

No. 53/PPCC/NP/SCI-II/2020/ 965
GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY AND ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE
3rd Floor, Housing Board Complex, Anna Nagar, Puducherry – 605 005.
Telephone: (0413) 2201256 ; Telefax: (0413) 2203494

Puducherry, the 30 NOV 2020

To
The Member Secretary,
Central Pollution Control Board,
Parivesh Bhawan,
CBD – cum – Office Complex,
East Arjun Nagar, Delhi – 110 032.

Sir,

Sub: PPCC – Action taken Report in Compliance of Hon'ble National Green Tribunal direction dated 05.11.2020 in OA No. 249/2020 – Ambient Air Quality and Noise Monitoring Report – Reg.

Ref: (1) CPCB Letter No. A-21016/1/8-Mon./7654 dated 17.09.2020.
(2) CPCB Letter No. Tech/39/NGT/RDS/2020-2/829 dated 13.11.2020.
(3) CPCB email communication dated 18.11.2020.

With references to the letter cited above, Puducherry Pollution Control Committee (PPCC), Puducherry has taken necessary action in compliance with the Hon'ble NGT order in OA No. 249/2020 dated 05.11.2020 and has carried out Ambient Air Quality and Noise Monitoring during the Deepavali festival and the action taken report along with the trend analysis is enclosed for kind reference.

Yours Sincerely,



(S. DINESH KANNAN, I.F.S)
MEMBER SECRETARY

PUDUCHERRY POLLUTION CONTROL COMMITTEE

Encl: as above

o/c
Ria
30/11/2020

Copy to:

1. The Regional Director, Central Pollution Control Board,
Regional Directorate (South), Nisarga Bhavan, 1st Floor Thimmaiah Road,
7th 'D' Cross, Shivanagar, Bengaluru – 560 079.
2. The Regional Director, Central Pollution Control Board,
Regional Directorate (South), Chennai.
3. Standing Guard File.

S. Dinesh Kannan
30/11/2020
DESPATCHED

ANNEXURE – I

Sl. No.	Hon'ble NGT Direction	PPCC - Compliance Status
1.	There will be total ban against sale or use of all kinds of fire crackers in the NCR from midnight of November, 9 -10, 2020 to the midnight of November 30 - December 1 st , 2020, to be reviewed thereafter.	Not applicable to UT Puducherry as this pertains to NCR region.
2.	Direction (i) will also apply to all cities/towns in the country where the average of Ambient Air Quality during November (as per available data of last year) fall under 'poor' and above category.	<p>(i) The Ambient Air Quality Monitoring carried out by PPCC during November, 2019 (copy enclosed) does not fall under poor and above category.</p> <p>(ii) The 24 hourly average concentration of PM₁₀ monitored under NAMP during November 2019 are in the ranges of 15µg/m³ – 74µg/m³ and 18µg/m³ – 92µg/m³ respectively in Puducherry and Karaikal.</p> <p>(iii) The Air Quality index reveals that in Puducherry 68.2% falls under good category and 31.8% falls under satisfactory category and in Karaikal 96% falls under good category and 4% falls under satisfactory category and hence the direction of complete ban of all kinds of fire crackers in the UT of Puducherry was not imposed by Government of Puducherry.</p>
3.	The cities/towns where Air Quality is 'moderate' or below, only green crackers be sold and the timings for use and bursting of crackers be restricted to two hours during festivals, like Deepavali, Chatt, New Year/Christmas Eve etc., as may be specified by the concerned State. This direction is on pattern of direction of the Hon'ble Supreme Court in (2019) 13 SCC 523 which we are applying to areas moderately polluted or below Air Quality due to aggravated effect during Covid-19, as already noted. If nothing is specified by the State, timing will be 8 to 10 P.M on Deepavali and Gurupurb, 6 A.M to 8 A.M on Chatt and 11.55 P.M to 12.30 A.M during Christmas and New year eve (which have yet to come and do not fall in November but if ban continues) and not otherwise.	<p>(i) Hon'ble Supreme Court in its order dated 31.10.2018 has permitted bursting of crackers for two hours only.</p> <p>(ii) The District Magistrate, Puducherry vide dated 05.11.2020 has issued orders under Section 144 Cr. P.C and has permitted bursting of fire crackers for two hours duration i.e., one hour in the morning (i.e.) from 06.00 AM to 07.00 AM and one hour in the evening (i.e.) from 07.00 PM to 08.00 PM.</p> <p>(iii) District Collector has also ordered fire crackers with permitted chemicals only to be purchased / possessed / sold / used during Deepavali and all other religious festivals, of any religion whatsoever, and other occasions like marriages etc.</p> <p>(iv) PPCC has communicated on 06.11.2020 to District Collector(s) of Puducherry, Karaikal to take necessary action to curb Air and Noise Pollution due to bursting of fire crackers on the Occasion of Deepavali.</p>

