

ASSESSMENT OF AMBIENT AIR QUALITY DURING DIWALI

(YEAR 2023)



DELHI POLLUTION CONTROL COMMITTEE

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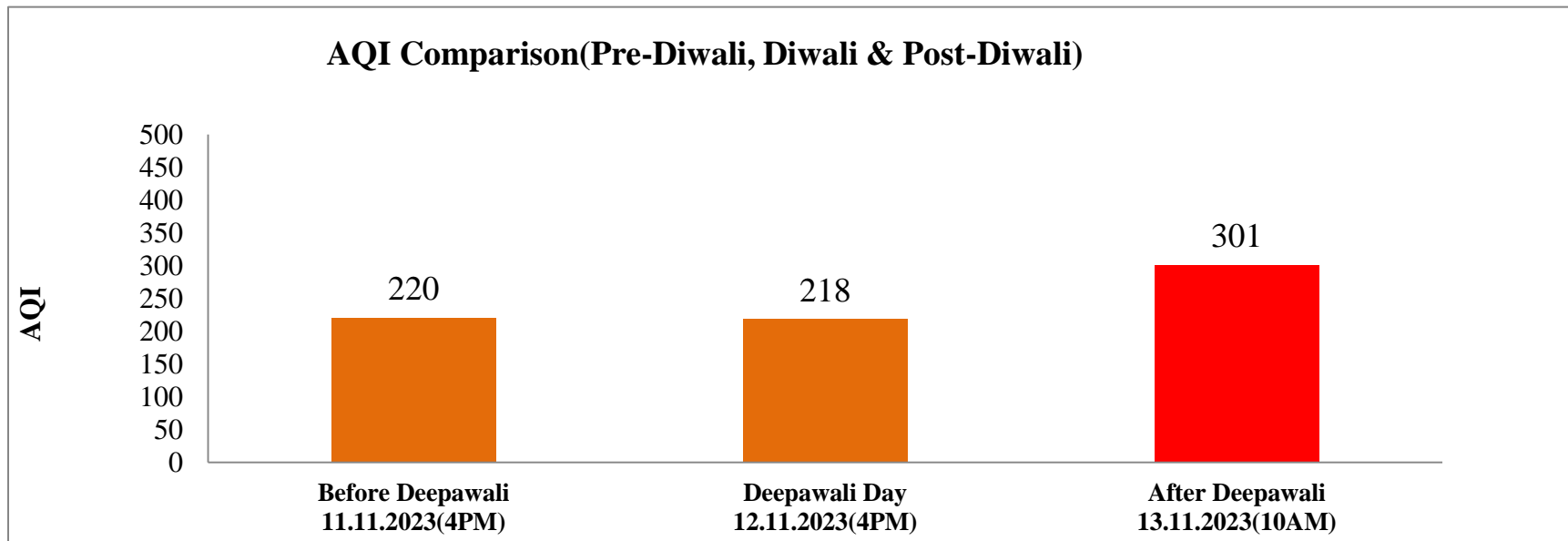
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Assessment of Ambient Air Quality during Diwali (Year 2023)

