

ADTPS' reply on report by Healthy Energy Initiative (India) (HEI India): “Impacts of air pollution on the Environment and health in ecologically sensitive Area of Dahanu, Maharashtra”

Background

The HEI India report discusses upon its effects on the air quality in the vicinity of Dahanu Taluka of district Palghar (Maharashtra). The study period of this report is from 23rd January 2022 to 30th January 2022. This period was worst affected by Karachi Sandstorm which caused significant temporary rise in pollutants, particularly particulate matters in ambient air of Dahanu as well as area of Gujarat, Rajasthan and Maharashtra.

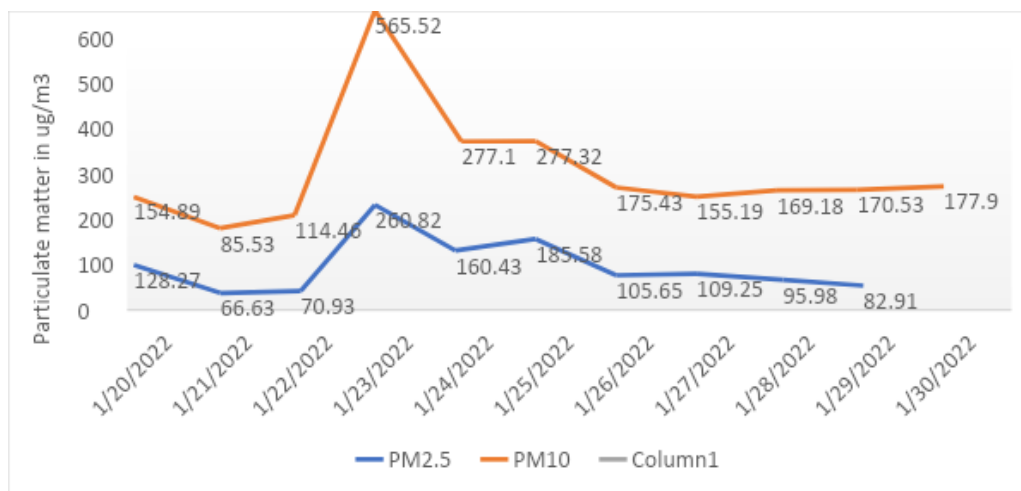
Air quality in Dahanu witnessed a significant rise in concentration of pollutants, lowering the visibility on January 23, 2022. On the other hand, Indian Meteorological Department (IMD) had issued an alert for dust storm moving from Karachi to Gujarat and south Rajasthan. The fact is supported by data as given below released by reliable sources like the Central Pollution Control Board and State Pollution Control Boards of the states Maharashtra and Gujarat.

(Ref: [CCR \(cpcbccr.com\)](http://cpcbccr.com), [MPCB \(ecmpcb.in\)](http://mpcb.ecmpcb.in))

1. Observations at Vapi:

It was observed that PM 2.5 and PM 10 peaked in Vapi on January 23, 2022, reaching 260.82 ug/m³ and 565.52 ug/m³ respectively. The concentration of PM 10 in the atmosphere on the day jumped as much as 495% with respect to the concentration on January 22. The air quality bettered after the peak but was still poor with respect to the air quality standards, until it almost neared its usual range on January 27.