4.	At other places, ban, restrictions are options for the authorities but if there are more stringent measures under orders of the authorities the same will prevail.	The District Magistrate, Puducherry vide dated 09.11.2020 has issued orders under Section 144 Cr. P.C and has permitted bursting of fire crackers for two hours duration i.e., one hour in the morning (i.e.) from 06.00 AM to 07.00 AM and one hour in the evening (i.e.) from 07.00 PM to 08.00 PM along with other directives.
5.	All states/ UTs/PCBs/PCCs may initiate special drives to contain air pollution from all sources in view of potential of aggravation of Covid-19.	The District Collector vide order dated 09.11.2020 has communicated that the concerned authorities i.e., Police Departments, shall take necessary action against the violators of the orders issued by the Hon'ble Apex court.
6.	The Chief Secretaries and DGPs of all the States/UTs may issue and circulate an appropriate order in above terms with appropriate enforcement guidelines to all the District Magistrates and Superintendents of Police, PCBs/PCCs.	The District Collector has issued order dated 09.11.2020 under section 144 Cr. P.C. PPCC has communicated the direction of the Hon'ble NGT in OA No. 249/2020 dated 05.11.2020 to District Collector (Puducherry, Karaikal Districts) and the Director General of Police for necessary compliance.
7.	The CPCB and the State PCBs/PPCs may regularly monitor the air quality during this period which may be uploaded on their respective websites. CPCB may compile information on the subject, including the status of compliance of this order from all the States/UTs.	<p>(i) PPCC has carried out 15 days Ambient Air Quality Monitoring as per the CPCB directions at two locations in Puducherry.</p> <p>(ii) The Ambient Air Quality and Noise Level Monitored during Deepavali 2020 and Air Quality Status pertaining to Deepavali 2019, 2020 including trend analysis were hosted in the website of PPCC and the weblink is listed below along with the report (Annexure-I, II, III, IV & V).</p> <p>http://dste.py.gov.in/ppcc/pdf/Laboratory/Deepavali_monitoring_data/Diwali2020.pdf</p>

NOVEMBER 2019

Name of the station	City / State	Sampling date	AQI	Status	Prominent Parameter
LAD	Puducherry				
		02.11.2019	34	Good	PM10
		06.11.2019	48	Good	PM10
		09.11.2019	68	Satisfactory	PM10
		13.11.2019	38	Good	PM10
		16.11.2019	29	Good	PM10
		20.11.2019	26	Good	PM10
		23.11.2019	21	Good	PM10
		27.11.2019	15	Good	PM10
PIPDIC IE	Puducherry				
		01.11.2019	21	Good	PM10
		05.11.2019	68	Satisfactory	PM10
		08.11.2019	55	Satisfactory	PM10
		12.11.2019	47	Good	PM10
		15.11.2019	44	Good	PM10
		19.11.2019	44	Good	PM10
		26.11.2019	56	Satisfactory	PM10
DSTE	Puducherry				
		04.11.2019	52	Satisfactory	PM10
		07.11.2019	74	Satisfactory	PM10
		11.11.2019	70	Satisfactory	PM10
		14.11.2019	26	Good	PM10
		18.11.2019	37	Good	PM10
		25.11.2019	47	Good	PM10
		28.11.2019	45	Good	PM10

Good : 0 - 50

Moderate : 101 - 200

Very Poor : 301 - 400

Satisfactory : 51 - 100

Poor : 201 - 300

Severe : > 401

No. of city : 1

No. of location : 3

Total No. of observation : 22

The analysis of AQI values during NOVEMBER 2019 indicates that 68.2% values are falling in good category and 31.8% values are falling in satisfactory.

