies in cities like Mumbai and Pune should put up at least one charger, which itself will motivate people to buy electric cars.

Mr. Diego Graffi
Managing Director & CEO,
Piaggio Vehicles India
Pvt. Ltd.

Mr. Diego Graffi on Piaggio's EV production numbers, how government policies are helping and what are the areas of improvement

The 3-wheeler segment is meant for livelihood and entrepreneurship and not for commuting. Owners of 3-wheelers are sensitive to the cost of ownership. We have already achieved total cost of ownership parity and hence penetration of electric vehicles into the 3-wheeler segment is the highest among the automotive sector. It's already in the range between 8-10 per cent based on the recent data for registration of new vehicles.

In terms of localization of components, we still have a lot of parts that are imported from outside India. The biggest problem as of now is in terms of supply chain capacity to follow the increase in demand. With the PLI scheme kind of interventions there will be more localization of components. We are impressed by the level of push that India is giving to electrification of mobility. However, government policies are helpful only in the short or midterms. We have to parallelly create an ecosystem, build infrastructure and improve the entire supply chain.

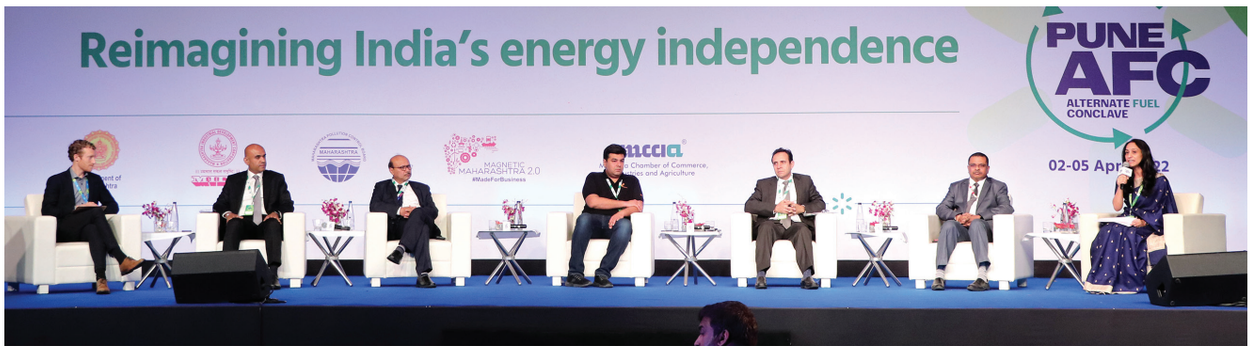
Ms. Sulajja Firodia-Motwani
Vice Chairperson,
Kinetic Engineering Limited

Ms. Sulajja Firodia-Motwani on her company's EV production status and her expectations from the governments for promoting the EV industry

Kinetic Green, set up six years ago, is one of the early players in the EV sector. We began our journey with golf carts and electric 3-wheelers, both passenger and cargo. Now we have also entered the electric 2-wheeler sector in 2021. We have sold more than 60,000 vehicles and we have 500 dealers across the country. All our vehicles are FAME compliant and we have achieved 100 per cent localization in our vehicles. Every part of our 3-wheeler is made in India.

I am very bullish on the prospects of electrification for three wheelers and two wheelers. Already 25 per cent of 3-wheelers are electric and I believe that in the next 10 years 75 per cent of vehicles will be electric. 2-wheeler penetration in the next 10 years would be around 40 to 50 per cent. Better charging infrastructure, better products and technology, getting out of the Chinese imported vehicles is needed. Policy should emphasize and promote good quality vehicles. Local supply chains have to gear up on capacity.

PANEL DISCUSSION 4



Topic: Financing India's E-Mobility Transition

Top representatives from India's premiere financial institutions discussed the E-Mobility scenario and financing this transition.

Participants:

- **Mr. K. Bhaskar Rao**
  Chief General Manager, Union Bank of India
- **Mr. Ryan Laemel**
  Principal, RMI
- **Mr. Sameer Aggarwal**
  Founder & CEO, RevFin
- **Mr. Shesh Ram Verma**
  General Manager, Commercial Clients Group, State Bank of India
- **Mr. Sumit Bali**
  Group Executive and Head Retail Lending, Axis Bank
- **Mr. Vikas Arora**
  Senior Vice President, Auto Loans, HDFC Bank

Session Moderator:

- **Ms. Akshima Ghate**
  Managing Director, RMI India

Mr. K. Bhaskar Rao on the Union Green Miles Program initiative and challenges in providing finance to EV buyers

Mr. K. Bhaskar Rao
Chief General Manager, Union Bank of India

We are supporting ESG norms and the basis that we have initiated various products. For e-vehicles, we have started a special scheme since November 2021 called the Union Green Miles. Under this program,we are offering products at 20 basis points lower than the ICE (Internal Combustion Engine) vehicles. We have financed about 470 vehicles in the last four months.

We are considering all industrial players on merit and proper assessment of viability. Awareness needs to be created in a big way so that tier 2 and tier 3 cities also get the benefit of the EV transition.

While EV infrastructure, like charging stations, is being sufficiently established, we are developing products in the finance segment. OEM manufacturers are also ready with various models. Once customer anxieties related to range and charging are taken care of, then it will automatically push the numbers which will ease up financing for EVs.

PUNE AFC ALTERNATE FUEL CONCLAVE 02-05 April 2022

Mr. Ryan Laemel
Principal, RMI

Mr. Ryan Laemel on the role of innovation in addressing barriers in financing EVs.

We actually don't need much innovation on the financial instrument side. We have all the financial instruments that we need from current practices and from other sectors to make the transition to electric vehicles viable. Picking the right financial instrument for a particular vehicle, using a case and designing that financial instrument is the real crux of innovation.

Blended and concessional finance are trending globally. These models have a potential to serve as a bridge between the higher and lower risk markets. OEMs have a role to play in product warranties, which are increasingly improving. Loan guarantees are another type of financial instrument, a type of guarantee mechanism, that can provide a backstop for banks and ensure that they can bring down interest rates slightly.

Mr. Sameer Aggarwal
Founder & CEO, RevFin

Mr. Sameer Aggarwal on the key barriers in financing EVs, the role of digital technology as a solution in this segment

We started lending for electric vehicles in 2018 when most of us had not even heard of electric vehicles. From our perspective, the biggest challenge has been to raise capital. It's been very difficult to convince even equity investors to put money behind electric vehicles.

The most critical aspect of EV adoption is the value that the end buyer derives from it. Digital technology has two uses - one is for efficiency gains in the process and the second is for risk mitigation. 97 per cent of our loans are done in tier 2 or tier 3 cities. 85 per cent of our customers are first-time borrowers. So, they have no past credit history, no banking transactions and they don't have any formal sources of income to show. Therefore, underwriting such customers is tough. We are able to underwrite people based on their personality and behaviour.

Mr. Shesh Ram Verma
General Manager,
Commercial Clients Group,
State Bank of India

Mr. Shesh Ram Verma on the critical challenges to speed up financing for the EV ecosystem, and the role of stakeholders in easing the financing.

Public sector banks like SBI have a presence in mainly cars and commercial vehicle segment. We observe that the normal cost of acquisition is slightly higher in the case of EVs and the repayment period is also higher than normal car loans.

More than 50 per cent of grid power is coming from fossil fuel or coal. We are transferring pollution from cities to powerhouses, so just don't push EVs. Let it be self-sufficient. We need some government scheme to ensure long-term viability for financing city transport buses. We are providing PLI loans to manufacturers of vehicles and components.

The government is pushing many sectors, like housing. Similar priority is required to be given to the EV sector. Classifying EV as a priority sector will reduce the cost of funding for us, which we can pass on to manufacturers and buyers both. My suggestion is that the entire value chain - whether it's producer of exclusive EV or buyer, should be classified. Small steps like these will boost this EV movement in the long run and it will reduce the cost of acquisitions.

Mr. Sumit Bali
Group Executive &
Head Retail Lending,
Axis Bank

Mr. Sumit Bali on how the industry is evolving to integrate EVs across all different vehicle classes and products

The automotive industry in India has grown well and if you see the financing of EVs, there are ESG funds available. Banks are focusing on ESG and there is a lot of investment going into electric vehicles. It will be a multiplied journey for electric vehicles, not a linear journey.

We will see a big jump in EV penetration by 2025-26 because this is something which is growing by leaps and bounds and is aided by government policies. This is said to grow exponentially from here. Government intervention is really necessary to make EVs more commercially viable. We need to have standardisation on the batteries so that the charging infrastructure or the swapping of batteries becomes seamless. This will reduce the uncertainties about charging infrastructure and mileage anxiety. We also need to keep in mind the disposal of batteries. Some norms around that need to be in place or else it can become extremely polluting.

Mr. Vikas Arora
Senior Vice President,
Auto Loans,
HDFC Bank Ltd.

