



# Air Quality Monthly Report

May, 2023



**Department of Environment**  
Ministry of Environment, Forest and Climate Change  
Bangladesh

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## **Introduction:**

Department of Environment (DoE), Bangladesh has established a countrywide air quality monitoring (AQM) network. The continuous monitoring of 6 (six) criteria pollutants ( $PM_{2.5}$ ,  $PM_{10}$ ,  $SO_2$ , CO,  $NO_x$  and  $O_3$ ) is being done by 31(thirty one) Continuous Air Monitoring Stations (CAMS) and Compact Continuous Air Monitoring Stations (C-CAMS) located in the divisional and industrial districts of the country; The network encompasses all the regions of the country - Dhaka, Narayanganj Gazipur, Savar, Mymensing, Narsindi in the center, Chittagong in the south-east. Khulna Cumilla and Barisal in the south, Rajshahi in the west, and Sylhet in the north-east regions, Rangpur in the north west of the country. And C-CAMS are located in Faridpur, Jashore, Satkhira, Bagerhat, Gopalganj, Tangail, Bogura, Tongi, BUET campus, Brahmanbaria, Feni, Noakhali, BSRM (Chattogram), Cox's-Bazar, Nagor Bhaban, Dhaka. The data and information generated from those stations are automatically collected in the central server and are disseminated through DoE website. Air Quality Index (AQI) for each city is calculated and published online daily for notifying the public about the status of air quality in their respective city.

Quality Assurance/Quality Control (QA/QC) methods and procedures are implemented with full documentation and are validated through an international certified calibration reference laboratory. Forms and log sheets document every activity in the air monitoring stations and document all maintenance, calibration, operation and other activities such as all visits to the stations. This monthly report provides an overview and analysis of air quality monitoring data in Bangladesh for the month wise monitoring results.

The report summarizes the data of different CAMS located in different cities of Bangladesh.

## Standards of Ambient Air Quality

The Government of Bangladesh has enacted Air Pollution (Control) Rules – 2022 with ambient air quality standards. This report establishes the Air Quality Index (AQI) followed by USEPA guideline to evaluate air pollution.

Table 1: National Ambient Air Quality Standards (NAAQS) for Bangladesh

Pollutant	Limit Value	Averaging time
CO	5 mg/m <sup>3</sup>	8 hours <sup>a</sup>
	20 mg/m <sup>3</sup>	1 hour <sup>a</sup>
Pb	0.25 µg/m <sup>3</sup>	Annual
	0.50 µg/m <sup>3</sup>	24 hours
NO <sub>x</sub>	40 µg/m <sup>3</sup>	Annual
	80 µg/m <sup>3</sup>	24 hours
PM <sub>10</sub>	50 µg/m <sup>3</sup>	Annual <sup>b</sup>
	150 µg/m <sup>3</sup>	24 hours <sup>c</sup>
PM <sub>2.5</sub>	35 µg/m <sup>3</sup>	Annual
	65 µg/m <sup>3</sup>	24 hours
O <sub>3</sub>	180 µg/m <sup>3</sup>	1 hour <sup>d</sup>
	100 µg/m <sup>3</sup>	8 hours
SO <sub>2</sub>		Annual
	80 µg/m <sup>3</sup>	24 hours <sup>a</sup>

Table 2: Air quality index (AQI) in Bangladesh

Air quality index (AQI)	Category		Colour
	In English	In Bangla	
0-50	Good	ভাল	Green
51-100	Moderate	মধ্যম	Yellow Green
101-150	Caution	সাবধানতা/সতর্কীকরণ	Yellow
151-200	Unhealthy	অস্বাস্থ্যকর	Orange
201-300	Very Unhealthy	খুব অস্বাস্থ্যকর	Red
301-500	Extremely Unhealthy/Hazardous	অত্যন্ত অস্বাস্থ্যকর	Purple

# Location Map of Air Monitoring Stations

Figure 1: Locations Map of Continuous Air Monitoring Stations (CAMS) under Department of Environment in Bangladesh.