NOVEMBER 2019

Name of the Station	City / State	Sampling date	AQI	Status	Prominent Parameter
B.Ed College	Karaikal				
		04.11.2019	38	Good	PM ₁₀
		07.11.2019	45	Good	PM ₁₀
		11.11.2019	34	Good	PM ₁₀
		14.11.2019	27	Good	PM ₁₀
		18.11.2019	26	Good	PM ₁₀
		21.11.2019	39	Good	PM ₁₀
		25.11.2019	32	Good	PM ₁₀
		28.11.2019	29	Good	
Tourist Home	Karaikal				
		01.11.2019	30	Good	PM ₁₀
		05.11.2019	45	Good	PM ₁₀
		08.11.2019	49	Good	PM ₁₀
		12.11.2019	33	Good	PM ₁₀
		15.11.2019	26	Good	PM ₁₀
		19.11.2019	33	Good	PM ₁₀
		22.11.2019	40	Good	PM ₁₀
		26.11.2019	43	Good	PM ₁₀
		29.11.2019	31	Good	
PPCL	Karaikal				
		02.11.2019	29	Good	PM ₁₀
		06.11.2019	92	Satisfactory	PM ₁₀
		09.11.2019	29	Good	PM ₁₀
		13.11.2019	29	Good	PM ₁₀
		16.11.2019	18	Good	PM ₁₀
		20.11.2019	32	Good	PM ₁₀
		23.11.2019	34	Good	PM ₁₀
		27.11.2019	25	Good	PM ₁₀

Good : 0 - 50

Moderate : 101 - 200

Very Poor : 301 – 400

Satisfactory : 51 - 100

Poor : 201 - 300

Severe : > 401

No. of city : 1

No. of location : 3

Total No. of observation : 25

The analysis of AQI values during November 2019 indicates that 96.0% values falls in good category and 4.0% values are falling in satisfactory.

Ambient Air Quality during Deepavali 2020								
Monitoring Location	Parameters Monitored							
	Pre-Deepavali Day (09.11.2020)				Deepavali Day (14.11.2020)			
	SO ₂	NO ₂	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	PM ₁₀	PM _{2.5}
Anna Nagar, Puducherry	2.1	8.6	48.0	-	3.3	5.5	112.0	-
Balaji Nagar, Reddiarpalayam	28.3	4.7	62.0	53.0	5.2	5.9	164.0	112.0
Mudaliarpet	2.8	5.3	53.0	48.0	2.8	5.3	152.0	105.0
Monitoring Location	Parameters Monitored							
	Pre-Deepavali Day (06.11.2020)				Deepavali Day (14.11.2020)			
	SO ₂	NO ₂	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	PM ₁₀	PM _{2.5}
Kovilpathu, Karaikal	2.3	4.6	55.0	-	2.0	4.8	55.0	-
NAAQ Standards	80	80	100	60	80	80	100	60
All values (24 hourly Average) are in $\mu\text{g}/\text{m}^3$								

Remarks/Observation:

The Ambient Air Quality Monitoring at Puducherry was carried out at three locations viz., Balaji Nagar (Reddiarpalayam), Mudaliarpet and Anna Nagar in Puducherry and in Karaikal at Kovilpathu. The monitoring data reveals that on comparison with Pre-Deepavali day 2020, the concentration of PM₁₀ was found to be higher on Deepavali day 2020 in Puducherry, while it remained the same in Karaikal. In Puducherry, the average PM₁₀ and PM_{2.5} concentration has increased by 165% and 114% respectively on Deepavali day 2020 when compared to Pre Deepavali day and it has decreased by 4.7% and 15.9% respectively when compared to Deepavali, 2019. In Karaikal PM₁₀ concentration has decreased by 28.6% on Deepavali day 2020 when compared to Deepavali day, 2019. The 24 hours average concentrations of SO₂ and NO₂ were well below the prescribed standards. There is no significant changes in the concentration of SO₂ and NO₂ on Deepavali 2020 when compared to Deepavali 2019.