Mr. Vikas Arora on dedicated loan products for EVs, HDFC Bank's perspective on this emerging industry and challenges in financing

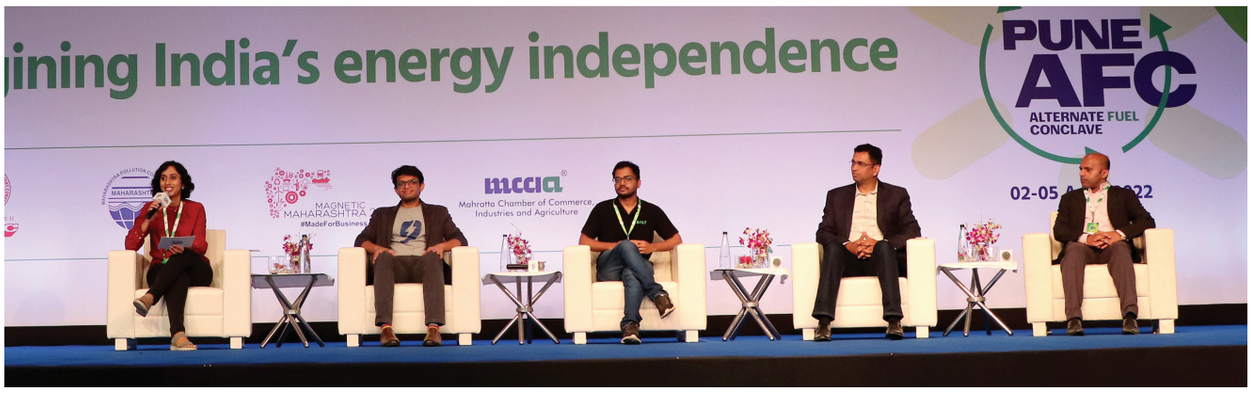
We don't differentiate between ICE and BEV vehicles. We give funding to the customer on the basis of their credit profile. We have equally aggressive programs for dealers for wholesale financing needed for inventory funding.

Business models are emerging on the end mobility side. The battery, a primary contributor to costs in this vehicle, will age over a period of time and we are still waiting and observing how these things will happen. When we have portfolios in place and some visibility of how these vehicles are aging, we will be able to fine tune our offerings even better.

Anxiety around product reliability needs to be taken care of. Warranties or a good guarantee programme from reputed OEMs will take care of that. Product range across various price points will lead to a lot of green plates on the roads and that's when the whole confidence loop starts coming in.

Subsidies are required to sustain the momentum that is there because that aligns a lot of factors towards this funding. Maybe NBFCs will start coming into this. They will align a lot of vectors to finance whichever pyramid of customers that we are discussing.

PANEL DISCUSSION 5



Topic: Building Infrastructure and Fuelling Growth with Clean Energy for EVs

Discussions about buying EV primarily focus around charging stations availability, charging batteries with renewable energy, etc. This panel discussed the infrastructure needed to fuel the growth of new mobility and the challenges around it.

Participants:

- **Mr. Maxson Lewis**
  Chief Engineering Officer, Magenta Power
- **Mr. Akshay Singhal**
  Co-Founder, Log9 Materials
- **Mr. Vinayak Kathare**
  Head of New Initiatives, Fourth Partner Energy
- **Mr. Jyotiranjan Harichandan**
  Co-Founder, Bolt Energy

Session Moderator:

- **Ms. Chaitanya Kanuri**
  Senior Manager, Electric Mobility, WRI India

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Mr. Maxson Lewis on the major trends in the EV charging infrastructure, its viability and challenges in integrating charging at the local level.

Mr. Maxson Lewis
Chief Engineering Officer, Magenta Power

India's first residential or community charging station was set up in 2018. A lot of traditional companies and start-ups are working in that space now. Redundancy and protocols are sorted out. Statistically, 60 per cent of charging globally is happening at destinations for individuals and at fleet hubs for fleets. Roadside EV charging is only to sort out the range anxiety. India is poised at this point in time in terms of having the right infrastructure, right solutions, and OEMs in place. An unknown aspect of residential charging is hitting the maximum demand sanction load, which means you pay double the cost of electricity while charging vehicles. The last transformer closest to your building is loaded around 80 per cent, which means there's a markup of 20 per cent additional which is possible on the load side. We will have to think about dynamic load management. Fires due to charging or wrong charging are also happening and it's not a battery fault all the time.

Mr. Akshay Singhal
Co-Founder,
Log9 Materials

Mr. Akshay Singhal on evolving battery technology, making batteries safer and more reliable

Globally, battery technology is evolving at a very fast pace. Batteries are becoming more and more reliable; higher performance technology is coming up. With battery advancement, fast charging is becoming the norm not just in the 2-wheeler, 3-wheeler, and 4-wheeler categories, but also in heavier vehicles like trucks and buses. It will revolutionize the entire ecosystem.

We are very quickly turning towards the solar and renewable energy powered grids. The grid cannot become green without storage, because solar and wind are both intermittent sources of energy and you need to bank them into some kind of storage, whether it's battery-backed storage or pumped hydro or whatever various options are available. It can be either stored at a central location or it can also be stored at a charging station itself.

Public charging has to be fast charging because nobody would have time to wait there. Workplace charging will pick up when the solar generation would be at its peak. It will automatically solve a lot of problems.

Mr. Vinayak Kathare
Head of New Initiatives,
Fourth Partner Energy

Mr. Vinayak Kathare on increasing the share of clean energy in the mix for EV charging, the role of Time of Day (TOD) Tariffs and business models, and financial viability of EV charging stations

The majority of the power in India's grid comes from thermal sources. Around 20 per cent of the energy supply is from RE resources and that number is expected to grow to 44 per cent by 2030. Large form factor charging hubs can easily procure power using an open access model for EV charging. We too have a large charging hub in Pune (near Viman Nagar) where we have taken a 1 MW power connection and we also have a 180 MW solar park under construction in Maharashtra. Charging in office or commercial spaces would be the second-most preferred location after residential or endpoint charging. Procurement of solar power not just helps you reduce your carbon footprint, but it's commercially viable.

I think the challenge is going to be mainly at the distribution level or the distribution transformer level and not at the transmission lines. It's very important to have shared upstream infrastructure to achieve break-even levels. We should promote EV charging during off-peak hours where you can use the base-load of power plants to supply power. Supply and demand load management is going to be a very important thing and load-matching solutions will be coming up soon.

Mr. Jyotiranjan Harichandan
Co-Founder, Bolt Energy

Mr. Jyotiranjan Harichandan on the interface needed to regulate EV charging ecosystem, integrated grid and load management and strengthening the grid

We have the entire infrastructure at Bolt with in-built smart grid management and connectivity to do active load balancing. Actual deployment in multiple tech parks has started where we have installed about 40 chargers in their parking lots. The sanctioned load has to be split between all chargers to manage the load. With greater adoption of EVs, these problems will start coming in. I think smart systems would help stabilize the grid and as and when EV adoption picks up, it will play an important role in terms of dispensing power safely.

We are actively working with government bodies and other private bodies to formulate policies. We are also doing thorough research for each and every component and to get the cost down for fast chargers. Soon we'll be out with some products suitable for Indian standards and the RoI will be much better.

In the next couple of years, I think we will see a lot more charging points; a lot of the range anxiety will be out of people's minds, and we will see a lot more EVs on the road.

Perspectives on the Auto Industry and the Pune Region

We all get to read and hear about the pace and shape of the EV transition through the print, electronic and digital media that we consume. Editors of media houses have a unique vantage point to interact with all possible stakeholders of this ecosystem and provide a perspective that is easy to digest and consume for people at large.

Participants:

- **Ms. Renuka Kirpalani**
  Executive Editor – Video Content, Autocar India
- **Ms. Harsha Kumari Singh**
  Editor – News & Special Projects, NDTV
- **Mr. Samrat Phadnis**
  Editor, Sakal

Session Moderator:

- **Mr. Hormazd Sorabjee**
  Editor, Autocar India

PUNE AFC ALTERNATE FUEL CONCLAVE
02-05 April 2022

Renuka Kirpalani shares her perspective on living with an EV and how convenient it is.

Ms. Renuka Kirpalani
Executive Editor - Video Content, Autocar India

Living with an EV is actually quite easy. I have been driving EVs for a very long time and I think the tipping point for me was realizing that it's actually very practical. You don't need to charge it as often, specially within city limits.

I had huge range anxiety myself, but for my daily commute to the office and back, we need to charge the vehicle maybe once in a week.

There are barriers and hesitations in people's minds because it's new technology that people are still getting used to.

Infrastructure has a little bit of catching up to do, but that is also growing. You know exactly where the next petrol station is but can't say the same thing about charging stations. We need to bring more awareness about portable charging stations which can be set up in buildings. Even if the buying cost is a bit on the higher side now, people would make that initial investment because they feel that the daily dip in their wallet is much less. This philosophy and mentality will continue to help the sector.

Ms. Harsha Kumari Singh
Editor – News & Special Projects, NDTV

Ms. Harsha Kumari Singh on whether an evangelist approach should be taken by news organisations for more EV proliferation

When we talk about Electric Vehicles, we talk about how we need to shift to alternate fuel. The challenge for us, is to make it digestible to our audience.

We know how EVs fit into climate change etc., but from the people's point of view, how does the cost of buying and running an EV work. If you buy an electric vehicle for say, Rs. 15 lakh, it's much more than what you would pay for a petrol or diesel vehicle, but the operational fuel cost is much lower.

