



Air Quality Monthly Report

February, 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 ³	8 hours ^a
	20 mg/m ³	1 hour ^a
Pb	0.25 µg/m ³	Annual
	0.50 µg/m ³	24 hours
NO _x	40 µg/m ³	Annual
	80 µg/m ³	24 hours
PM ₁₀	50 µg/m ³	Annual ^b
	150 µg/m ³	24 hours ^c
PM _{2.5}	35 µg/m ³	Annual
	65 µg/m ³	24 hours
O ₃	180 µg/m ³	1 hour ^d
	100 µg/m ³	8 hours
SO ₂		Annual
	80 µg/m ³	24 hours ^a

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 ₁₀ , PM _{2.5} , SO ₂ , CO, O ₃ & NO _x 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 ₁₀ , PM _{2.5} , SO ₂ , CO, O ₃ & NO _x 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 February, 2023

Table 5: Summary of components_ Month of February, 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 ₂ -24 hr (ppb)	Average	8.9	7.9	DNA	12.4	7.1	1.6	DNA	10.1	1.8	DNA	7.1	2.5	1.5	4.3	1.6	3.8	
	Max	17.7	11.1	DNA	23.4	8.2	2.9	DNA	15.5	1.9	DNA	8.3	6.6	1.7	10.4	1.9	10.3	
	Min	0.3	4.7	DNA	8.5	6.1	0.9	DNA	7.0	1.7	DNA	5.9	0.4	1.3	0.4	1.3	1.4	
	Excedance(Days)	0.0	0.0	DNA	0.0	0.0	0.0	DNA	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	12.9	25.8	DNA	58.1	9.7	67.7	DNA	90.3	90.3	DNA	29.0	45.2	90.3	90.3	6.5	67.7	
NO ₂ -24 hr (ppb)	Average	3.8	29.7	8.5	DNA	1.2	9.6	16.9	5.0	DNA	4.8	3.5	10.0	16.8	1.9	5.2	4.5	
	Max	9.0	42.1	13.0	DNA	1.8	40.5	29.9	7.9	DNA	9.2	6.1	13.5	78.1	3.7	5.3	5.4	
	Min	2.6	17.0	3.9	DNA	1.1	4.6	6.8	3.7	DNA	1.4	1.9	5.9	8.0	0.8	5.1	3.7	
	Excedance(Days)	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	DNA	0.0	0.0	0.0	2.0	0.0	0.0	0.0	
	Data capture(%)	83.9	29.0	77.4	DNA	90.3	67.7	87.1	90.3	DNA	90.3	58.1	71.0	90.3	90.3	71.0	87.1	
CO-8hr (ppm)	Average	4.3	1.6	5.9	DNA	1.3	2.0	DNA	DNA	1.3	1.1	DNA	2.2	0.7	3.0	1.4	3.1	
	Max	9.9	5.0	11.3	DNA	1.5	3.0	DNA	DNA	2.6	2.0	DNA	3.0	2.7	16.4	2.7	5.4	
	Min	0.6	0.6	0.0	DNA	1.2	0.5	DNA	DNA	0.5	0.8	DNA	1.7	0.1	2.1	0.1	0.0	
	Excedance(Hour)	296.0	5.0	394.0	DNA	0.0	0.0	DNA	DNA	0.0	0.0	DNA	0.0	0.0	59.0	0.0	36.0	
	Data capture(%)	81.3	27.3	84.7	DNA	58.1	44.4	DNA	DNA	88.0	90.3	DNA	68.3	90.3	91.3	33.9	72.6	
O ₃ -8hr (ppb)	Average	DNA	6.0	3.3	DNA	DNA	5.0	34.4	DNA	2.4	13.8	115.9	21.6	19.2	18.3	23.9	15.1	
	Max	DNA	20.2	13.7	DNA	DNA	8.5	34.5	DNA	13.1	20.4	115.9	28.5	48.7	52.5	71.2	56.9	
	Min	DNA	0.1	0.9	DNA	DNA	2.6	34.3	DNA	0.3	1.1	115.9	14.7	7.0	2.2	0.1	0.1	
	Excedance(Hour)	DNA	0.0	0.0	DNA	DNA	0.0	0.0	DNA	0.0	0.0	8.0	0.0	0.0	5.0	46.0	12.0	
	Data capture(%)	DNA	26.9	90.3	DNA	DNA	44.1	84.0	DNA	88.0	90.3	1.1	67.9	90.3	90.3	64.4	69.9	
PM _{2.5} -24hr (ug/m3)	Average	135.3	122.3	177.2	173.9	184.0	33.6	129.2	148.5	135.0	241.3	69.8	39.8	157.8	173.6	106.8	DNA	
