

Delhi at AQI 500

The days the index ran out of scale, 2021 to 2026, and the monitor that has since gone quiet

683

station-days at the ceiling

Every occasion between 2021 and 2026 when a Delhi monitor reported the highest number the scale can produce.

33

of them in 2026 so far

Counted to 31 August, which is the highest figure on that same eight-month window since 2021, and more than three times the 10 of 2025.

54

of them at Anand Vihar

More than any other monitor in Delhi. Since 30 August 2026 that station has reported only half of each day.

The Central Pollution Control Board's National Air Quality Index stops at 500. That is not a rounding convention, because the scale genuinely has no value above it, so a monitor which reports 500 is telling you that the air was at least that bad and that the index could not say how much worse. This report counts every occasion on which that happened in Delhi, sets the years against each other on a window that treats them alike, and then examines what has been happening at the single monitor that reaches the ceiling most often.

A reading of 500 is a floor rather than a measurement, so every count in this report understates the air it describes.

The report is built in three parts. The first explains what the ceiling is and shows how far beyond it the measured concentrations actually ran. The second counts the ceiling days year by year, first across the whole record and then on the like-for-like window of 1 January to 31 August, which is the only fair way to place 2026 beside the years that are complete. The third part is new, and it examines Anand Vihar hour by hour, because a monitor that stops reporting does not publish a low number, it publishes nothing at all.

2	Why 500 is a floor	How the scale is built, and the twelve occasions on which the measured air ran furthest beyond it.
3	The whole record	Every ceiling day from 2021 to 2026, split between dust and combustion because the two accuse different people.
4	Like for like	The same eight months in each year, which is the only way to place an unfinished 2026 beside the finished years.
5	Which monitors	Monitor by monitor, so that a city-wide average cannot hide which parts of Delhi reach the ceiling.
6	Read this before quoting	Why the balance between the two pollutants changes with the window, and what to say so the point survives a reply.
7	Episodes, not a condition	The dates themselves, because the network pegs out together for a day or two and then falls back.
8 and 9	Anand Vihar, hour by hour	The monitor that reaches the ceiling most often has reported only half of each day since 30 August 2026.
10	Method and limits	How the figures were produced, and the three things this report cannot tell you.

Source: CPCB National AQI recomputed from CREA hourly station data for Delhi, 24 hours to 10:00 IST, CPCB breakpoints, read 31 August 2026.

Why 500 is a floor and not a reading

The index converts a measured concentration into a number between 0 and 500 using a fixed table of bands. The top band for fine particles, which are the particles smaller than 2.5 micrometres and are known as PM2.5, maps a concentration of 251 to 380 micrograms per cubic metre onto an index of 401 to 500. The top band for coarse particles, which are the particles smaller than 10 micrometres and are known as PM10, maps 431 to 600 onto that same index range. Once a concentration passes the top of its band the index has nowhere left to go, so the station reports 500 whether the true PM2.5 is 381 or 900.

This is not a theoretical worry, because of the 178 station-days at 500 inside the January to August window almost every one was already past the top breakpoint, which means the true concentration was outside anything the scale can express. The table below ranks the twelve worst by how far the driving pollutant ran beyond the point at which the index stops counting.

The furthest past the scale, 1 January to 31 August, all years

Date	Station	Pollutant	Measured, micrograms per cubic metre	Scale stops counting at	Times over
2023-01-08	DTU	PM10	1000	600	1.67 times
2021-01-02	Mundka	PM2.5	579	380	1.52 times
2023-01-07	DTU	PM10	893	600	1.49 times
2024-01-14	Nehru Nagar	PM2.5	559	380	1.47 times
2021-01-24	ITO	PM2.5	516	380	1.36 times
2026-01-18	Sonia Vihar	PM2.5	512	380	1.35 times
2021-01-02	Jahangirpuri	PM2.5	512	380	1.35 times
2021-01-02	Sonia Vihar	PM2.5	510	380	1.34 times
2026-01-18	Anand Vihar	PM10	803	600	1.34 times
2023-01-10	Nehru Nagar	PM2.5	502	380	1.32 times
2021-01-02	Punjabi Bagh	PM2.5	500	380	1.32 times
2024-01-14	New Moti Bagh	PM2.5	499	380	1.31 times

Read the last column as the size of the understatement. On 8 January 2023 the coarse-particle concentration at DTU was 1.67 times the level at which the index stops counting, so the published 500 described air that the scale had no way of describing.

