



Air Quality Monthly Report

September, 2024



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

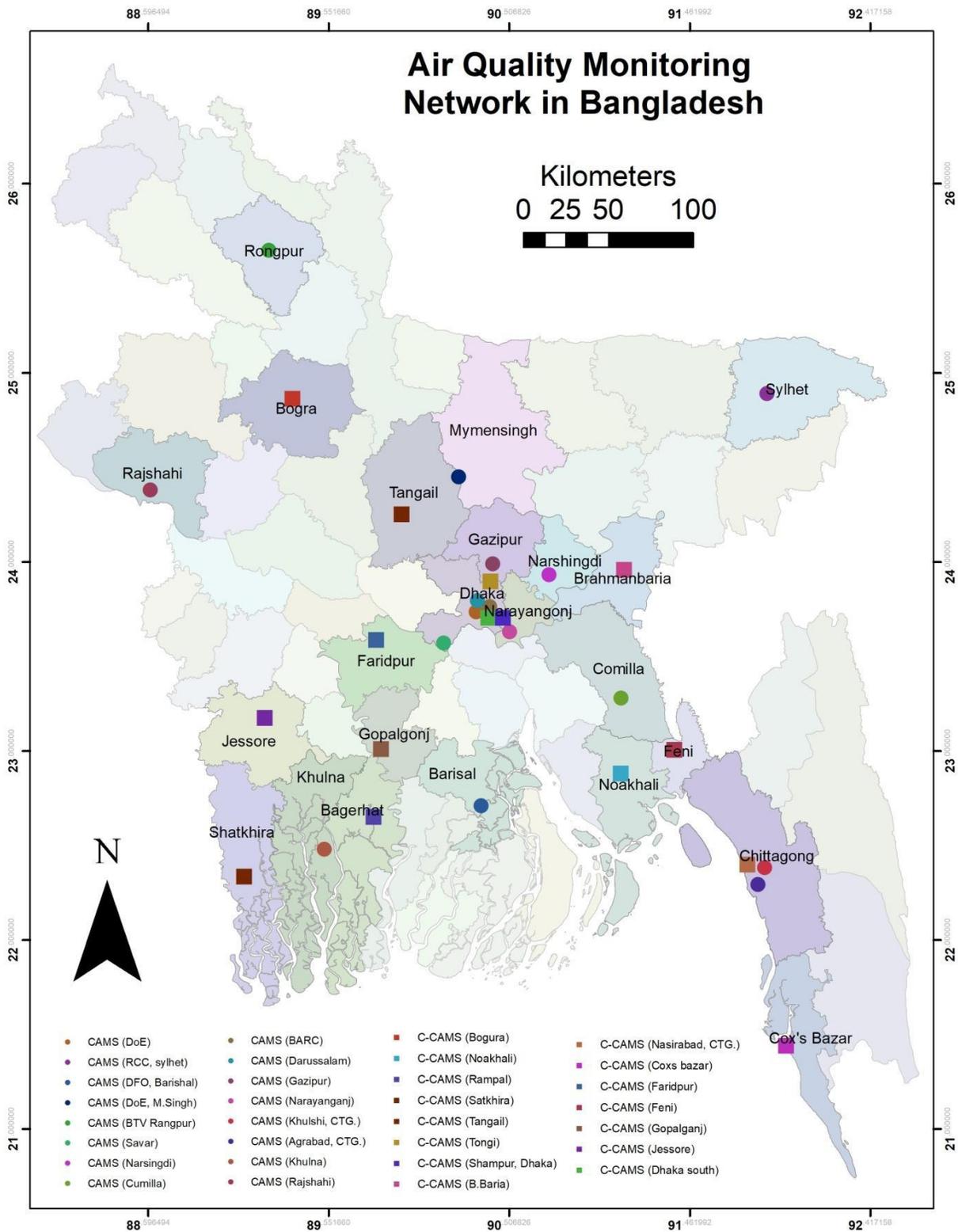
Pollutant	Limit Value	Averaging time
CO	5 mg/m ³	8 hours ^a
	20 mg/m ³	1 hour ^a
Pb	0.25 µg/m ³	Annual
	0.50 µg/m ³	24 hours
NO _x	40 µg/m ³	Annual
	80 µg/m ³	24 hours
PM ₁₀	50 µg/m ³	Annual ^b
	150 µg/m ³	24 hours ^c
PM _{2.5}	35 µg/m ³	Annual
	65 µg/m ³	24 hours
O ₃	180 µg/m ³	1 hour ^d
	100 µg/m ³	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 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	Nagor 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 September, 2024

