



EVCONNECT

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FROM THE CEO'S DESK

Dear Friends,

With the pandemic showing no signs of abating, focus on the environment and sustainable mobility modes will not only foster new investments and jobs but also contribute to the creation of better cities.

In the 23rd issue of EVConnect, we bring to you a conversation with Ms Pooja Bedi, a popular actor, columnist, and entrepreneur. We discuss the issue of air pollution, uptake of electric vehicles and the role of the government in building awareness among the masses through policy initiatives. We also bring a host of news updates from national and global frontiers along with curating a feature on EV financing and its role in scaling up electric vehicles in India.

Various developments are taking place in the electric mobility market, and it is often difficult to keep up with them. These are reported through multiple media channels and are hard to track. This newsletter seeks to bring together several of these developments into one accessible document. We hope this curated and compiled content will come in handy to those who are seeking the latest information on electric mobility.

We hope you find this edition of the newsletter beneficial and share your thoughts so that we can improve further.



Sincerely,

Dr. OP Agarwal
CEO, WRI India

WATCH

Presenting EV Connect Powertalk - exclusive monthly interviews with EV experts, policymaker and stakeholders discussing key insights. We also present one hand-picked video to showcase EV innovations from around the world.



Power Talk with Pooja Bedi
Founder of Happy Soul, Actor, Model, Author and Columnist



How does Vehicle to Grid (V2G) work?
TheVox Network



 **WATCH** the full interview [here](#)

"It is unbelievable how much we can deplete our resources and pollute our planet when we know that we can also be the solution for this. So why aren't we focusing on solutions? Why aren't we focusing on measures to correct it?"

"I have two electric cycles at my home here in Goa. We use it extensively for shopping and our daily commute, and they are great for a workout as well. Just turn off the electric switch and start cycling."

POWERTALK

IN CONVERSATION WITH POOJA BEDI

FOUNDER OF HAPPY SOUL, ACTOR, MODEL, AUTHOR AND COLUMNIST

Interview taken by Amit Bhatt, WRI India

Interviewer: We know about your work in the film and television industry, health and fitness. Can you elaborate on this a little bit?

Pooja Bedi: I started researching alternative sciences and wellness through alternative therapies about 18 years ago. This includes food, diet, nutrition, our emotional health, mental health, physical health, and looking at wellness from a holistic perspective. In 2016, I launched a series of empowerment workshops with an emphasis on sustainability. My brand is 'Happy Soul' and it essentially helped empower various communities across the country. We focus on the environment, gardening, greenery, composting and electric vehicles or electric mobility. So, for me, health and wellness are a wonderful way to change what I don't like around me.

Interviewer: You mentioned that there are things you don't like around yourself. Air pollution is one such thing, and you have been very vocal about this issue. So, when did it start and what are you doing about it?

Pooja Bedi: I think it's extremely important for us to start thinking of ourselves, our children and the future of the planet. We witnessed during our first COVID lockdown, how beautifully the planet healed. We saw clear skies; clear roads and pollution levels dropped. People were amazed to see distant mountains, whereas before they could barely see a few buildings away. However, it is unfortunate that, as soon as the economy started to bounce back, people just forgot and went back to their polluting ways. I think, there should be some sense of learning through this entire COVID period that should stay with people.

It is unbelievable how much we can deplete our resources and pollute our planet when we know that we can also be the solution for this. So why aren't we focusing on solutions? Why aren't we focusing on measures to correct it?

What should we do to reduce our carbon footprint? How are we recycling our resources? How are we changing our reality daily, whether it is water conservation, growing your own food, planting trees etc. All these questions must be asked routinely and regularly so that people start building that awareness. The more you bring this up, by the power of repetition, the process of change will start. Start making people stakeholders in these issues, and then you can empower and engage them and ask them to do more.

Interviewer: In your opinion, what is the role of transport in the air that we breathe in our cities?

Pooja Bedi: Well, that is one of the key factors. The fact is that we all are using vehicles that contribute to pollution. And, I think as far as transport goes, we need to make alternatives available to people. For example, our waterways are hugely underutilized. So, if you can tap into electric or solar-powered water transport, or a combination of both, it will make a huge difference to pollution levels. Kerala, for example, is leading the way with water transport. Given the large waterways we have in our country, if we can turn the modes of transport into electric, we would be doing good. At the end of the day, what is important is that we must focus on good quality electric vehicles. For example, electric cycles are such an amazing mode of transport. If you don't want to pedal it, you turn on the electric mode and still move. So, these are easy choices to make and not that costly either given the price of petrol and fuel nowadays.

