

**ASSESSMENT OF AMBIENT AIR QUALITY  
DURING DEEPAWALI  
(YEAR 2022)**



**DELHI POLLUTION CONTROL COMMITTEE**  
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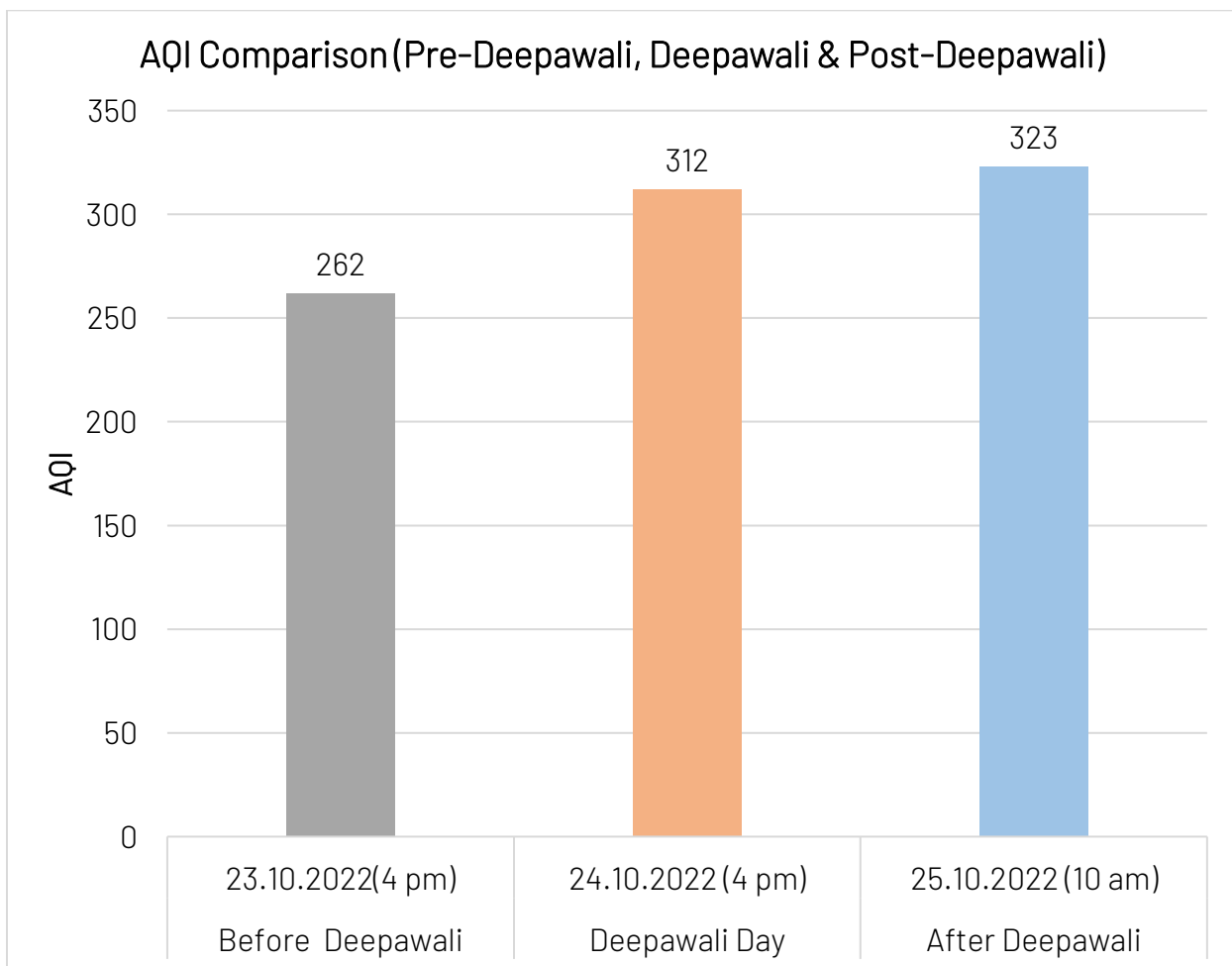