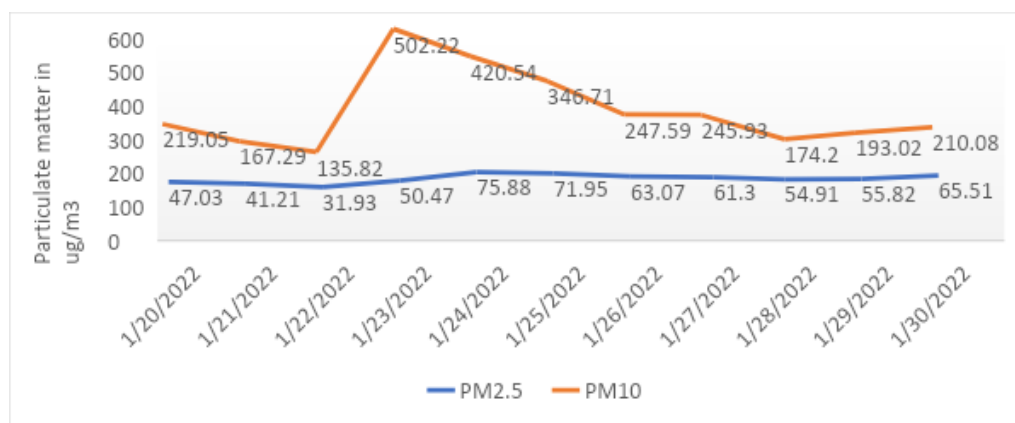
Table 4. Report of average concentration of particulate matter at Vapi (source: CPCB)



2. Observations at Vasai West, Mumbai:

The concentration of PM 10 peaked on January 23, 2022 reaching values above 500 $\mu\text{g}/\text{m}^3$. PM 2.5 did not see much deviation in its before and after values. Vasai west had a 370% rise in PM 10 concentrations compared to the previous day. The concentration kept decreasing after peak to reach its usual range by around January 28.

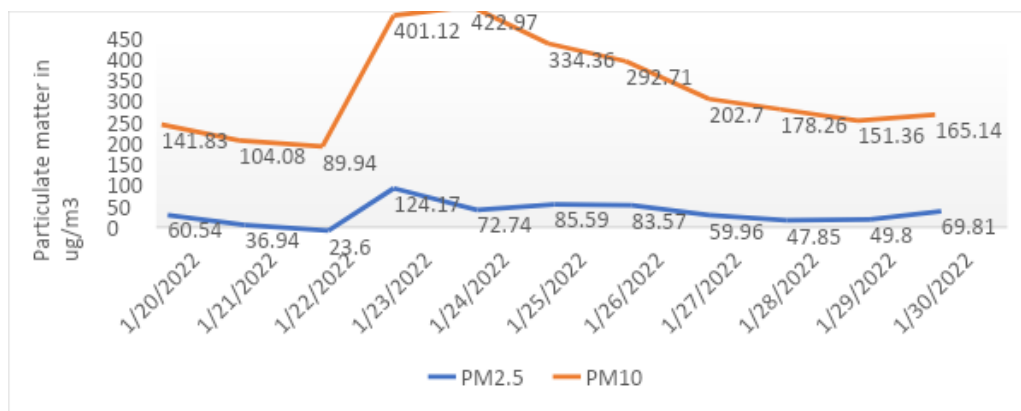
Table 5. Report of average concentration of particulate matter at Vasai West (source: MPCB)



3. Observations at Borivali East, Mumbai:

There was a steep rise on January 23, 2022 with PM 10 concentrations reaching 401.12 $\mu\text{g}/\text{m}^3$ with more than 445% rise than the day before. However, the concentrations peaked on January 24, 2022 at 422.97 $\mu\text{g}/\text{m}^3$ and kept decreasing steadily for subsequent days.

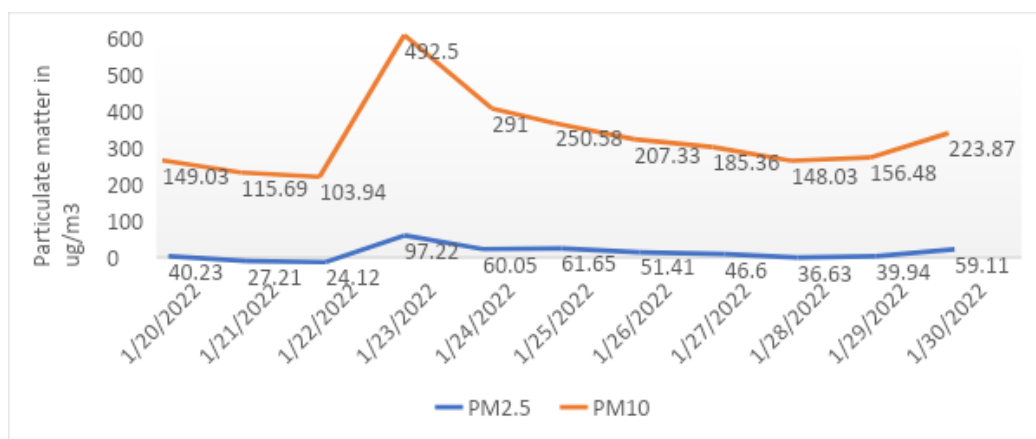
Table 6. Report of average concentration of particulate matter at Borivali East (Source: MPCB)