Table 5: Summary of components, Month of September, 2024

Parameter	Summary	DoE	BARC	Darus-salam, Dhaka	Gazipur	Narayanganj	TV-Station, Chattagram	Agrahad, Chattagram	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Narshingdi	
SO ₂ -24 hr	Average	6.9	6.4	6.6	8.0	DNA	1.4	6.5	8.9	8.5	6.4	5.5	6.7	3.9	5.5	1.0	2.3	
	Max	12.8	14.3	6.7	9.5	DNA	4.1	8.1	12.0	14.0	15.0	7.1	18.0	19.0	12.9	1.8	6.7	
	Min	1.7	3.2	6.5	5.7	DNA	0.3	5.3	8.1	1.6	2.4	4.7	1.1	1.6	1.7	1.0	0.4	
	Excedance(Days)	0.0	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	0.0
	Data capture(%)	90.3	96.8	96.8	80.6	DNA	80.6	41.9	67.7	83.9	96.8	93.5	96.8	96.8	77.4	96.8	67.7	
NO ₂ -24 hr	Average	3.9	27.4	2.7	0.2	5.8	5.8	3.4	3.3	1.7	3.9	1.7	6.9	11.8	4.8	2.5	3.1	
	Max	9.2	37.8	5.3	0.2	9.3	18.6	4.5	5.9	1.8	4.0	4.9	14.6	17.5	9.9	5.1	6.8	
	Min	2.4	14.4	0.9	0.2	1.6	0.1	1.4	1.2	1.6	3.5	0.7	0.1	4.0	2.8	1.4	0.1	
	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	0.0	0.0
	Data capture(%)	90.3	96.8	96.8	61.3	93.5	77.4	41.9	96.8	96.8	96.8	93.5	90.3	71.0	96.8	96.8	77.4	
CO-8hr	Average	2.0	2.2	1.4	1.4	1.0	0.6	0.9	1.7	2.1	1.9	DNA	1.6	1.8	1.1	1.3	1.1	
	Max	2.9	4.5	2.2	3.7	1.1	1.9	2.9	3.5	2.1	5.1	DNA	3.2	2.8	4.0	1.9	4.9	
	Min	1.2	0.1	1.1	0.9	0.8	0.0	0.4	0.9	2.1	0.2	DNA	1.2	0.2	0.1	0.5	0.5	
	Excedance(Hour)	0.0	144.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	DNA	0.0	0.0	0.0	0.0	1.0	
	Data capture(%)	96.8	93.1	96.9	21.4	88.8	71.8	40.1	95.8	0.1	64.7	DNA	96.8	96.0	93.0	96.8	70.0	
O ₃ -8hr	Average	DNA	6.0	2.3	7.2	5.2	14.4	2.6	0.6	12.9	25.2	3.9	24.3	34.0	16.0	6.6	8.1	
	Max	DNA	42.3	4.4	13.4	5.3	50.7	2.6	0.8	33.0	53.2	18.4	117.8	72.1	53.9	18.8	111.4	
	Min	DNA	0.1	2.2	5.4	5.1	4.1	2.6	0.1	6.4	6.4	1.0	0.2	2.2	2.7	0.4	0.4	
	Excedance(Hour)	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	147.0	57.0	4.0	0.0	10.0	
	Data capture(%)	DNA	93.7	96.9	62.0	37.8	73.5	0.1	77.8	96.9	96.8	61.0	96.9	95.8	94.0	74.5	70.4	
PM _{2.5} -24hr	Average	36.7	46.5	52.5	44.1	49.6	15.7	18.0	24.9	21.2	33.3	DNA	49.6	48.2	32.6	29.5	36.3	
	Max	91.7	128.7	132.0	110.6	118.8	37.8	37.6	73.6	52.7	73.1	DNA	110.4	82.9	66.3	72.7	94.0	
	Min	12.7	18.3	22.9	17.5	14.5	7.5	10.1	8.7	7.1	9.0	DNA	12.1	25.1	15.8	10.5	11.9	