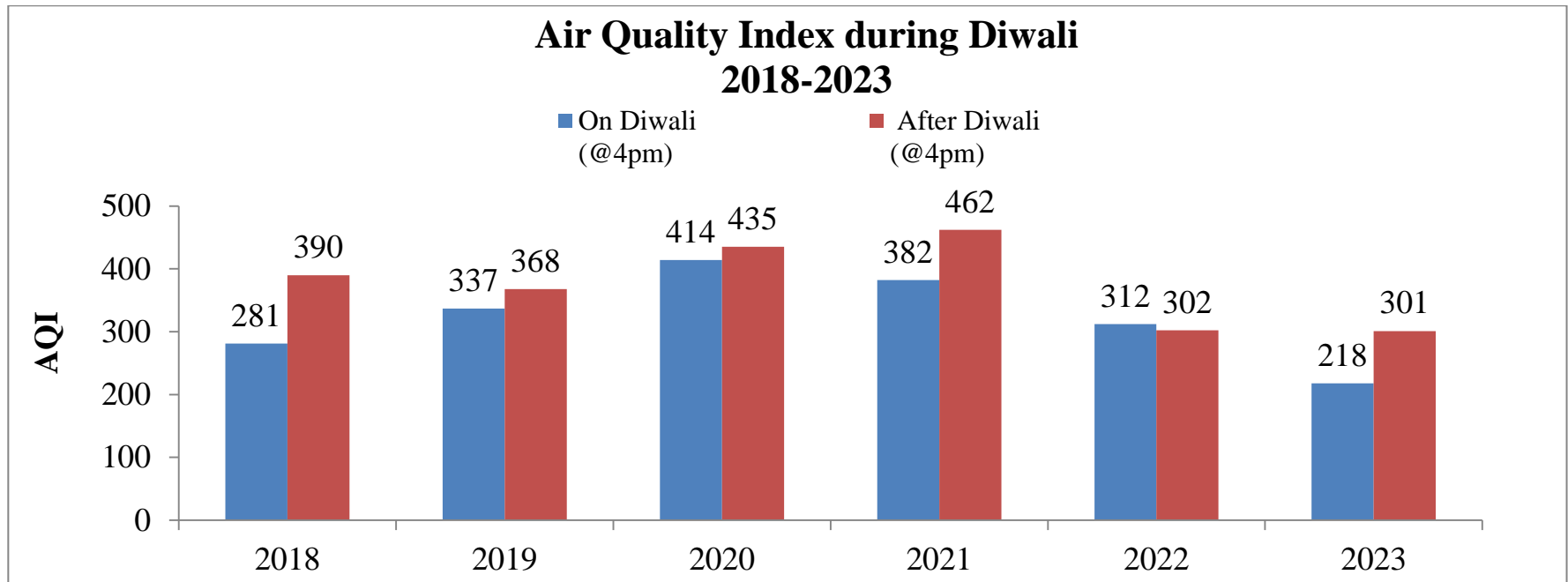
1. Air Quality Index (AQI)

Before Diwali 11.11.2023 (4 PM)	Diwali Day 12.11.2023 (4 PM)	After Diwali 13.11.2023 (10 AM)
220	218	301