4. Observations at Sion, Mumbai:

Sion observed a rise nearly 480% in PM 10 concentrations on January 23, 2022 compared to the day prior. After the PM 10 peak of 492.5 ug/m³, the concentrations kept reducing to reach a near regular range by January 28, 2022.

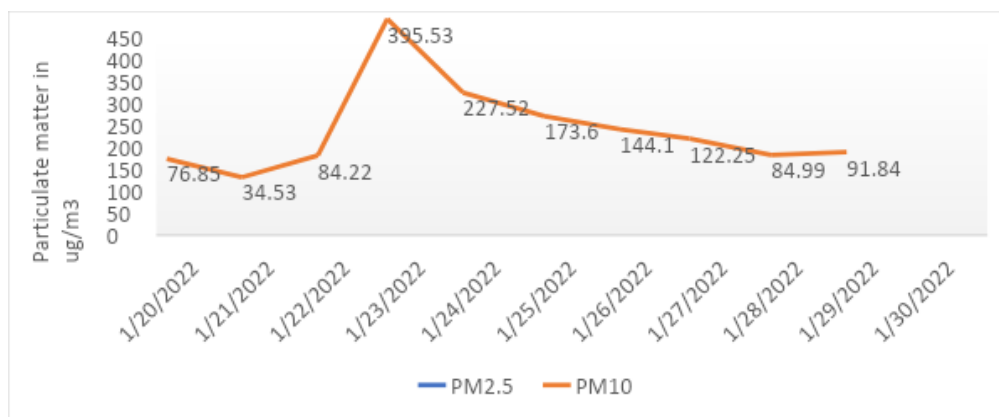
Table 7. Report of average concentration of particulate matter at Sion (Source: MPCB)



5. Observations at Pimpleshwar Mandir, Thane:

Just like most of the other stations observed, the peak in PM 10 concentrations was reached in Thane on January 23, 2022, with rise of more than 470%, and more than a 1000% rise from its minimum on January 21, 2022. The data for PM 2.5 was not available with CPCB website, hence no observations can be derived for PM 2.5.

Table 8. Report of average concentration of particulate matter at Thane (Source: MPCB)



Observations at ADTPS

The ambient air quality as reported by Adani Electricity Mumbai Ltd. (AEML) to MPCB indicates a significant rise in the PM 10 values from 23.01.2022 to 27.01.2022 with the highest value reaching 318.5 ug/m³ on 23.01.2022. For the subsequent days PM 10 value dropped till the range of 40 to 50 ug/m³ was observed. On the same day, PM 2.5 peaked with 76.5 ug/m³. This happened due to Karachi Sandstorm. This was conveyed to MPCB through submission of monthly AAQM report of January 2022.

Before and after this sandstorm period, the values were within the MPCB limits.

	Aashagad		Kosbad		Vangaon	
Date	PM 2.5	PM 10	PM 2.5	PM 10	PM 2.5	PM 10
20/01/2022	18.2	46.4	14.8	37	18	25.8
21/01/2022	22.4	30.1	19.5	23.3	18.6	27.4
22/01/2022	19.8	27.9	19.6	28.3	19.8	42.6
23/01/2022	35.5	287.2	56.2	307.1	64.1	323.2
24/01/2022	16.8	122	27.9	139.6	69.1	116.5
25/01/2022	23.2	96.3	23.8	106.5	23.3	72.9
26/01/2022	18.4	60.1	17.7	67.4	16.5	30.3
27/01/2022	18.8	44.8	14.4	47.3	16.7	32.6
28/01/2022	17.7	39.2	15.6	44	19.9	29.3

The data as monitored on 20.01.2022 to 30.01.2022 is considered as this highlights the before, during and after the storm relation with the air quality.