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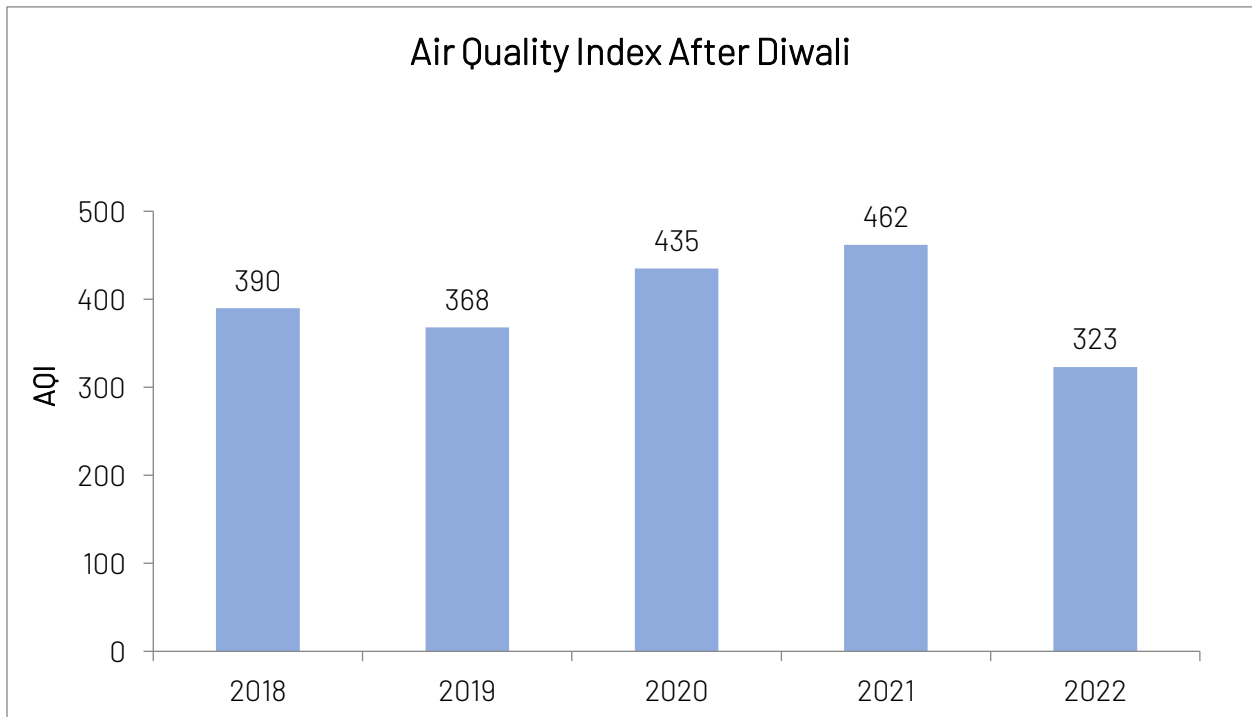
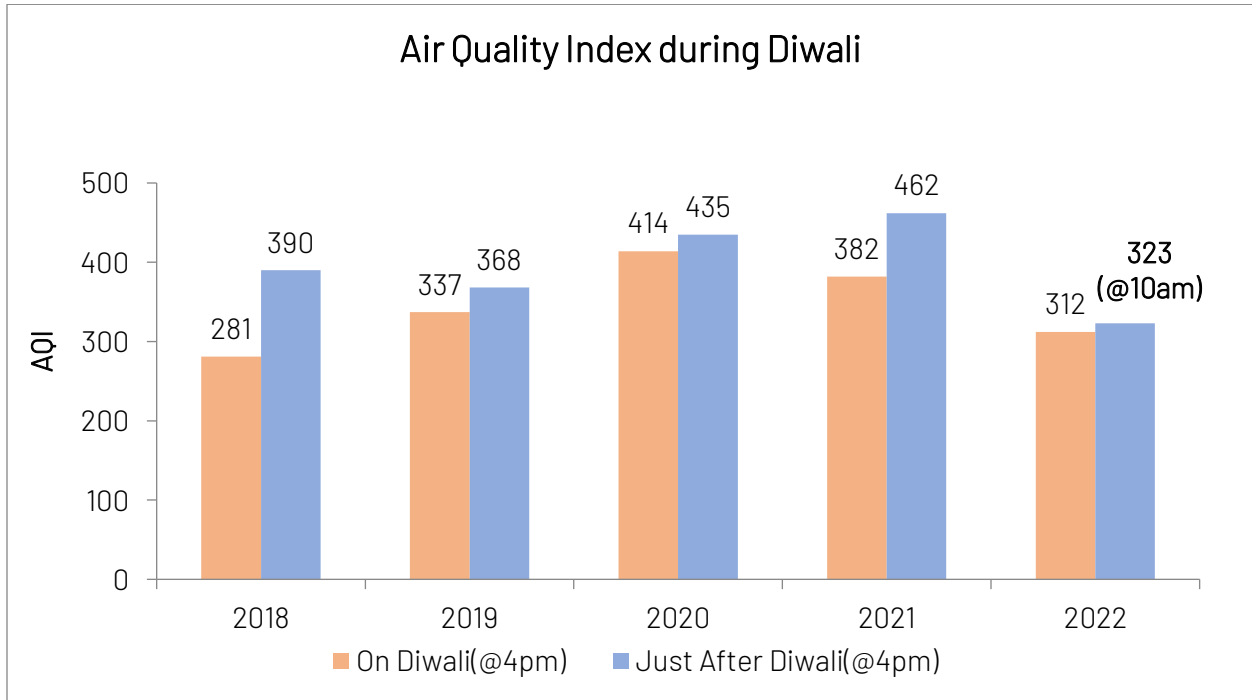
# Assessment of Ambient Air Quality during Deepawali (Year 2022)