It's important that we create talking points, give space to topics like these, and make it easy to understand to the audience. From the editor's perspective, we need not be evangelical, but we can create the buzz to get people talking.

Mr. Samrat Phadnis
Editor, Sakal

Mr. Samrat Phadnis on how Pune city is aiming to have a complete green fleet and its impact on the city infrastructure

The Pune Municipal Corporation is probably the first civic body in India which has phased out diesel-fuelled public transport vehicles from its operating fleet. These buses are transporting lakhs of citizens daily. I see this as a huge transition, because as a common citizen, I may not know about the climate change impact and why people are transitioning from diesel to electric vehicle, but I know that electric buses are more efficient and I get a nice commute experience for the same cost. As journalists we talk less about good policies by governments, but policy decisions like those in the EV space are positively impacting common citizens.

We need more awareness on the policy front. Common citizens are apprehensive of any change, but once they realise the convenience of charging and driving an EV, then the pace of adoption will increase dramatically. The issue of availability of charging stations needs to be addressed first.

We have more than 15,000 privately owned EVs running in Pune city. People are experimenting with new brands. Policy level sensitization will help us transform from traditional fuel to alternative fuel at a faster pace.

Mr. Hormazd Sorabjee
Editor, Autocar India

Mr. Hormazd Sorabjee on the Pune region being the auto industry's centre of gravity

Maharashtra and especially the Pune region, is really the centre of gravity of the automotive industry, including EVs. The pace of electrification has taken off much faster than many expected. Government and policy support is crucial until electrification reaches a tipping point where affordability comes. The biggest trigger right now is rocketing fuel prices and there is a direct correlation between this and electrification.

As an EV owner, range anxiety depends on whether you commute within the city or outside. More awareness needs to be created for consumers regarding the criticality of moving to the how critical it is, you know, to move to a low carbon future. Evolved customers will finally realise that there is even a cost benefit and we are coming to that point.

Charging infrastructure has to be ready in the next three years, because knowing the future manufacturers plans, we're going to see an avalanche of EVs coming. People are trying new brands as the barrier to entry in the EV space is much lower than the barrier to entry for an ICE car. EVs can democratize mobility in time.

Another infrastructure issue while driving EVs is of speed breakers. EVs typically have a very low ground clearance because by design the battery packs are placed very low for the best centre of gravity. Hence, speed breaker construction norms should be adhered to.

FIRESIDE CHAT 1

Acclerating the transition

In a fireside chat with MCCIA Director General Mr. Prashant Girbane, Bajaj Finserv Chairman and Managing Director Mr. Sanjiv Bajaj shared his views on the clean and green economy and the role of financial services in speeding up the transition to sustainable mobility.

Mr. Sanjiv Bajaj

Chairman and Managing Director,
Bajaj Finserv

In the coming decades, as we grow, we should get together and drive towards a cleaner, greener world so that we can leave this world for our children in a better state than it is today. We really have to think at the ground level about how we will make this work and to make this work, there are three ecosystems that need to work together.

The first ecosystem we require is the entire electric vehicle ecosystem. It could be hydrogen or any fuel, and that's why we call it an alternate fuel. What it means is that from research and innovation to manufacturing and organising the supply chain, to charging, disposal and repurchase, this ecosystem needs to be planned properly. India is in a position where we no longer have to just take what is invented somewhere else in the world. India is in a position today where we can produce for us and for the world. We must also keep in mind that the world is not waiting for us to do that. Hence our policies, actions and investments will decide what role we will play.

The second ecosystem is one that already exists, the Internal Combustion Engine (ICE) ecosystem. This ecosystem also has research and development, suppliers, manufacturers, a supply chain with disposal and upgradation processes. A large part of this ecosystem will become redundant in the coming decades. We need to think about how to create maximum overlap between these two ecosystems proactively through our policies, actions and investments.

Pune can be a vibrant EV hub for not only this country, but for the world.

The third ecosystem is the financial and insurance ecosystem, which enables this from providing money for research, setting up infrastructure and capacity, charging stations, ensuring and protecting it. We have to see that these three eco-systems are being managed in a proactive manner end to end at the centre level and then at the state level.

On the financing aspect for alternate fuel and electric vehicles, we need to understand that these are still early days. We are trying to understand and participate in the ecosystem which is still developing. The huge transition from ICE to alternate fuel vehicles will have its own pace. To accelerate that pace, there are two significant outsiders that can play a role. One is the government with policies, incentives, etc and second is financial services.

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Access to credit for alternate fuel and e-vehicles is something that we should build on. Incentives for buying green vehicles in government policies are in place. The resale value of EVs is still unknown. Technology is changing very rapidly. The life of the battery will also change, far more efficient and cheaper batteries will enter the market. So, there are some uncertainties in place. That's where we would encourage governments to put together a Credit Default Fund, similar to the ECLGS for MSMEs. That would encourage banks, NBFCs to lend against those vehicles without knowing what the residual price will be.

Any large change is driven from the top-down. Small incremental changes can happen at different levels. Government sponsorship is extremely important because that brings momentum and seriousness. The next has to be large companies, financiers, insurance companies like ourselves who have to get involved in trying to understand various aspects of the ecosystem. We need to think about how we can, in an organised manner, work in taking it from where it is today to tomorrow.

As far as Pune is concerned, it has the right ingredients. It is one of the best cities to study, live, and work. Pune can be a vibrant EV hub for not only this country, but all over the world. Pune has industry and academia but still they don't do the expected amount of research. These are initiatives which we have to work on for years and start building that culture. We got the ingredients like brain, workforce, capital, infrastructure in Pune. We just have to put our will together.

FIRESIDE CHAT 2

Green Energy for the future

Serum Institute of India (SII) CEO, Mr. Adar Poonawalla, in a fireside chat with MCCIA Director General, Mr. Prashant Girbane, reveals his vision and reasons behind investing in clean-tech start-ups. Adar also advocated the creation of a green-energy cluster to bring together innovators and investors and other stakeholders in the ecosystem.

Mr. Adar Poonawalla
CEO,
Serum Institute of India (SII)

It's a pleasure to be here at the Pune AFC. The Adar Poonawalla Clean City initiative was started in 2015 as I felt the central and state governments needed support from the private sector. We were in a fortunate position to be able to contribute and do this. Since then, we have got 450 trucks and machines going across the city including, 150 electric vehicles which have prevented around 50 tons of carbon emissions. Garbage going to landfills needs to be processed. We have got a separate initiative to process the wet waste at Talegaon Dabhade, near Pune. Wet waste is used in digesters to convert to CNG and that is provided for CNG buses. It has become a good biogas and garbage waste solution all in one, which we are hoping we can scale up. I think, we need some support from government policies in that.

We want to contribute to the Green Hydrogen story of India. It is also complementary to batteries in the electric space and to improve range, usage and storage, hydrogen technology plays a key role. We are making electrolysers and fuel cells to convert solar energy or wind energy into hydrogen. We put fuel cells to convert hydrogen back to electricity. This technology can be used where major power consumption is happening like in steel plants or Public Sector Units (PSUs). The challenge is doing it at scale and bringing the cost down to make it viable. Batteries will also play an important role in mobility. For extending the range of EVs, we should be able to recharge the vehicles fast or refuel quickly. That's where CNG, or hydrogen plays a role and we have to figure out how to transport the hydrogen safely throughout the country, how to blend it with CNG and how to use it in our vehicles. We have to find ways of encouraging and incentivizing manufacturers of vehicles to have this technology and incorporate CNG and make it cost effective in the next five years.

> There are funds and corporates to back you if you have a viable technology or a solution in alternate fuel space.

I would encourage all to innovate as much as they can. There is so much investment that can be made in innovation and there are funds and corporates to back you if you have a viable technology or a solution in this space. Globally too, there's a lot of opportunity out there. You can have a Green Energy Zone or Cluster where innovators, investors and other stakeholders within the ecosystem can be put together. Industries will have to work with governments to set up renewable energy projects.

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FIRESIDE CHAT 3

Battery technology is a big factor

The auto sector contributes to about half of India's manufacturing output and the green mobility transition will have implications on much of it. Some of the auto sector leaders have taken the task head-on to continue to lead from the front. One of these well-known leaders is Mahindra & Mahindra. Mr. Hormazd Sorabjee, Editor, Autocar India in a fireside chat session with Mr. Anish Shah, Managing Director, Mahindra & Mahindra.

Mr. Anish Shah

Managing Director,
Mahindra & Mahindra

Our RISE philosophy talks about driving positive change in communities to enable them to rise. For us, it has always been about planet positive, not just carbon neutral. We have saved 74 per cent of the energy we were using 15 years ago. We are zero waste to landfill on 17 of the 21 sites that we have for manufacturing, and we are water positive, as a group. Now, we have laid out 10 commitments for ESG (Environmental, Social, and Governance) of which seven are in sustainability.

The technology that exists today will not allow us to be carbon neutral by 2040 or 2050 across the world. It will get us only 50 per cent there. So, we need to invest in new technologies. It's also about the materials that we buy for our products. Achieving a balance between cost and clean technology is a challenge which can be overcome with partnerships. We have joined up with a group of global companies as part of our first movers' coalition to make supply chains greener. So, it's a combination of government incentives for the industry, the industry then taking over and driving down costs, and scale driving productivity.