Source: CPCB National AQI recomputed from CREA hourly station data for Delhi, 24 hours to 10:00 IST, CPCB breakpoints, read 31 August 2026.

The whole record, 2021 to 2026

The table counts station-days, which means one monitor reaching 500 on one day. Two monitors at the ceiling on the same day count as two. The last two columns separate the two pollutants because they accuse different people. Coarse particles are largely dust, which comes from construction, demolition and roads, and which sits with the municipal agencies and the dust rules of the Commission for Air Quality Management. Fine particles are largely combustion, which comes from vehicles, industry and burning.

Station-days at AQI 500, every month of every year

Year	Station-days at 500	Driven by PM2.5	Driven by PM10	Both at the cap
2021	162	84	78	53
2022	49	14	35	21
2023	141	44	97	56
2024	219	86	133	103
2025	79	44	35	23
2026 (to 31 August)	33	17	16	14
All six years	683	289 (42%)	394 (58%)	270 (40%)

Across the six years the coarse-particle share is the larger one, at 394 of 683 station-days, which is 58%. That matters politically, because dust is the half of the problem that the city government and the municipal agencies control directly.

On 270 of the 683 station-days, which is 40%, both pollutants were at the cap at the same moment. On those days the air was not failing one test. It was failing both at once.

Source: CPCB National AQI recomputed from CREA hourly station data for Delhi, 24 hours to 10:00 IST, CPCB breakpoints, read 31 August 2026.

Like for like: 1 January to 31 August

The year 2026 is not finished, and the four months it is missing are September to December, which is when Delhi's worst air arrives. Setting an unfinished 2026 against complete years would flatter every earlier year by four months of winter, so every figure on this page uses the same eight-month window for all six years. That window is also the harder test for the argument this report makes, because it removes the season that a government can blame on stubble burning and on winter weather.

The same eight months, every year

	2021	2022	2023	2024	2025	2026
Station-days at AQI 500	75	0	28	32	10	33
of which PM2.5 driven	47 (63%)	0	14 (50%)	14 (44%)	8 (80%)	17 (52%)
of which PM10 driven	28 (37%)	0	14 (50%)	18 (56%)	2 (20%)	16 (48%)
both PM2.5 and PM10 at the cap	16 (21%)	0	6 (21%)	14 (44%)	2 (20%)	14 (42%)
Stations that reached 500	26	0	17	26	7	23
Calendar days on which it happened	13	0	7	5	3	5
Worst single day, stations at once	20	0	14	26	7	19

On this like-for-like window 2026 already stands at 33, which is the highest since 2021 and more than three times the 10 of 2025, and the winter is still ahead of it.

In 2022 no Delhi station reached 500 at all before September, which is why that column is empty. The comparison to hold on to is 2025 against 2026, because those two years are measured by almost the same network: 10 station-days then, 33 now, on the same eight months.

Source: CPCB National AQI recomputed from CREA hourly station data for Delhi, 24 hours to 10:00 IST, CPCB breakpoints, read 31 August 2026.

Which monitors, and how often

A city-wide average hides which parts of Delhi actually reach the ceiling, so this table gives it monitor by monitor on the same eight-month window, and a monitor appears only if it reached 500 at least once. Where a cell reads “not sited” the monitor was not yet reporting in that year, which is a different thing altogether from a monitor that reported clean air.