42% increase after Diwali

2. Comparison of Air Quality Index (AQI) Diwali (Year 2018- 2023)



On Diwali Day

AQI Reduction in 2023 wrt 2021- 43%

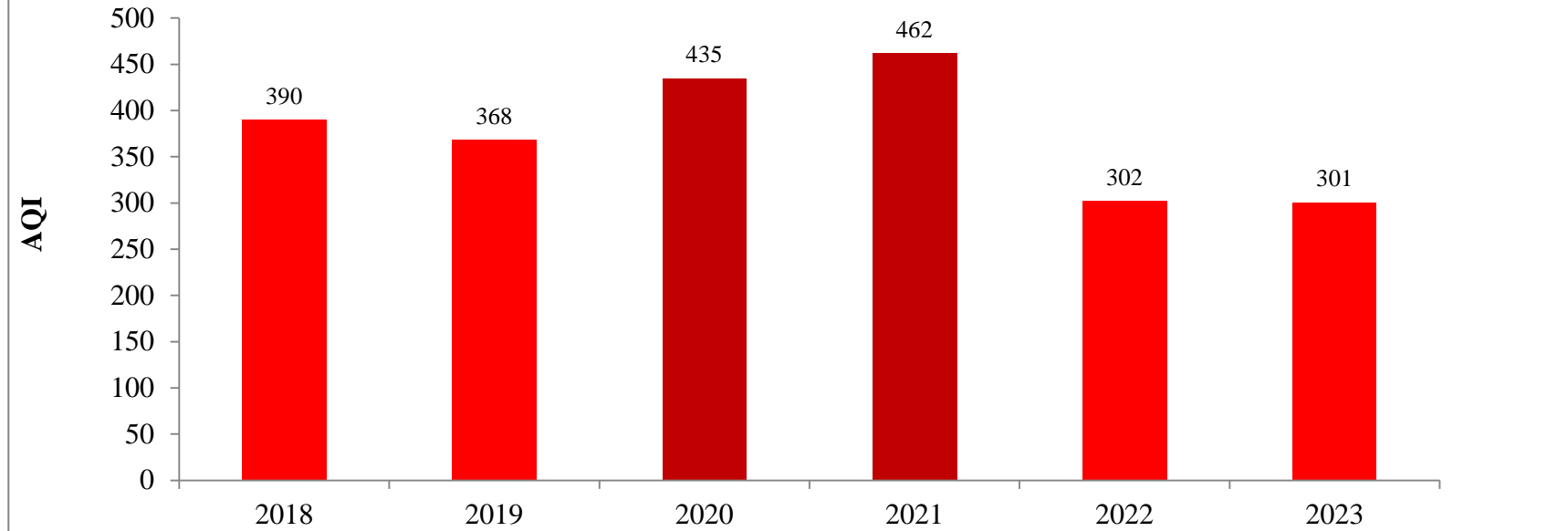