	Excedance(Days)	1.0	5.0	6.0	4.0	7.0	0.0	0.0	1.0	0.0	2.0	DNA	8.0	4.0	1.0	1.0	2.0	
	Data capture(%)	96.8	96.8	87.1	71.0	74.2	80.6	41.9	83.9	96.8	80.6	DNA	96.8	96.8	90.3	96.8	87.1	
PM ₁₀ -24hr	Average	48.0	55.0	82.1	62.7	DNA	35.2	45.8	60.4	32.8	64.3	DNA	86.3	75.6	58.4	45.5	DNA	
	Max	96.5	77.9	178.4	171.2	DNA	108.1	66.9	145.4	73.2	137.9	DNA	191.1	146.7	133.8	107.8	DNA	
	Min	22.3	32.9	19.1	15.4	DNA	10.0	18.6	26.1	11.6	15.9	DNA	24.8	18.9	13.8	11.7	DNA	
	Excedance(Days)	0.0	0.0	1.0	1.0	DNA	0.0	0.0	0.0	0.0	0.0	DNA	2.0	0.0	0.0	0.0	DNA	
	Data capture(%)	96.8	41.9	96.8	77.4	DNA	80.6	41.9	93.5	96.8	96.8	DNA	96.8	96.8	48.4	93.5	DNA	
Solar rad. 1hr	Average	279.53	134.37	116.9	0.4	DNA	407.8	190.2	4.7	446.2	156.0	111.1	208.1	202.4	251.6	227.7	250.5	
	Max	485.49	813.3	1012.7	13.4	DNA	608.0	816.3	5.1	1987.3	970.6	778.5	879.7	967.9	981.2	891.8	1009.7	
	Min	21.03	0.1	980.4	0.0	DNA	20.1	7.5	3.8	1.4	0.0	6.0	0.0	0.0	0.1	0.0	0.0	
	Data capture(%)	95.03	91	95	19	DNA	46	40	94	43	54	90	64.7	65.1	57.0	66.5	48.9	
	Average	74.30	91.3	78.6	DNA	DNA	57.9	80.9	39.7	59.2	78.1	63.5	82.6	94.5	87.4	DNA	42.2	
Relative Humidity 1hr	Max	98.98	100.0	95.0	DNA	DNA	76.7	99.8	39.8	98.4	94.5	80.5	99.5	99.4	99.7	DNA	80.6	
	Min	41.75	33.8	50.7	DNA	DNA	46.0	56.3	39.6	45.0	15.7	57.5	36.8	58.5	54.8	DNA	15.4	
	Data capture(%)	95.03	94.8	96.2	DNA	DNA	69	40	94	97	88	90	95.8	92.3	92.7	DNA	73.4	
	Average	27.61	26.4	32.4	DNA	DNA	29.4	29.2	DNA	31.0	31.2	23.1	28.0	28.7	27.9	28.6	28.7	
	Max	40.68	33.6	36.4	DNA	DNA	35.4	43.0	DNA	36.9	38.2	32.4	34.9	35.8	35.6	36.4	34.9	
Ambient Temp. 1hr	Min	14.72	19.8	7.5	DNA	DNA	24.8	13.3	DNA	21.2	7.1	11.0	9.4	15.1	12.8	19.0	18.8	
	Data capture(%)	95.03	94.5	85	DNA	DNA	69	23	DNA	45	88	90	92.5	92.1	82.0	95.6	70.6	
	Average	DNA	5.18	0.63	0.01	DNA	4.12	0.01	DNA	DNA	62.34	0.29	4.15	4.55	4.48	0.43	1.54	
	Max	DNA	46.40	0.80	0.02	DNA	5.08	0.04	DNA	DNA	71.03	0.80	39.60	90.60	40.50	4.59	29.20	
	Min	DNA	0.20	0.20	0.01	DNA	1.52	0.01	DNA	DNA	0.20	0.01	0.30	0.30	0.05	0.03	0.05	
Rainfall 1hr	Data capture(%)	DNA	10.08	88.71	9.68	DNA	9.41	7.39	DNA	DNA	52.96	82.39	13.71	10.62	11.16	9.14	17.07	