Interviewer: When It comes to EVs, a lot of people think of fancy electric cars, but electric cycles can have mass mode appeal, which can take off in the country. Right?

Pooja Bedi: Absolutely. There are so many models of e-cycles in various price ranges that exist in the market today. You can take it anywhere, plug it, charge it and you can be up and about. I think it is one of the most efficient ways to travel. I have two electric cycles at my home here in Goa. We use it extensively for shopping and our daily commute, and they are great for a workout as well. Just turn off the electric switch and start cycling. It keeps you in shape.

Interviewer: In your opinion, what can the government do to accelerate electric mobility? And, what are you doing personally, to accelerate electric mobility uptake?

Pooja Bedi: Like I said, open the waterways and focus on electric powered and solar-powered boats. Second, governments should focus on offering tax-saving benefits to consumers and corporates who buys e-vehicles. Not just a small percentage discount, but something that is more alluring. What would I personally do? Well, many things. One is that through 'Happy Soul'. I am looking at engaging with larger audiences for building awareness and sales. We are going to heavily start marketing, advertising, promoting, and doing shows and videos, on the importance of electric and solar power in our lives. In the coming years, I would want my company to get involved in solar power awareness. So yes, looking forward to doing a lot for the planet in every possible way.



UPDATES FROM THE WORLD

Why reducing drivetrain size can make electric cars even greener? | *Technology and Development*

Summary of news: Battery electric vehicles (BEVs) are starting to gain a larger market share, in Europe, as consumers opt for cleaner technology and lawmakers strengthen emissions rules for automakers. Latest developments in electric drivetrain technology, such as halving motor size and reducing vehicle weight, will not only help automakers in cutting the costs of electric vehicles but will also offer environmental benefits. [Read more](#)

Takeaways for India: Electric vehicles, in India, have a high upfront cost which is a key barrier to their adoption. As automakers move towards developing new models of EVs, standardised modular designs can offer obvious environmental benefits along with bringing down vehicle costs and increase EV uptake in India.

'Walkcar' portable micro-mobility: The world's smallest electric mobility that can fit into your bag

Market Development

Summary of news: Japan's Cocoa Motors offer the world's smallest electric vehicle that can be put in a bag! The lightweight aluminium board is approximately the size of a laptop and can carry a load of up to 120 kilograms. The e-scooter comes with two drive modes, Eco and Sport, delivering different speeds and per-charge ranges. While the Sport mode has a top speed of 16 kph (10 mph) and a range of 5 km (3.1 miles), the Eco delivers a max 10 kph (6.2 mph) and 7 km (4.3 miles) of range. The total weight of the e-scooter is just 2.9 kg (6.4 pounds). [Read more](#)

Takeaways for India: With technological advancements, entirely new EV product ranges can be designed. The smaller form factor can take the EV industry to new and wider horizons and can play an important role in a country like India, especially as a feeder to mass transit. Such advancements will also help in reducing carbon emissions and furthering sustainability in mass transit system.



Hyundai Motor Company signs MOU for EV battery lease to foster EV ecosystem and sustainable battery reuse | *Strategy*

Summary of news: Hyundai Motor Company has signed a memorandum of understanding (MOU) with South Korea's Ministry of Trade, Industry and Energy as well as logistics, battery, and mobility companies like Hyundai Glovis, LG Energy Solution and KST Mobility to demonstrate the EV battery leasing business. Through this agreement, Hyundai aims to foster an EV ecosystem by alleviating the initial cost burden of EV purchases and providing innovative services that enable the eco-friendly reuse of batteries. [Read more](#)

Takeaways for India: Second life of spent EV batteries is an important issue that needs to be addressed both from a mobility as well as from a sustainability perspective. In a country like India, where a key barrier to EV adoption is its high purchase cost, sustainable reuse of EV batteries can help in lowering EV purchase cost.

South Korea to halve electric vehicle prices by 2025 | *Policy*

Summary of news: The South Korean government is planning to lower the cost of electric vehicles to expedite the country's transition toward EVs. The strategy includes implementing electric battery leases for Korean customers that would cut their initial purchase costs by nearly half. South Korea is a major player in the battery market, hence domestic battery material development will play a large role in lowering costs. [Read more](#)

Takeaways for India: The learning from such initiatives will be important as the country moves towards setting up gigafactories with the intent of aggregating a capacity of 50 GWh over the next ten years. It's time that India began exploring new approaches towards domestic battery manufacturing to strategically reduce battery import dependence.