In Puducherry the city level average calculated for PM₁₀ and PM_{2.5} concentrations on Deepavali day (14.11.2020) were 143 $\mu\text{g}/\text{m}^3$ and 109 $\mu\text{g}/\text{m}^3$ respectively and in Karaikal the concentration of PM₁₀ was 55 $\mu\text{g}/\text{m}^3$.

The outcome of the report reveals that the concentration of pollutant monitored on Deepavali day 2020 was found to be higher when compared to Pre Deepavali day.

Air Quality Index (AQI) in Puducherry on Deepavali day falls under moderate category and in Karaikal it falls under satisfactory category.

PUDUCHERRY POLLUTION CONTROL COMMITTEE
ENVIRONMENTAL ANALYTICAL LABORATORY
Format of Report: Deepavali Monitoring 2020

City : Puducherry
Climate / Meteorology : 1. Clear (Normal Day)
2. Clear, cloudy and rainy (Deepavali Day)
Major Land use : Residential
Monitoring Location : Mudaliarpet
Area : Residential
Activity : Two Wheeler movement
Data / Observations : Noise Level during Deepavali Festival 2020

Location A	Pre-Deepavali Day (10.11.2020)			Deepavali Day (14.11.2020)		
Time Duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18.00 to 19.00 Hr	49.8	98.1	70.0	57.1	113.4	89.6
19.00 to 20.00 Hr	49.3	106.3	73.0	60.0	114.2	90.1
20.00 to 21.00 Hr	50.6	100.5	70.0	56.5	109.3	81.7
21.00 to 22.00 Hr	48.9	94.0	70.0	48.8	99.7	73
22.00 to 23.00 Hr	47.2	89.1	57.5	46.9	108.5	70
23.00 to 24.00 Hr	46.0	91.7	60.4	R	R	R
Average Lequivalent dB(A) between (18.00 to 24.00 hours)	-	-	66.8	-	-	80.9
Lmax between (18.00 to 24.00 hours)	-	96.6	-	-	109.0	-
Lmin between (18.00 to 24.00 hours)	48.6	-	-	53.9	-	-

Note: R - Rain

Observation:

- The Ambient Noise Level measured was increased by 21.1% on Deepavali day (80.9 dB (A)) compared to Pre-Deepavali Day (66.8 dB (A)) and it has decreased slightly by 2.9% as compared to Deepavali Day 2019 (83.3 dB (A)).
- The main cause of increase in the Ambient Noise Level on the Deepavali day is due to bursting of crackers and vehicular movement.

COMPARATIVE REPORT OF AIR QUALITY STATUS INDICATING TREND ANALYSIS FOR THE YEAR 2019 AND 2020 DURING DEEPAVALI

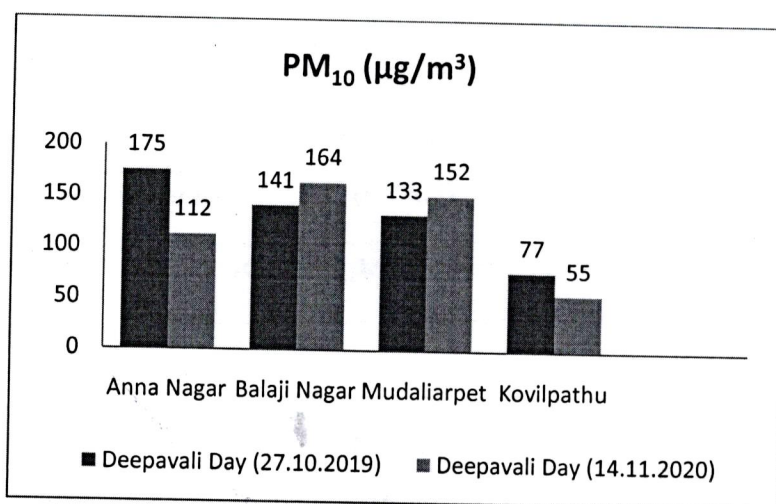
Ambient Air Quality during Deepavali 2019 and 2020								
Monitoring Location	Parameters Monitored							
	Deepavali 2019 (27.10.2019)				Deepavali Day (14.11.2020)			
	SO ₂	NO ₂	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	PM ₁₀	PM _{2.5}
Anna Nagar, Puducherry	2.0	10.2	175.0	-	3.3	5.5	112.0	-
Balaji Nagar, Reddiarpalayam	4.6	4.5	141.0	99.0	5.2	5.9	164.0	112.0
Mudaliarpet	7.9	9.2	133.0	88.0	2.8	5.3	152.0	105.0
Monitoring Location	Parameters Monitored							
	Deepavali Day (27.10.2019)				Deepavali Day (14.11.2020)			
	SO ₂	NO ₂	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	PM ₁₀	PM _{2.5}
Kovilpathu, Karaikal	5.8	10.2	77.0	-	2.0	4.8	55.0	-
NAAQ Standards	80	80	100	60	80	80	100	60
All values (24 hourly Average) are in µg/m ³								