We have seen a rapid adoption of electric vehicles where cost of ownership is at parity; range anxiety and charging infrastructure issues are addressed. We have started seeing movement in three-wheelers rapidly. We are seeing movement in two-wheelers as well. The four-wheelers segment will take longer and therefore we expect the inflection point to come sometime between 2025-2027.

The challenge to achieve balance between cost and clean technology can be overcome with partnerships.

IC engines are cash generators and are here to stay for a long time. Even if we achieve 50 per cent EV penetration by 2030, we will still sell as many cars in 2030 as we sell today. Our view right now is that by 2030, 50 per cent of cars sold will be electric. The adoption rate may accelerate, if we achieve cost parity and get infrastructure ready at the earliest.

Battery technology and its raw materials are a big factor. It is still an open question whether OEMs need to invest in battery technology directly or whether they need to partner with others to invest in it. The cell mechanism for creating the battery, leveraging the power from that battery, the power train that's behind it, the software that goes into the motors and the battery will be proprietary for the OEM combined with design. This is what will really differentiate one versus the other.

Our R & D teams are focused on EVs now and reskilling is happening there. If our associates are eager to do it, the transition will be much easier. We have to also ensure recycling the batteries and other aspects to protect the environment.

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CONSUL GENERALS' ROUNDTABLE

India to play a crucial role in the global alternate fuel trasition

The Pune Alternate Fuel Conclave would have been incomplete without the participation of representatives from different countries as most companies from these countries have a strong presence in the automotive hub around Pune. The Consul Generals shared the initiatives undertaken by their respective countries and governments and also the implementation progress so far. To further the cause of new mobility, partnership potential between Indian companies and companies originating from these countries was explored during the session.

'Vasudhaiva Kutumbakam' has always been an important doctrine of Indian culture. We all belong to mother earth and mother earth belongs to us all. A cleaner and greener world is a global aspiration and many countries have taken significant strides to create policies and implement them towards this vision. The 'Consul General Roundtable', seemed like a mini-United Nations meeting, which provided an opportunity to hear perspectives of each country, to learn, and to forge mutually beneficial partnerships.

The dignitaries who participated in this session included, Ms. Manisha Mhaiskar, Principal Secretary, Environment and Protocol, Government of Maharashtra; Shri. Alan Gemmel, British Deputy High Commissioner, United Kingdom; Shri. Erik Malmberg, Consul General Sweden; Shri. Arne Jan Flolo, Consul General, Norway; Shri. Kobbi Shoshani, Consul General, Israel; Shri. Luiz Felipe Czarnobai, Deputy Consul General, Brazil; Shri. Bart De Jong, Consul General, Netherlands; Shri. Alessandro De Masi, Consul General, Italy; Ms Diedrah Kelly, Consul General, Canada; Shri. Dr. Fukahori Yasukata, Consul General, Japan; and Shri. Prashant Girbane, Director General, MCCIA, moderated the session.

Ms. Manisha Mhaiskar gave her opening remarks. She shared an interesting story about her travel to Pune from Mumbai in an electric car. She said, "When I asked my driver to drive an electric car, he was a bit hesitant due to range anxiety. It took me about 10 minutes to convince him that EVs are also good for intercity

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commute. But when he actually drove the EV, he realized that it was definitely a better drive than a traditional internal combustion engine (ICE) vehicle."

The honourable Consul Generals shared their experiences and how their countries are managing the transition from ICE to EVs. Mr. Girbane requested the Consul Generals to elaborate on what's happening in their country in the alternate fuels space and what is the potential of their country's collaboration with India.

Canada

Ms. Diedrah Kelly
Consul General, Canada

Canada recently announced its plan for 2030 emissions reduction. We have set an ambitious target of 45 per cent reductions below our 2005 levels before 2030. There have been a number of developments in the EV sector in Canada and also related to India-Canada co-operation.

Like in India, the automotive industry is a critical component of Canada's economy. The industry contributes $16 billion to Canada's GDP and employs over 1,30,000 people. It includes a network of suppliers and companies that operate not only in Canada but around the globe. In terms of automotive components, there are two major Canadian companies that are manufacturing in Pune - Linamar and Magna International. Both companies are in the powertrain supply and we recognize that moving forward in this transition to EV, this sector will need attention. Beyond manufacturing, Canada is also very active in research, and development (R & D). There are a number of R & D partnerships between Canadian and Indian entities.

In terms of forward-looking cooperation, areas where we could further expand beyond manufacturing and R & D, include the supply chain of precious minerals. Canada has reserves of nickel, lithium, graphite and cobalt. These are critical for battery production and investing in mining operations could help secure India's supply chain.

Netherlands

Mr. Bart De Jong
Consul General, Netherlands

Netherlands also has ambitions plans because climate change is endangering our country and the economy. We have one of the highest EV uptake per thousand vehicles in the world and also have got charging infrastructure. It is the result of a very deliberate stimulating policy. We started with subsidies, tax incentives, and financing schemes. We have a national agenda for charging infrastructure which puts responsibilities on all levels of governments-provincial governments, municipalities, regional corporations, and also on the private sector. At the moment we have 80,000 chargers, most of them on public roads, in a country with a population of 17 million. We have 600 fast chargers along the highways which charge vehicles in just 20 minutes.

One of the critical factors for the success of EVs in the Netherlands is that we went for international cooperation between companies and also between governments. We strongly advocate for open standards, which will provide for interoperability of vehicles, charging infrastructure and for import and export of products. We are also conducting some pilots with bi-directional charging. Normally a vehicle is charged from the grid, but bi-directional charging means that the vehicle can also charge the grid, or a household. It would mean that private households would get an impetus to convert to electric vehicles.

Japan

Dr. Fukahori Yasukata
Consul General, Japan

Major cities like Tokyo, New York have achieved efficient environmental systems due to the introduction of mass transportation. Mass transportation systems like metro do not emit CO_2. Japan is working together with India to introduce metros and high-speed trains in Mumbai and other cities. Connecting distant cities is not only bringing business efficiency; it also helps reduce poverty in the region and improves the quality of air. Mass transportation systems are very much environmentally friendly. Based on that understanding, Japan has been working with India for many years. We are also constructing the freight system from New Delhi to Mumbai. If all the systems are completed, we can reduce tonnes of greenhouse gases and carbon emissions.

Mr. Kobbi Shoshani
Consul General, Israel

Israel

I will start with one of our biggest failures in recent years in the EV field. We tried battery swapping at fuel stations instead of battery charging, but that didn't succeed. Battery charging is one of the biggest challenges for us in the EV industry. But we are trying to find other solutions.

We have tested wireless charging on roads in Israel. Vehicles can be charged while driving, queuing, or standing. If electric vehicles are used heavily, then I think investment in buses will be extremely important.

We have a good cooperation between Indian and Israeli companies with respect to engines and batteries. We have signed a strategic agreement recently in this regard. I would also like to talk about a sensitive aspect of this transition. It's about the magnet.

In the near future, the prices of magnets used are going to jump. I think we have to find a solution to this problem and we are progressing in that direction. Israeli and Indian companies should find a combination of semi-magnet engines because the prices are going to be extremely high and it's coming from one country which has the control.

Mr. Arne Jan Flolo
Consul General, Norway

Norway

Norway is by far leading the world when it comes to introducing and incentivizing electric vehicles. In March 2022, 86.1 per cent of all new passenger cars sold in Norway were electric. In December 2021 we passed the 50 per cent mark for all passenger cars rolling on Norwegian roads.

One may think that Norway is producing so much oil and gas, it would be very happy to continue to drive around with fossil fuelled vehicles. But we haven't. We are trying to take the front seat in adopting alternate fuel vehicles and it's a whole value chain.

Incentives and policies from the government side are crucial. In Norway we have incentivized EVs by cutting the VAT, import tax, or purchase tax. There are no toll road fees, no ferry fees, discounts are given on company taxes, permissions to drive in bus lane, etc. We have also incentivized the building of charging infrastructure at petrol stations. We also have wireless charging for taxis.

Norwegian companies are partnering with Indian companies. I think Maharashtra has a wonderful opportunity and it should engage manufacturers at all stages of the value chain. We have the technology and competence and we are keen to partner with companies here in Pune and Maharashtra to drive this development forward.

Mr. Alan Gemmel
British Deputy High Commissioner, United Kingdom;

United Kingdom

In November 2020, Prime Minister of the United Kingdom put the UK on course to be the fastest nation in the G7 to decarbonize road transport, along with announcing that sales of all new petrol and diesel cars and vans would end by 2030.

He has set out a 10-point plan to transform the UK economy, our society and the environment for the transition to alternative fuels and EV vehicles, with a focus on technology, supply chains, etc. We have set a landmark net zero strategy with an aim to secure 4,40,000 well-paid jobs and unlock 90 billion pounds of investment in this sector by 2030.

Our strategy and new investments include 350 million pounds to support the electrification of UK vehicles and their supply chains and over 600 million pounds for targeted electric vehicle grants and infrastructure. The industry has also comprehensively embraced this transition.

