



# Air Quality Monthly Report

## February, 2022



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 people 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 Station

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.Barbia (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 February, 2022

Table 5: Summary of components, Month of February, 2022

Parameter	Summary	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	0.8	5.2	DNA	DNA	3.5	14.8	DNA	3.5	7.2	DNA	1.5	4.9	4.3	2.4	2.5
	Max	2.1	5.5	DNA	DNA	7.6	19.0	DNA	5.7	10.2	DNA	13.0	8.6	5.7	4.7	6.9
	Min	0.2	4.9	DNA	DNA	0.7	11.6	DNA	1.8	3.0	DNA	0.4	2.3	3.1	1.2	0.8
	Excedance(Days)	0.0	0.0	DNA	DNA	0.0	0.0	DNA	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	87.1	9.7	DNA	DNA	90.3	83.9	DNA	90.3	90.3	DNA	41.9	90.3	83.9	87.1	90.3
NO <sub>2</sub> -24 hr (ppb)	Average	9.6	13.7	0.2	DNA	13.0	18.6	13.2	3.0	11.8	1.5	9.0	15.7	2.3	2.8	2.8
	Max	33.8	16.2	0.4	DNA	22.1	29.1	19.4	3.3	16.1	2.3	12.0	23.7	3.4	2.8	8.6
	Min	1.7	9.4	0.1	DNA	4.9	7.7	10.1	2.6	6.3	0.7	5.7	7.6	0.3	2.8	0.2
	Excedance(Days)	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	54.8	90.3	19.4	DNA	90.3	83.9	45.2	35.5	87.1	29.0	80.6	90.3	61.3	83.9	90.3
CO-8hr (ppm)	Average	0.9	DNA	DNA	4.6	3.7	2.2	3.2	4.9	1.1	DNA	0.9	0.9	0.9	1.4	1.0
	Max	3.7	DNA	DNA	7.5	8.5	3.6	6.5	8.6	3.3	DNA	2.0	3.7	3.7	6.1	2.5
	Min	0.0	DNA	DNA	3.0	0.2	0.5	2.0	1.1	0.4	DNA	0.3	0.3	0.1	0.1	0.4
	Excedance(Hour)	0.0	DNA	DNA	0.0	0.0	0.0	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	89.9	DNA	DNA	76.3	85.5	9.7	56.3	41.8	99.1	DNA	75.3	99.1	88.7	73.7	93.3
O <sub>3</sub> -8hr (ppb)	Average	3.9	1.4	DNA	DNA	11.7	2.6	4.5	25.3	10.2	DNA	26.2	16.1	21.9	DNA	38.8
	Max	15.9	5.3	DNA	DNA	55.0	2.7	17.8	99.3	29.3	DNA	54.8	53.3	58.8	DNA	78.0
	Min	0.5	0.5	DNA	DNA	3.6	2.6	1.2	0.7	0.5	DNA	6.5	0.2	0.7	DNA	0.3
	Excedance(Hour)	0.0	0.0	DNA	DNA	4.0	0.0	0.0	43.0	0.0	DNA	9.0	2.0	13.0	DNA	170.0
	Data capture(%)	90.3	51.6	DNA	DNA	85.8	9.7	55.1	96.8	90.3	DNA	88.6	98.5	87.8	DNA	99.1
PM <sub>2.5</sub> -24hr (ug/m3)	Average	152.4	158.0	133.0	155.1	123.9	78.5	94.2	74.7	104.5	85.3	139.6	122.3	156.0	121.3	91.0
	Max	263.7	279.3	204.8	253.5	174.6	87.8	180.2	136.9	228.9	188.6	221.9	190.5	288.9	206.0	127.9
	Min	62.7	86.6	74.6	84.2	63.1	69.2	48.4	26.1	23.7	48.7	64.1	54.9	79.1	40.5	46.3
	Excedance(Days)	16.0	26.0	25.0	23.0	21.0	2.0	13.0	16.0	24.0	15.0	24.0	27.0	27.0	26.0	24.0
	Data capture(%)	90.3	83.9	80.6	74.2	71.0	6.5	51.6	90.3	90.3	87.1	80.6	90.3	87.1	87.1	90.3
PM <sub>10</sub> -24hr (ug/m3)	Average	244.4	207.4	222.5	258.6	84.1	138.3	163.7	202.2	229.8	DNA	206.5	198.4	233.9	166.4	212.0
	Max	380.8	334.5	316.6	437.0	129.7	218.3	236.1	358.1	342.3	DNA	315.8	313.6	537.1	418.8	313.8
	Min	112.4	132.2	86.5	146.5	36.3	80.3	84.0	60.9	69.9	DNA	86.6	134.6	130.1	53.8	93.4
	Excedance(Days)	28.0	22.0	21.0	24.0	0.0	10.0	11.0	23.0	24.0	DNA	22.0	20.0	20.0	15.0	24.0
	Data capture(%)	90.3	83.9	80.6	83.9	90.3	80.6	54.8	90.3	90.3	DNA	80.6	77.4	74.2	87.1	90.3
Solar rad. 1hr (W/m2)	Average	0.60	124.3	DNA	DNA	DNA	176.5	DNA	260.9	213.2	138.4	315.4	241.6	342.0	302.4	345.2
	Max	0.6	778.5	DNA	DNA	DNA	725.1	DNA	980.6	807.3	634.1	771.2	710.8	868.2	697.7	870.1
	Min	0.6	7.3	DNA	DNA	DNA	9.0	DNA	0.3	0.1	8.3	0.4	0.6	0.1	0.7	0.9
	Data capture(%)	6	38	DNA	DNA	DNA	92	DNA	95	73	100	49.5	49.6	45.4	47.4	50.1
	Relative Humidity 1hr (%)	Average	37.9	58.4	DNA	DNA	69.0	62.7	DNA	50.9	59.2	80.9	66.4	75.1	78.9	79.2
Max		50.6	92.9	DNA	DNA	95.5	94.9	DNA	68.5	92.5	95.8	98.0	99.3	99.6	99.5	82.3
Min		24.1	25.1	DNA	DNA	56.6	21.1	DNA	30.1	44.7	58.3	21.4	25.7	28.6	22.8	17.1
Data capture(%)		90.1	79.8	DNA	DNA	56	73	DNA	98	98	100	82.9	100.0	89.8	35.3	99.2
Ambient Temp. 1hr (degreeC)		Average	30.7	21.2	DNA	DNA	23.1	19.7	DNA	23.4	20.6	19.4	19.1	19.0	17.7	19.5
	Max	34.6	34.4	DNA	DNA	27.6	29.9	DNA	31.5	31.5	35.9	28.4	28.3	27.2	29.7	29.3
	Min	8.5	8.2	DNA	DNA	19.7	7.3	DNA	13.9	7.4	7.6	10.7	11.8	9.5	11.8	11.7
	Data capture(%)	90.1	89	DNA	DNA	51	26	DNA	98	97	100	96.2	100.0	89.1	94.0	99.3
	Rainfall 1hr (mm)	Average	1.10	DNA	DNA	DNA	DNA	DNA	DNA	DNA	2.40	0.53	0.07	0.14	0.06	0.05
Max		1.28	DNA	DNA	DNA	DNA	DNA	DNA	DNA	3.36	1.08	0.51	4.48	0.13	0.13	3.46
Min		0.97	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0.04	0.02	0.01	0.02	0.01	0.01	0.01
Data capture(%)		6.18	DNA	DNA	DNA	DNA	DNA	DNA	DNA	20.16	98.12	2.02	93.01	1.61	0.67	1.75