Stack Emissions at ADTPS during the sandstorm period

The report for the online stack emissions by Adani Dahanu Thermal Power Station (ADTPS), and data for ambient air quality in Dahanu region is obtained from the MPCB portal where the later continuously monitors the emissions of the power plant.

It may be noted that Unit 2 of ADTPS was under shutdown from 20.01.2022 to 27.01.2022.

During the period from 20.01.2022 to 30.01.2022, for unit 1, Adani Thermal Power Station (ADTPS) reported peak emissions as follows:

- SO₂- 260 mg/Nm³ on 21.01.2022 (Limit of emission= 600 mg/Nm³ per unit)
- NO_x- 482 mg/Nm³ on 30.01.2022 (Limit of emission= 600 mg/Nm³ per unit)
- TPM- 44 mg/Nm³ on 25.01.2022 (Limit of emission= 100 mg/Nm³ per unit)

The values of ADTPS stack emissions, were observed under control and within prescribed limits.

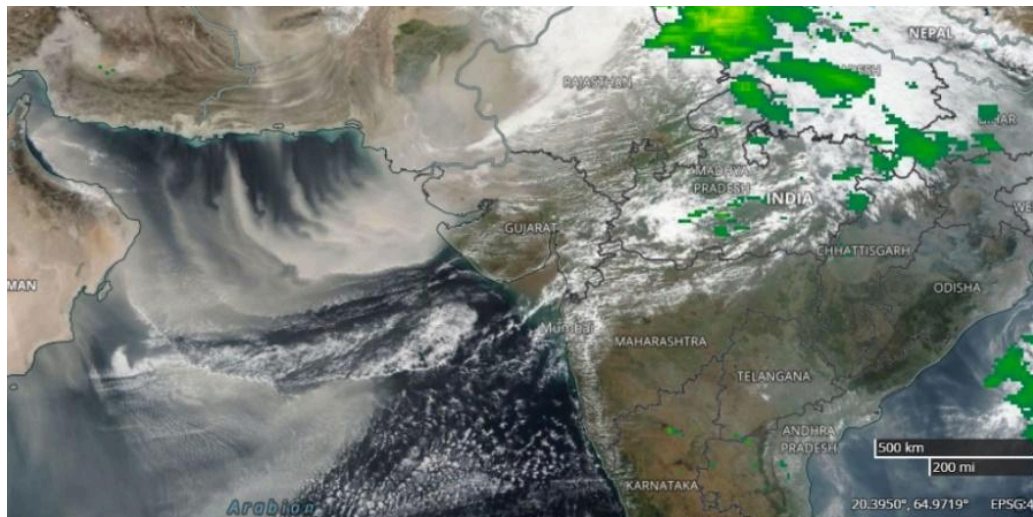
Fact about heavy metals findings

Heavy metals referred in the HEI India report, i.e. manganese, nickel and lead are not released from the thermal power plant as these heavy metals are not found in coal or ash. Possibly these heavy metals maybe the part of Karachi sandstorm.

Higher values of silica and other mentioned heavy metals as published in the report is purely the effect of sample collected during Karachi Sandstorm in the region.

To support above claims, following are the supporting publication details from trusted sources.