Many countries have to make significant changes in their energy mix to reduce the reliance on fossil fuels. We are also seeing significant investment from UK companies in this space in Maharashtra. We must work urgently together to accelerate this shift to clean and green energy.

Mr. Erik Malmberg
Consul General, Sweden

Sweden

Sweden aims to be the first fossil-free welfare state. We have set a goal that 100 per cent of our electricity should be renewable by 2040, we should have a 50 per cent more effective use of energy than we did in 2005; and by 2045, Sweden should be net zero with regards to emissions.

We have a national initiative of working towards increasing the pace of the climate transition by cooperating with 22 different industries such as transport, petrol production, steel production, etc. We have identified opportunities that the climate transition can provide for these industries and how to use those as a commercial advantage. Several Swedish cities right now are rolling out emission-free electric buses and using renewable electric energy to power them.

Government incentives are in the form of taxation discounts, incentives for putting up charging infrastructure in-house, etc. We have a large cooperation platform with India.

Mr. Luiz Felipe Czarnobai
Deputy Consul General, Brazil

Brazil

Around 50 per cent of the total energy consumed in Brazil comes from renewable sources. The share in the energy matrix is led by biogas. The use of coal in the Brazilian electricity matrix is limited to only 2.7 per cent. Brazil has proudly been using ethanol as a fuel since the 1970s. Ethanol, in addition to being widely distributed through the national network of gas stations, is also added to gasoline at a factor of 25 per cent. Over the past few years, Brazil has implemented various policies which have allowed the country to become the world's second largest producer and exporter of ethanol. Brazil recently came up with the national biofuels policy, which is called 'RenovaBio' which started to be implemented in 2019. This Brazilian policy recognizes the strategic role of all biofuels in the Brazilian energy matrix with regard to its contribution to energy security, market predictability, and emissions mitigation.

The RenovaBio programme is expected to prevent the release of more than 600 million tons of CO_2 into the atmosphere over the next 10 years. By 2029, within the scope of the RenovaBio programme, global greenhouse gas emissions equivalent to the planting of 5 billion trees will have to be compensated. To sum up, Brazil has been working hard in the field of alternate fuels since the 70s, making our environment much cleaner.

Mr. Alessandro De Masi
Consul General, Italy

Italy

Maharashtra and Pune are among our top commercial and investment priorities. In Pune itself we have 25 plants, which include the production of electric vehicles, that generate 1-billion-euro turnover per year and employ 15,000 workers.

The energy transition and the green economy constitute the first pillar in our plan of action that our Prime Ministers have signed at the end of 2020. We are planning a tech summit on energy transition at the highest political level and that will include a session on future mobility including biofuels energy, storage and battery recycling.

Hydrogen is another top priority sector for us. We are trying to put in place the Mumbai-Milan partnership with e-mobility as the top pillar of our partnership in the terms of exchange of views on information and technology.

VALEDICTORY SESSION

Moving towards the goals...

The Pune AFC concluded with a joint declaration on EV readiness by Municipal Commissioners of ten cities across Maharashtra. The officials resolved to demonstrate leadership in accelerating the adoption of electric vehicles. Mr. Aditya Thackeray, Minister of Environment and Climate Change, Government of Maharashtra addressed the valedictory session.

The second day of the conference was as action-filled as the previous day. Panel discussions on EV production, building infrastructure, financing, e-mobility, editors' roundtable and a fireside chat with industry leader Mr. Anish Shah provided valuable insights.

Mr. Ashish Kumar Singh (IAS), Additional Chief Secretary, Transport, Government of Maharashtra; Ms. Manisha Mhaiskar (IAS), Principal Secretary, Environment, Govt of Maharashtra; Mr. Amgothu Sri Ranga Naik (IAS), Joint CEO, MIDC; Mr. Ashok Shingare, IAS, Member Secretary, MPCB and Mr. Prashant Girbane, Director General, MCCIA accompanied Mr. Aditya Thackeray, Minister of Environment and Climate Change, Government of Maharashtra on the stage for the valedictory session.

The Pune EV Readiness Plan was released at the hands of Mr. Thackeray and in presence of Mr. Vikram Kumar (IAS), Administrator and Commissioner, Pune Municipal Corporation (PMC); Mr. Kunal Khemnar, Additional Commissioner, PMC; Ms. Akshima Ghate, Managing Director, RMI India and Mr. Mandar Patil, Manager, RMI India.

Pune was one of the first cities in India to establish an EV Cell as a governance structure to accelerate EV adoption in the city. The Pune City EV Cell along with the technical support of RMI and RMI India had developed the first ever EV Readiness Plan for the city which outlines the detailed steps the city plans to undertake to ensure its transition to becoming EV-ready city in the near future.

After the EV readiness plan, the report titled 'Pioneering Electric Buses in Pune' was also released at the hands of Mr. Thackeray. Mr. Rajesh Patil, Administrator and Commissioner, Pimpri-Chinchwad Municipal Corporation (PCMC);

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Mr. Laxminarayan Mishra, Chairman and MD, PMPML; Mr. Clay Stranger, Managing Director, RMI and Mr. Ryan Laemel, Principal, RMI were also present on the occasion.

Pune has the largest e-bus fleet in the country. Municipal corporations of Pune, Pimpri-Chinchwad along with PMPML and RMI India have put together this report, capturing the journey of PMPML from IC engine buses to electric buses. The report also shares learnings and takeaways from the e-bus deployment in Pune.

On the side lines of the conclave, there was a closed-door roundtable discussion of over 10 Municipal Commissioners of cities of Maharashtra in presence of Mr. Aditya Thackeray. As an outcome of this session, these Municipal Commissioners signed a joint declaration to be more committed towards working on their EV readiness plan. The joint declaration was also announced and released during the valedictory session.

Giving his concluding remarks, Mr. Aditya Thackeray said, "During the two-day conference, I saw different panel discussions, one-on-one interactions, round table discussions, closed door meetings, and one common thing in all of this was passion and dedication. Team MIDC and MPCB, with the support of MCCIA, managed this ambitious task of organising the conclave on just one month's notice."

"Young entrepreneurs, start-ups have started off with their own dreams in smaller places and exhibited their products at the EV exhibition. I think it is our duty as citizens to support them because these are big dreams not just for themselves but also for the planet," he said.

"I think it is very important to have such conclaves, especially in cities like Pune. All of this is moving towards setting our goals for the Maharashtra Council of Climate Change because Maharashtra, its cities and rural areas, and all of us are going to lead the way in climate action around the world," Mr. Aditya Thackeray concluded.

Mr. Amgothu Sri Ranga Naik (IAS), Joint CEO, MIDC expressed the vote of thanks and declared the conclusion of the Pune AFC.

ANNEXURE

List of Exhibitors

- Aaryan's Group
- Ador Digatron
- AIC Pinnacle
- Amplify Cleantech
- ARAI
- Arihant Enterprises
- Ashni Motors
- ASR Energy Solutions Systems
- Ather
- Attron Automotive Private Limited
- Auto Cluster
- B U Bhandari - M G Motors
- Bolt
- Catalyst Green Private Limited
- ChargeZone
- Conair
- Delta Secura
- Destek Infosolutions
- Devise Electronics
- Dhone Mobility
- Divgi TorqTransfer
- Dombivali Nagari Sahakari Bank
- Dynomark Controls
- Electrik Express
- Evergreen Recyclekaro
- EVFTech Pvt.LTD
- Evigo Charge
- Exide Industries
- Fitwel Mobility
- Genesys Electric Mobility
- Genrich Membranes
- Green PCO
- HDFC Bank
- Impactware Technology Solutions
- Indiana LED Lighting
- Jitendra EV
- Joulepoint
- Kalyani Powertrain
- Kanha EV
- Kazam Evitech
- Krushigati pvt Ltd
- Log9
- Mahindra and Mahindra
- Maruti EV Motors
- MIDC +Auric (Aurangabad Industrial City)
- Miracle5
- MIT World Peace University
- MPCB
- MSEDCL
- National Chemical Laboratory
- Nettoyer Automotives LLP
- NexZU Mobility
- Northway Motors
- Ola
- Olectra Greentech
- Perfect Power Solutions
- Phroton Mobility
- Piaggio Vehicles
- Pinnacle Mobility
- Pixy Electric Cars pvt Ltd
- Plug In EV
- PMC EV Cell
- Praj Industries
- PVG Automotive Pvt. Ltd.
- Revamp Moto
- Riddhi Siddhi
- RTO
- Safe Charge
- Sharify Services
- Skoda Auto Volkswagen
- Sonae EV
- Sun Mobility
- Synergy Solutions
- Tata Motors
- Trick Motors
- Ujoy Technologies - Bolt EV Chargers
- Umicore India
- Ward Wizard\
- Ziffy Tech Digital Healthcare Private Limited

ACKNOWLEDGEMENTS

MEDIA COVERAGE

ई-मोबिलिटी हेच व्यवहार्य उत्तर : ठाकरे


आदित्य ठाकरे

पेट्रोल-डिझेलच्या दरवाढीकडे राजकीय दृष्टिकोनातून पाहून आंदोलने केली जातात. मात्र, इंधन दरवाढीला विद्युत दळणवळण (ई-मोबिलिटी) हे व्यवहार्य उत्तर आहे. त्यामध्ये पुण्याने आघाडी घेतल्यास मोठे परिवर्तन घडू शकेल, असा विश्वास पर्यावरणमंत्री आदित्य ठाक[रे] यांनी मंगळवारी व्यक्त केला.