## Station Information

Table 3: Overview of the locations and capacity of the CAMS

City	ID	Location	Latitude/ Longitude	Monitoring Capacity	Year of Est.	Type	Inlet & Met tower Height( m)
Dhaka	CAMS-1	Dept of Environment	23°.77'73.94"N 90°.37'26.03"E	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , CO, O <sub>3</sub> & NO <sub>x</sub> with Meteorological Parameters	2012	UB/Res	4.8 & 8
	CAMS-2	Farmgate	23°.75'94.10"N 90°.38'86.79"E		2008	Rd/Com	8.8 & 11
	CAMS-3	Darussalam	23°.78'07.75"N 90°.35'54.10"E		2012	UB/Com	8.8 & 11
Gazipur	CAMS-4	Gazipur	23°.99'41.28"N 90°.42'23.15"E		2012	SUB	8.8 & 11
Narayanganj	CAMS-5	Narayanganj	23°.62'60.79"N 90°.50'72.00"E		2012	UB industry	8.8 & 11
Chattogram	CAMS-6	TV Station, Khulshi	22°.36'04.87"N 91°.80'04.54"E		2006	UB1	4.8 & 7
	CAMS-7	Agrabad	22°.32'30.20"N 91°.80'23.36"E		2012	UB/Res	8.8 & 11
Khulna	CAMS-8	Boyra	22°.83'57.75"N 89°.52'90.56"E		2008	UB	6.8 & 10
Rajshahi	CAMS-9	Sapura	24°.38'33.20"N 88°.60'80.07"E		2008	Rd/Res	6.8 & 10
Sylhet	CAMS-10	Red Crecent Campus	24°.88'83.34"N 91°.86'73.47"E		2012	Rd/UB/Res	13.8 & 15
Barishal	CAMS-11	DFO Office Campus	22°.71'02.87"N 90°.36'25.98"E		2012	UB/Res	6.8 & 10
Mymensingh	CAMS-12	DoE Office, Divisional Headquarter	24°.76'24.58"N 90°.40'21.02"E		2019	UB	8.8 & 11
Rangpur	CAMS-13	BTV Rangpur Station	25°.74'73.71"N 89°.22'89.31"E		2019	UB	8.8 & 11
Savar	CAMS-14	Atomic Energy Research Institute	23°.95'37.04"N 90°.27'97.94"E		2019	SUB	10.8 & 14
Narsingdi	CAMS-15	Sadar Upazila Complex	23°.93'24.56"N 90°.71'65.98"E		2019	SUB	8.8 & 11
Cumilla	CAMS-16	Court Area	23°.47'29.88"N 91°.18'06.71"E		2019	UB	8.8 & 11

UB: Urban; Rd: Road; Res: residential; Com: Commercial; SUB: Suburban; Rural: Rural

Table 4: Overview of the locations and capacity of the C-CAMS

City	ID	Location	Lat/Lon	Year of Est.	Type	Monitoring Capacity	Inlet & Met tower Height(m)
Faridpur	C-CAMS-17	Sadar, Faridpur (Municipal Office)	23°.60'64.11"N 89°.83'88.19"E		SUB		9 & 11
Jashore	C-CAMS-18	Sadar, Jashore (circuit house)	23°.16'22.16"N 89°.20'63.70"E		SUB		12 & 14
Satkhira	C-CAMS-19	Shyamnagar, Satkhira	22°.31'59.96"N 89°.04'31.70"E		Rural		5.2 & 7.2
Bagerhat	C-CAMS-20	Rampal, Bagerhat (Maytree Super Thermal Power Project)	22°.59'60.86"N 89°.55'37.20"E		Rural/Industrial		5.7 & 7.7
Gopalganj	C-CAMS-21	Sadar, Gopalganj	23°.00'88.53"N 89°.82'91.60"E		SUB		22 & 24
Tangail	C-CAMS-22	Sadar, Tangail (DoE office)	24°.24'97.96"N 89°.92'93.57"E		SUB		15 & 17
Bogura	C-CAMS-23	Sadar, Bogura (DoE Office)	24°.86'17.79"N 89°.36'11.46"E		SUB		9 & 11
Tongi	C-CAMS-24	BSCIC, Tongi, Gazipur	23°.89'41.74"N 90°.41'12.10"E		Com/Industrial	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , CO, O <sub>3</sub> & NO <sub>x</sub> with Meteorological Parameters	18 & 20
BUET	C-CAMS-25	Department of Chemical Engineering, BUET, Dhaka	23°.72'75.91"N 90°.39'27.97"E	2020	UB		10 & 12
Brahmanbaria	C-CAMS-26	Sadar, B.Baria (municipal Office)	23°.97'43.71"N 91°.10'97.69"E		SUB		18 & 20
Feni	C-CAMS-27	Sadar, Feni (DoE Office)	23°.00'62.97"N 91°.38'13.05"E		SUB		18 & 20
Noakhali	C-CAMS-28	Maijdi Bazar, Noakhali (DoE Office)	22°.88'11.48"N 91°.09'69.66"E		SUB		15 & 17
Chattogram BSRM	C-CAMS-29	BSRM, Nasirabad, Chattogram	22°.37'28.38"N 91°.81'80.54"E		UB/Industrial		12 & 14
Cox's-Bazar	C-CAMS-30	Saymon Road, Sadar, Cox's-Bazar (DoE Office)	21°.44'22.08"N 91°.97'10.83"E		SUB		9 & 11
Nagor Bhaban, Dhaka	C-CAMS-31	Nagar Bhaban, DSCC, Dhaka	23°.72'40.75"N 90°.40'91.42"E		UB/Com		13 & 15

