



Air Quality Monthly Report

May, 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 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 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 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 May, 2022

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

Parameter	Summary	BARC	Darus-salam, Dhaka	Gazipur	Narayanganj	TV-Station, Chattogram	Agrabad, Chattogram	Sylhet	Khulna	Rajshahi	Barishal	Savar	Mymensingh	Rangpur	Cumilla	Narshingdi
SO ₂ -24 hr (ppb)	Average	1.3	DNA	DNA	DNA	3.5	2.2	DNA	2.8	2.5	DNA	1.0	1.1	4.7	0.9	1.5
	Max	1.9	DNA	DNA	DNA	7.1	3.1	DNA	4.4	4.6	DNA	8.9	1.4	9.6	1.5	1.8
	Min	0.8	DNA	DNA	DNA	0.5	1.8	DNA	0.5	0.6	DNA	0.4	1.0	0.8	0.3	0.8
	Excedance(Days)	0.0	DNA	DNA	DNA	0.0	0.0	DNA	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	54.8	DNA	DNA	DNA	64.5	100.0	DNA	87.1	100.0	DNA	77.4	48.4	83.9	100.0	100.0
NO ₂ -24 hr (ppb)	Average	5.8	10.6	0.3	0.2	14.3	7.3	8.9	5.8	6.4	0.2	7.9	5.9	19.9	3.9	7.7
	Max	6.1	16.2	0.8	0.3	15.9	14.9	13.4	6.1	9.3	1.0	11.1	11.4	91.4	5.1	9.3
	Min	5.5	7.5	0.1	0.1	13.5	1.6	5.4	3.0	4.6	0.1	3.6	2.7	4.8	2.8	7.3
	Excedance(Days)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
	Data capture(%)	90.3	100.0	80.6	77.4	71.0	100.0	35.5	80.6	100.0	61.3	100.0	96.8	58.1	100.0	100.0
CO-8hr (ppm)	Average	0.6	1.6	DNA	DNA	DNA	DNA	3.7	1.3	0.9	DNA	1.0	0.5	0.5	0.9	1.0
	Max	1.5	1.6	DNA	DNA	DNA	DNA	5.1	4.0	1.0	DNA	6.7	1.5	1.6	1.4	2.1
	Min	0.0	1.6	DNA	DNA	DNA	DNA	3.1	0.4	0.6	DNA	0.0	0.2	0.0	0.5	0.6
	Excedance(Hour)	0.0	0.0	DNA	DNA	DNA	DNA	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	98.9	0.1	DNA	DNA	DNA	DNA	32.9	24.1	99.1	DNA	26.9	92.2	70.4	99.1	99.1
O ₃ -8hr (ppb)	Average	9.6	2.5	DNA	DNA	13.8	DNA	6.3	38.8	56.8	DNA	30.5	17.7	24.5	20.4	15.5
	Max	18.0	8.1	DNA	DNA	35.1	DNA	12.6	66.3	87.0	DNA	49.9	48.0	64.7	47.3	42.9
	Min	9.0	0.6	DNA	DNA	3.1	DNA	3.5	21.4	30.8	DNA	16.9	4.8	5.6	2.0	1.4
	Excedance(Hour)	0.0	0.0	DNA	DNA	0.0	DNA	0.0	0.0	23.0	DNA	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	99.1	71.2	DNA	DNA	68.3	DNA	32.8	83.6	99.1	DNA	96.2	92.2	73.4	89.8	98.9
PM _{2.5} -24hr (ug/m ³)	Average	72.5	57.8	50.9	42.5	47.7	29.3	36.9	29.7	37.7	24.2	59.5	52.7	62.7	39.9	32.9
	Max	117.5	95.7	89.5	115.3	107.0	45.6	118.4	79.7	80.1	42.8	99.6	94.9	102.6	90.1	61.3
	Min	38.1	30.0	25.7	17.2	18.5	15.0	10.1	8.4	15.4	9.9	28.4	23.0	33.6	13.7	12.3
	Excedance(Days)	15.0	8.0	6.0	3.0	3.0	0.0	1.0	1.0	1.0	0.0	12.0	7.0	11.0	3.0	0.0
	Data capture(%)	100.0	83.9	96.8	67.7	67.7	100.0	29.0	87.1	100.0	71.0	96.8	96.8	83.9	100.0	100.0
PM ₁₀ -24hr (ug/m ³)	Average	142.6	91.8	78.2	93.7	25.5	72.1	54.4	62.1	105.5	DNA	97.9	105.8	94.7	57.0	84.2
	Max	204.9	152.4	148.2	197.4	54.1	111.8	122.9	121.1	256.1	DNA	151.1	196.6	155.0	118.7	150.4
	Min	65.4	50.5	27.5	31.3	11.0	37.9	17.5	23.8	35.6	DNA	55.5	46.6	37.8	19.2	33.6
	Excedance(Days)	15.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	8.0	DNA	1.0	4.0	2.0	0.0	1.0
	Data capture(%)	100.0	90.3	96.8	77.4	54.8	93.5	12.9	87.1	100.0	DNA	64.5	96.8	83.9	100.0	100.0
Solar rad. 1hr (W/m ²)	Average	DNA	157.8	DNA	DNA	DNA	183.2	DNA	171.3	161.7	148.4	248.1	213.1	327.5	250.9	240.8
	Max	DNA	1006.5	DNA	DNA	DNA	826.7	DNA	852.0	804.7	751.1	947.1	906.8	963.6	921.4	995.7
	Min	DNA	996.3	DNA	DNA	DNA	9.3	DNA	0.1	0.1	8.6	0.0	0.0	0.1	0.0	0.0
	Data capture(%)	DNA	99	DNA	DNA	DNA	97	DNA	83	75	49	71.4	67.2	42.7	74.7	79.2
Relative Humidity 1hr (%)	Average	52.3	66.6	DNA	DNA	64.1	80.4	DNA	66.2	56.4	87.6	80.4	88.3	84.0	91.9	46.9
	Max	94.2	90.3	DNA	DNA	95.3	95.0	DNA	72.0	90.2	95.8	98.0	99.4	99.5	99.5	74.1
	Min	26.4	29.6	DNA	DNA	57.1	53.0	DNA	55.0	28.9	63.6	46.4	53.8	48.1	43.1	19.1
	Data capture(%)	64.7	99.2	DNA	DNA	43	37	DNA	84	96	47	59.1	92.2	69.8	88.2	98.8
Ambient Temp. 1hr (degreeC)	Average	27.2	33.2	DNA	DNA	28.1	32.8	DNA	31.2	31.8	30.4	27.4	27.1	27.6	27.6	27.2
	Max	33.5	41.9	DNA	DNA	33.9	42.0	DNA	38.4	36.6	39.4	33.7	33.8	34.2	35.1	33.9
	Min	18.0	21.1	DNA	DNA	20.5	12.3	DNA	21.2	19.2	16.2	19.2	18.2	16.4	19.0	18.8
	Data capture(%)	73.0	99	DNA	DNA	43	19	DNA	84	96	49	96.1	92.2	68.5	100.0	98.5
Rainfall 1hr (mm)	Average	DNA	DNA	DNA	DNA	0.29	DNA	DNA	DNA	2.65	0.52	DNA	0.06	DNA	DNA	DNA
	Max	DNA	DNA	DNA	DNA	2.83	DNA	DNA	DNA	3.32	1.22	DNA	0.41	DNA	DNA	DNA
	Min	DNA	DNA	DNA	DNA	0.15	DNA	DNA	DNA	0.04	0.03	DNA	0.01	DNA	DNA	DNA
	Data capture(%)	DNA	DNA	DNA	DNA	19.22	DNA	DNA	DNA	44.22	49.46	DNA	54.57	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 May, 2022