पुणे पर्यायी इंधन परिषदेच[्या] ... बोलत हो[ते] ... [प्रध]ान स[चिव] ... विभा[ग] ...

घोषणापत्रावर स्वाक्षऱ्या

परिषदेच्या समारोप कार्यक्रमात पुणे, पिंपरी-चिंचवडसह राज्यातील दहा महापालिकांचे आयुक्त सहभागी झाले होते. शहरांमध्ये इलेक्ट्रिक वाहन आणि पर्यायी इंधन वापरास गती देण्यासंदर्भात त्यांनी पर्यावरणमंत्र्यांशी चर्चा केली. या संदर्भातील संयुक्त घोषणापत्रावरही त्यांनी स्वाक्षऱ्या केल्या.

... आशिष कुमार सिंह, ...

ठाकरे म्हणाले, "पुणे हे शिक्षण, संशोधन आणि नवसंकल्पनांचे शहर ... इंधनावरील ...

Regulators will take care of teething EV issues: Aaditya

Major Industry Players Exhibit Their Produce

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Aaditya Thackeray (wearing mask) at the Pune AFC on Saturday

Shiladitya Pandit

Pune: State tourism and environment minister on Saturday Aaditya Thackeray said safety issues that had emerged with electric vehicles, including battery fires, would be taken care of by the regulators.

The minister inaugurated the Pune Alternate Fuel Conclave (AFC) on Saturday. The electric vehicle and allied infrastructure exhibition, as part of the Pune AFC, is being held at the Sinchan Nagar grounds till April 5, which the organisers — the state government in association with the Mahratta Chamber of ...

... scheduled for Sunday that will run for a course of 27 kilometres, starting at the exhibition venue, followed by a two-day conference on the EV and alternative fuels industry on April 4 and 5.

Key players in the electric and alternative fuels space, including EV manufacturers, battery makers, and ...

... those of safety and fires. Those issues will be taken care of and looked into by the regulators involved such as the Automotive Research Association of India (ARAI) and others," Thackeray said while interacting with reporters.

He added that such exhibitions ...

... event on the occasion of the exhibition as well as Gudi Padwa, including EKA, which is owned by the auto components manufacturer Pinnacle. It launched its nine metre, 31-seater electric city bus E9 on Saturday, which it expects to be running on the roads in around four months' time.

"All of the production process is local, including the components and the software. The one inaugurated today is the first prototype, while another one is currently undergoing homologation at the ARAI. We expect that process to be completed in the next 60 days, and the first buses will be running on city roads in around four months", said Sudhir Mehta, the chairman of Pinnacle Industries.

He said, "We are targeting state transport utilities but there is interest from private players too. While the upfront cost of an electric bus is around twice that of a diesel bus, the running costs are only around 15% of a conventional diesel bus, and the owner can bre...

EKA unveils first electric bus

The arm of Pinnacle Industries is looking to raise ₹500 crore

GEETA NAIR
Pune, April 2


Maharashtra's minister of tourism, environment & protocol Aaditya Thackeray (centre) unveils EKA electric bus on Saturday

PAWAN KHENGRE

COMMERCIAL ELECTRIC VEHICLE company, EKA, a subsidiary of Pinnacle Industries, on Saturday unveiled its first electric bus E9. Sudhir Mehta, chairman of EKA and Pinnacle Industries, said the company was talking to investors to raise ₹500 crore for the bus project. Pinnacle Industries has got approval to launch electric vehicle manufacturing under the production-linked incentives scheme and has committed to invest ₹2,000 crore to set up EV manufacturing unit. Pinnacle has also received approval under the EV ... the government's PLI policy.

Mehta said they had already invested ₹150 crore in designing and developing the bus. The company plans to make 1,00[0] buses in FY23 with indige[]nously developed component[s] and technolo[gy] ...

Transport minister pushes for conversion of ICE to e-vehicles

TIMES NEWS NETWORK


Around 500 EV owners took part in the rally on Sunday morning

Mandar Deshpande

Pune: State transport minister Anil Parab on Sunday pushed for the conversion of internal combustion engine (ICE) vehicles into electric[] vehicles (EVs), asking [al]l stakeholders to support [an]d create awareness pertaining to the same.

While speaking during flagging-off ceremony of [E]V rally in town — part of [t]hree-day Pune Alterna[te] Fuel Conclave (AFC), [whic]h saw the participation [of mo]re than 400 EVs of dif[ferent] kinds — Parab said, [again]st the backdrop of cli[mate c]hange, the state go[vernm]ent has brought out [gre]en mobility and EV ... The transitioning ... to create awareness about the advantages of EVs. Today's EV rally is a part of this initiative and through such events, awareness about EVs will reach all citizens. The state government is taking necessary steps to ...

Sunday's rally saw the participation of 350 two-wheelers, 35 three-wheelers and around 40 four-wheelers, along with e-cycles, e-buses, and e-autorickshaws. It covered 28km from Sinchan Nagar ground, hea...

Pune commissi[oner of] police (CP) Amitab[h] ... who was present o[n] ... sion, said that EV ... developed even ... better performa[nce] ... is leapfrogging ... tion. We are ... mass and si[] ... charging and ... nology is evol[ving] ... fident that if ... a range of 7 ... charge, ICE ... a thing of t[he] ... Many ... that whil[e] ... sing, cha[rging] ... re neede[d] ... "Witho[ut] ... ners w[] ... to go ... te go[v] ... gent ...

Maharashtra set to use hydrogen to generate power: Energy Minister

EXPRESS NEWS SERVICE
PUNE, APRIL 4


Energy Minister Nitin Raut

WITH THE Maharashtra government encouraging the use of electric vehicles, the state government is now all set to use hydrogen energy as an alternative fuel to generate power, said Energy Minister Dr Nitin Raut at the 'Alternate Fuel Conclave' in Pune on Monday.

He also announced the state Energy department's plan to expand the base of charging stations across the state.

Raut also indicated that the state government will soon amend the existing Renewable Energy Policy 2020 and give more incentives to stakeholders. "We are shifting our focus of generation of electricity from conventional fuel to hydrogen energy. Very soon, our state will be featured as a pioneer in the use of Hydrogen energy," Raut said while addressing the conclave in Pune on Monday.

EV [st]ation at Baner inaugurated

The minister also inaug[u]rated an electric vehicle cha[rg]ing station at Baner Monday.

The state plans to set u[p] ... charging stations soon. P[une] will have 18 EV stations, Mumbai 10 and Thane 6.

"In order to facilitate t[he in]creased use of green ene[rgy] ... the transport s[ector] ... Maharashtra State Ele[ctricity] Distribution Compa[ny has] taken the initiative to e[xpand] the EV charging stat[ions]," said Raut.

पर्यायी इंधनावरील वाहनांसाठी पुणे लीडर बनला, तर देश करेल फॉलो

पर्यावरण मंत्री आदित्य ठाकरे : पुणे पर्यायी इंधन परिषद

लोकमत न्यूज नेटवर्क

पुणे : 'पुणे परिसरात पर्यायी इंधनावर चालणाऱ्या वाहनांचे उत्पादन करणाऱ्या आणि या क्षेत्राशी संबंधित विविध उद्योग येत असून, भविष्यात पुणे पर्यायी इंधनावरील वाहनांच्या क्षेत्राचे नेतृत्व करेल,' असा विश्वास पर्यावरण मंत्री आदित्य ठाकरे यांनी व्यक्त केला.

नवीन कृषी मैदान येथे महाराष्ट्र औद्योगिक विकास महामंडळ आणि महाराष्ट्र प्रदूषण नियंत्रण मंडळ प्रायोजित तसेच महाराष्ट्र चेंबर्स ऑफ कॉमर्स, इंडस्ट्रीज अँड ॲग्रीकल्चर पुण्याच्या वतीने पहिल्या पुणे पर्यायी इंधन परिषदेचे आयोजन करण्यात आले होते त्यावेळी ठाकरे बोलत होते. ...


राजेश पाटील, पुणे महानगर विकास प्राधिकरणचे सुहास दिवसे, महाराष्ट्र प्रदूषण नियंत्रण महामंडळाचे सदस्य सचिव अशोक शिनगारे, परिवहन आयुक्त अविनाश ढाकणे ... संचालक प्रशांत गिरबाने आदी यावेळी उपस्थित होते.

ठाकरे म्हणाले, 'प्रदूषणमुक्ती, रोजगार उपलब्धता ...

