Report on Vehicular Emission Monitoring Program in Khulna, Jessore, Kustia and Rajshahi

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Introduction: Clean Air and Sustainable Environment (CASE) Project, Department of Environment (DoE), as part of its ongoing Vehicular Emission Testing (VET) activities, conducted a massive program in the West and South-West districts of Bangladesh during 08-12 July 2012. A total of 159 different types of vehicles were tested in the cities of Khulna, Jessore, Kustia and Rajshahi. Khulna Divisional Office and the district offices of the DoE helped organize the program in respective cities and the Air Quality Cell (AQC), DoE actively took part in the program. District Magistrates and the members of traffic police in respective cities were hired to penalize the polluting vehicles.

Vehicle Types and Characteristics: Non-motorized rickshaws, electricity-driven "tuktuk" and octane-run motorbikes dominate in number in all of the cities. Medium and heavy duty buses and trucks running on diesel were seen plying on the roads across the cities. Conditions of these buses and trucks are at the worse in terms of black smoke emission. A good number of two-stroke three wheelers run on the streets of the Khulna city. This type of two-stroke vehicles could be considered one of the major sources of air pollution in Khulna. CNG driven "baby taxies" were found running in the Rajshahi city.

= Location of VET

Instruments for Emission Testing: Automotive Gas Analyzer made by Horiba Instruments Ltd was used to measure concentrations of Carbon Monoxide (CO) and Hydrocarbon (HC) in the emission from Petrol/Octane/CNG vehicles. Both full and partial flow smoke opacity meters were used to measure smoke opacity of the emission from diesel vehicles.

Standards for the emissions: The Government of Bangladesh vide its Statutory Regulatory Order (SRO) no-220-law/2005 has set standards (Annex-1) for the emission concentration of different types of vehicles. Vehicles that emit less or equal than the standard value were termed as "Pass" and those whose emission exceed the standard value were termed as "Fail"

Table#1: Program Schedule

Date	Time	Location
08.07.2012	11:00 – 12:30	Nurnagar Junction, Khan A Sabur Road, Boira, Khulna
	14:30 – 16:30	B N College Junction, Khulna
09.07.2012	12:00 – 14:00	Jessor-Khulna Highway, Jessor
10.07.2012	11:00 – 14:00	Customs Junction, Kustia
11.07.2012	11:00 – 12:30	Talaimari, Rajshahi
	14:30 – 16:00	City Bypass Junction, Rajshahi
12.07.2012	12:30 – 14:30	Amtala, Rajshahi

Table#2: Emission Testing Results

DV=Diesel Vehicle, P/O/CV=Petrol/Octane/CNG Vehicle, TV= Total Vehicle, *P*/*F*= *Pass*/*Fail*

Location	DV	DV (P/*F*)	P/O/CV	P/O/CV (P/*F*)	TV	TV (P/*F*)
Nurnagar Junction, Khan A Sabur Road, Boira, Khulna	06	03/*03*	17	14/*03*	23	17/*06*
B N College Junction, Khulna	26	10/*16*	03	03/*00*	29	13/*16*
Jessor-Khulna Highway, Jessor	12	02/*10*	02	02/*00*	14	04/*10*
Customs Junction, Kustia	28	08/*20*	14	11/*03*	42	19/*23*
City Bypass Junction, Rajshahi	14	03/*11*	00	00	14	03/*11*
Amtala, Rajshahi	11	02/*09*	01	01/*00*	12	03/*09*
	22	05/*17*	03	01/*02*	25	06/*19*
Total	**119**	33/*86*	**40**	32/*08*	**159**	65/*94*

Table#3: Penalty/Fine

Location	Total Vehicle	No of vehicles violated standard value	On-spot fine (Tk)	Case filed by the Police	Comments
Khulna	52	22	9000.00	08	
Jessor	14	10	4500.00	00	
Kustia	42	23	1600.00	04	
Rajshahi	51	39	27700.00	04	Police took a truck to their custody
Total	**159**	**94**	**42800.00**	**16**	

Picture#1: Pictures on Vehicular Emission Testing Activities

Annex-1

In-service Vehicular Emission Standards for Bangladesh

Registration Before 1st September 2004					
Vehicle Type	Fuel	Test	CO (% by Vol)	HC (ppm)	Smoke Opacity (HSU)
All 4-wheeled Vehicles	Petrol/ Octane	Idle Speed	4.5	1200	--
2-Stroke, 2 or 3 wheelers	Petrol/ Octane	Idle Speed	7.0	12000	--
4-Stroke, 2 or 3 wheelers	Petrol/ Octane	Idle Speed	7.0	3000	--
All CNG Vehicles	CNG	Idle Speed	3.0	--	--
All Diesel Vehicles	Diesel	Free Acceleration	--	--	65
Registration After 1st September 2004					
All 4-wheeled Vehicles	Petrol/ Octane	Idle Speed	1.0	1200	--
	CNG	Idle Speed	1.0	1200	--
4-Stroke, 2 or 3 wheelers	Petrol/ Octane	Idle Speed	4.5	1200	--
All CNG 3 wheelers	CNG	Idle Speed	3.0	--	--
All Diesel Vehicles	Diesel	Free Acceleration	--	--	65

Vehicle Type	**Registration**	**Fuel**	**Test**	**CO (% v)**	**HC (ppm)**
All Type	Before 1 Sept 2004	CNG	Idle	3.0	-
4-S Two/Three Wheeler	After 1 Sept 2004	CNG	Idle	3.0	-
Four Wheelers	After 1 Sept 2004	CNG	Idle	1.0	1200