AQI Reduction in 2023 wrt 2022- 30%

After Diwali Day

AQI Reduction in 2023 wrt 2021- 35%

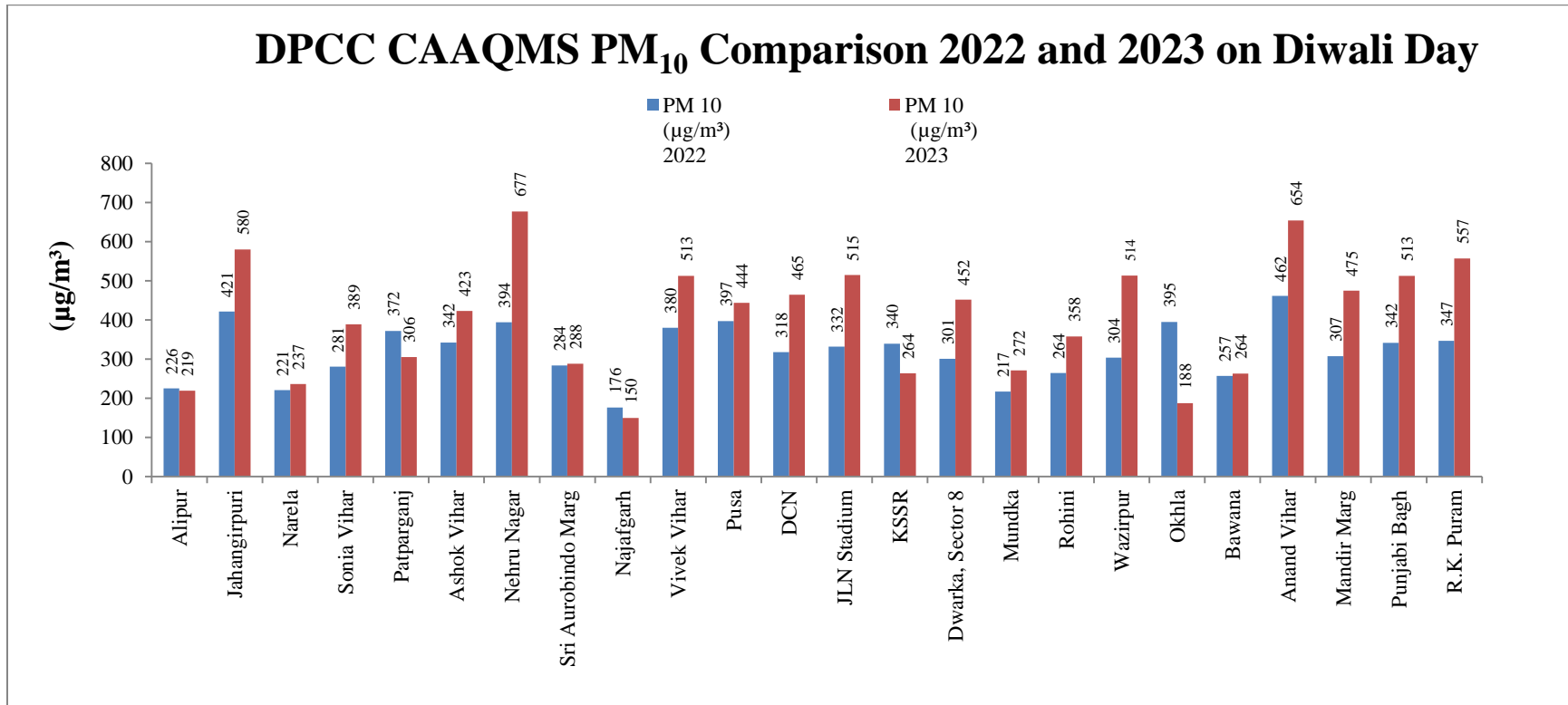
AQI Reduction in 2023 wrt 2022- 0.3%

