



Panel Discussion

Session -05

Tuesday, 7th October 2025

1730 hr – 1830 hr IST

Venue: Taj Vivanta, Dwarka, New Delhi (India)



Session Moderator

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The Harsh Reality – India's Air Pollution Crisis

- **India** ranks 5th among the countries with the worst air quality globally
- **Delhi (NCR)** tops the global list of 10 most polluted cities

Global scenario (top 10)

City	Country	AQI	Pollution level
Delhi	India	404	hazardous
Beijing	China	220	Very unhealthy
Karachi	Pakistan	195	unhealthy
Dhaka	Bangladesh	180	unhealthy
Jakarta	Indonesia	160	unhealthy
Los Angeles	USA	120	Unhealthy for sensitive groups
Tokyo	Japan	85	moderate
Sydney	Australia	70	moderate
Paris	France	65	moderate
London	UK	55	moderate

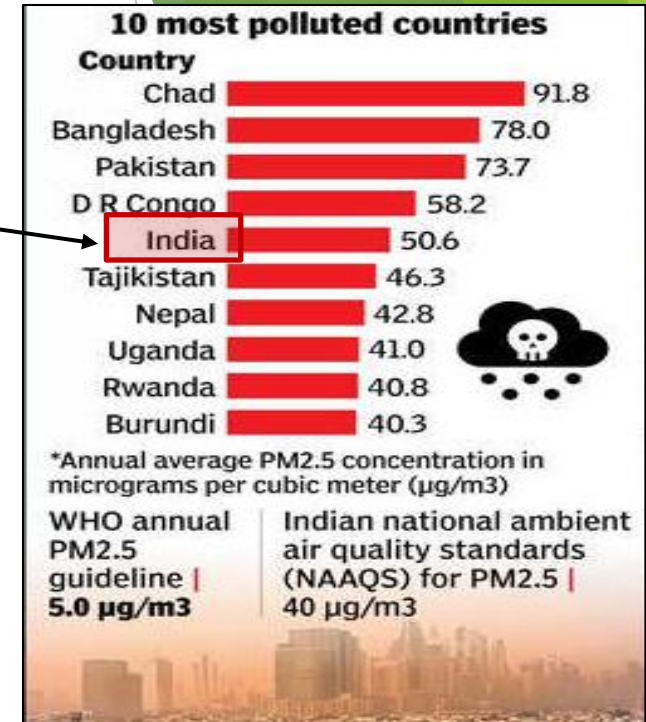
Metro cities in India

City	AQI
Delhi	404
Kolkata	182
Mumbai	142
Chennai	121
Ahmedabad	116
Hyderabad	100
Pune	98
Bangaluru	94

Northern cities in India

City	AQI	Pollution level
Delhi	404	hazardous
Gaziabad	346	severe
Gurugram	316	severe
Noida	313	severe
Hisar	312	severe
Muzaffarpur	311	severe
Jalandhar	309	severe
Bulandshahar	309	severe
Faridabad	308	severe
Amritsar	304	severe

Ref -  Landeed : Top 10 Most Polluted Cities in India vs. Global Cities
<https://www.landeed.com>



Ref: IQAir – 7th Annual World Air Quality Report for 2024

- Unprecedented scale of air pollution in Indian cities calls for out-of-box approach
- Air pollution is the leading environmental risk factor for premature deaths and diseases in India (~18% of all deaths due to air pollution)
- Virtually almost all urban population of India is exposed to PM2.5 levels exceeding WHO guidelines

- Euro 7 is an advanced emission regulation, but it is designed for European conditions and fleet dynamics.
- Operating conditions, traffic pattern and boundary conditions in India differ significantly

India

- ICEVs is still dominant in LDV segment. It is likely to continue in foreseeable future
 - ICE will continue to remain prominent powertrain for HDV segment for many more decades
 - Driving habits - harsh accelerations, sudden braking adversely affect the engine and emission performance
 - Higher traffic congestion leads to prolonged idling and lower average vehicle speeds in city and urban areas
 - Extreme ambient temperatures and increasing ethanol blending are considered to cause significant evaporative emissions
- These condition pose additional stress on engine and emission control systems*
- Progressively tightening emission regulations exist. However, large proportion of older-generation, highly polluting vehicles on the road is the reality shadowing the benefits of clean technologies
 - Challenges: in-use compliance, regular maintenance, I&M stations, strict enforcement

Key Features and Target Areas

Tail-pipe Emissions	• existing Euro 6 limits for NO_x, CO and THC retained for LDVs. • CF for RDE reduced to 1.0 i.e. Laboratory test limits match with RDE limits • Significant cuts for NO_x (>50%), PM (20%) and PN₁₀ (from PN₂₃) for heavy-duty vehicles
PN Cut-off	• Reduction to 10 nm from 23 nm for all vehicles, including GDI and MPFI
New Pollutants	• NMOG, NH₃, CH₄, N₂O for both lab and RDE testing for heavy-duty vehicles
Evaporative Emissions	• Diurnal test cycle increased from 24 hr to 48 hr. Limit tightened to 1.5 g/test
Enhanced On-Board Monitoring	• Real-time monitoring and prevention of tampering throughout vehicle life
Wider Boundary Conditions (RDE)	• ambient temp: (-)10 deg C to (+)45 deg C, high altitudes upto 1800 m, • Specific cold start emission limits for HDVs

Uniform and stricter limits for all fuels – making BS7 truly fuel neutral, technology neutral

Maximum emission reduction from all types of vehicle - irrespective of size, volume and varied usage pattern

RDE testing should reflect actual Indian driving cycles to represent congestion, overloading and frequent cold starts.

Lower CF to account to ensure vehicles run cleaner in real-world and not just in the laboratory conditions

higher ambient temperatures, longer time vehicle parking under the Sun and introduction of ethanol blended gasoline.

Need to control evaporative emissions through stricter limits, revised diurnal test conditions and technology advances.

to reduce VOCs (causing ozone formation), it is needed to -

- **introduce ORVR at vehicle level**
- **Introduce evaporative emission control technology**
- **Introduce stricter limits**

Legislate the policy for removal of highly-polluting vehicles from the road

With this background, the context of today's Panel Discussion subject is probably very apt :

- to debate the challenges and path forward in Indian scenario, while further stricter emission norms being discussed, such as BS7 regulation
- to debate the ground reality, apprehensions and solutions to implement stricter emission limits, such as Trem-V norms
- to discuss the approaches to achieve net-zero and reduced carbon foot print through CO₂ control, such as CAFÉ norms

We are fortunate to have a line up of the eminent Panelists, having global exposure and experience –

Dr Saeed Alerasool
Dr Rasto Brezny
Mr Dirk Bosteels
Dr Ameya Joshi

Dr Devendra Singh
Mr K K Gandhi
Mr Vikram Khanna
Dr Anupam Dave

Thank you