## 1. Air Quality Index (AQI)

Before Deepawali 23.10.2022 (4 pm)	Deepawali Day 24.10.2022 (4 pm)	After Deepawali 25.10.2022 (10 am)
262	312	323

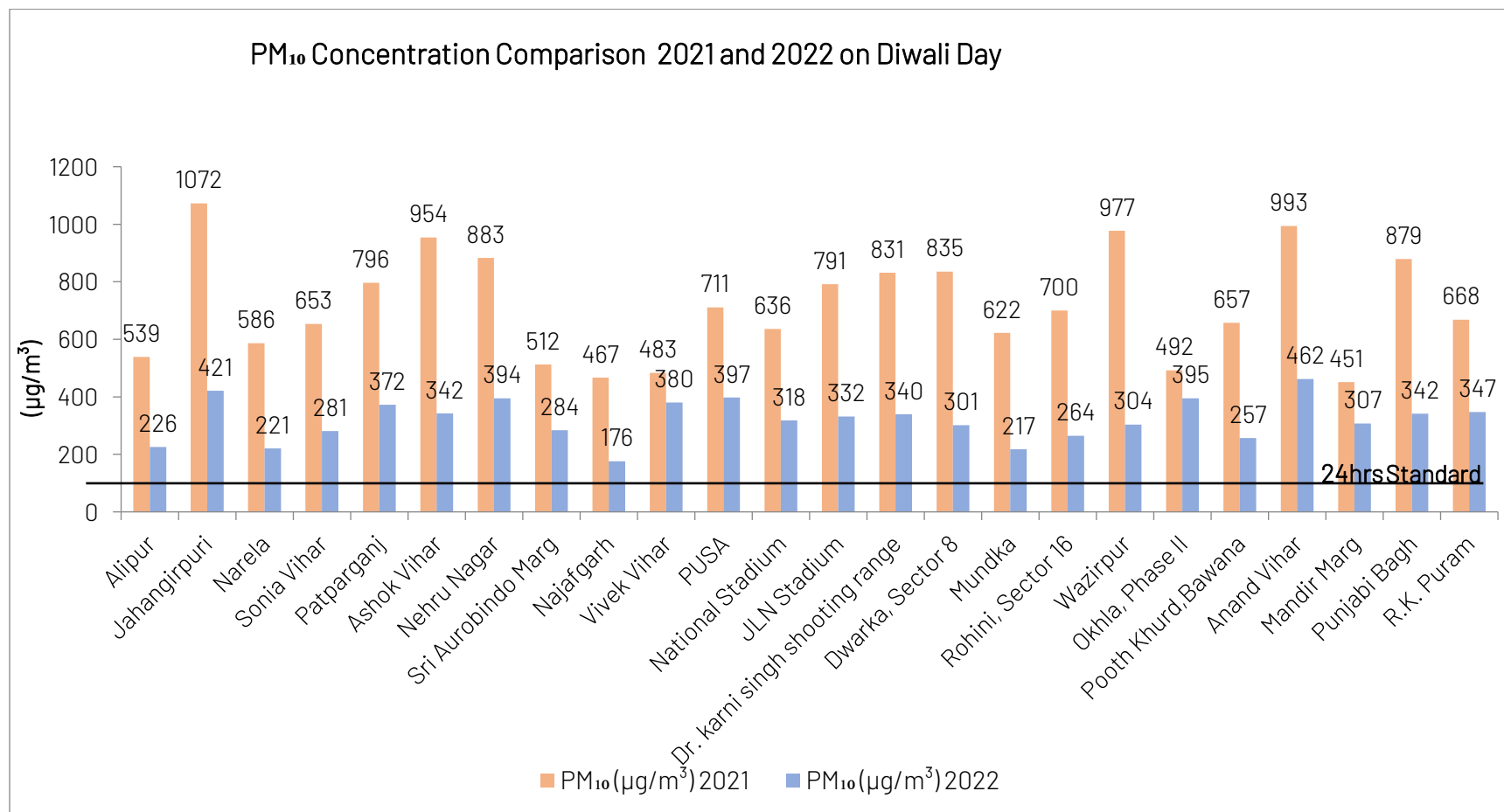


## 2. Comparison of Air Quality Index (AQI) Deepawali (Year 2018- 2022)



- Percentage reduction in Year 2022 compared to 2021: 30%

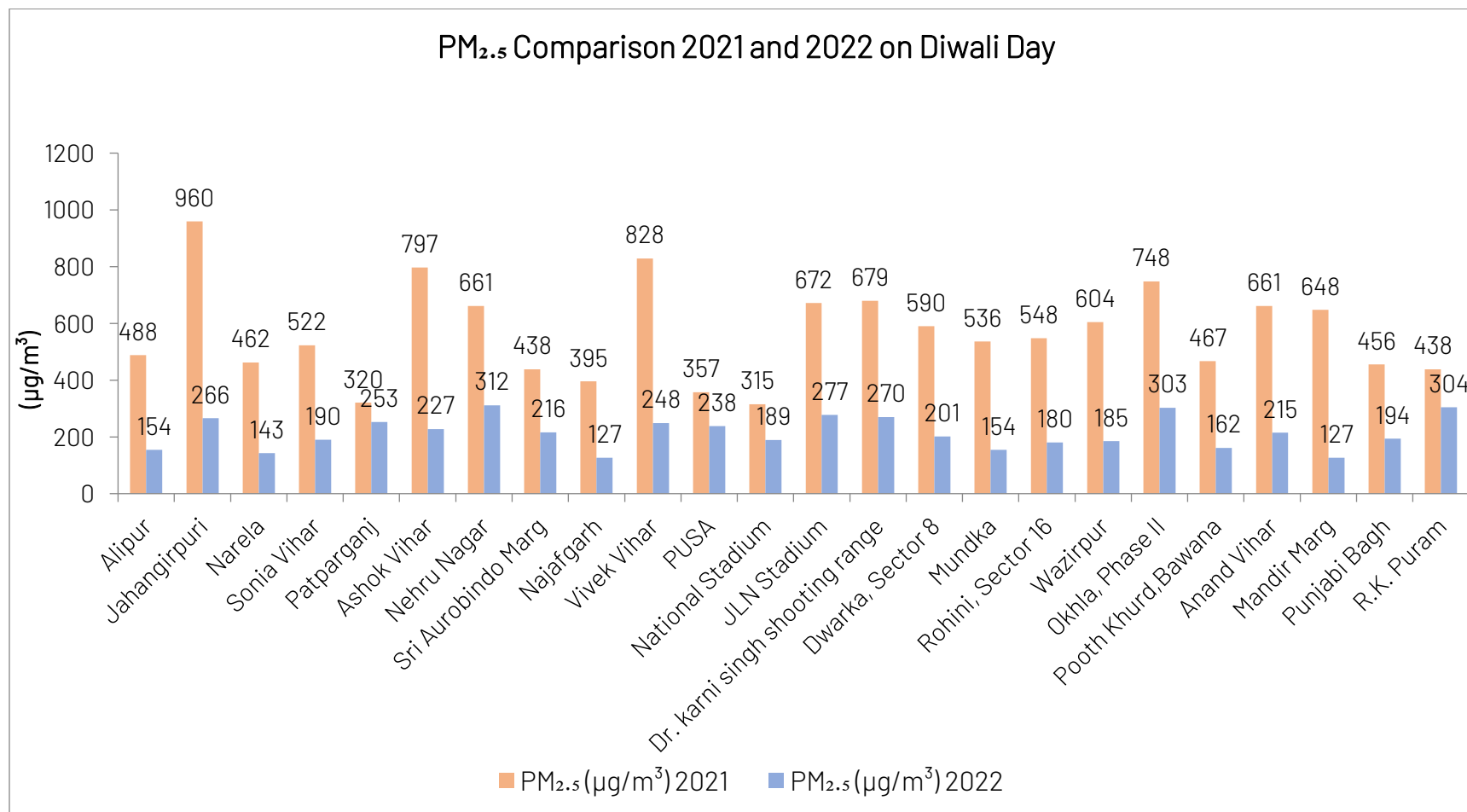
### 3. Ambient Air Quality of Delhi w.r.t PM<sub>10</sub> (24 locations) (Year 2021 & 2022)