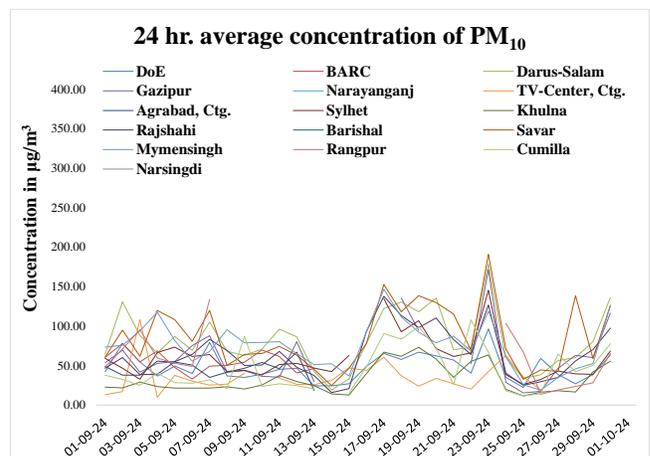
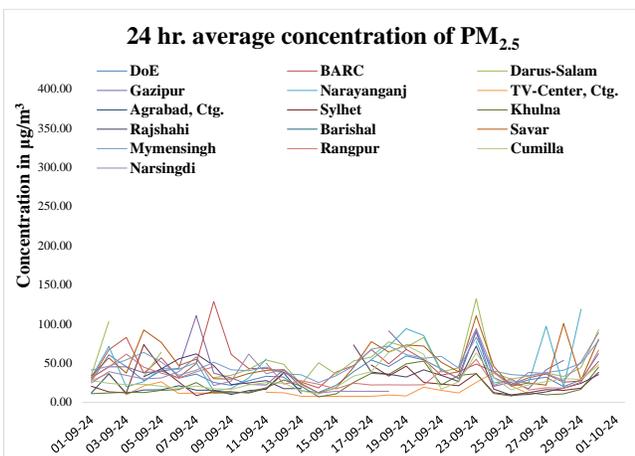
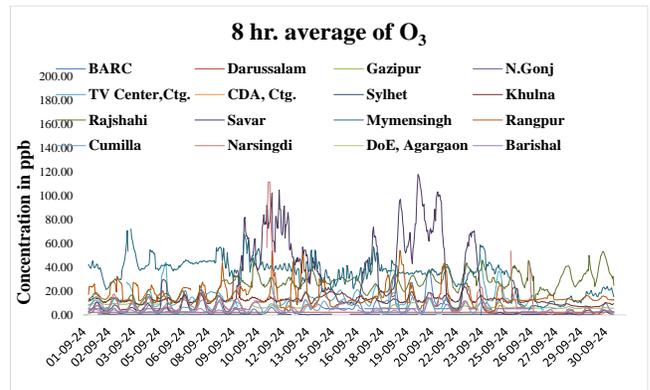
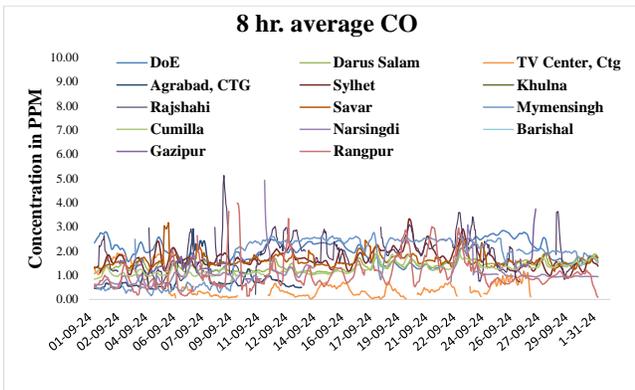
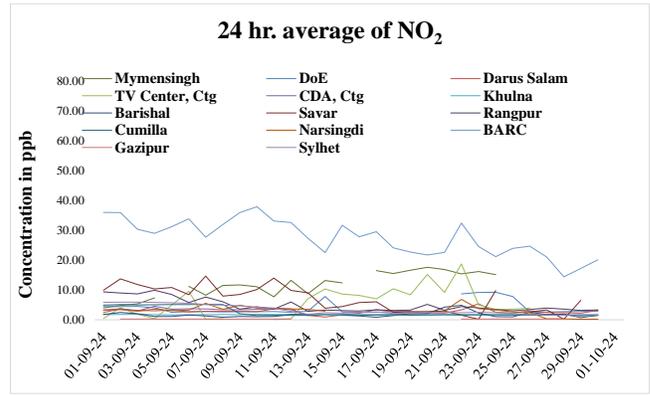
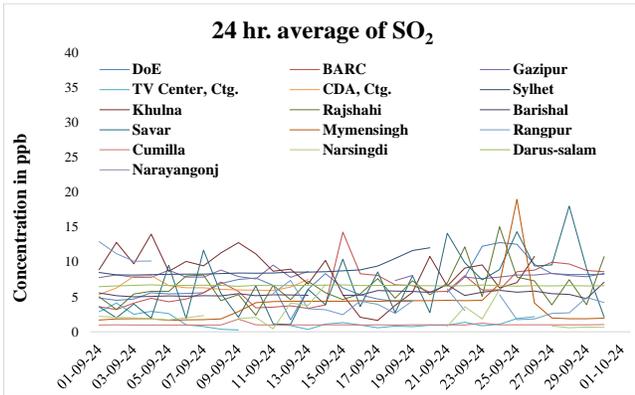
CAMS= Continuous Air Monitoring Station, NAAQS=National Ambient Air Quality Standard, a=Refurbishment CAMS, PM= Particulate Matter