इंधनावरील वाहनांमुळे महापालिकांच्या सार्वजनिक वाहतूक सेवेवरील खर्च कमी होताना दिसत आहे. त्यामुळे अशा वाहनांना प्रोत्साहन देण्याचे शासनाचे प्रयत्न आहे. येत्या २-३ वर्षात मोठ्या प्रमाणात चार्जिंग स्टेशन उभे राहतील. नव्याने या क्षेत्रात उद्योग करू इच्छिणाऱ्यांना उत्पादन वाढीसाठी प्रोत्साहन देणेही गरजेचे असून, शासन त्यासाठी निश्चितपणे सकारात्मक भूमिका अदा करेल,' असेही ते म्हणाले. परिषदेच्या माध्यमातून बायोइंधन आणि हायड्रो इंधनावरील सर्व वाहन उत्पादक संस्थांनी परिषदेत सहभाग घेतला आहे. इलेक्ट्रिक वाहनांचे सर्व पर्याय येथे उपलब्ध आहेत. राज्यातील जनतेला एकाच ठिकाणी पर्यायी इंधनावरील ...

ROAD TO GREEN MOBILITY

Tata Motors sees EV penetration going up to over 25% by 2030

GEETA NAIR
Pune, April 5

THOUGH THE PENETRATION of electric vehicles (EVs) in the commercial vehicles and passenger vehicles spaces is sub-1%, Girish Wagh, ED, Tata Motors, believes it could go up to north of 25% by 2030. Wagh is equally optimistic about the bus segment, where he expects EV penetration at more than 20%, driven by the growth in intra-city transportation.

Tata Motors has put 640 electric buses on the road so far and they have covered a distance of 2.5 million km, Wagh told *FE* on Tuesday. He estimates tenders for around 7,000 e-buses have been floated.

Analysts at Bank of America point out electric buses and three-wheeler cargo vehicles are seeing increasing acceptance. In FY22, electric buses accounted for approximately 7% of the overall new bus registrations, albeit on a small base. "The e-bus market is largely driven by government tenders right now," they said. They also attributed the pick-up in demand to support from large e-commerce companies and predictable routes that provide fixed charging locations.

"We believe EV transition has been set in motion in buses and three-wheeler cargo vehicles, but the key constraints around the supply side and financing persist," they observed.

Indeed, Wagh warns that demand will collapse if the incentives are withdrawn ahead of volumes reaching a certain threshold.

Continued on Page 2


■ EV penetration in the bus segment could go up to over **20%** according to Tata Motors ED Girish Wagh

■ Tata Motors has put 640 electric buses on the road so far and they have covered a distance of 2.5 million km

Future investment will be directed to EVs: M&M's Shah

ANISH SHAH, MD, Mahindra & Mah[indra] on Tuesday said electrification in v[ehicles] was moving faster than expected, ... the base was still small.

A large part of M&M's R&D, he ... now focused on the electric pl[atform] ... "M&M has comp[] ... investments in ... cles and futur[e] ... ments would be ... to EVs but it w[ould] require too mu[ch] ... Shah said, add[ing] ... electric platfo[rm] ... expected in Ju[] ...


Anish Shah, MD, M&M

Speaking ... Alternate Fu[el] ... Shah pointe[d] ... even if EV penetration reach[] ... 2030, ICE engines would ... account for the remaining ma[] ... company would not take the[] ... ball. Given ICE engines are ca[] ... they are here to stay, he said. ... had met with success in the ... wheeler segment and will fu[] ...

—FE B[UREAU]

'कृषी' कामांना 'गती' देणारे संशोधन

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पुणे : करोनामुळे झालेल्या टाळेबंदीने अनेकांचे आयुष्य बेरंग केल्याच्या घटना आपण ऐकल्या; पण अनेकांना या टाळेबंदीमुळे नव्या वाटा सापडल्याची उदाहरणेही कमी नाहीत. टाळेबंदीत अनेक महिने गावाला राहिल्याने सुचलेल्या कल्पनेतून पिंपरीमधील अभियंत्या जोडप्याने शेतकऱ्यांसाठी बॅटरीवर चालणारे एक यंत्र बनवले असून; 'कृषिगती' असे नाव या यंत्राला दिले आहे. पेरणीपासून ते कापणीपर्यंतची सर्व कामे या यंत्राद्वारे करता येणार आहेत.

करोनाकाळात सर्व व्यवहार ठप्प झाल्याने अनेकांप्रमाणे पिंपरीमध्ये राहणाऱ्या अभियंता जोडपे सोनाली वेलजाळे-सोनावणे आणि तुकाराम सोनावणे हेही आपल्या मूळ गावी येवला (नाशिक) येथे गेले. काळ बदलत गेला तसे बैलांची जागा ट्रॅक्टरने घेतली मात्र, कमी जमीन असलेल्या शेतकऱ्याला ट्रॅक्टर घेणे आजही परवडत नाही. यावर उपाय म्हणून अनेक छोटी यंत्रे बाजारात आली असली, तरी प्रत्येक ...

'पर्यायी इंधन परिषदे'च्या प्रदर्शनात 'कृषिगती' मशिन पाहायला उपलब्ध आहे.

अमित रुके

मटा विशेष

विकसित करण्याची कल्पना सुचली, अशी माहिती तुकाराम सोनावणे यांनी दिली. हे यंत्र सिंचननगर येथे ...

संशोधन करीत असल्याने गावातील शेतकऱ्यांच्या मदतीने उपकरण अधिकाधिक वापरकर्त्यांना हवे तसे झाले आहे. बॅटरीवर चालणारे आणि एकाच उपकरणात पेरणी, कोळपणी, भरणी, फवारणी, कापणी अशी पाच प्रकारची कामे करणारे ...

६० हजार रुपये हेक्टरी जिथे खर्च येतो ती कामे या यंत्राद्वारे केल्यास केवळ ५ हजार रुपयांत होऊ शकतात. यंत्र चालवणाऱ्याचा मोबदला म्हणून ५ हजार रुपये धरल्यास एकूण १० हजारांत पेरणीपासून कापणीपर्यंतची मशागत शक्य आहे.

त्यामुळे शेतीकामांच्या खर्चात ऐंशी टक्के बचत शक्य आहे. या यंत्राला 'चार्ज' करण्यासाठी दोन तास इतका वेळ लागतो. त्यासाठी सरासरी दीड युनिट वीज खर्च होते. शेतीच्या कामांवर हे यंत्र तीन ते चार तास काम करते.

इमारतीच्या पार्किंगमध्ये वाहन चार्जिंग पॉइंट बंधनकारक

ई-वाहनांना प्रोत्साहन देण्याचे धोरण : बांधकाम नियमावलीत पालिका करणार तरतूद

प्रभात वृत्तसेवा

पुणे, दि. ६ - शहरातील नव्याने बांधकाम करण्यात येणाऱ्या प्रकल्पांमध्ये आता पार्किंगसाठी निश्चित केलेल्या जागेत वाहनसंख्येच्या २० टक्के ई-चार्जिंग पॉइंट उभारणे बंधनकारक करण्यात आले आहे. हा निर्णय महापालिका प्रशासनाने घेतला आहे. भविष्यात शहरात मोठ्या प्रमाणात ई-वाहनांची संख्या वाढणार आहे. परिणामी, चार्जिंगची सुविधाही वाढविणे आवश्यक असून त्यासाठी महापालिकेकडून हे पाऊल उचलण्यात आले आहे.

> "मोठ्या बांधकाम प्रकल्पांना मान्यता देताना वाहनांच्या पार्किंगची सुविधा उभारण्याचे बंधन आहे. त्यानुसार पार्किंगमध्ये असलेल्या एकूण वाहनांच्या तुलनेत २० टक्के चार्जिंग पॉइंट असणे बंधनकारक असणार आहेत. हे पॉईंट उभारल्याशिवाय संबंधित विकसकास भोगवटा पत्र दिले जाणार नाही. तसेच या निर्णयाची अंमलबजावणी लवकरच करण्यात येणार आहे.
>
> – विक्रम कुमार, आयुक्त, महापालिका

याबाबत आयुक्त विक्रम कुमार यांनी बुधवारी पत्रकारांना ही माहिती दिली. दरम्यान, याबाबतचा आदेश पुढील आठवडाभरात काढण्यात येणार आहे. महापालिकेच्या मुख्य इमारतीसह, शहरातील इतर कार्यालयांतही ही सुविधा उभारण्याबाबत विचार सुरू असल्याचे कुमार म्हणाले. भविष्यात वाढते हवा प्रदूषण रोखण्यासह पेट्रोल आणि डीझेलच्या पुरवठ्यावर असलेल्या मर्यादा लक्षात भविष्यातील पर्यायी इंधनाबाबतची परिषद नुकतीच पुण्यात झाली. या परिषदेत महापालिकेकडून पालिकेच्या ई-वाहनांचा भविष्यातील वापराचा आराखडा सादर करण्यात आला.

MEDIA COVERAGE

पर्यावरणपूरक वाहनांना शासनाचे प्रोत्साहन–परब

लोकसत्ता प्रतिनिधी

पुणे : पर्यावरण बदलाच्या पार्श्वभूमीवर शासनाने इलेक्ट्रिकल वाहन धोरण स्वीकारले आहे. त्याचाच एक भाग म्हणून जनजागृती व्हावी यासाठी पर्यायी इंधनावर आधारित वाहनांच्या रॅलीचा उपक्रम राबविण्यात येत आहे. पर्यायी इंधन वाहन ग्रीन मोबिलिटीमध्ये महाराष्ट्र देशात अग्रेसर राहील, असा विश्वास परिवहन मंत्री ॲड. अनिल परब यांनी व्यक्त केला.