Air Quality Index After Diwali



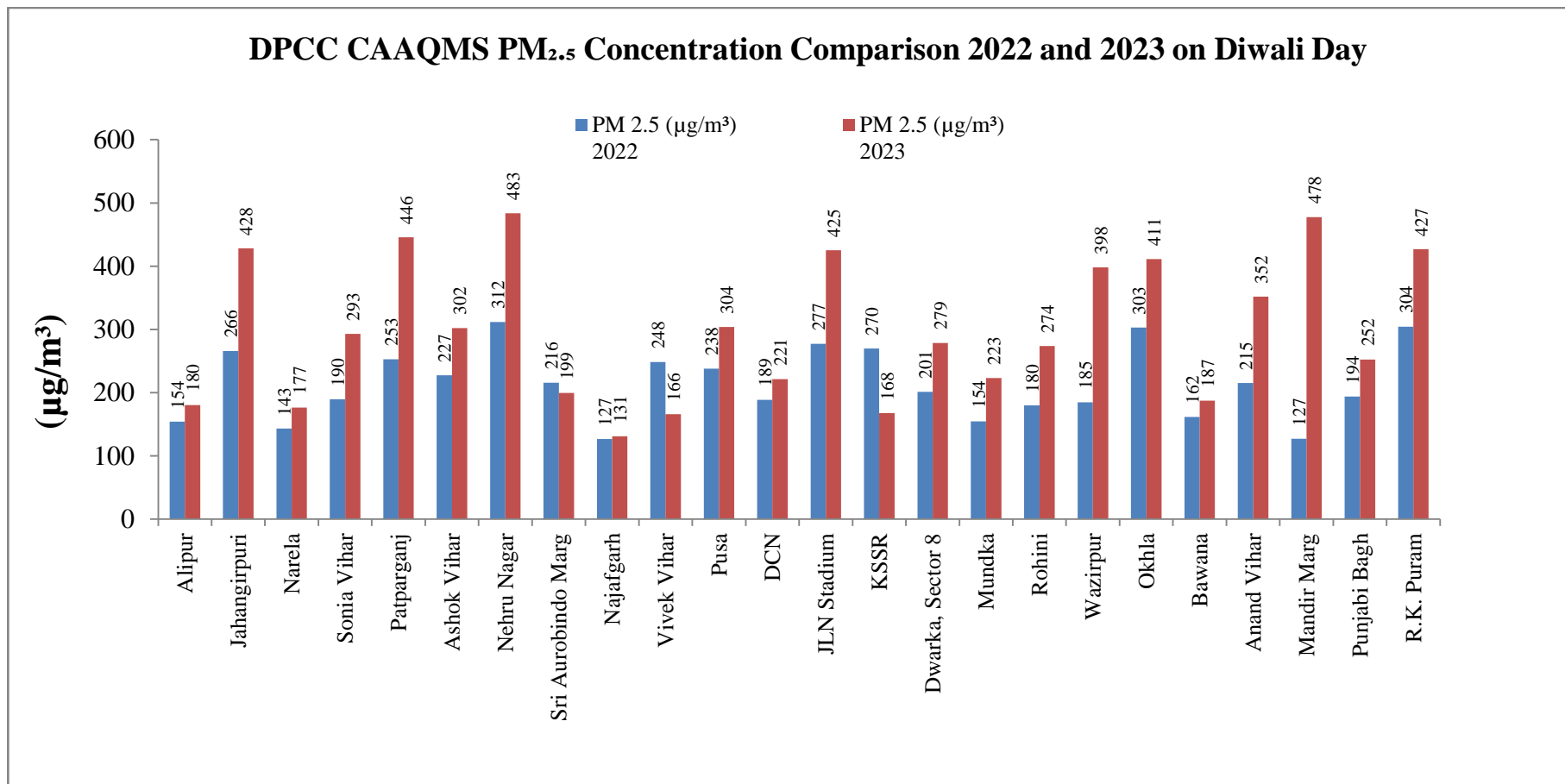
Percentage reduction in Year 2023 compared to 2022: 0.3%
Percentage reduction in Year 2023 compared to 2021: 35%