Amazon begins testing its Rivian electric delivery vans in San Francisco | *Market Development*

Summary of news: Amazon has begun testing its electric delivery vans in Los Angeles, USA. This is part of its climate pledge, which involves the purchase of 100,000 custom electric delivery vehicles. The company first unveiled the van last October and aims to have 10,000 vehicles operational by next year. The electric delivery vans are being designed and built in partnership with Rivian, and can last up to 150 miles on a single charge. [Read more](#)

Takeaways for India: Electrification of delivery vehicles is an important opportunity for a country like India which has seen a massive rise in such vehicles in the wake of the COVID crisis.



UPDATES FROM INDIA

Demand for E-vehicles in India more than doubled in 3 years | *Market Development*

It may be a while before electric vehicles become mainstream in India, but there are enough indications that demands are rising. The Government of India's e-vahan portal data highlights that the demand for electric vehicles in India has doubled over the last three years. India had 69,012 electric vehicles on road in 2017-18 that increased to 143,358 units in 2018-19 and again, 167,041 units in 2019-20. Reduction of GST on electric vehicles, chargers and charging stations; and allowing sale of electricity as a service for charging of electric vehicles is likely to further boost uptake.

[Read more](#)

Bengaluru: Zero-emission solar powered electric vehicle charging station | *Technology*

The Indian Institute of Science (IISc) in Bengaluru has developed a solar photovoltaic powered EV charging station. The zero-emission charging station has been designed and developed at the institute's sustainable transportation lab by the UK-based Greenencho Ltd under the Innovating for Clean Air (IfCA) programme of the Energy System Catapult, UK. The custom-made off-grid system comprises of a solar photovoltaic (PV) module, hybrid inverter, battery storage and an EV charger. With the integration of renewable energy, such a charging station not only helps combat air pollution but also effectively addresses challenges related to EV charging infrastructure and power grid management. [Read more](#)

Government announces vehicle scrappage policy: All you need to know | *Policy and Strategy*

Union minister Nitin Gadkari recently announced the much-awaited vehicle scrappage policy. The policy is touted as a major step to boost the Indian automobile sector, reeling under the adverse impact of the pandemic. Once implemented, the scrappage policy will make India the world's largest automobile hub. The rules for fitness tests and scrapping centers are likely to be notified by October 1, 2021. As per the new policy, commercial vehicles and private vehicles will be de-registered, after 15 years and 20 years respectively, in case of failure to get fitness or renewed registration certificates. [Read more](#)



Delhi Government announces interest subvention scheme of 5% in EV purchases | *Policy and Finance*

The Delhi Government has been taking progressive steps to accelerate EV adoption under the Delhi EV policy launched in August 2020. As part of the 'Switch Delhi' mass-awareness campaign, the Transport and Environment minister of Delhi, Kailash Gahlot, has announced that the government will soon be introducing an interest subvention scheme worth 5% for electric vehicle purchases in Delhi. Currently, the policy offers an incentive of up to Rs 30,000 for the purchase of two-wheelers and e-rickshaws and up to 1.5 lakh for goods carrier vehicles and cars. [Read More](#)

India to launch supercharged push for global electric vehicle players | *Strategy and Development*

India has planned to offer fresh incentives to companies making electric vehicles — as part of a broader auto sector plan through which it hopes to attract \$14 billion in investment over five years. The automotive incentive scheme is part of India's \$27 billion programme to capture a bigger share of the global supply chain by attracting interest from global manufacturers. The government expects to create 5.8 million new jobs and raise more than \$4 billion in total tax revenue over a five-year period. [Read more](#)



EV @ WRI

Total Cost of Ownership (TCO) analysis

A key barrier to Electric Vehicle (EV) adoption is the perceived notion of high capital costs. A more accurate assessment of an EV's economic efficiency is a Total Cost of Ownership (TCO) analysis. The WRI India TCO Evaluator performs an analysis on key cost components and performance parameters, across all fuel segments and transport modes, to identify their impact on TCO per km. This comparison offers valuable insights to policymakers, fleet operators, manufacturers, and private and public vehicle users and owners.