...रीविद्युत दुचाकींची रॅली काढण्यात आली.

जवळपास ३५० इलेक्ट्रिकल वाहने सहभागी झाली आहेत. यावरून आपली वाटचाल योग्य दिशेने सुरू असल्याचे लक्षात येते. या धोरणाच्या अंमलबजावणीच्या अनुषंगाने अशा प्रत्येक उपक्रमाला राज्य शासन प्रोत्साहन देईल. नवनवीन तंत्रज्ञानाच्या माध्यमातून इलेक्ट्रिकल वाहनाच्या बॅटरीमध्ये सुधारणा होत आहे. त्यामुळे इलेक्ट्रिकल वाहन वापरण्याचे सामान्य नागरिकांचे स्वप्न पूर्ण होणार आहे, असे पोलीस आयुक्त अमिताभ गुप्ता यांनी सांगितले. पर्यावरण बदलाचा मानवी जीवनावर होणारा दुष्परिणाम ...

वाहनसंख्येच्या २० टक्के चार्जिंग पॉइंट

भोगवटा प्रमाणपत्रासाठी नियम स्पष्ट

म. टा. प्रतिनिधी, पुणे

"बांधकाम प्रकल्पांमध्ये मंजूर पार्किंगच्या २० टक्के वाहनांसाठी चार्जिंगची व्यवस्था असल्याशिवाय यापुढे संबंधित प्रकल्पांना भोगवटा प्रमाणपत्र देण्यात येणार नाही. इलेक्ट्रिक वाहनांची वाढती संख्या लक्षात घेता चार्जिंग स्टेशनसाठी आवश्यक ते सर्व ..."

पार्किंग आवश्यक आहे, याबाबत स्पष्टता असते. या पार्किंगपैकी किमान २० टक्के वाहनांसाठी ई-चार्जिंग पॉइंट असणे आता बंधनकारक करण्यात आले आहे. महापालिका आयुक्त विक्रमकुमार यांनी 'महाराष्ट्र टाइम्स'ला दिलेल्या माहितीनुसार, एखाद्या बांधकाम प्रकल्पामध्ये १०० वाहनांसाठीचे ...

ग्रीन मोबिलिटीत महाराष्ट्र अग्रेसर असेल

परिवहनमंत्री ॲड. परब यांचे मत

प्रभात वृत्तसेवा

पुणे : पर्यायी इंधन परिषदेच्या निमित्ताने रविवारी ई-व्ही बाइक रॅलीचे आयोजन केले होते. यामध्ये बॅटरीवर चालणारी वाहने सहभागी झाली होती. सिंचननगर येथून या रॅलीला सुरुवात झाली.

इथे ई-वाहन दुनियेची सफर

पुढारी

'पुणे एएफसी'मध्ये ई-सायकल, बसपासून महागड्या चारचाकी गाड्यांचे दर्शन

हैदराबाद येथील इलेक्ट्रिक रिक्षा...

'मेड इन पुणे' बाईक पाहायचीय...

महावितरणकडून राज्यात ५० ईव्ही स्टेशनची उभारणी सुरू

महावितरणचे पहिले अत्याधुनिक चार्जिंग केंद्र

बाणेरमध्ये ऊर्जामंत्र्यांच्या हस्ते उद्घाटन

लोकसत्ता प्रतिनिधी

राज्यातील चार्जिंग केंद्रे

पुणे परिसरात स्टार्टअप्सना चालना देणार : आदित्य ठाकरे

पुणे : वाहन उद्योगासाठी पुणे, चाकण, तळेगाव या भागांत क्लस्टर मोठ्या प्रमाणात बनले आहेत. त्यामुळे जगभरातील बड्या कंपन्यांनी यात गुंतवणूक केली आहे. पण, गेल्या काही वर्षांत पुणे एमआयडीसीच्या भागात स्टार्टअप्समध्ये गुंतवणुकीचे प्रमाण वाढले आहे. या स्टार्टअप्सना चालना देण्याच्या दृष्टिकोनातून सहकार्य करण्यास कटिबद्ध असल्याचे राज्याचे पर्यावरण आणि पर्यटनमंत्री आदित्य ठाकरे यांनी सांगितले.

पर्यायी इंटन कॉन्क्लेव्हमध्ये पत्रकारांशी बोलताना ते म्हणाले की, पुण्यात इलेक्ट्रिक व्हेईकल्ससाठी लागणारे ७३ टक्के संलग्न छोटे उद्योग हे पुण्याच्या आसपास आहेत. त्यामुळे त्यांना ईव्ही धोरणांतर्गत मदत करण्यासाठी इंडस्ट्रीने मार्गदर्शक होण्याची गरज आहे. जेणेकरून चाकण आणि आसपासच्या भागातील या क्षेत्रातील लघुउद्योगांना नेमकी दिशा मिळेल. यासाठी टाटा मोटर्स, महिंद्रा, हिरो यांसारख्या बड्या कंपन्यांशी ईव्ही क्षेत्रातील बॅटरी उत्पादन आणि इतर तांत्रिक बाबींमधील बदल जाणून घेण्यासाठी आम्ही चर्चा करीत असतो.

इलेक्ट्रिक मोबिलिटीसंदर्भात भारतातील एकूण वेंडर्सच्या संख्येपैकी महाराष्ट्रातील त्यांची संख्या अंदाजे ६० ते ७० टक्के आहे. त्यामुळे इथे टेस्लासारखी कंपनीही गुंतवणूक करण्यास उत्सुक आहे. कारण, ईव्हीचा ग्राहक त्यांना महाराष्ट्रातून अधिक प्रमाणात मिळणार आहे, असे ठाकरे यांनी नमूद केले.

मुख्यमंत्र्यांचे प्रतिपादन : पर्यायी इंधनाबाबत राज्याकडून देशाचे नेतृत्व

गुंतवणुकीपुढील गतिरोधक दूर!

लोकसत्ता प्रतिनिधी

चार्जिंग स्टेशन उभारणार

पर्यायी इंधन परिषदेच्या उद्घाटनावेळी पर्यावरणमंत्री आदित्य ठाकरे यांची माहिती

Pune will lead. India will follow

पर्यायी इंधन परिषद उद्यापासून

राज्य सरकारचा पुढाकार

म. टा. प्रतिनिधी, पुणे

इलेक्ट्रिक वाहने आणि पर्यायी इंधनावर आधारित वाहतूक क्षेत्राला प्रोत्साहन देण्यासाठी राज्य सरकारच्या पुढाकारातून महाराष्ट्र औद्योगिक विकास महामंडळ (एमआयडीसी) आणि महाराष्ट्र प्रदूषण नियंत्रण मंडळाच्या (एमपीसीबी) संयुक्त विद्यमाने आणि मराठा चेंबर ऑफ कॉमर्स इंडस्ट्रीज अँड ॲग्रीकल्चरच्या (एमसीसीआयए) सहकार्याने पुण्यात पर्यायी इंधन परिषदेचे आयोजन करण्यात आले आहे.

या परिषदेंतर्गत उद्या, शनिवार (दोन एप्रिल) ते पाच एप्रिलदरम्यान सकाळी अकरा ते सायंकाळी सहा या वेळेत सिंचननगर येथील मैदानात देशातील सर्वांत मोठे पर्यायी इंधन प्रदर्शन भरविण्यात येणार आहे. परिवहनमंत्री अनिल परब आणि पर्यावरणमंत्री आदित्य ठाकरे यांच्या हस्ते प्रदर्शनाचे उद्घाटन होणार आहे. एमआयडीसीचे ...

'रॅली'तून होणार पर्यायी इंधनाचा जागर

"पेट्रोल-डिझेलची सातत्याने दरवाढ होत आहे. जीवाश्म इंधनाच्या अतिवापरामुळे प्रदूषण वाढत आहे. त्यामुळे इलेक्ट्रिक आणि पर्यायी इंधनावरील वाहनांचा वापर वाढला पाहिजे. इलेक्ट्रिक आणि पर्यायी इंधनावरील वाहतूक पर्यावरणपूरक आणि सर्वसामान्यांना परवडणारी आहे. त्या पार्श्वभूमीवर पुण्यात आयोजित पर्यायी इंधन परिषद उपयुक्त ठरणार आहे."

– पीयूष सोनटक्के, उद्योजक

"पुणे वाहन उद्योगाचे प्रमुख केंद्र आहे. येत्या काळात या उद्योग क्षेत्रात मोठे बदल होत असून, त्याचे नेतृत्व करण्याची क्षमता पुण्यामध्ये आहे. त्या पार्श्वभूमीवर देशातील पहिल्या पर्यायी इंधन परिषदेचे आयोजन पुण्यात करण्यात आले आहे. या परिषदेंतर्गत अनेक नामांकित कंपन्यांची इलेक्ट्रिक आणि पर्यायी इंधनावरील वाहने सादर होणार असून, त्याची खरेदी व नोंदणी करण्याची संधी नागरिकांना आहे."

– प्रशांत गिरबने, महासंचालक, एमसीसीआयए

Pune will lead.
India will follow.

PUNE AFC
ALTERNATE FUEL CONCLAVE

02-05 April 2022

PUNE

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