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 February, 2022

Date	Dhaka	Chattogram	Gazipur	Narayanganj	Sylhet	Khulna	Rajshahi	Barishal	Savar	Mymensingh	Rangpur	Cumilla	Norshindi
01-02-2022	316	227	355	359	172	153	314	123	349	337	441	211	187
02-02-2022	328	172	289	354	DNA	206	168	DNA	282	320	320	214	170
03-02-2022	310	154	212	224	DNA	168	176	DNA	292	244	265	214	182
04-02-2022	280	162	218	211	DNA	118	108	DNA	242	234	274	184	136
05-02-2022	163	85	162	176	DNA	61	63	DNA	151	134	DNA	113	115
06-02-2022	237	145	190	242	DNA	114	127	105	191	171	DNA	182	173
07-02-2022	195	138	248	268	DNA	145	168	125	196	159	267	192	131
08-02-2022	322	156	285	375	DNA	182	208	139	306	203	333	199	168
09-02-2022	336	181	312	340	DNA	204	212	148	320	311	341	186	191
10-02-2022	410	170	372	400	DNA	178	184	DNA	368	274	336	278	230
11-02-2022	324	166	282	342	DNA	210	159	DNA	278	289	210	242	168
12-02-2022	216	167	252	297	DNA	142	169	DNA	DNA	190	223	204	175
13-02-2022	282	167	269	257	DNA	129	186	DNA	214	207	311	228	180
14-02-2022	309	152	209	220	DNA	163	169	DNA	284	235	259	204	176
15-02-2022	335	161	320	345	DNA	145	197	DNA	367	304	307	303	179
16-02-2022	328	192	235	307	178	184	291	DNA	290	276	268	247	184
17-02-2022	335	173	323	345	207	183	312	163	339	274	308	246	217
18-02-2022	304	221	318	DNA	240	198	304	DNA	306	253	277	248	188
19-02-2022	316	162	268	DNA	209	174	206	168	307	246	304	246	190
20-02-2022	222	215	262	245	176	147	196	175	225	307	199	231	224
21-02-2022	213	127	199	183	117	142	163	115	204	185	176	170	145
22-02-2022	224	181	221	183	120	120	172	114	188	173	171	199	147
23-02-2022	260	198	219	313	161	152	175	154	227	199	270	207	188
24-02-2022	333	193	325	282	188	156	257	160	326	243	278	225	213
25-02-2022	179	159	188	194	172	122	130	134	170	205	161	168	163
26-02-2022	191	152	DNA	311	174	165	198	154	214	171	194	182	156
27-02-2022	309	175	282	319	194	173	229	DNA	309	298	319	DNA	198
28-02-2022	302	185	295	304	186	154	208	223	DNA	316	317	299	254

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