	Max	194.0	175.0	290.7	260.6	386.4	167.5	194.8	266.9	310.5	303.5	113.1	75.9	301.8	267.6	160.2	DNA	
	Min	74.8	87.6	85.5	90.6	87.1	11.7	51.1	83.9	54.9	167.2	37.9	18.4	20.2	86.8	62.9	DNA	
	Excedance(Days)	26.0	10.0	28.0	26.0	23.0	2.0	26.0	14.0	26.0	28.0	16.0	2.0	22.0	28.0	21.0	DNA	
	Data capture(%)	83.9	32.3	90.3	83.9	74.2	48.4	87.1	45.2	90.3	90.3	83.9	67.7	90.3	90.3	71.0	DNA	
PM ₁₀ -24hr (ug/m3)	Average	242.8	DNA	286.7	313.7	301.8	DNA	250.6	252.4	160.1	DNA	166.1	62.1	312.9	DNA	69.6	281.3	
	Max	364.5	DNA	462.6	449.9	474.3	DNA	359.3	383.9	307.5	DNA	243.9	169.9	437.2	DNA	87.5	445.5	
	Min	140.7	DNA	150.0	148.1	146.6	DNA	143.1	137.1	31.9	DNA	102.0	23.4	210.0	DNA	46.3	170.7	
	Excedance(Days)	24.0	DNA	27.0	25.0	26.0	DNA	26.0	23.0	6.0	DNA	17.0	2.0	13.0	DNA	0.0	27.0	
	Data capture(%)	90.3	DNA	90.3	83.9	87.1	DNA	87.1	77.4	35.5	DNA	83.9	71.0	41.9	DNA	35.5	87.1	
Solar rad. 1hr (W/m2)	Average	DNA	487.16	106.8	10.6	DNA	832.4	121.9	DNA	267.0	DNA	127.2	267.2	117.1	291.7	220.5	315.2	
	Max	DNA	737.3	1020.0	11.7	DNA	966.0	556.5	DNA	949.5	DNA	618.1	751.5	540.4	697.1	569.6	822.9	
	Min	DNA	20.4	1006.3	0.0	DNA	810.9	9.1	DNA	0.2	DNA	8.5	0.0	0.0	0.1	0.0	0.0	
	Excedance(Hour)	DNA	9	73	79	DNA	44	78	DNA	54	DNA	80	37.1	43.1	45.6	33.1	28.5	
	Data capture(%)	DNA	9	73	79	DNA	44	78	DNA	54	DNA	80	37.1	43.1	45.6	33.1	28.5	
Relative Humidity 1hr (%)	Average	DNA	64.9	61.6	DNA	DNA	65.3	67.4	DNA	71.2	67.4	86.3	63.4	80.1	79.3	78.6	55.1	
	Max	DNA	99.2	93.9	DNA	DNA	99.6	99.9	DNA	72.1	79.3	88.9	100.0	99.5	99.7	99.7	90.0	
	Min	DNA	25.3	21.4	DNA	DNA	57.1	15.1	DNA	60.0	24.0	79.0	18.4	18.1	24.4	18.9	17.2	
	Excedance(Hour)	DNA	16.4	90.2	DNA	DNA	62	77	DNA	90	89	80	58.7	83.1	90.3	60.2	59.5	
	Data capture(%)	DNA	23.1	21.4	31.4	DNA	23.3	26.4	DNA	24.5	32.2	23.5	22.6	21.3	20.2	22.5	21.8	
Ambient Temp. 1hr (degreeC)	Average	DNA	23.1	21.4	31.4	DNA	23.3	26.4	DNA	24.5	32.2	23.5	22.6	21.3	20.2	22.5	21.8	
	Max	DNA	28.7	27.6	42.2	DNA	33.6	42.8	DNA	34.0	35.7	38.4	30.9	31.0	29.2	31.6	31.0	
	Min	DNA	17.8	15.3	16.2	DNA	15.2	7.5	DNA	14.9	18.0	10.1	12.9	13.4	11.5	14.1	13.3	
	Excedance(Hour)	DNA	17.5	90	0	DNA	64	38	DNA	90	89	80	66.0	82.8	90.3	59.5	54.2	
	Data capture(%)	DNA	17.5	90	0	DNA	64	38	DNA	90	89	80	66.0	82.8	90.3	59.5	54.2	
Rainfall 1hr (mm)	Average	DNA	8.72	0.66	0.35	DNA	DNA	DNA	DNA	DNA	0.04	0.85	0.26	0.41	DNA	DNA	DNA	
	Max	DNA	16.36	0.68	0.48	DNA	DNA	DNA	DNA	DNA	0.07	1.47	0.26	4.47	DNA	DNA	DNA	
	Min	DNA	0.03	0.17	0.01	DNA	DNA	DNA	DNA	DNA	0.01	0.20	0.26	0.01	DNA	DNA	DNA	
	Excedance(Hour)	DNA	7.53	13.17	29.03	DNA	DNA	DNA	DNA	DNA	88.71	79.97	0.13	73.66	DNA	DNA	DNA	
	Data capture(%)	DNA	7.53	13.17	29.03	DNA	DNA	DNA	DNA	DNA	88.71	79.97	0.13	73.66	DNA	DNA	DNA	