3. Ambient Air Quality of Delhi w.r.t PM10 (24 locations) (Year 2022 & 2023)



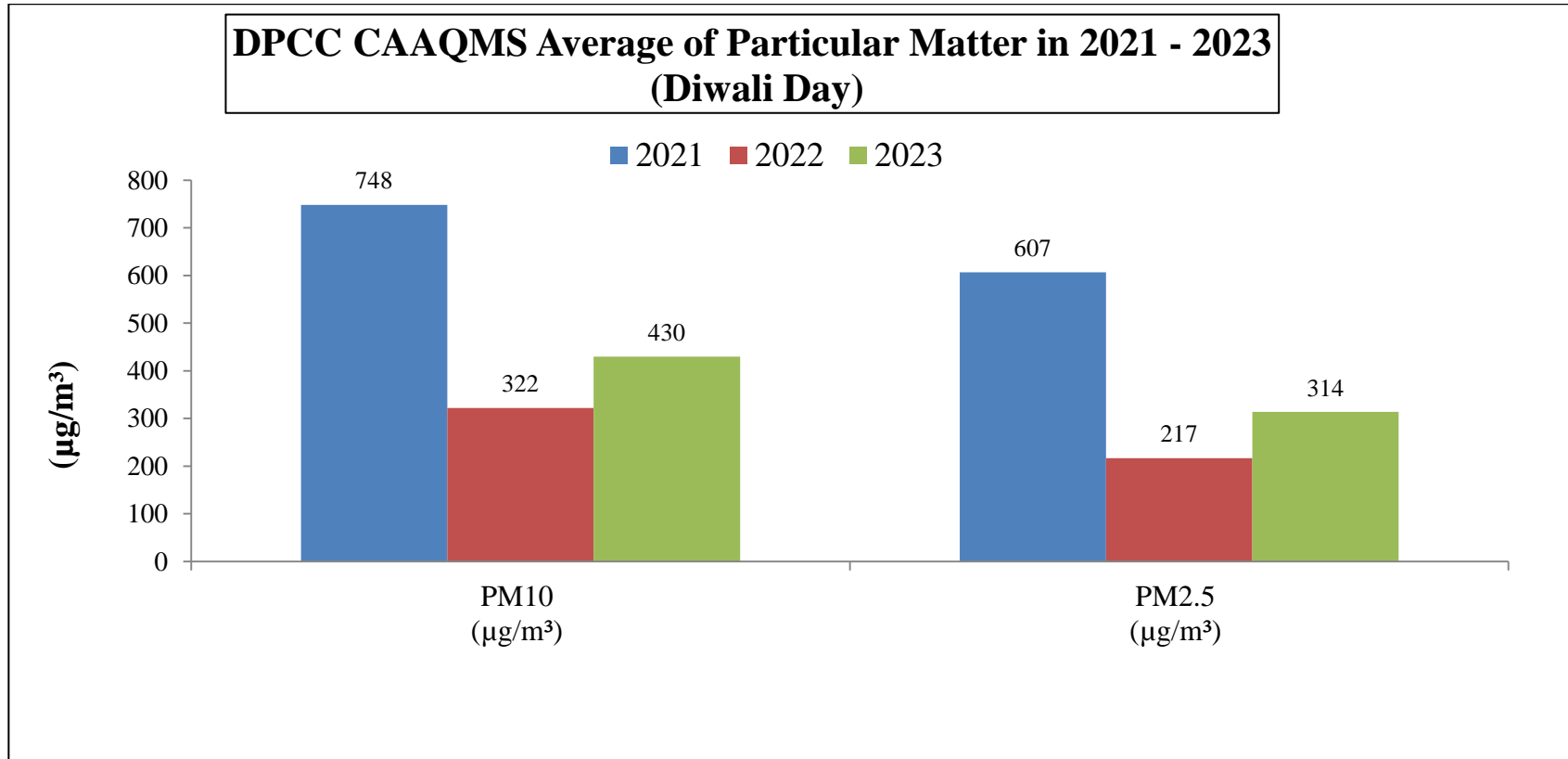
All stations observed increment in concentration of PM₁₀ in 2023 w.r.t 2022 except **Alipur, Patparganj, Najafgarh, KSSR and Okhla.**