% Reduction	58	61	62	57	53	64	55	45	62	21	44	50	58	59	64	65	62	69	20	61	54	32	61	48
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- All the stations observed reduction in concentration of PM<sub>10</sub> in 2022 w.r.t 2021.
- The minimum reduction observed at Okhla (20%) and maximum at Wazirpur (69%)

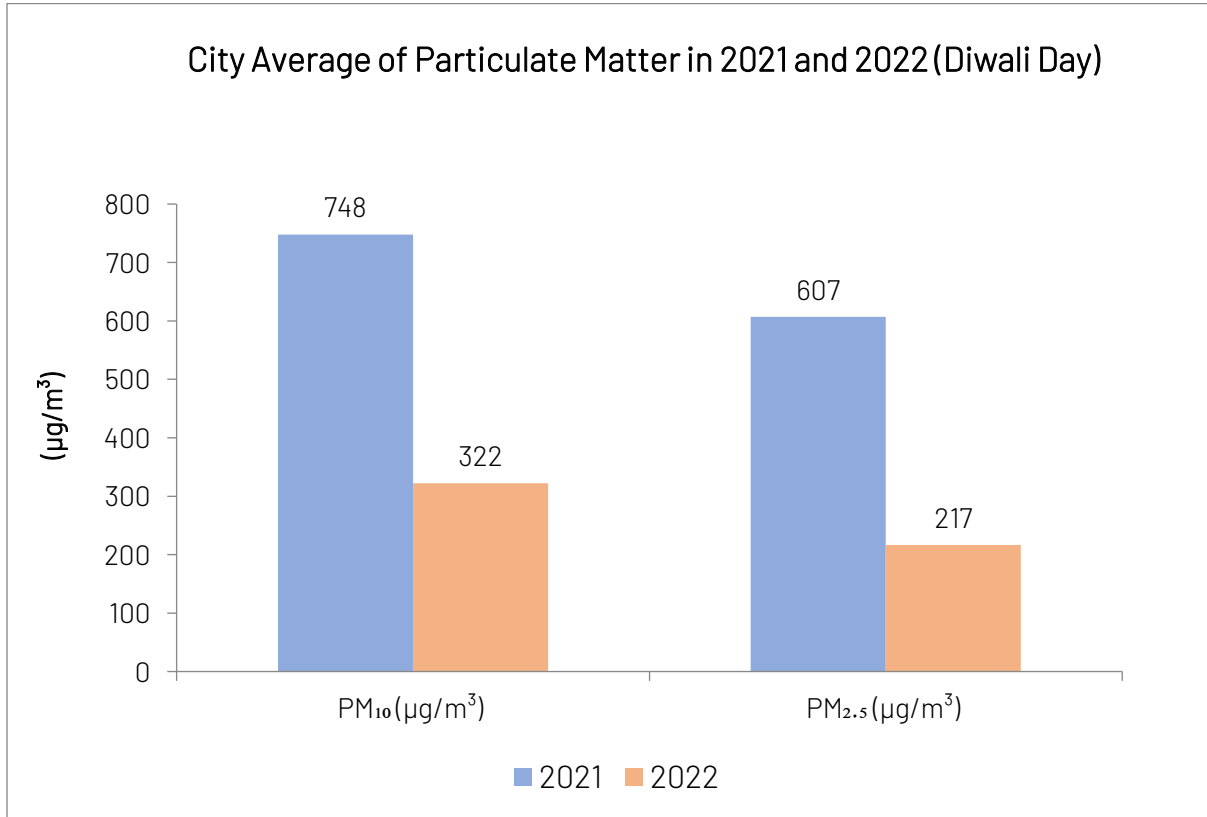
#### 4. Ambient Air Quality of Delhi wrt PM2.5 (24 locations) (year 2021-2022)