Access the TCO Evaluator tool [here](#)

Click [here](#) to view the recording of the launch event



EV FEATURE

Electric vehicles could help fight India's pollution crisis – but the lack of bank loans is a hurdle

About 40 lakh automobiles are sold every year in the country, out of which only a quarter are purchased outright – the other 75% are financed

by Amit Bhatt and Garima Agrawal, WRI India | Jan 2021 | This article first appeared in [Scroll.in](#)

Winter in Delhi, like most parts of northern India, brings toxic air. Climatic conditions along with episodic events like crop burning and Diwali also worsen the air quality. As per the State of Global Air 2018 report, air pollution is a silent killer in India and the country lost about 11 lakh people due to it. But that is not all. Recent studies show that almost 27% of Covid-19 cases in East Asia are a result of long-term exposure to polluted air. Combating toxic air requires action on multiple fronts and one such area is reducing vehicular emissions. Studies show that in a city like Delhi motor vehicles are the major source of pollutants emissions, contributing to about 40% of PM2.5 (ultrafine particles that are less than 2.5 microns in size and are responsible for health issues).

To address the issues of vehicular emission, states like Delhi are taking a holistic approach to promote electric vehicles. Launched in August, Delhi Government's EV policy has an ambitious target of having a 25% share of battery electric vehicles in new vehicle registrations by 2024.

However, scaling up electric vehicles needs substantive work in terms of charging infrastructure development, EV model availability, public awareness, etc. In addition to this, the high upfront cost is another key barrier to its uptake. Hence, financing plays a crucial role in scaling up electric vehicles in India.

About 40-lakh motor vehicles are sold every year in India out of which only a quarter are purchased outright. The rest 75% are financed by banks, non-banking financial institutions and others. Banks account for about 60% of the total vehicle lending in the country. According to the Reserve Bank of India data, in 2019 the total vehicle lending was ₹4.7-lakh crore. The data also shows that banks offered ₹10,155-crore in loans in the December 2019 quarter compared with ₹3,833-crore in the same period in 2018. All these loans were majorly disbursed for conventional internal combustion engine vehicles as EV forms less than 1% of India's total motor vehicle fleet.



Delhi Government's EV policy has an ambitious target of having a 25% share of battery electric vehicles in new vehicle registrations by 2024.

Photo credit: Roberto Schmidt/ AFP Photo

This shows that even with a limited number, financing electric vehicles is a big challenge in India. When it comes to financing a conventional vehicle, banks and financial institutions mostly look at the buyer's paying capacity. However, in the case of EVs, additional factors like vehicle longevity, battery life, resale value are also considered. All these concerns and risk factors result in higher interest rates, higher down-payment and shorter repayment periods.

Another peculiar thing about EV finance is that unlike conventional vehicle finance, there are no standard practices and policies for EV finance. Different bank branches have different lending terms based on their risk appetite.

A WRI India survey looking at electric vehicle finance practices by banks in Delhi brought some interesting insight on the financing of various categories of EVs in Delhi.

Electric Cars

Perhaps, this is the only segment where banks are relatively comfortable in lending for personal use. The interest rate charged by most banks is marginally higher than conventional cars. The finance is available for a period of three to seven years and one can get up to 100% of the vehicle value financed. The loan approval, however, is heavily dependent on the customer's CIBIL score and repayment capability.

Electric two-wheelers

In this segment, there are hardly any loans available for customers. Leaving a few private banks, most banks do not finance vehicles in this segment. Also, public banks do not usually finance more than 75% of the vehicle value and the loan repayment period is usually very short (less than a year). The rate of interest could be as high as 14%. Currently, less than 5% of electric two-wheelers are financed, compared to more than 60% of petrol two-wheelers.

Electric three-wheelers

The availability of bank loans for electric three-wheelers (e-rickshaws and e-autos) is even low as compared to two-wheelers. While the banks are reluctant in providing loans to this segment, NBFCs are the only source of finance. In addition to this, high loan repayment default rate (almost 30%) along with low ticket size are the main reasons bank want to de-risk themselves from financing this category of vehicles.

Taxi's and commercial electric vehicles

There is an additional set of challenges for the commercial electric vehicle segment. The viability and profitability of the business (an important loan approval criterion for this segment) are highly uncertain. EV business models also have longer break-even period due to the higher cost of vehicles. Banks usually provide a loan based on personal or

institutional credibility and the rate of interest is higher compared to conventional vehicles. Although the availability of finance for electric cars is good news, it will not transform India's motor vehicle mix as around 70% of the country's fleet comprise of two-wheelers, another 18% are mainly of small and affordable vehicles like shared, public transport, goods vehicles and economy cars.

Therefore, the benefits of reduced vehicle emission can only be observed when there is an uptake of electric vehicles in the two-wheelers, three-wheelers, and taxi segments. mBanks and other financial institutions are not willing to support competitive financing for most EV segments due to various reasons, but the crux of the problem is a lack of substantive demand. One way to spurt the demand is by bringing down the cost of financing of these vehicles.