1. The Indian Express on January 24 reported poor visibility, windy and cold conditions on the day prior in Mumbai and north Konkan districts.
(The Indian Express: [Mumbai, north Konkan to be hit by dust storm in next 12 hrs: IMD | Pune News \(indianexpress.com\)](https://www.indianexpress.com/news/mumbai-north-konkan-to-be-hit-by-dust-storm-in-next-12-hrs-imd-pune-news/684444))
2. Observations made by the Earth Observatory (NASA), “A substantial dust storm enveloped the Arabian sea, affecting populated areas around the basin as wind carried the desert dust over Karachi, Mumbai and numerous other cities and degraded air quality. On January 22, the dust blew over the sea and then hooked towards the east. By January 23, dust blanketed western India, shrouding the states of Maharashtra, Gujarat, and Rajasthan. The dust hung in the air for days. In Mumbai, the air quality index on January 24 was “severe”, the highest of six categories in the country’s index. According to news reports, an air quality index that high in Mumbai is “unprecedented.” (Ref: [Dust Storm Envelops the Arabian Sea \(nasa.gov\)](https://www.nasa.gov/content/dust-storm-envelops-the-arabian-sea/) and [EOSDIS Worldview \(nasa.gov\)](https://worldview.nasa.gov/))



3. The dust storm had its effect for quite a few days as a local Marathi newspaper, Loksatta on February 5 which reported poor visibility due to dust in Vasai city caused by the dust coming with winds from Gujarat blanketing the north coast of the state. The locals explained on the difficulty in breathing and burning sensation in eyes due to the same.



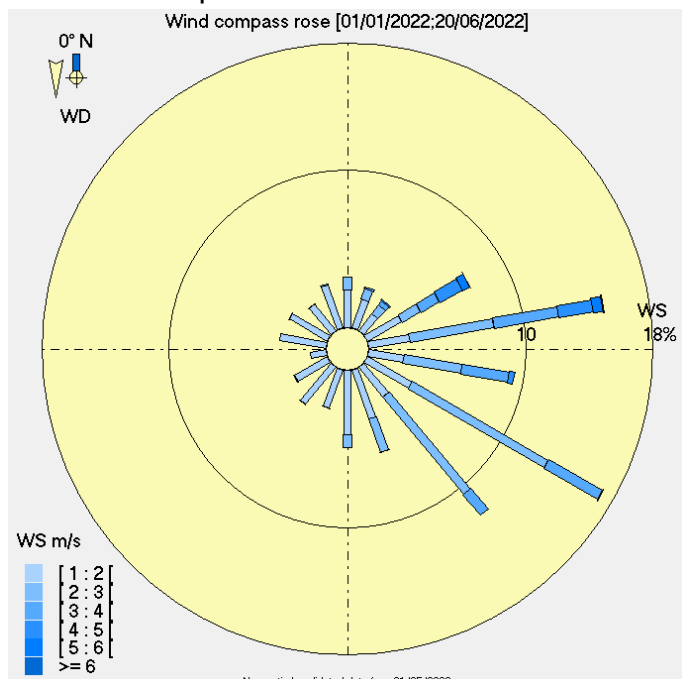
Other baseless statements mentioned in HEI India report

- a) *"The ADTPS came into functioning in 1996 which was then operated by BSES. Since the commissioning of the Thermal Power Plant (TPP), whenever I step out of my home, I can feel the pollution."*

ADTPS submission: ADTPS is being operated within prescribed environmental limits since inception and never violated any of the given conditions. ADTPS is operating continuously with due care of environment and legal norms. ADTPS, apart from this, is already involved in doing lot for sustainable development. Online emission and effluent data are connected to MPCB and CPCB server. MPCB JVS results are always found within the prescribed limits.

- b) *"The findings of the qualitative interviews showed that the Chiku farms located North-Northeast of ADTPS were most affected due to the black fungal disease when compared to the farms in South-Southwest."*

ADTPS submission: Disease observed in chiku is "Sooty Mold disease". Cause of the disease is fungus and spreads



through insects and is not related to any source or other emission. The wind direction throughout the year is predominantly in Southwest direction. This voids the claim made in the report of impacts in the area in northwest direction of ADTPS. Even the sampling locations of HEI India do not fall under this wind direction.