% Reduction	68	72	69	64	21	71	53	51	68	70	33	40	59	60	66	71	67	69	60	65	67	80	57	30
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- All the stations observed reduction in concentration of PM<sub>2.5</sub> in 2022 w.r.t 2021.
- The minimum reduction observed at Patparganj (21%) and maximum at Mardir Marg (80%).

## 5. City average for Ambient Air Quality of Delhi on the day of Deepawali (24 hr)(Year 2021 & 2022)

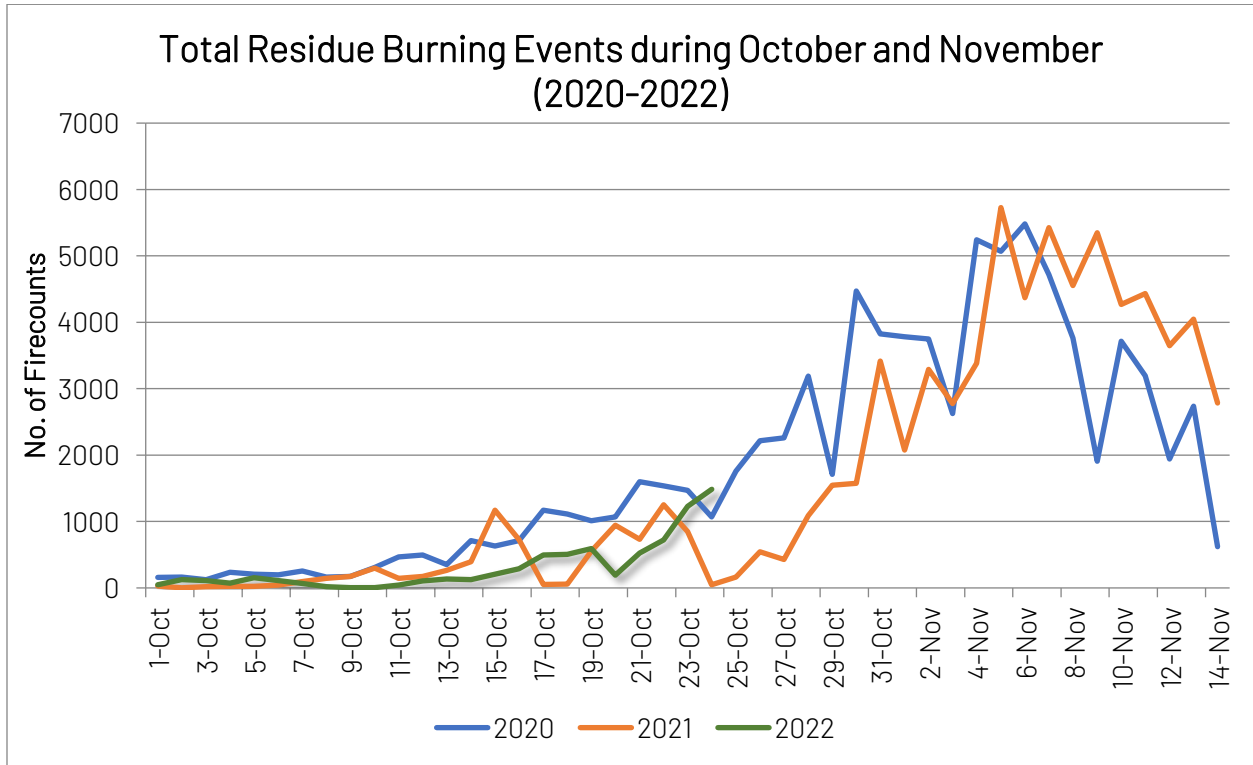


- Overall Percentage reduction observed in City average Concentration of  $\text{PM}_{10}$  is 57%.
- Overall Percentage reduction observed in City average Concentration of  $\text{PM}_{2.5}$  is 64%.