4. Ambient Air Quality of Delhi wrt PM_{2.5} (24 locations) (year 2022-2023)



All stations observed increment in concentration of PM_{2.5} in 2023 w.r.t 2022 except **Sri Aurobindo, Vivek Vihar, KSSR.**

5. City average for Ambient Air Quality of Delhi on the day of Diwali (24hrs) (Year 2021- 2023)

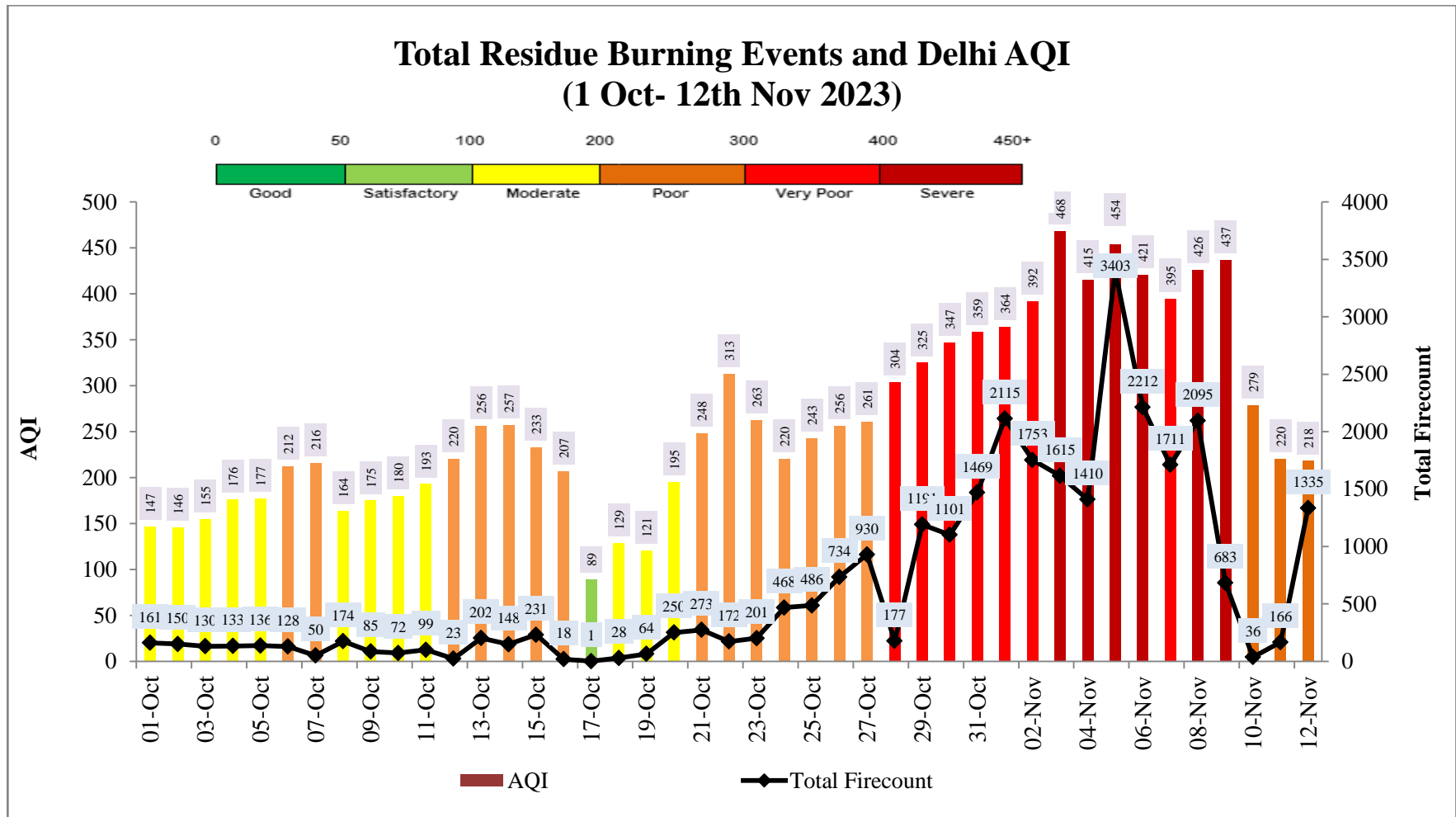


- Overall increase observed in city average conc. of PM_{10} in 2023 wrt 2022: 33%
- Overall reduction observed in city average conc. of PM_{10} in 2023 wrt 2021: 42%
- Overall increase observed in city average conc. of $\text{PM}_{2.5}$ in 2023 wrt 2022: 45%
- Overall reduction observed in city average conc. of $\text{PM}_{2.5}$ in 2023 wrt 2021: 48%

6. Gaseous Pollutants

All the gaseous pollutants i.e. ammonia, SO₂, NO₂, CO, O₃ & Benzene were found to be within the Prescribed Standard of National Ambient Air Quality Standard (NAAQS).

7. Total Residue Burning during and Delhi AQI (2023)



The total number of Residue burning incidents (Punjab, Haryana, UP & Delhi) observed 1335 on Diwali Day i.e. 12.11.2023. Year and State-wise Residue Burning data is as follows:

Year (on Diwali Day)	Punjab	Haryana	UP	Delhi	Total
2021 (4 th Nov)	3032	228	123	0	3383
2022 (24 th Nov)	1019	250	215	2	1486
2023 (12 th Nov)	987	110	238	0	1335

*3% reduction in Residue Burning Events in Punjab (from 2022 to 2023).