Ambient Air Quality during Deepavali 2019 and 2020

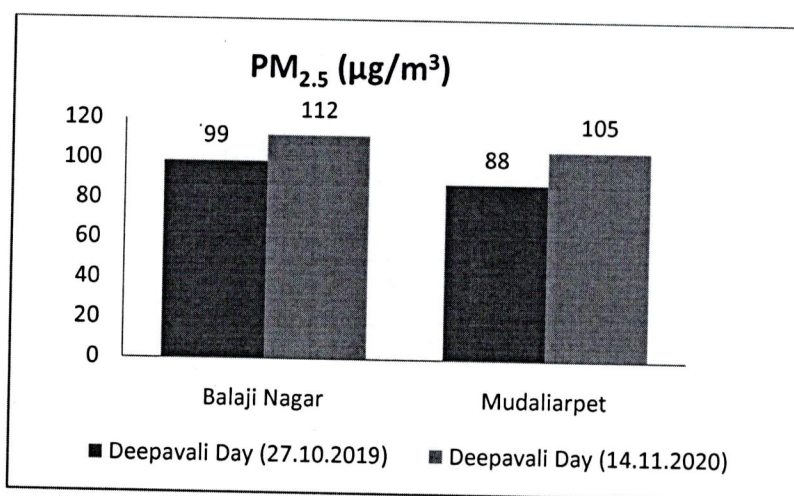
A comparison of the ambient air quality with respect to Particulate matter (PM_{10}) Particulate matter ($PM_{2.5}$) Sulphur dioxide (SO_2) and Nitrogen dioxide (NO_2) during Deepavali Day 2019 and 2020 and the finding are as below:

The monitoring data reveals that in Puducherry the average PM_{10} and $PM_{2.5}$ concentration on Deepavali day 2020 has decreased by 4.7% and 15.9% respectively when compared to Deepavali day 2019 and in Karaikal PM_{10} concentration has decreased by 28.6% on Deepavali day 2020 when compared to Deepavali day, 2019. There is no significant changes in the concentration of SO_2 and NO_2 on Deepavali 2020 when compared to Deepavali 2019.

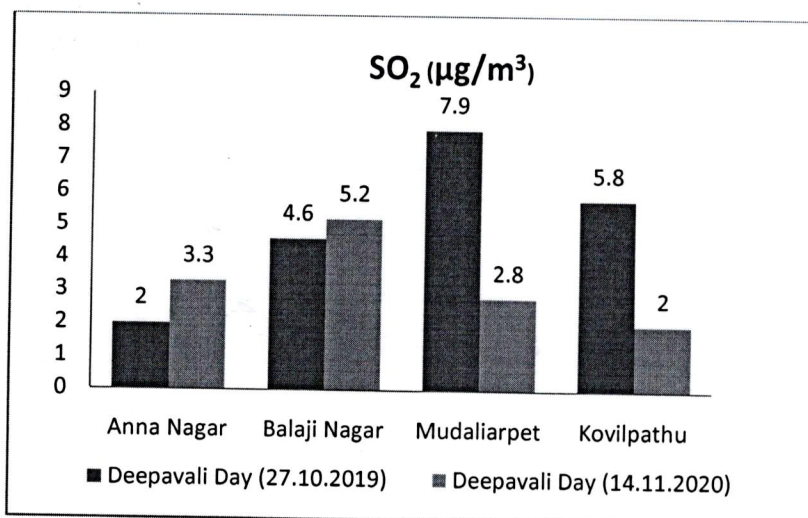
Concentration of PM_{10} on Deepavali 2019 and 2020