DNA= Data Not Available

Table 6: Air Quality Index (AQI), Month of September, 2024

Date	Dhaka	Chittagong	Gazipur	Narayangonj	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Norshindi
01-09-24	87	44	89	73	67	43	44	DNA	96	110	83	81	75
02-09-24	152	98	119	162	53	51	54	DNA	144	123	107	77	103
03-09-24	135	44	106	60	38	51	34	DNA	101	142	145	71	95
04-09-24	95	52	123	100	77	48	78	DNA	122	152	133	74	86
05-09-24	122	51	112	98	83	55	97	DNA	145	130	104	67	90
06-09-24	90	69	120	94	61	68	129	DNA	98	91	91	63	108
07-09-24	141	55	155	125	37	78	152	DNA	148	114	108	68	145
08-09-24	86	57	76	58	52	51	131	DNA	88	144	143	61	68
09-09-24	82	39	67	64	53	42	69	DNA	88	111	DNA	58	81
10-09-24	118	53	71	101	81	63	80	DNA	113	123	148	79	105
11-09-24	116	70	122	DNA	81	84	37	DNA	116	DNA	58	75	114
12-09-24	116	70	122	DNA	81	84	37	DNA	116	DNA	58	75	114
13-09-24	82	19	105	102	DNA	DNA	51	DNA	76	DNA	115	53	71
14-09-24	69	DNA	DNA	DNA	DNA	24	27	DNA	47	DNA	77	41	53
15-09-24	94	DNA	DNA	DNA	DNA	45	59	DNA	64	107	59	69	45
16-09-24	122	DNA	DNA	DNA	DNA	77	72	DNA	115	119	DNA	94	55
17-09-24	151	DNA	DNA	148	131	104	107	DNA	161	156	DNA	109	DNA
18-09-24	138	DNA	165	156	96	100	101	DNA	DNA	159	DNA	154	DNA
19-09-24	155	DNA	156	162	111	134	95	DNA	159	153	DNA	159	DNA
20-09-24	151	DNA	DNA	155	79	143	110	DNA	159	150	DNA	153	DNA
21-09-24	97	DNA	DNA	113	74	72	88	DNA	147	152	DNA	60	DNA
22-09-24	108	DNA	99	118	70	98	77	DNA	111	121	DNA	79	122
23-09-24	162	DNA	162	162	78	103	129	DNA	179	164	124	154	171
24-09-24	101	DNA	68	54	51	47	62	DNA	126	111	87	91	110
25-09-24	74	DNA	82	DNA	37	31	43	DNA	69	78	58	59	69
26-09-24	89	DNA	62	67	51	51	48	DNA	78	97	58	72	107
27-09-24	99	DNA	115	DNA	51	35	57	DNA	72	106	64	81	103
28-09-24	81	DNA	132	66	57	45	65	DNA	76	114	63	89	84
29-09-24	90	DNA	DNA	99	63	53	53	DNA	85	130	79	87	135
30-09-24	153	DNA	84	75	75	124	100	DNA	163	162	139	131	167

Table 7: Graphical representation of Gaseous and Particulate matter.



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>