Date	Dhaka	Chattogram	Gazipur	Narayanganj	Sylhet	Khulna	Rajshahi	Barishal	Savar	Mymensingh	Rangpur	Cumilla	Norshindi
01-05-2022	156	62	145	DNA	67	83	105	DNA	162	125	DNA	73	114
02-05-2022	117	90	102	DNA	64	86	96	DNA	129	134	DNA	76	112
03-05-2022	102	87	127	DNA	59	45	48	DNA	104	128	DNA	65	120
04-05-2022	88	79	92	DNA	80	DNA	DNA	DNA	106	83	106	46	58
05-05-2022	103	91	94	DNA	DNA	75	89	DNA	114	117	136	45	61
06-05-2022	106	92	114	DNA	DNA	DNA	65	158	134	141	164	53	79
07-05-2022	171	80	143	127	DNA	DNA	88	DNA	DNA	144	184	72	142
08-05-2022	223	120	156	213	141	86	122	104	180	156	177	94	132
09-05-2022	132	67	129	48	73	68	86	41	127	146	91	49	107
10-05-2022	120	48	64	47	33	21	88	28	93	77	97	36	33
11-05-2022	116	72	94	63	DNA	33	47	45	105	83	129	47	49
12-05-2022	123	65	127	69	DNA	51	80	79	121	127	DNA	41	46
13-05-2022	117	91	93	72	DNA	42	67	92	114	84	62	39	55
14-05-2022	120	82	100	77	DNA	30	70	69	103	96	DNA	46	70
15-05-2022	92	53	84	62	DNA	26	61	56	85	57	129	34	52
16-05-2022	107	35	95	70	DNA	30	76	DNA	91	123	103	93	51
17-05-2022	104	41	82	55	DNA	29	59	DNA	104	99	103	55	111
18-05-2022	86	28	69	60	DNA	24	48	24	73	98	128	100	49
19-05-2022	106	37	78	80	DNA	42	51	36	70	87	90	62	35
20-05-2022	159	55	107	DNA	DNA	DNA	102	DNA	120	DNA	92	111	65
21-05-2022	146	71	104	98	DNA	38	76	40	95	DNA	84	93	53
22-05-2022	160	64	104	78	DNA	56	132	44	146	118	124	127	102
23-05-2022	160	80	100	110	DNA	105	135	58	160	119	166	137	75
24-05-2022	178	84	131	161	DNA	88	104	68	158	183	166	173	127
25-05-2022	182	48	141	111	DNA	79	117	47	178	161	170	110	83
26-05-2022	148	91	177	124	DNA	124	108	61	155	148	163	137	88
27-05-2022	187	84	132	104	DNA	103	133	74	184	150	174	138	95
28-05-2022	192	84	DNA	119	DNA	107	153	54	166	144	153	139	92
29-05-2022	173	69	161	120	DNA	137	120	73	164	145	143	137	89
30-05-2022	208	63	128	119	DNA	159	115	81	171	143	156	135	93
31-05-2022	167	65	156	114	DNA	112	115	77	162	166	179	145	102

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