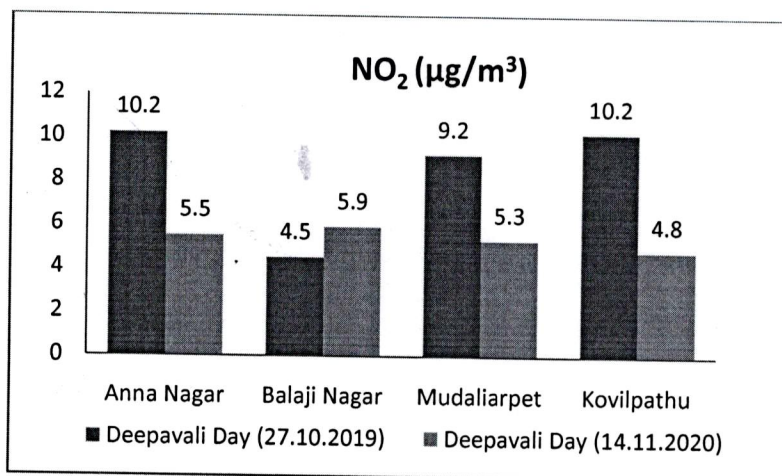
Concentration of $PM_{2.5}$ on Deepavali 2019 and 2020



Concentration of SO₂ on Deepavali 2019 and 2020



Concentration of NO₂ on Deepavali 2019 and 2020



Report on Ambient Air Quality and Noise Level during Deepavali 2020

Puducherry Pollution Control Committee carried out Ambient Air Quality and Noise Monitoring on Pre-Deepavali day and on Deepavali day in Puducherry and Karaikal as done in the previous years to assess the environmental impact due to bursting of crackers during Deepavali festival. Ambient Air Quality was monitored at three locations viz., Balaji Nagar (Reddiarpalayam), Mudaliarpet and Anna Nagar in Puducherry region and in Karaikal at one location i.e., Kovilpathu. Noise level and Air Quality Data on Pre-Deepavali day and Deepavali days were compared with last 5 years data and is presented in this report for assessment of environmental impact on account of bursting of crackers.

Result and Discussion:

Noise Level Monitoring: 06.00 P.M. to 12.00 Mid Night

The Pre-Deepavali data for the past five years (2016 – 2020) is given in table below. Pre-Deepavali day's values are only indicative background when noise making activities (Fireworks) are not affecting Ambient Noise Level. This year noise level (measured as Leq dB(A), decibels) was found slightly decreased as against the previous year i.e., 2019.

Ambient Noise Level Data on during Pre-Deepavali Days (2016 -2020)

Year	Pre-Deepavali Day				
	2016	2017	2018	2019	2020
Date	Oct 24	Oct 13	Nov 02	Oct 21	Nov 10
Noise Level in Leq dB (A)	62.5	63.9	74.18	68.03	66.8

The Deepavali data for the past five years (2016 – 2020) is given in table below. The data reveals that Noise Level measured has increased by 21.1% on Deepavali day 2020 compared to Pre-Deepavali Day 2020 and it has decreased slightly by 2.9% as compared to Deepavali Day 2019 and also decreased in comparison to the years 2017 – 2019.

The main cause of increase in the Ambient Noise Level on the Deepavali day is due to bursting of crackers and sporadic vehicular movement, that people went for shopping etc.

Ambient Noise Level Data on during Deepavali Days (2016 -2020)

Year	Deepavali Day				
	2016	2017	2018	2019	2020
Date	Oct 29	Oct 18	Nov 06	Oct 27	Nov 14
Noise Level in Leq dB (A)	72.5	82.8	87.15	83.33	80.9

Note: The values reported should not be compared with prescribed Noise Level standards for designated areas as the time period for measurement (06.00 P.M. to 12.00 Mid Night) do not match with the period specified in the prescribed standards (Day Time: 06.00 A.M. to 10.00 P. M., and Night Time: 10.00 P.M. to 06.00 A.M.).