## 6. Gaseous Pollutants

All the gaseous pollutants i.e. ammonia,  $\text{SO}_2$ ,  $\text{NO}_2$ , CO,  $\text{O}_3$  & Benzene were found to be within the Prescribed Standard of National Ambient Air Quality Standard (NAAQS).

## 7. Total Residue Burning during October and November (2020-2022)



Trans boundary movement of pollutants from stubble burning saw a gradual increase during the last three days. The total number of Residue burning incidents (Punjab, Haryana, UP & Delhi) observed 1486 on Deepawali Day i.e. 24.10.2022. Year and State-wise Residue Burning data is as follows:

Year (on Diwali Day)	Punjab	Haryana	UP	Delhi	Total
2020 (14 <sup>th</sup> Nov)	339	50	234	0	623
2021 (4 <sup>th</sup> Nov)	3032	228	123	0	3383
2022 (24 <sup>th</sup> Oct)	1019	250	215	2	1486

\*56% reduction in Residue Burning Events in Punjab (from 2021 to 2022).

### Meteorological Conditions on Deepawali Day

**Wind Speed:** 06-08 Kmph with clear sky & favorable for Dispersion of Pollutants

**Wind Direction:** North-west



## **8. Assessment of Noise Levels**

Real Time Noise Monitoring was undertaken at 31 locations in Delhi during Deepawali Day, the range was observed with minimum value of 54.0 dB(A) (Najafgarh) and maximum value of 82.0 dB(A) (Karol Bagh) on Deepawali Day. Before Deepawali day, the range was observed with minimum value of 47.4 dB(A) (Najafgarh) and maximum value of 71.2 dB(A) (Karol Bagh).

## 9. Observations

- i. AQI: % Reduction in AQI in the Year 2022 compared to 2021 is 30%.
- ii. PM10: All the stations observed reduction in concentration of PM10 in 2022 with respect to 2021. The minimum reduction observed at Okhla (20%) and maximum at Wazirpur (69%)
- iii. PM2.5: All the stations observed reduction in concentration of PM2.5 in 2022 with respect to 2021. The minimum reduction observed at Patparganj (21%) and maximum at Mardir Marg (80%)
- iv. Gaseous Parameters: 6 major Gaseous Pollutants are measured that are Ammonia, SO<sub>2</sub>, NO<sub>2</sub>, CO, O<sub>3</sub> & Benzene. All the pollutants were within the National Ambient Air Quality Standard (NAAQS).
- v. Residue Burning: 56% reduction in Residue Burning Events in Punjab (from 2021 to 2022).
- vi. Meteorology: Wind Speed: 06-08 kmph with clear sky and moderate for Dispersion of Pollutants. Wind Direction: North-west.

## 10. Conclusion

In view of Ambient Air Quality Assessment with respect to Particulate Matter in year 2022, overall % reduction observed in City average Concentration of PM10 is 57% and PM2.5 is 64% compared to 2021. AQI observed 30% Reduction in Year 2022 as compared to 2021.

Overall Ambient Air Quality found to be better than the previous year. The probable reasons may be:

- i. 56% reduction in Residue Burning Events on Diwali in Punjab this year compared to 2021.
- ii. Better meteorological conditions with respect to wind speed of 06-08 kmph with clear sky & moderate conditions for Dispersion of Pollutants despite unfavorable Wind Direction: North-west.  
*Previous year - Wind was from North direction with wind speed of 02-08 kmph.*
- iii. Higher Temperatures varying between 15° C to 36° C this year. In year 2021, the temperature observed was 10° C to 33° C. Temperature was also one of the significant factors this year.
- iv. Less bursting of firecrackers in year 2022 could also be an important reason as compared to year 2021.

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