



Air Quality Monthly Report

April, 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.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 April, 2022

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

Parameter	Summary	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	1.7	DNA	DNA	DNA	5.3	1.7	DNA	1.8	4.5	DNA	0.7	3.6	2.3	1.4	1.5	
	Max	2.7	DNA	DNA	DNA	12.5	5.7	DNA	5.6	7.7	DNA	2.2	6.4	10.5	3.1	4.7	
	Min	0.8	DNA	DNA	DNA	1.3	0.3	DNA	0.3	0.9	DNA	0.4	1.0	0.4	0.2	0.1	
	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	0.0
	Data capture(%)	93.5	DNA	DNA	DNA	48.4	87.1	DNA	96.8	96.8	DNA	96.8	77.4	93.5	83.9	93.5	
NO ₂ -24 hr (ppb)	Average	5.4	7.5	0.3	0.3	11.3	6.0	10.4	2.9	6.8	0.2	7.8	9.7	6.5	2.8	7.6	
	Max	6.3	10.6	0.4	1.1	16.2	12.6	14.8	3.1	14.1	0.4	15.4	16.9	10.4	3.0	8.0	
	Min	4.4	1.5	0.1	0.1	4.5	2.0	6.8	2.6	4.6	0.1	5.0	4.7	3.2	2.8	7.2	
	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	0.0	0.0	0.0	
	Data capture(%)	96.8	83.9	38.7	90.3	38.7	87.1	96.8	87.1	96.8	45.2	96.8	87.1	58.1	96.8	96.8	
CO-8hr (ppm)	Average	0.7	1.7	0.9	DNA	1.8	0.7	3.7	2.9	0.9	DNA	1.3	0.6	1.2	0.7	1.3	
	Max	2.9	2.2	1.0	DNA	3.7	1.0	6.5	4.8	3.0	DNA	1.8	2.3	3.6	2.0	1.8	
	Min	0.1	1.3	0.8	DNA	0.7	0.5	2.3	1.3	0.4	DNA	0.0	0.2	0.0	0.1	1.0	
	Excedance(Hour)	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	
	Data capture(%)	98.7	3.4	3.2	DNA	5.8	3.2	98.8	5.1	99.1	DNA	79.2	86.8	92.3	98.9	96.5	
O ₃ -8hr (ppb)	Average	8.3	2.1	8.0	2.3	11.1	2.6	6.4	19.0	65.2	DNA	42.5	11.9	27.5	11.1	11.6	
	Max	13.5	5.2	11.8	2.9	34.6	2.7	12.8	57.6	96.2	DNA	82.8	41.9	59.8	41.2	42.7	
	Min	1.6	0.6	5.9	2.0	2.0	2.6	0.8	1.0	16.5	DNA	10.0	3.0	0.6	0.9	0.1	
	Excedance(Hour)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	153.0	DNA	7.0	0.0	0.0	0.0	0.0	
	Data capture(%)	55.8	69.2	3.2	12.4	42.6	3.2	63.6	99.1	96.6	DNA	99.1	86.6	84.8	98.9	76.1	
PM _{2.5} -24hr (ug/m ³)	Average	76.6	53.0	58.7	48.6	65.0	31.1	42.1	26.7	70.4	35.1	60.8	67.8	236.3	43.0	35.4	
	Max	149.7	75.3	102.9	259.5	89.9	51.6	71.7	45.1	192.6	119.7	84.3	112.6	414.9	129.9	77.6	
	Min	44.0	34.0	30.6	23.4	46.0	21.8	22.0	6.5	23.9	12.3	41.2	43.4	125.3	20.6	14.9	
	Excedance(Days)	23.0	4.0	8.0	2.0	8.0	0.0	3.0	0.0	11.0	2.0	13.0	13.0	29.0	4.0	2.0	
	Data capture(%)	96.8	96.8	90.3	93.5	48.4	87.1	96.8	96.8	96.8	48.4	96.8	87.1	93.5	96.8	96.8	
PM ₁₀ -24hr (ug/m ³)	Average	157.5	103.4	101.8	120.7	49.1	88.2	91.4	112.3	171.8	DNA	109.1	147.0	365.4	60.3	82.9	
	Max	244.2	133.5	186.8	392.8	194.9	124.1	255.8	188.8	287.4	DNA	152.9	204.5	551.7	87.4	131.2	
	Min	102.6	80.2	48.4	65.3	15.2	66.6	51.0	48.0	95.6	DNA	71.4	96.0	178.4	31.7	30.0	
	Excedance(Days)	12.0	0.0	3.0	1.0	1.0	0.0	1.0	4.0	20.0	DNA	1.0	11.0	29.0	0.0	0.0	
	Data capture(%)	96.8	96.8	96.8	83.9	48.4	67.7	90.3	96.8	96.8	DNA	96.8	87.1	93.5	96.8	96.8	
Solar rad. 1hr (W/m ²)	Average	125.71	158.3	13.5	DNA	511.9	182.2	DNA	157.3	187.5	147.2	289.5	227.0	183.3	279.8	293.6	
	Max	334.6	1019.9	14.0	DNA	527.9	762.6	DNA	729.3	805.0	715.9	932.9	876.2	619.6	836.1	939.1	
	Min	0.1	999.3	13.2	DNA	441.8	9.2	DNA	0.4	0.1	8.3	0.0	0.0	0.1	0.0	0.0	
	Data capture(%)	2	96	3	DNA	3	86	DNA	98	70	77	63.4	61.3	49.3	68.4	72.0	
Relative Humidity 1hr (%)	Average	41.2	63.3	DNA	DNA	62.7	78.8	DNA	66.4	62.8	84.4	77.2	85.2	91.7	88.2	52.8	
	Max	78.3	89.1	DNA	DNA	96.4	95.0	DNA	72.0	90.7	95.7	98.0	99.3	99.7	99.4	73.0	
	Min	20.7	25.5	DNA	DNA	57.2	48.2	DNA	58.1	41.5	61.6	39.9	39.7	40.2	54.3	18.9	
	Data capture(%)	67.9	98.4	DNA	DNA	32	42	DNA	98	98	77	89.9	90.3	98.9	71.6	100.0	
Ambient Temp. 1hr (degreeC)	Average	26.3	33.7	DNA	DNA	26.2	32.2	DNA	30.8	29.0	30.5	28.2	27.2	14.2	28.0	27.5	
	Max	34.1	41.9	DNA	DNA	29.7	42.0	DNA	39.7	39.6	40.8	34.7	33.7	24.6	34.1	33.1	
	Min	18.3	20.3	DNA	DNA	14.9	16.2	DNA	18.2	14.7	13.9	16.6	16.6	13.4	16.3	16.0	
	Data capture(%)	62.8	98	DNA	DNA	34	25	DNA	98	98	77	94.4	89.9	96.1	98.9	100.0	
Rainfall 1hr (mm)	Average	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	1.93	0.54	DNA	0.10	DNA	DNA	DNA	
	Max	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	3.35	1.15	DNA	4.37	DNA	DNA	DNA	
	Min	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0.04	0.01	DNA	0.01	DNA	DNA	DNA	
	Data capture(%)	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	25.40	76.61	DNA	75.54	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 April, 2022