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, 2023

Date	Dhaka	Chittagong	Gazipur	Narayangonj	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Narsingdi
01-02-23	192	194	196	256	DNA	171	267	168	DNA	195	193	183	184
02-02-23	176	171	178	200	127	164	217	152	DNA	177	191	162	183
03-02-23	189	180	197	278	125	178	224	163	DNA	186	210	DNA	191
04-02-23	240	185	225	331	153	195	263	167	DNA	192	220	DNA	131
05-02-23	265	188	253	310	316	191	299	180	DNA	221	233	193	184
06-02-23	252	226	273	382	230	191	305	179	DNA	211	390	210	194
07-02-23	217	200	243	198	229	181	300	152	DNA	179	266	182	186
08-02-23	170	181	212	170	182	180	286	106	DNA	211	228	158	132
09-02-23	269	186	216	193	183	170	250	142	DNA	211	183	158	135
10-02-23	182	264	200	244	167	230	259	167	DNA	196	184	DNA	156
11-02-23	234	DNA	275	225	151	219	310	164	DNA	249	233	DNA	295
12-02-23	195	179	209	193	168	179	275	157	167	223	198	182	210
13-02-23	178	161	176	193	182	162	223	139	DNA	199	153	168	163
14-02-23	189	122	186	242	DNA	168	234	156	157	172	158	165	172
15-02-23	268	142	222	385	DNA	188	271	163	190	235	215	181	189
16-02-23	273	204	249	312	DNA	195	334	DNA	220	309	278	193	188
17-02-23	298	186	312	325	172	176	344	DNA	254	318	236	196	175
18-02-23	277	189	308	DNA	DNA	168	353	DNA	192	287	267	198	187
19-02-23	246	246	280	361	DNA	166	344	159	192	267	284	199	174
20-02-23	221	196	260	262	277	178	291	153	100	307	183	195	204
21-02-23	175	210	220	177	296	154	316	121	196	215	252	194	182
22-02-23	167	162	173	167	174	149	285	124	152	158	232	155	146
23-02-23	167	162	173	167	174	149	285	124	152	158	232	155	146
24-02-23	173	164	172	175	165	164	288	143	156	167	196	154	152
25-02-23	167	162	173	167	174	149	285	124	152	158	232	155	146
26-02-23	185	154	220	292	172	211	280	160	151	152	189	DNA	178
27-02-23	216	170	242	254	166	187	258	155	164	156	251	177	180
28-02-23	199	172	225	256	181	180	294	156	184	185	251	173	188

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