



Air Quality Monthly Report

July, 2023



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

Table of Content

- Introduction
- Standards of Ambient Air Quality
- Location Map of Air Monitoring Station
- Station Information
- Summary of Components

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.Barria (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 July, 2023

Table 5: Summary of components_ Month of July, 2023

Parameter	Summary	DoE	BARC	Darus-salam, Dhaka	Gazipur	Narayanganj	TV-Station, Chattagram	Agrabad, Chattagram	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Narsingdi	
SO ₂ -24 hr (ppb)	Average	15.5	3.6	11.8	16.4	8.8	4.1	5.9	5.8	10.6	5.0	9.8	1.4	1.0	9.3	5.8	1.2	
	Max	37.3	6.7	12.3	24.4	10.7	5.3	6.5	15.2	26.6	5.0	11.2	3.2	1.1	11.0	11.1	6.2	
	Min	4.5	1.5	11.3	15.5	7.9	2.9	5.1	0.8	0.7	5.0	8.5	0.2	0.9	6.7	3.5	0.1	
	Excedance(Days)	2.0	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	0.0	0.0
	Data capture(%)	87.1	100.0	38.7	48.4	54.8	71.0	100.0	87.1	100.0	100.0	6.5	87.1	90.3	100.0	100.0	93.5	
NO ₂ -24 hr (ppb)	Average	3.1	62.6	3.1	0.2	DNA	8.9	5.6	DNA	3.9	4.1	1.0	0.1	6.3	0.5	7.0	8.6	
	Max	4.5	148.8	5.1	0.2	DNA	45.6	9.8	DNA	10.4	6.1	3.3	0.3	7.2	0.7	7.9	9.0	
	Min	2.0	5.8	2.0	0.2	DNA	0.6	3.1	DNA	1.8	2.8	0.4	0.1	0.6	0.2	6.1	7.3	
	Excedance(Days)	0.0	13.0	0.0	0.0	DNA	1.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Data capture(%)	90.3	77.4	100.0	90.3	DNA	74.2	100.0	DNA	45.2	61.3	71.0	93.5	71.0	12.9	67.7	35.5	
CO-8hr (ppm)	Average	1.5	1.6	1.6	4.4	0.6	1.3	15.9	2.3	2.3	2.0	DNA	0.8	1.1	0.8	8.6	0.2	
	Max	2.8	4.4	2.8	12.6	0.7	2.1	26.1	5.1	6.2	9.9	DNA	1.3	1.6	65.3	11.6	0.5	
	Min	0.0	0.5	0.9	0.0	0.6	0.5	1.8	2.3	0.1	0.1	DNA	0.2	0.5	0.1	6.8	0.1	
	Excedance(Hour)	0.0	3.0	0.0	12.0	0.0	0.0	97.0	1.0	99.0	24.0	DNA	0.0	0.0	7.0	334.0	0.0	
	Data capture(%)	50.9	99.1	99.1	4.0	37.0	99.1	13.7	39.9	96.1	96.2	DNA	96.6	87.5	100.0	44.9	99.1	
O ₃ -8hr (ppb)	Average	DNA	7.5	3.3	36.4	3.0	23.3	5.0	2.4	9.8	17.3	112.6	26.4	36.1	51.2	7.7	14.1	
	Max	DNA	29.6	7.0	43.1	4.8	40.9	5.3	3.6	23.9	26.9	117.5	54.6	119.6	116.6	51.0	24.9	
	Min	DNA	4.3	0.1	32.5	2.6	10.6	4.7	0.1	4.3	11.5	104.7	1.6	2.3	12.3	0.2	5.2	
	Excedance(Hour)	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	8.0	124.0	338.0	1.0	0.0	
	Data capture(%)	DNA	99.1	95.4	83.7	84.1	99.1	80.2	60.2	97.3	98.9	3.5	96.5	54.6	97.4	97.0	76.3	
PM _{2.5} -24hr (ug/m3)	Average	17.8	44.0	26.4	27.6	14.3	10.7	19.9	25.6	10.5	27.1	46.0	29.7	38.0	36.8	35.3	13.2	
	Max	31.7	250.0	42.3	45.8	23.9	27.8	66.3	72.7	23.7	61.6	118.7	89.0	59.7	55.1	105.2	26.4	