Date	Dhaka	Chattogram	Gazipur	Narayangonj	Sylhet	Khulna	Rajshahi	Barishal	Savar	Mymensingh	Rangpur	Cumilla	Norshindi
01-04-2022	145	DNA	75	50	66	50	60	DNA	114	139	150	DNA	43
02-04-2022	150	83	142	117	104	76	145	DNA	160	145	158	119	98
03-04-2022	149	85	118	115	147	89	152	DNA	159	168	116	118	111
04-04-2022	139	79	97	88	70	62	111	DNA	116	133	147	108	69
05-04-2022	139	85	149	88	138	93	104	DNA	134	149	147	110	97
06-04-2022	148	81	147	121	109	90	121	DNA	151	166	154	150	107
07-04-2022	150	88	158	144	145	86	136	DNA	159	173	94	159	126
08-04-2022	146	83	158	111	158	84	159	DNA	160	179	124	131	106
09-04-2022	115	51	105	67	108	71	113	DNA	102	153	119	71	46
10-04-2022	130	55	121	91	81	49	115	DNA	110	112	107	58	44
11-04-2022	133	46	112	80	65	73	91	DNA	129	107	76	103	57
12-04-2022	134	83	122	100	99	40	112	DNA	142	143	119	117	61
13-04-2022	134	54	117	96	98	80	94	40	128	157	150	106	47
14-04-2022	101	60	95	65	65	73	126	37	113	121	149	65	38
15-04-2022	109	72	123	69	55	38	120	38	122	131	157	67	53
16-04-2022	123	60	111	73	65	64	140	37	116	109	157	79	54
17-04-2022	112	55	88	64	92	63	136	35	111	120	147	85	40
18-04-2022	117	56	96	64	79	65	98	DNA	113	124	120	90	41
19-04-2022	144	80	107	80	96	75	103	DNA	132	139	127	68	76
20-04-2022	145	DNA	75	50	66	50	60	DNA	114	139	150	DNA	43
21-04-2022	169	DNA	125	102	81	103	106	63	153	139	DNA	71	102
22-04-2022	142	DNA	144	74	60	28	89	52	156	183	DNA	62	107
23-04-2022	171	DNA	154	112	98	128	127	79	156	139	DNA	52	122
24-04-2022	143	56	120	DNA	110	60	185	DNA	139	181	206	62	84
25-04-2022	151	72	175	DNA	112	103	169	DNA	142	160	190	84	88
26-04-2022	160	110	137	DNA	116	82	124	DNA	159	169	171	74	85
27-04-2022	162	114	146	DNA	125	78	123	69	157	155	127	70	121
28-04-2022	172	138	183	124	126	75	111	75	172	181	119	72	126
29-04-2022	156	90	143	DNA	102	79	159	78	166	206	152	85	119
30-04-2022	148	76	97	DNA	67	68	75	87	134	116	118	87	100

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