UB: Urban; Rd: Road; Res: residential; Com: Commercial; SUB: Suburban; Rural: Rural

# Summary of Components

## Month of May, 2023

Table 5: Summary of components\_ Month of May, 2023

Parameter	Summary	DoE	BARC	Darus-salam, Dhaka	Gazipur	Narayanganj	TV-Station, Chattagram	Agrabad, Chattagram	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Narshingdi	
SO <sub>2</sub> -24 hr (ppb)	Average	19.1	7.7	DNA	DNA	DNA	3.2	6.6	3.7	8.8	5.0	9.3	12.8	1.0	4.2	2.9	1.4	
	Max	38.2	15.0	DNA	DNA	DNA	6.1	7.2	8.2	25.4	5.0	10.0	23.8	1.0	12.2	6.1	3.2	
	Min	1.0	1.2	DNA	DNA	DNA	1.9	5.7	1.1	1.5	5.0	8.8	1.5	0.9	0.4	1.0	1.0	
	Excedance(Days)	3.0	0.0	DNA	DNA	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	96.8	87.1	DNA	DNA	DNA	61.3	100.0	51.6	100.0	100.0	35.5	58.1	93.5	93.5	100.0	100.0	
NO <sub>2</sub> -24 hr (ppb)	Average	6.2	38.5	9.1	DNA	1.5	11.1	15.3	DNA	99.7	6.5	2.9	8.2	15.4	2.4	7.8	6.1	
	Max	18.1	65.3	17.1	DNA	1.6	31.4	23.7	DNA	99.9	11.0	5.4	8.3	37.3	7.7	9.7	8.8	
	Min	2.6	6.6	4.3	DNA	1.5	2.3	6.6	DNA	98.3	3.8	1.5	8.2	4.2	0.6	5.9	5.2	
	Excedance(Days)	0.0	14.0	0.0	DNA	0.0	0.0	0.0	DNA	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Data capture(%)	100.0	96.8	93.5	DNA	25.8	51.6	100.0	DNA	29.0	100.0	35.5	100.0	90.3	93.5	100.0	100.0	
CO-8hr (ppm)	Average	2.8	1.6	1.5	DNA	DNA	1.4	DNA	1.6	3.1	1.9	DNA	5.0	1.2	0.9	2.7	2.0	
	Max	3.9	4.7	5.2	DNA	DNA	3.5	DNA	1.6	7.6	6.0	DNA	7.3	2.5	2.7	15.8	2.7	
	Min	1.3	0.4	0.2	DNA	DNA	0.0	DNA	1.6	0.1	0.5	DNA	3.0	1.0	0.3	0.5	0.1	
	Excedance(Hour)	0.0	11.0	5.0	DNA	DNA	0.0	DNA	0.0	130.0	17.0	DNA	673.0	0.0	0.0	178.0	0.0	
	Data capture(%)	97.4	94.8	99.1	DNA	DNA	89.9	DNA	6.6	91.8	98.1	DNA	99.1	90.3	85.2	96.9	95.8	
O <sub>3</sub> -8hr (ppb)	Average	DNA	10.1	8.8	DNA	3.6	20.0	5.0	4.8	6.1	17.8	111.1	32.0	17.9	35.1	19.8	20.6	
	Max	DNA	30.8	26.6	DNA	11.1	49.7	5.2	10.5	10.6	30.4	118.4	86.6	37.2	107.6	46.5	70.8	
	Min	DNA	0.4	3.3	DNA	2.5	8.6	4.8	2.4	3.6	4.4	102.2	8.5	3.3	0.9	4.9	0.6	
	Excedance(Hour)	DNA	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	0.0	17.0	79.0	0.0	154.0	0.0	19.0	
	Data capture(%)	DNA	94.8	59.8	DNA	33.2	90.1	79.0	11.3	92.9	99.1	2.3	99.1	90.2	73.9	98.3	97.3	
PM <sub>2.5</sub> -24hr (ug/m3)	Average	54.4	70.1	81.1	62.4	79.8	34.9	42.8	77.3	32.0	72.5	22.8	87.6	84.2	80.3	51.7	42.5	
	Max	107.6	127.1	288.1	112.1	246.1	66.6	109.4	229.8	57.9	129.9	31.4	146.4	238.9	173.8	148.9	92.6	
