Centre for Science and Environment has analysed realtime data of PM2.5 concentration from the Central Pollution Control Board to assess the trend during Diwali; weekly trend before Diwali; and the overall trend since September 15, 2019. This has also been compared with the same two months during 2018.

However Diwali dates are different -- 2018 Diwali was on November 7, later in the season and was colder. 2019 Diwali was on October 27. This analysis has also taken into account the trend in wind speed. Highlights are as follow:

1. Hourly build up of PM2.5 on Diwali, 2019
Rapid build up from 10 pm to 6am on Diwali night. Also dissipates quicker during the day. Wind speed is favourable.

Graph 1: Diwali: Hourly trend in PM2.5 concentration (4PM to 4PM):-- October 27-28, 2019
2. Comparison of Diwali night pollution – October 27-28, 2019 and November 7-8, 2018 (4.pm-4pm)

Peak night-time pollution during 2019 and 2018 Diwali are quite similar though in 2018 the pollution level remained persistent until late in the morning. Wind was comparatively weaker in 2018.

Graph 2: Diwali: Hourly trend in PM2.5 concentration – October 27-28, 2019 and November 7-8, 2018 (4.pm-4pm) and trend in wind speed
3. Weekly trend in PM2.5 preceding Diwali, 2019 (24-hour average)

Daily 24-hr average level has not yet reached severe level in most parts of the region this season. Only Gaziabad has experienced season’s first 24-hr average severe pollution on Diwali day. The daily average levels have remained largely very poor in the region. However, the early indication on post Diwali-day is that all cities in the region are likely to experience severe pollution and the 24-hour average could be in the severe category.

**Graph 3a: Pollution build up to Diwali (October 20-27, 2019) 24-hr average PM2.5 concentration in Delhi and NCR towns**

**Graph 3b: Comparison of pollution build up to Diwali (October 20-27, 2019 and October 30 to November 7, 2018) 24-hr average PM2.5 concentration in Delhi**

*Note: PM2.5 concentration for Day 9 for 2019 (October 28, 2019) is based on 16 hours data uptill 4pm.*
4. Overall trend in daily PM2.5 concentration since September 15 (2019 and 2018)

2019: Onset of poor and very poor days have been much delayed this winter. These have started to occur only after October 10th.

Graph 4 a: Pollution map – September 15 to October 27, 2019

2018: Overall, there were more poor and very poor days during the later part of September and early October – largely starting after September 26. Nearly all the cities and towns had experienced severe pollution days even before Diwali (October 30 – almost a week before Diwali).

Graph 4 b: Pollution map – September 15 to November 10, 2018
PM2.5 trend and wind speed during the month preceding Diwali 2019 (September 26-October 28); and; PM2.5 trend and wind during month preceding Diwali 2018 (October 7-November 8).

Even with better wind condition in 2018 pollution level was higher compared to 2019; shows overall pollution load in the city must have been higher. During 2019, there are days with wind even lower than 2018 and yet pollution not exceeding the level noted during the period in 2018.

Graph 5: Trend in PM2.5 concentration and wind speed during the month preceding Diwali (September 26-October 28, 2019 and October 7-November 8, 2018)