Ambient Air Quality:

Data of Manual Monitoring: 06.00 A.M. to 06.00 A.M (24 Hrs)

The location – wise data for comparison of air quality on Pre-Deepavali and Deepavali days are presented in the Table below. The monitoring data reveals that on comparison with Pre-Deepavali day 2020, the concentration of PM₁₀ was found to be higher on Deepavali day 2020 in Puducherry, while it remained the same in Karaikal. In Puducherry, the average PM₁₀ and PM_{2.5} concentration has increased by 165% and 114% respectively on Deepavali day 2020 when compared to Pre-Deepavali day and it has decreased by 4.7% and 15.9% respectively when compared to Deepavali, 2019. In Karaikal PM₁₀ concentration has decreased by 28.6% on Deepavali day 2020 when compared to Deepavali day, 2019. The 24 hours average concentration SO₂ and NO₂ were well below the prescribed standards. There is no significant changes in the concentration of SO₂ and NO₂ on Deepavali 2020 when compared to Deepavali 2019.

Ambient Air Quality Status during Pre-Deepavali & Deepavali Day**Anna Nagar:-**

Year and Dates	Pre - Deepavali Day					Deepavali Day				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Parameters	Oct 24	Oct 12	Oct 29	Oct 24	Nov 09	Oct 29	Oct 18	Nov 06	Oct 27	Nov 14
SO ₂	4.1	2.9	3.8	6.1	2.1	14.2	9.2	8.8	BDL	3.3
NO ₂	19.0	19.7	13.6	17.3	8.6	8.7	31.0	14.1	10.2	5.5
PM ₁₀	74.0	73.0	61.0	45.0	48	116.0	180.0	124.0	175.0	112.0

Balaji Nagar, Reddiarpalayam:-

Year and Dates	Pre - Deepavali Day			Deepavali Day		
	2018	2019	2020	2018	2019	2020
Parameters	Nov 02	Oct 24	Nov 09	Nov 06	Oct 27	Nov 14
SO ₂	5.8	2.0	28.3	11.8	4.6	5.2
NO ₂	10.1	12.0	4.7	12.5	4.5	5.9
PM ₁₀	32.0	50.0	62.0	221.0	141.0	164.0
PM _{2.5}	22.0	13.0	53.0	199.0	99.0	112.0

Mudaliarpet:-

Year and Dates	Pre-Deepavali Day			Deepavali Day		
	2018	2019	2020	2018	2019	2020
Parameters	Nov 02	Oct 24	Nov 09	Nov 06	Oct 27	Nov 14
SO ₂	4.8	2.0	2.8	2.0	7.9	2.8
NO ₂	10.5	12.5	5.3	17.0	9.2	5.3
PM ₁₀	31.0	49.0	53.0	139.0	133.0	152.0
PM _{2.5}	25.0	22.0	48.0	65.0	88.0	105.0

Kovilpathu, Karaikal: -

Year and Dates	Pre-Deepavali Day					Deepavali Day				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Parameters	Oct 24	Oct 12	Oct 31	Oct 18	Nov 06	Oct 29	Oct 18	Nov 06	Oct 27	Nov 14
SO ₂	11.2	11.0	2.0	2.0	2.3	17.4	13.4	6.2	5.8	2.0
NO ₂	6.3	7.8	4.9	4.5	4.6	20.4	12.5	6.7	10.2	4.8
PM ₁₀	56.0	35.0	52.0	39.0	5.5	87	62.0	73.0	77.0	55

Overall Observation

In Puducherry the city level average calculated for PM₁₀ and PM_{2.5} concentrations on Deepawali day (14.11.2020) were 143µg/m³ and 109µg/m³ respectively and in Karaikal the concentration of PM₁₀ was 55µg/m³.

The outcome of the report reveals that the concentration of pollutant monitored on Deepawali day 2020 was found to be higher when compared to Pre Deepawali.

Air Quality Index (AQI) in Puducherry on Deepawali day falls under moderate category and in Karaikal it falls under satisfactory category.