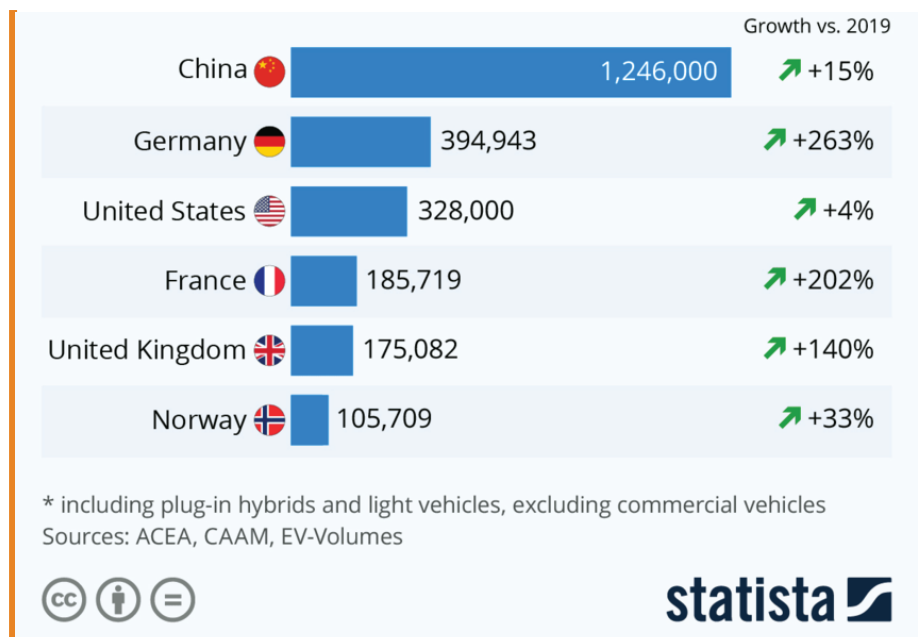
Delhi Government's EV policy, which provides a 5% interest rate subvention for a selected segment of vehicles, is an innovative approach. The right implementation of the scheme may well be the catalyst for a zero-emission vehicle future.

EVisual

Who Leads the Charge Towards Electric Mobility?

Largest markets in terms of plug-in electric passenger car sales in 2020*

Visit source page [here](#)



EV Podcast

Highly Dispersible Silica (HDS): Unlocking a new era of sustainable mobility

Highly Dispersible Silica (HDS) is a technique, which is making way for green tyres, the new-generation tyres that reduce CO₂ emissions as well as fuel consumption, thereby controlling pollution.

Listen to **Dr. Richard Lobo**, Head-Innovation & CQH (Business Excellence), Tata Chemicals [here](#)

COURTESY FOR THE ARTICLES

Sources:

<https://energy.economictimes.indiatimes.com/news/power/demand-for-e-vehicles-in-india-more-than-doubled-in-3-yrs/81530068>
<https://swarajyamag.com/news-brief/bengaluru-zero-emission-solar-powered-electric-vehicle-charging-station-developed-at-iisc>
<https://www.hindustantimes.com/india-news/govt-announces-vehicle-scrappage-policy-all-you-need-to-know-101616078006047html>
<https://www.saurenergy.com/ev-storage/delhi-announces-interest-subvention-scheme-of-5-in-ev-purchases>
<https://energy.economictimes.indiatimes.com/news/power/india-to-launch-supercharged-push-for-global-electric-vehicle-players/81642708>
https://www.youris.com/mobility/traffic_management/why-reducing-drivetrain-size-can-make-electric-cars-even-greener.kl
<https://electricvehicles.in/walkcar-portable-micro-mobility/>
<https://www.automotiveworld.com/news-releases/hyundai-motor-company-signs-mou-for-ev-battery-lease-to-foster-ev-ecosystem-and-sustainable-battery-reuse/>
<https://electrek.co/2021/02/19/south-korea-to-halve-electric-vehicle-prices-by-2025/>
<https://techcrunch.com/2021/03/18/amazon-begins-testing-its-rivian-electric-delivery-vans-in-san-francisco/>
<https://scroll.in/article/981572/electric-vehicles-could-help-fight-indias-pollution-crisis-but-the-lack-of-bank-loans-is-a-hurdle>
<https://www.weforum.org/agenda/2021/02/electric-vehicle-market-global>
<https://auto.economictimes.indiatimes.com/podcast/hds-unlocking-a-new-era-of-sustainable-mobility/81598513>

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VIDEO CREDIT

How does Vehicle to Grid (V2G) work?: <https://www.youtube.com/watch?v=wHNFYMPFUv4>

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