Meteorological Conditions on Diwali Day

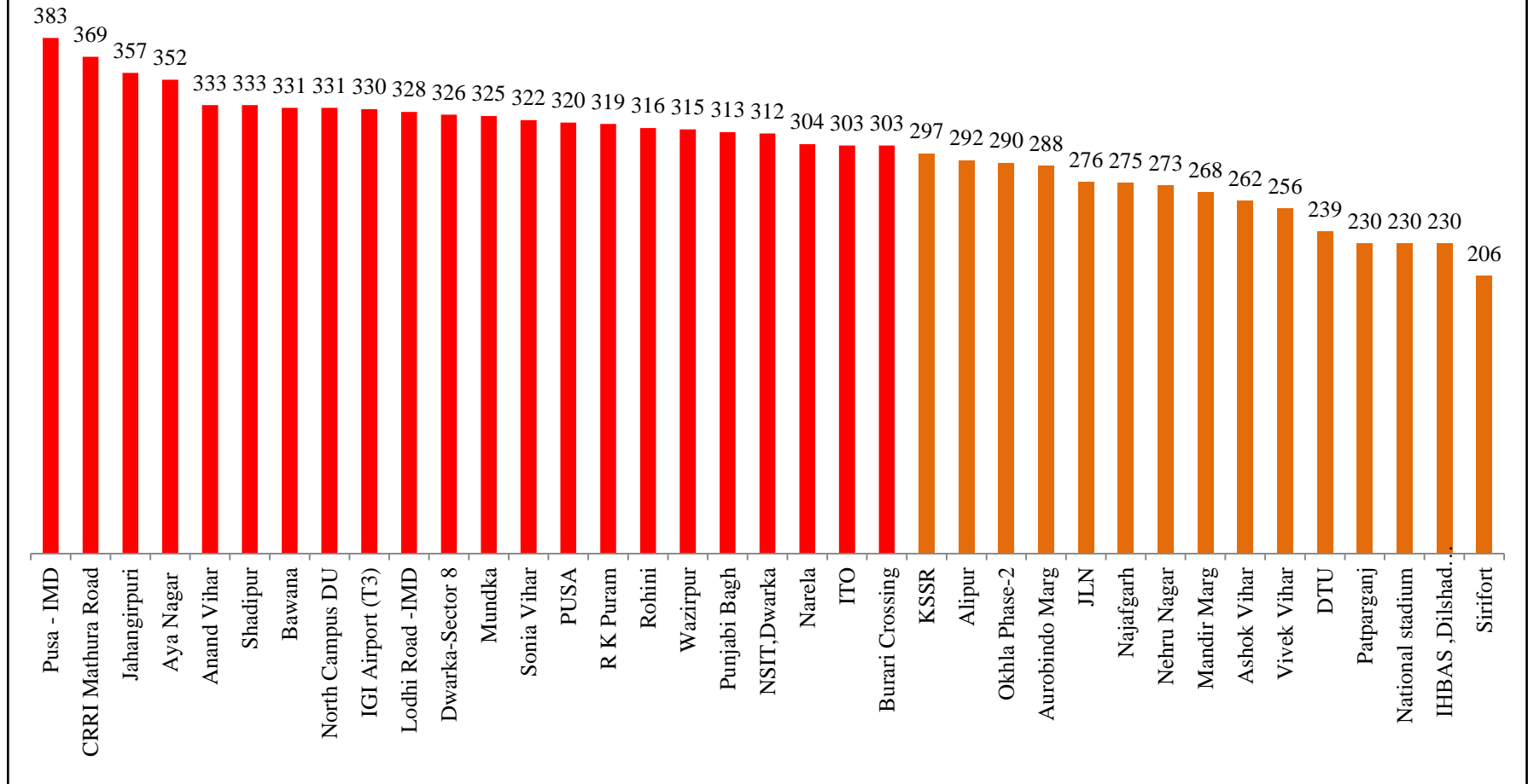
Wind Speed: upto 10 Kmph with clear sky & favorable for Dispersion of Pollutants

Wind Direction: North-west

Temperature Variation: 12.4°C – 26.3°C (Source: IMD)

Prediction: The air quality is likely to be deteriorate and will reach in Very Poor category on 13.11.2023. The air quality is likely to reach in **Severe** category from 14.11.2023 to 15.11.2023. The outlook for subsequent 6 Days, The air quality is likely to remain in **Severe** to **Very Poor category**.

AQI of 40 Stations in Delhi (13th Nov 2023 @10AM)



8. Assessment of Noise Levels

Real Time Noise Monitoring was undertaken at 31 locations in Delhi during Diwali Day (12 Nov 2023), the range was observed with minimum value of 53.7 dB(A) (Najafgarh) and maximum value of 84.5 dB(A) (Karol Bagh) on Diwali Day. Before Diwali day (06 Nov 2023), the range was observed with minimum value of 44.9 dB(A) (Najafgarh) and maximum value of 74.7 dB(A) (Karol Bagh).

9. Observation

- i. AQI: % Reduction in AQI in the Year 2023 compared to 2022 is 30% on Diwali, and after Diwali day it is 0.3%.
- ii. PM10: All the stations (except 5 stations) observed increased in concentration of PM10 in 2023 .
- iii. PM2.5: All the stations (except 3 stations) observed increased in concentration of PM10 in 2023 .
- iv. Gaseous Parameters: 6 major Gaseous Pollutants are measured that are Ammonia, SO₂, NO₂, CO, O₃ & Benzene. All the pollutants were within the National Ambient Air Quality Standard (NAAQS).
- v. Residue Burning: 3% reduction in Residue Burning Events in Punjab (from 2022 to 2023).

Meteorology

Wind Speed: upto 10 kmph with clear sky and moderate for Dispersion of Pollutants.

Wind Direction: North-west.