- c) *"Since 2002, as the quality of Chiku has been reduced, the market value has also declined for our fruits. In 2006, Flue Gas Desulphurisation (FGD) was set up in TPP. After which the yield improved only for a couple of years and again the productivity decreased later."*

ADTPS submission: The data obtained from Krushi Utpanna Bazaar Samiti, the chiku production is in increasing trend and there is no effect of TPP on chiku production.

- d) *The release of hot water from the thermal power plant into the Dahanu creek has adversely affected the fish, crabs, lobsters and prawn population in the river. The coal used in the TPP is mostly imported via the Arabian sea in huge container ships. They are then shifted into small barges and taken to the TPP through Dahanu creek. During this process, loads of coal are spilt into the sea near the river mouth. Because of this, the fish caught in the sea is also compromised.*

ADTPS submission: Before discharging the water in the creek, the seawater from condenser



is precooled in precooling channel. Discharge temperature is always below the limit prescribed by MPCB. Whereas warm water up to certain extent supports to better breeding ground for fishes, which is evident from the existence of migratory birds like flamingoes, now being part of ADTPS ecosystem.

As far as coal import through Arabian Sea is concerned, only two vessels arrived in last year. Transportation of coal is done in a closed vessel/barge without coal spillage. Hence, the claim in HEI India report is unproven.

Conclusion

1. It is evident from the scientific and valid data available, information provided on website of government authorities and press releases that the dust storm raised from Karachi and other parts of western Asia has affected and caused rise in particulate matter not only in Dahanu region but in observed in most of the spread areas like Vapi, Vasai, Borivali, Sion and Thane.
2. It can be concluded that emissions reported by ADTPS had no role to play on increased concentrations of particulate matter in the atmosphere. And it is important to highlight once again that one of the two units of the power plant was under shutdown from January 20 to January 27.
3. Heavy metals reported in HEI India report maybe the part and parcel of the Karachi sandstorm effect which is a temporary phenomenon.
4. The study carried out by Healthy Energy Initiative (India) and circulated by DTEWA was done during Karachi sandstorm period. Hence, the collected samples and results are not scientifically correct representation of normal ambient air quality in the area.

The report by Healthy Energy Initiative (India) is studied and sampled during wrong period and the claims on ADTPS are biased and baseless. The report is wrongly prepared with prejudiced mind for the interest of ill will of some people.

References:

1. Central Pollution Control Board (CPCB): [CCR \(cpcbcr.com\)](http://ccr.cpcbcr.com)
2. Maharashtra Pollution Control Board (MPCB): [MPCB \(ecmpcb.in\)](http://mpcb.ecmpcb.in)
3. Indian Institute of Tropical Meteorology: [SAFAR - India \(tropmet.res.in\)](http://safar-india.tropmet.res.in)
4. National Aeronautics and Space Administration (NASA):
 - a) [Dust Storm Envelops the Arabian Sea \(nasa.gov\)](http://duststorm.envelops.the.arabian.sea.nasa.gov)
 - b) [EOSDIS Worldview \(nasa.gov\)](http://eosdis.worldview.nasa.gov)
5. The Indian Express: [Mumbai, north Konkan to be hit by dust storm in next 12 hrs: IMD | Pune News \(indianexpress.com\)](http://mumbai.north.konkan.to.be.hit.by.dust.storm.in.next.12.hrs.imd.pune.news.indianexpress.com)
6. India TV: [Massive dust storm heading towards Gujarat, south Rajasthan: IMD | India News – India TV \(indiatvnews.com\)](http://massive.dust.storm.heading.towards.gujarat.south.rajasthan.imd.india.news-india.tv.indiatvnews.com)
7. The straight: [Massive dust storm formed over Arabian Sea, causing temperatures to plunge in Mumbai | Georgia Straight Vancouver's News & Entertainment Weekly](http://massive.dust.storm.formed.over.arabian.sea.causing.temperatures.to.plunge.in.mumbai.georgia.straight.vancouver.snews.ew.com)