Station-days at AQI 500, 1 January to 31 August

Monitor	2021	2022	2023	2024	2025	2026	Total
Anand Vihar	4	0	4	1	3	4	16
Nehru Nagar	6	0	2	4	0	2	14
Mundka	4	0	1	1	1	2	9
R K Puram	3	0	2	2	0	1	8
Wazirpur	4	0	0	1	1	2	8
Vivek Vihar	3	0	1	1	2	1	8
ITO	4	0	2	0	0	1	7
Ashok Vihar	3	0	0	1	1	2	7
Okhla Phase-2	4	0	2	1	0	0	7
Rohini	3	0	0	1	1	2	7
Patparganj	3	0	2	1	0	1	7
Chandni Chowk	6	0	0	0	0	1	7
DTU	2	0	3	0	0	1	6
Jahangirpuri	3	0	0	1	1	1	6
Pusa (DPCC)	3	0	2	1	0	0	6
CRRJ Mathura Road (IITM)	3	0	1	1	0	0	5
Sirifort	2	0	1	1	0	1	5
Punjabi Bagh	3	0	0	1	0	1	5
Dwarka-Sector 8	2	0	1	1	0	1	5
Major Dhyan Chand National Stadium	2	0	1	1	0	0	4
Sonia Vihar	2	0	0	0	0	2	4
Mandir Marg	2	0	0	1	0	0	3
Dr. Karni Singh Shooting Range	1	0	1	1	0	0	3
Jawaharlal Nehru Stadium	1	0	0	1	0	1	3
New Moti Bagh	not sited	not sited	0	2	0	1	3
North Campus (IITM)	1	0	0	0	0	1	2
Shadipur	0	0	0	2	0	0	2
IHBAS	1	0	0	0	0	1	2
Bawana	0	0	1	0	0	1	2
Sri Aurobindo Marg	0	0	1	1	0	0	2
Burari Crossing (IITM)	not sited	0	0	0	0	2	2
IGI Airport (T3) (IITM)	0	0	0	1	0	0	1
Aya Nagar (IITM)	0	0	0	1	0	0	1
IMD Lodhi Road	0	0	0	1	0	0	1
All stations	75	0	28	32	10	33	178

Source: CPCB National AQI recomputed from CREA hourly station data for Delhi, 24 hours to 10:00 IST, CPCB breakpoints, read 31 August 2026.

Read this before quoting the split

The eight-month window used on the previous two pages is, in practice, January. Of the 178 station-days at 500 that fall inside it across all six years, 168 are in January alone, which is 94%. February to August contribute 10 between them over six years.

That is why the balance between the two pollutants changes with the window. The table below pools all six years and splits them by month, so the effect is visible rather than argued.

Station-days at AQI 500 by month, all six years pooled

Month	Station-days at 500	Driven by PM2.5	Driven by PM10
Jan	168	98	70
Feb	2	0	2
Mar	1	1	0
May	3	0	3
Jun	2	1	1
Jul	1	0	1
Aug	1	0	1
Sep	1	0	1
Oct	10	2	8
Nov	364	122	242
Dec	130	65	65

November alone carries 364 of the 683 station-days in the whole record, and coarse particles drove 242 of those. That is what makes dust the majority across a full year. Strip the autumn out, as the like-for-like window does, and what remains is mostly January, where fine particles lead instead.

Both statements are true and neither is the whole truth. Over a full year coarse particles drive most of the ceiling days, and over January to August fine particles do. State which window you mean, because the other side will otherwise state it for you.

Source: CPCB National AQI recomputed from CREA hourly station data for Delhi, 24 hours to 10:00 IST, CPCB breakpoints, read 31 August 2026.

These are episodes, not a steady condition

The ceiling days do not trickle through the year. The whole network pegs out together for a day or two and then falls back, so the right unit for an argument is the episode rather than the annual average. The table gives the dates, with the number of monitors at 500 on each date in brackets.

How the ceiling days cluster, 1 January to 31 August

Year	Station-days	Calendar days	Worst single day	The dates, with monitors at 500
2021	75	13	20 monitors	15/01 (20), 02/01 (17), 16/01 (17), 14/01 (6), and 9 more
2022	0	0	none	no station reached 500 before September
2023	28	7	14 monitors	10/01 (14), 09/01 (7), 17/05 (3), 07/01 (1), and 3 more
2024	32	5	26 monitors	14/01 (26), 27/01 (3), 15/01 (1), 26/01 (1), and 1 more
2025	10	3	7 monitors	10/01 (7), 04/01 (2), 15/01 (1)
2026	33	5	19 monitors	18/01 (19), 19/01 (11), 20/01 (1), 26/03 (1), and 1 more

The pattern is sharpest in 2026, where 30 of the 33 station-days fall on two consecutive days in January. A city-wide daily average spreads that spike across the whole network and then across the whole year, until an episode that pinned nineteen monitors to the top of the scale reads as an unremarkable annual mean.

