



Centre of Excellence for Research on Clean Air (CERCA)

Indian Institute of Technology Delhi
Research on Air Pollution and Climate Change

Monthly Newsletter **February 2021**



Editorial

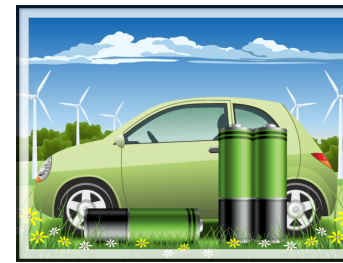
EV Retrofitting: An Innovative Step towards Reducing Air Pollution

Dear Readers,

EV retrofitting or conversion technology offers the best choice to contribute for a pollution-free India and for adoption of electric mobility. The Government of India is moving towards the direct transition from ICE-powered engines to EVs. There are many challenges involved in the direct transition to EVs from ICE like efficient charging and scrapping infrastructure and high cost of new EVs. The electric Retrofitting model addresses three major concerns— air pollution, traffic congestion and vehicle scrapping. Government aims to move 25% of transportation to EVs by 2030 in a bid to reduce air pollution. A retrofit could play a very crucial role in the transition to EVs and has the potential to produce efficient, eco-friendly, and sustainable EVs by expanding into vintage cars and old cars more than 15 years old. The process of building a new electric car is costly, in terms of energy and GHG emissions. Retrofitting should be the first choice for users of cars that are close to the end of their life cycle. EV Retrofit technology could bridge an important awareness gap about EVs for fast

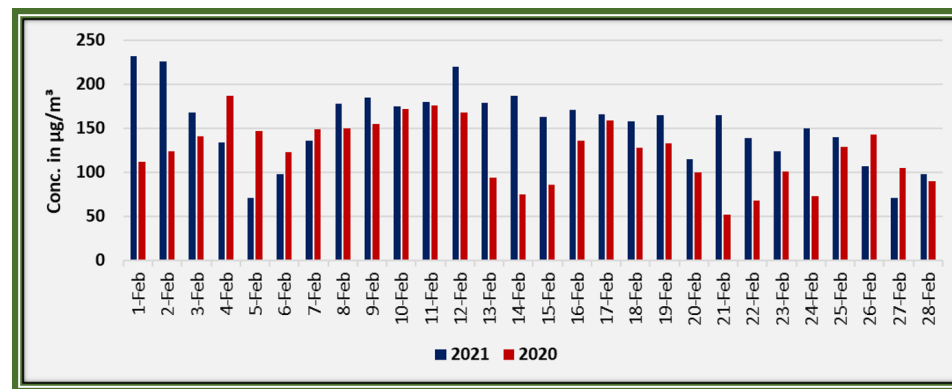


transition to fully electric fleets. A clear government policy in favor of retrofit EVs will help a lot. The choice should be left to the consumer to decide between scraping his old car or retrofit his IC engine car to electric. Pricing could be a major deciding factor for the average Indian middle-class segment that represents the highest percentage of vehicle ownership in India. Electric retrofitting is going to cost nearly one-third of what new electric vehicles will cost. Only a mix of new electric vehicles supplemented by electric retrofits can help India achieve the ambitious target of 25% EVs by 2030.



Hemant Kaushal
Project Coordinator, CERCA

Delhi The Most Polluted Capital City In The World Air Quality Trend for Delhi



About 23% increase in PM2.5 levels in February 2021 in comparison to February 2020 have been observed

Source: CPCB



CERCA is pleased to announce our **Monthly Lecture Series** for 2021-2022. From air pollution to climate change, CERCA virtual lecture series spotlights a range of contemporary issues while providing a platform for renowned speakers from around the world. Due to restrictions imposed by the ongoing pandemic, these lectures would take place virtually.

The first eminent speaker in the series is Prof Kalpana Balakrishnan, a leading air pollution epidemiologist in the country. She is a professor of Biophysics in the Department of Environmental Health Engineering at Sri Ramachandra University in Chennai, India. She also supports environmental health work at the World Health Organization and Government of India. She would speak on ["Just a pair of lungs: the challenge of seamless air pollution exposures in India"](#)



CERCA Events and Expert Opinions

Release of Special Cover and Postmark on First Classic Retrofit car developed by IIT, Delhi

To commemorate the successful launch of the first classic electric car developed by the Centre of Excellence for Research on Clean Air-IIT Delhi, a special cover and postmark were released on February 06, 2021 at Head Post office, New Delhi. The event was jointly organized with Heritage Motoring Club of India.

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Public awareness generation on Indoor Air Quality for priority building in NCT of Delhi

CERCA, SIE and Kaiterra conducted a baseline survey on the state of Indoor air quality in various buildings across Delhi in order to find out the quality of air that we breathe indoors in different buildings spaces and to generate public awareness about the importance of indoor environment.

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Chemical source profiles of fine particles for five different sources in Delhi

- Particulate matter profiles are developed for five major air pollutant sources in Delhi.
- Diagnostic ratios (Cl/EC) were highest in solid waste and crop burning.
- Road dust was influenced by anthropogenic sources more than natural.

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A comprehensive review on indoor air quality monitoring systems for enhanced public health

- Around 3 billion people worldwide use coal and biomass as primary source of energy.
- Humans spend 80-90% of their time indoors.
- This study provides a critical review of microcontrollers used for system designing and challenges in the development of real-time monitoring systems.

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Airshed Delineation & Management

Ms. Garima Sharma, Scientist 'D' Central Pollution Control Board (CPCB)

In this opinion paper, Ms. Garima Sharma has explored questions on the need for regional delineation of airshed for air quality management in the country. An airshed is defined as a part of the atmosphere, which behaves in a coherent way with regard to dispersion of pollutants. In other words, it is an area with a distinct air mass such that emissions emanating in the region remains within its boundaries.

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CERCA in Circulation



Educational institutes top list for high PM concentration: CERCA-IIT Delhi survey

A survey of indoor air quality in 37 buildings of the city, conducted by Centre of Excellence for Research on Clean Air (CERCA), IIT-Delhi; Society for Indoor Environment (SIE); and Kaiterra, has revealed that schools and colleges have the highest concentration of PM 2.5 and PM 10 compared to other buildings such as offices, restaurants and malls.

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New wine in old bottle: Vintage rides go green

On February 06, the India Post launched a special post cover and post mark at the Head Post Office, to commemorate the first classic retrofit electric car by Centre of Excellence for Research on Clean Air (CERCA), IIT, Delhi. "Through this car, we want to give a message to the government that converting old cars to electric ones will help curb pollution.

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Texas freeze led to release of tons of air pollutants as refineries shut

The largest U.S. oil refiners released tons of air pollutants into the skies over Texas this past week, according to figures provided to the state, as refineries and petrochemical plants in the region scrambled to shut production during frigid weather.

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Delhi government announces key decision on electric vehicles

The Delhi government ordered all its departments, autonomous bodies and grantee institutions to replace their existing fleet of hired conventional fuel vehicles to electric vehicle. The order was issued by special secretary, finance of the Delhi government.

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