	Min	18.5	40.4	29.0	29.7	16.6	14.5	18.8	28.6	13.5	32.2	15.1	53.4	15.6	33.2	10.1	10.2	
	Excedance(Days)	10.0	15.0	17.0	13.0	16.0	1.0	4.0	5.0	0.0	14.0	0.0	22.0	16.0	17.0	8.0	4.0	
	Data capture(%)	96.8	96.8	100.0	100.0	96.8	93.5	100.0	32.3	100.0	100.0	35.5	100.0	93.5	93.5	74.2	96.8	
PM <sub>10</sub> -24hr (ug/m3)	Average	102.8	DNA	146.4	109.3	145.2	76.0	106.5	122.8	64.0	104.3	73.2	124.1	158.8	137.2	116.4	92.7	
	Max	187.1	DNA	582.8	222.9	364.0	130.3	206.8	325.9	142.8	199.2	104.4	221.3	330.2	278.8	152.8	240.8	
	Min	47.9	DNA	80.1	56.2	55.0	33.7	38.2	45.5	27.4	45.0	46.3	76.6	74.0	69.6	65.0	14.6	
	Excedance(Days)	4.0	DNA	7.0	6.0	12.0	0.0	6.0	3.0	0.0	5.0	0.0	8.0	8.0	9.0	2.0	5.0	
	Data capture(%)	93.5	DNA	100.0	100.0	100.0	93.5	100.0	48.4	96.8	100.0	35.5	100.0	67.7	93.5	29.0	93.5	
Solar rad. 1hr (W/m2)	Average	DNA	412.50	190.5	4.9	DNA	500.7	193.9	DNA	294.4	DNA	162.8	319.9	227.4	408.1	281.0	322.4	
	Max	DNA	747.1	1014.8	20.7	DNA	546.8	799.2	DNA	871.3	DNA	726.5	971.7	935.8	982.1	906.0	1002.8	
	Min	DNA	3.9	980.5	1.3	DNA	436.5	9.0	DNA	0.1	DNA	8.5	0.0	0.0	0.1	0.0	0.0	
	Data capture(%)	DNA	13	96	95	DNA	89	99	DNA	54	DNA	27	66.0	12.5	46.5	65.1	67.6	
Relative Humidity 1hr (%)	Average	DNA	61.2	65.8	DNA	DNA	62.6	71.1	DNA	66.0	75.5	84.7	69.8	91.0	72.6	84.8	46.4	
	Max	DNA	100.0	91.9	DNA	DNA	98.9	96.2	DNA	72.6	86.8	87.7	100.0	99.4	99.6	99.7	77.6	
	Min	DNA	18.1	23.7	DNA	DNA	57.1	18.9	DNA	58.0	58.0	82.5	25.7	48.5	18.7	25.9	18.9	
	Data capture(%)	DNA	41.3	96.4	DNA	DNA	88	99	DNA	94	93	27	75.1	15.5	78.4	97.0	100.0	
Ambient Temp. 1hr (degreeC)	Average	DNA	22.4	28.4	DNA	DNA	28.9	27.1	DNA	30.8	33.5	31.5	28.0	25.6	27.9	28.2	28.0	
	Max	DNA	34.5	35.0	DNA	DNA	36.3	43.0	DNA	39.7	37.3	40.7	37.2	32.3	37.9	38.8	38.0	
	Min	DNA	7.1	19.6	DNA	DNA	20.6	7.3	DNA	20.7	27.9	18.1	19.4	19.2	20.2	19.8	20.0	
	Data capture(%)	DNA	37.8	89	DNA	DNA	89	64	DNA	94	93	27	95.4	14.7	76.3	92.9	100.0	
Rainfall 1hr (mm)	Average	DNA	DNA	0.40	0.27	DNA	13.83	DNA	DNA	DNA	1.45	0.38	0.14	0.65	0.12	0.01	0.11	
	Max	DNA	DNA	0.80	0.64	DNA	15.06	DNA	DNA	DNA	1.61	0.81	0.89	4.98	0.61	0.02	0.93	
	Min	DNA	DNA	0.04	0.01	DNA	3.71	DNA	DNA	DNA	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
	Data capture(%)	DNA	DNA	59.01	42.88	DNA	12.77	DNA	DNA	DNA	2.96	26.34	3.63	80.51	1.88	0.81	3.49	