	Min	5.5	17.2	15.4	15.9	9.1	5.2	9.1	9.5	6.3	12.2	9.8	9.2	22.3	20.1	12.9	6.8	
	Excedance(Days)	0.0	1.0	0.0	0.0	0.0	0.0	1.0	2.0	0.0	0.0	6.0	1.0	0.0	0.0	4.0	0.0	
	Data capture(%)	100.0	100.0	100.0	77.4	83.9	100.0	100.0	83.9	100.0	96.8	67.7	100.0	90.3	100.0	90.3	100.0	
PM ₁₀ -24hr (ug/m3)	Average	42.3	86.0	68.9	50.9	63.3	34.3	54.9	DNA	20.8	47.0	27.1	56.9	112.3	47.2	27.9	55.4	
	Max	70.0	129.8	369.3	88.1	233.0	45.9	115.2	DNA	30.4	81.0	37.2	107.9	157.7	90.7	70.2	169.5	
	Min	24.5	39.8	34.3	27.4	33.1	24.3	25.1	DNA	10.7	14.7	19.3	25.2	65.4	13.2	16.9	13.8	
	Excedance(Days)	0.0	0.0	1.0	0.0	1.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	4.0	0.0	0.0	1.0	
	Data capture(%)	100.0	100.0	100.0	90.3	90.3	80.6	100.0	DNA	100.0	77.4	61.3	100.0	90.3	100.0	32.3	96.8	
Solar rad. 1hr (W/m2)	Average	DNA	266.55	160.8	2.4	DNA	471.4	207.9	DNA	251.2	882.7	137.2	290.3	202.9	259.5	252.2	306.3	
	Max	DNA	742.4	1004.4	34.2	DNA	524.3	873.5	DNA	916.4	984.8	775.5	1003.4	951.3	921.2	979.4	1062.5	
	Min	DNA	0.1	980.1	0.8	DNA	20.8	9.4	DNA	0.0	810.6	8.4	0.0	0.0	0.1	0.0	0.0	
	Excedance(Days)	DNA	38	97	86	DNA	91	99	DNA	48	83	67	66.0	77.7	59.5	70.7	72.2	
	Data capture(%)	DNA	38	97	86	DNA	91	99	DNA	48	83	67	66.0	77.7	59.5	70.7	72.2	
Relative Humidity 1hr (%)	Average	DNA	75.8	74.5	DNA	DNA	62.0	77.5	DNA	61.1	90.1	83.2	79.1	93.9	86.8	96.9	42.0	
	Max	DNA	100.0	93.9	DNA	DNA	97.9	97.8	DNA	71.9	95.6	85.2	100.0	99.4	99.6	99.7	62.8	
	Min	DNA	39.5	48.6	DNA	DNA	57.1	48.2	DNA	58.4	71.4	70.9	51.1	64.4	54.5	61.7	20.6	
	Excedance(Days)	DNA	57.9	99.7	DNA	DNA	99	99	DNA	81	94	67	38.6	100.0	97.0	96.4	100.0	
	Data capture(%)	DNA	57.9	99.7	DNA	DNA	99	99	DNA	81	94	67	38.6	100.0	97.0	96.4	100.0	
Ambient Temp. 1hr (degreeC)	Average	DNA	21.8	28.8	DNA	DNA	29.4	28.8	DNA	30.6	32.8	31.2	28.9	28.7	28.8	28.7	28.9	
	Max	DNA	31.2	33.3	DNA	DNA	34.6	43.0	DNA	36.2	38.2	38.4	35.5	35.3	35.0	35.7	34.9	
	Min	DNA	7.0	25.2	DNA	DNA	25.4	7.3	DNA	27.0	26.7	25.4	23.8	24.2	24.6	24.6	23.4	
	Excedance(Days)	DNA	56.5	63	DNA	DNA	100	69	DNA	81	94	67	96.6	100.0	89.5	87.8	98.5	
	Data capture(%)	DNA	56.5	63	DNA	DNA	100	69	DNA	81	94	67	96.6	100.0	89.5	87.8	98.5	
Rainfall 1hr (mm)	Average	DNA	DNA	0.75	0.04	DNA	6.71	DNA	DNA	DNA	0.01	0.31	0.06	0.41	0.06	0.02	0.14	
	Max	DNA	DNA	0.80	0.04	DNA	7.52	DNA	DNA	DNA	0.01	0.98	0.62	4.06	0.45	0.06	0.91	
	Min	DNA	DNA	0.16	0.02	DNA	0.56	DNA	DNA	DNA	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
	Excedance(Days)	DNA	DNA	99.73	47.72	DNA	66.67	DNA	DNA	DNA	0.13	62.10	3.90	66.26	5.24	2.02	4.97	
	Data capture(%)	DNA	DNA	99.73	47.72	DNA	66.67	DNA	DNA	DNA	0.13	62.10	3.90	66.26	5.24	2.02	4.97	