Source: CPCB National AQI recomputed from CREA hourly station data for Delhi, 24 hours to 10:00 IST, CPCB breakpoints, read 31 August 2026.

Anand Vihar, hour by hour, 29 August to 2 September 2026

Anand Vihar: the PM10 sub-index it reported, hour by hour

The station reads Severe almost every hour it is switched on, and since 30 August it switches off at noon. The cells marked “no data” are hours it sent nothing, and a missing hour publishes no reading at all rather than a low one.

	Sat 29 Aug	Sun 30 Aug	Mon 31 Aug	Tue 1 Sep	Wed 2 Sep	
00:00	500 676 µg	441 499 µg	381 415 µg	406 439 µg	no data	
01:00	no data	500 785 µg	461 533 µg	381 415 µg	no data	
02:00	500 732 µg	497 596 µg	451 516 µg	406 439 µg	no data	
03:00	500 718 µg	470 549 µg	368 404 µg	418 460 µg	no data	
04:00	500 650 µg	409 444 µg	432 484 µg	216 265 µg	no data	
05:00	490 582 µg	419 461 µg	337 379 µg	138 156 µg	no data	
06:00	500 643 µg	450 514 µg	275 324 µg	212 261 µg	no data	
07:00	500 740 µg	337 379 µg	255 305 µg	299 349 µg	no data	
08:00	485 574 µg	404 435 µg	319 364 µg	321 366 µg	no data	
09:00	470 549 µg	418 458 µg	393 424 µg	252 302 µg	no data	
10:00	494 590 µg	435 488 µg	313 360 µg	337 379 µg	no data	
11:00	434 486 µg	378 412 µg	239 288 µg	247 296 µg		nothing after 11:00, every day from 30 Aug
12:00	323 368 µg	no data	no data	no data		
13:00	236 285 µg	no data	no data	no data		
14:00	237 286 µg	no data	no data	no data		
15:00	287 336 µg	no data	no data	no data		
16:00	468 546 µg	no data	no data	no data		
17:00	500 642 µg	no data	no data	no data		
18:00	500 662 µg	no data	no data	no data		
19:00	500 691 µg	no data	no data	no data		
20:00	428 477 µg	no data	no data	no data		
21:00	427 474 µg	no data	no data	no data		
22:00	445 506 µg	no data	no data	no data		
23:00	479 564 µg	no data	no data	no data		
	23 of 24 h mean 556 µg	12 of 24 h mean 502 µg	12 of 24 h mean 400 µg	12 of 24 h mean 344 µg	0 of 11 h due by 10:00	

- Good 0-50
- Satisfactory 51-100
- Moderate 101-200
- Poor 201-300
- Very Poor 301-400
- Severe 401-500
- station sent nothing
- hour not yet due

Source: CPCB station data via the CREA hourly download, file CREA_Delhi_Raw_Long_2026_through_2026-09-02.csv, fetched 2 September 2026 at 10:30 IST. The sub-index is computed with the CPCB PM10 breakpoints held in AQI_Analysis/CPCB_AQI_Analysis/aqi_cpcb.R, which caps the index at 500. CPCB publishes the PM10 sub-index on a 24-hour mean, so an hourly value is a diagnostic of the instrument rather than a publishable station AQI. The category colours are read at run time from CAT_COL in CPCB_AQI_Analysis/CPCB_AQI_Report.Rmd, so this figure and the daily report cannot colour a category differently.

Source: CPCB station data via the CREA hourly download, file CREA_Delhi_Raw_Long_2026_through_2026-09-02.csv, fetched 2 September 2026 at 10:30 IST. The figure is drawn by anand_vihar_pm10_matrix_plot.py and carries its own source line, which is repeated here in text so that the attribution can be read without opening the image.