CAMS= Continuous Air Monitoring Station, NAAQS=National Ambient Air Quality Standard, a=Refurbishment CAMS, PM= Particulate Matter

DNA= Data Not Available

Table 6: Air Quality Index (AQI), Month of May, 2023

Date	Dhaka	Chittagong	Gazipur	Narayangonj	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Narsingdi
01-05-23	154	148	133	178	187	89	125	DNA	155	160	170	142	DNA
02-05-23	160	104	163	193	138	150	157	DNA	169	191	168	154	140
03-05-23	144	123	166	167	148	80	164	DNA	177	188	190	142	154
04-05-23	116	91	143	166	138	88	152	DNA	154	174	164	128	143
05-05-23	135	73	149	154	122	81	151	DNA	153	158	157	DNA	107
06-05-23	138	82	158	155	DNA	85	167	DNA	166	198	156	DNA	159
07-05-23	157	111	163	160	DNA	105	172	DNA	166	181	180	DNA	170
08-05-23	161	99	171	157	DNA	147	187	DNA	177	230	185	158	167
09-05-23	174	135	180	176	DNA	137	187	DNA	198	186	174	199	155
10-05-23	167	110	165	168	DNA	114	175	DNA	181	155	198	173	104
11-05-23	169	106	156	120	DNA	96	155	DNA	177	136	162	168	142
12-05-23	176	60	156	189	DNA	106	176	DNA	193	DNA	DNA	152	140
13-05-23	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA
14-05-23	93	68	96	98	DNA	67	117	DNA	151	130	DNA	52	64
15-05-23	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA
16-05-23	149	83	128	119	DNA	97	143	DNA	161	112	129	112	96
17-05-23	125	70	94	90	DNA	69	133	56	151	161	118	89	87
18-05-23	142	87	126	129	89	58	143	58	153	134	95	90	82
19-05-23	140	75	135	DNA	85	83	153	66	161	124	140	84	89
20-05-23	136	84	108	131	DNA	72	152	74	146	132	127	62	75
21-05-23	132	80	142	106	DNA	94	151	70	162	145	152	115	70
22-05-23	134	89	126	102	DNA	79	131	56	154	145	122	96	53
23-05-23	128	85	128	95	DNA	67	151	82	153	144	151	93	55
24-05-23	150	94	131	153	DNA	57	116	82	162	130	151	93	88
25-05-23	160	92	83	131	DNA	72	152	80	146	158	155	60	89
26-05-23	136	81	110	99	DNA	53	93	72	146	132	127	62	75
27-05-23	140	85	146	100	DNA	55	119	DNA	145	148	127	57	146
28-05-23	165	102	148	174	164	62	163	81	164	163	151	161	97
29-05-23	172	132	162	296	142	151	184	91	183	172	170	159	141
30-05-23	201	136	167	267	176	148	182	DNA	186	176	188	168	127
31-05-23	165	80	179	166	156	111	169	90	178	200	183	166	160

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