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 July, 2023

Date	Dhaka	Chittagong	Gazipur	Narayangonj	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Narsingdi
01-07-23	64	44	74	76	58	48	88	DNA	72	DNA	101	73	62
02-07-23	72	31	DNA	DNA	51	42	95	DNA	72	DNA	140	77	54
03-07-23	74	39	DNA	DNA	65	56	85	DNA	78	114	121	88	61
04-07-23	70	28	90	71	92	54	86	DNA	79	99	95	69	66
05-07-23	63	47	64	42	73	52	58	DNA	75	123	131	55	48
06-07-23	67	32	65	52	40	38	46	DNA	71	95	84	58	46
07-07-23	66	30	64	52	36	27	46	DNA	71	117	77	52	38
08-07-23	68	32	69	42	45	32	94	DNA	71	96	79	57	44
09-07-23	87	49	91	54	38	30	92	DNA	74	85	82	60	57
10-07-23	75	54	112	57	49	34	88	DNA	82	141	93	53	58
11-07-23	82	52	101	53	61	35	86	DNA	89	132	110	72	48
12-07-23	66	40	80	43	53	DNA	52	DNA	67	103	98	60	41
13-07-23	66	43	85	50	48	37	59	DNA	91	102	84	50	46
14-07-23	78	33	DNA	42	36	31	58	DNA	97	73	83	52	35
15-07-23	80	42	52	38	44	38	54	41	87	DNA	DNA	45	31
16-07-23	95	32	64	56	64	26	59	51	92	92	68	62	32
17-07-23	107	44	71	74	64	57	73	46	96	98	67	76	67
18-07-23	108	52	98	61	69	DNA	85	54	105	96	87	77	37
19-07-23	94	51	79	55	53	25	65	43	96	110	141	85	36
20-07-23	86	41	72	54	55	28	57	37	114	117	130	91	39
21-07-23	79	46	60	57	54	38	63	36	80	74	123	95	63
22-07-23	87	56	70	60	DNA	32	63	47	85	DNA	110	DNA	49
23-07-23	82	48	82	57	84	42	85	34	90	117	107	86	55
24-07-23	85	52	101	59	82	43	92	41	50	127	130	118	65
25-07-23	85	47	85	56	84	48	134	42	38	138	132	119	69
26-07-23	84	34	58	41	40	39	76	DNA	65	115	105	98	45
27-07-23	90	52	52	56	38	42	77	38	70	112	102	96	49
28-07-23	71	46	72	54	46	37	73	38	70	112	86	98	47
29-07-23	93	52	80	52	40	39	85	DNA	102	92	81	87	52
30-07-23	115	47	81	78	DNA	36	101	DNA	DNA	116	132	119	68
31-07-23	94	60	111	78	DNA	46	113	DNA	106	109	144	97	66

CONTACT US

Call us: (+880)222218569;

E-mail us: aqm.doe@gmail.com

Department of Environment, Ministry of Environment, Forest and Climate Change; Bangladesh.

Know more about us: <http://www.doe.portal.gov.bd>