What the matrix shows, and why it belongs in this report

The figure on the previous page gives the coarse-particle sub-index for every hour that Anand Vihar reported over five days. It is placed in a report about the ceiling because the two subjects turn out to be the same subject. The monitor that has reached the ceiling more often than any other in Delhi is the monitor that has now stopped sending data for half of each day.

The three findings on the face of it

On 29 August the station reported 23 of the 24 hours, and it read Severe through almost all of them, including seven separate hours at the cap of 500. Even those 500s understate what the instrument measured, because the concentrations behind them run from 643 to 740 micrograms per cubic metre against a scale that stops counting at 600.

From 30 August the station reported only 12 of the 24 hours, and it did the same on each of the two days that followed, so that every hour it sent falls between midnight and 11:00 with nothing at all arriving after noon. On the morning of 2 September it sent nothing whatsoever, which cannot be explained by a fault in the wider feed, since other monitors in the same network reported normally on all of those days.

Why half a day counts as no day

The daily analysis requires at least 16 of the 24 hours before it will publish a figure for a monitor, which is the standard completeness rule and is there to stop a handful of hours standing in for a day. The report's day also runs from 11:00 to 10:00 rather than from midnight, so a monitor that cuts off at 11:00 leaves each window holding about 12 hours. Anand Vihar therefore fails the completeness test every day, and it is dropped from the daily table altogether.

The city's dirtiest monitor has been absent from the published station table since 31 August 2026. The air did not improve. The instrument that measures the worst of it stopped sending.

The inference

Both faults push the published number in the same direction, which is the reason for setting them side by side. When a monitor is at the ceiling the index understates the air, because the scale has run out. When that same monitor goes dark the city-wide figure loses its worst reading altogether, because an average is taken across whichever monitors happened to report. Neither fault is visible to a reader of the daily figure, and neither ever moves the number upward.

The size of the second effect can be stated exactly. On 30 August the worst monitor in Delhi was Anand Vihar at 443. On 31 August it was absent, and the worst figure available anywhere in the city was 230. Nothing in the air changed by 213 points overnight. What changed was which instruments were switched on, and that is a fact about the measuring network rather than a fact about the air.

This report does not assert why the monitor stopped, because the record here cannot distinguish a failing instrument from a failing data feed, and an honest report says so. What the record does establish is that the gap is specific to this monitor, that it began on 30 August 2026, that it repeats at the same hour each day, and that it removes from the published record the single station which has reached the top of the scale 54 times since 2021, more often than any other monitor in the city.

Source: CPCB station data via the CREA hourly download, file CREA_Delhi_Raw_Long_2026_through_2026-09-02.csv, fetched 2 September 2026 at 10:30 IST.

Method, and what this report cannot tell you

How the figures were produced

The index is the CPCB National Air Quality Index, recomputed from the hourly station record that the Centre for Research on Energy and Clean Air compiles from CPCB and DPCC monitors. Each station-day uses the 24 hours ending at 10:00 IST, the published CPCB breakpoints, a minimum of 16 reporting hours, and at least three pollutants of which one must be PM_{2.5} or PM₁₀. Those are the CPCB's own rules rather than a convention adopted for this report.

The recomputation was checked against the daily pipeline over the ten days to 30 August 2026, and the two agreed within 6 index points on all nine days that reported. The counts here were read on 31 August 2026, and the hour-by-hour figure for Anand Vihar was read on 2 September 2026.

Three limits worth stating plainly

The number of monitors grew over the six years, so part of any rise in the city-wide total reflects a larger network rather than worse air. The per-monitor table on page 5 does not have that problem, which is why it is printed in full rather than summarised.

A count of ceiling days is a count of the worst hours and says nothing about the rest of the year. A year with fewer ceiling days is not necessarily a cleaner year, and this report makes no such claim.

The ceiling itself means every count here is a floor. Where a concentration ran past the top breakpoint the true severity is unknown, and the only honest statement is that the air was at least as bad as 500 describes. That is a limit of the published scale rather than of this analysis, and it can only be removed by the CPCB extending the index or by publishing the concentrations beside it.

Source: CPCB National AQI recomputed from CREA hourly station data for Delhi, 24 hours to 10:00 IST, CPCB breakpoints, read 31 August 2026.