

SAFAR-India (DELHI)

System of Air Quality and weather Forecasting and Research (SAFAR)
Indian Institute of Tropical Meteorology, Pune
Ministry of Earth Sciences

Air Quality Forecast for Diwali Period-2020

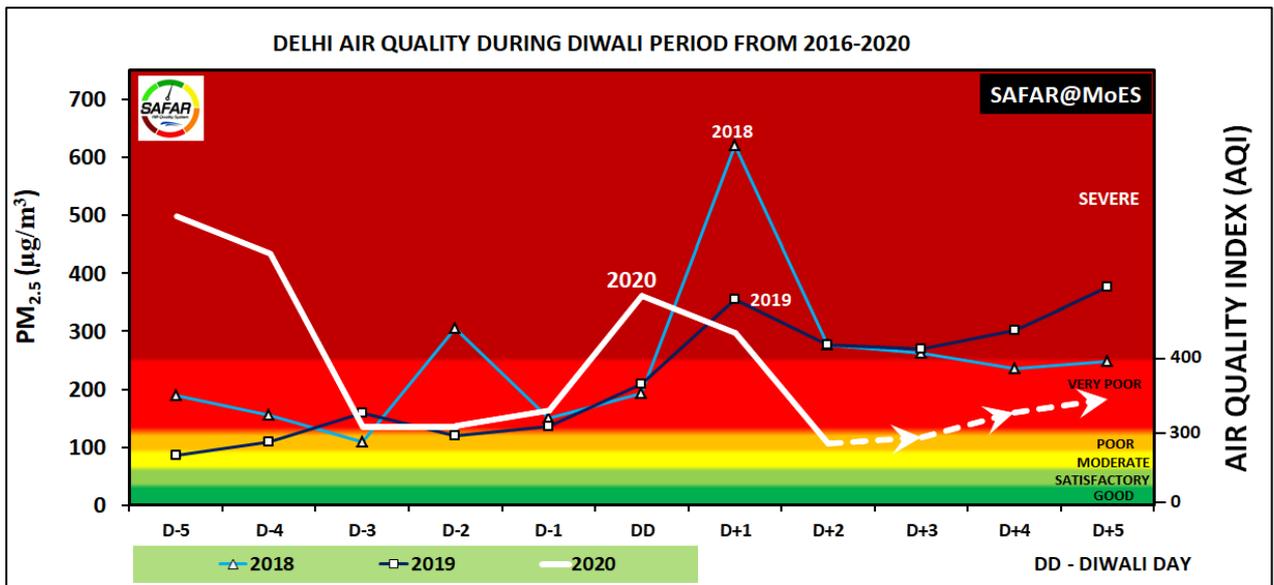
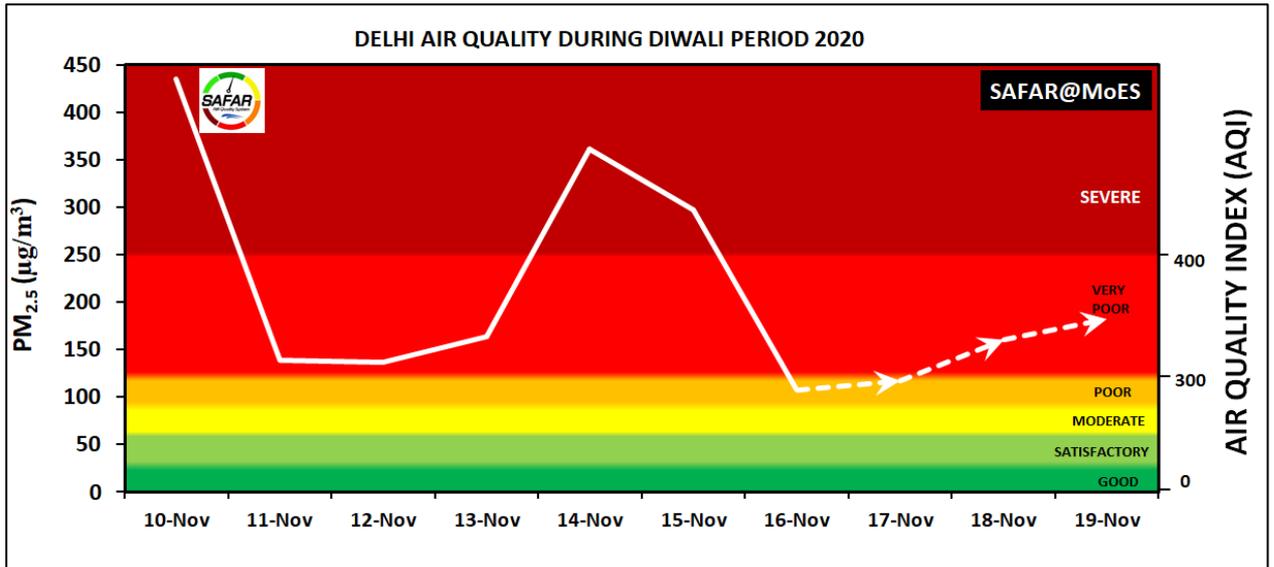
FINAL REPORT (Issued on 16th November 2020)

TRENDING SUMMARY

Delhi: The overall air quality of Delhi is in the lower end of the Very Poor category today morning as forecasted. AQI is predicted to improve further during the day and will reach the POOR category by afternoon. Surface winds are northeasterly direction and energetic, very favorable for pollutant dispersion. Scattered rainfall in Delhi and observed surrounding region has washed out some of the pollutants. Effective Stubble fire counts with sufficient potential estimated from SAFAR-multi-satellite products are significantly reduced and are around 282. However, in reality it could be an underestimate due to the inability of satellites to identify spots under cloudy conditions. However, in any case, since boundary layer wind direction is North easterly and not favorable for fire-related transport with higher local dispersal rate, even higher counts could not have changed the conclusion of negligible share of ~1% of stubble burning in PM2.5 in Delhi's air today. A change in boundary layer wind direction is forecasted by tomorrow afternoon but since the fire-related emissions have reduced, significant impact is not expected. The AQI is likely to improve and the Poor category is forecasted for tomorrow. AQI is forecasted to marginally deteriorate and stay in the Very Poor category on 18th and 19th November.

HIGHLIGHTS

- (1) Stubble Fire Share:** The reason for deterioration of AQI on 14th was purely attributed to highly stagnat local weather condition and stubble fire related intrusion. The contribution from additional local emissions (firecrackers) was marginal. The % stubble fire share in Delhi's AQI was 32% on 14th, 4% on 15th and 1% (negligible) on 16th Nov' 2020.
- (2) Fire Counts:** Might have been underestimated as under cloudy and rainy conditions, satellite has difficulty in detecting brightness. However, it is irrelevant until tomorrow morning as wind speed and direction both are not favorable for intrusion in Delhi.
- (3) Days Ahead:** Positive signs for 2 days: Sufficient rainfall occurred on 15th Nov to wash away enough particulate matters, unfavorable intrusion related wind direction and faster local winds to lower AQI to POOR category until 17th morning only.
- (4) Impact of any additional Local Emissions:** There appears to be a moderate additional increment in the local additional emissions is added on the night of 14-15 Nov. which may be related to firecrackers.
- (5) Hot Spot Regionsof Delhi on 15th Nov:** Anand Vihar, Ashok Vihar, Mundka, Nehru Nagar, Delhi University; **Least Polluted spots in Delhi on 15th Nov:** Ariport, Lodhi Road, Aya nagar, and Rajendra Nagar



SHARE OF STUBBLE BURNING IN TOTAL PM2.5 OF DELHI NCT (%)

