

ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT TOWNS

Name of City/Town: Byrnihat including EPIP Industrial Area

District: Ri-Bhoi, Meghalaya.

**PREPARED BY
AIR QUALITY MONITORING COMMITTEE
MEGHALAYA**

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The Meghalaya State Pollution Control Board is operating the following 10(ten) nos. of Ambient Air Quality Monitoring stations in the State as part of the air quality network under National Air Monitoring Programme (NAMP), a Centrally CPCB sponsored programme.

1. State Board's Premises, Shillong (established during 1989)
2. State central library (established during 1989) shifted to Police Bazar then to Barik, Shillong
3. Upper Shillong (established during 2016)
4. Polo, Shillong (established during 2016)
5. Tura, West Garo Hills District (established during 2010)
6. Nongstoin, West Khasi Hills District (established during 2011)
7. Khliehriat, Jaintia Hills District (established during 2011)
8. Export Promotion Industrial Park, Byrnihat, Ri-Bhoi District (established during 2009)
9. Umiam industrial estate, Ri-Bhoi District (established during 2009)
10. Dawki, Jaintia Hills District (established during 2009)

Under the programme 3 (three) pollutants viz. Sulphur Dioxide (SO_2), Oxides of Nitrogen (NO_x), Particulate Matter (PM_{10}) has been monitoring regularly from the stations. Monitoring is being carried out for 24 hours (4 hourly sampling for gaseous pollutants & 8 hourly sampling for particulate matter). The monitoring of meteorological parameters such as wind speed and direction, relative humidity and temperature was also integrated with the monitoring of the air quality. Air quality monitoring Data is regularly submitted on monthly basis to for compilation and interpretation.

Based on the Air monitoring data, the level of Particulate Matter (PM_{10}) were observed to be exceeding the National Ambient Air Quality Standards (NAAQS), 2009 consecutively during 2011-2015, Byrnihat including EPIP Industrial Area is declared as non-attainment towns by CPCB.

The air quality generated over the years in the monitored station reveal that PM_{10} (Particulate Matter) concentration exceeds the National Ambient Air Quality Standard (Annual Average). High concentrations of Particulate Matter (PM_{10}) levels may be attributable to the build-up of pollutants owing to emissions from industries located in the industrial area, emission from vehicle, dust generated due to movement of vehicles, natural dust and construction activities.

Therefore, in order to prevent further deterioration and improvement of the ambient air quality in the area there is an immediate need for taking necessary preventive and control measures to reduce the emission/pollutants at source.

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Air Pollution Concerns: PM₁₀

Sl.No.	Source Group	Control Option	Implementation Period (Short/Mid/Long term)	Time target for Implementation	Responsible Agencies	Any other information
1.	Vehicles	Prevent parking of vehicles in the non-designated areas	long term	Regular activity	Superintendent of Police	
		Synchronize traffic movements/introduce intelligent traffic systems for lane-driving				
		Launch extensive drive against polluting vehicles for ensuring strict compliance - Strict vigilance and no tolerance for visible emissions – stop plying of visibly polluting vehicles by impounding or heavy fine.	long term	Regular activity	Superintendent of Police / District Transport Officer	
		Introduction of public transport system in Byrnihat - Nongpoh route section	Long term	180 Days	Urban Affairs Deptt under JNNURM	
		Introduction of electric vehicle in Byrnihat - Nongpoh route section	Long term	180 Days	Transport Deptt	
		Introducing of Mobile Vehicular Emission Testing unit in Nongpoh-Byrnihat section	Long term	180 Days		
		Maintaining and enforcing of permissible loading limits of vehicle	Long term	180 Days		
		Launch public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicles, lane discipline, etc	*long term	Regular activity		
		Setting up of Pollution under Control (PUC) certification Centres	Long term	180 Days	District Transport Officer	
		Strict vigilance and enforcement of PUC norms and Link PUC certificates with annual vehicle insurance to ensure 100 % compliance.	long term	180 Days		
2.	Road	Prepare action plan to check fuel adulteration and random monitoring of fuel quality data	Short term	30 days	Deputy Commissioner (Supply)	
		Control measures for fugitive emissions from material	Long term	Regular activity	District Administration/	

Sl.No.	Source Group	Control Option	Implementation Period (Short/Mid/Long term)	Time target for Implementation	Responsible Agencies	Any other information
	Dust	handling, conveying and screening operations through water sprinkling, curtains, barriers and dust suppression units; Ensure carriage of construction material in closed/covered vessels Blacktopping of metalled road including pavement of road shoulders Prepare plan for widening of road and improvement of infrastructure for decongestion of road Prepare plan for construction of expressways/bypasses to avoid congestion due to non-destined vehicles Maintain potholes free roads for free-flow of traffic	Short term Long term Long term Long term Long term	90 days 180 days 180 days 180 days 180 days	Executive Engineer, Public Works Department (Rds), / Meghalaya Industrial Development Co-operation in Industrial Area/Industries Department	
		Prepare plan for creation of green buffers along the traffic corridors Introduce water fountains at major traffic intersection, wherever feasible Greening of open areas, gardens, community places, schools and housing societies Industrial units to install water spraying system of internal roads and washing of tyres of vehicles Launch extensive drive against open burning of bio-mass, crop residue, garbage, leaves etc. Proper collection of horticulture waste (bio-mass) and its disposal following composting-cum-gardening approach Ensure ban on burning of agriculture waste and crop residues and its implementation Creation of awareness to farmers to stop burning of crops residue and biomass Stress on promotion of horticulture programme and use of organic manures/compost	Long term Short term Long term Long term Long term Long term Long term	180 days 90 days 180 days Regular Regular activity Regular activity 180 days 180 days 180 days	Forest & Environment Dept. / Meghalaya Industrial Development Co-operation in Industrial Area/Industries Dept. Industrial units Agriculture Dept.,/ District Administration/ Local Bodies Agriculture Deptt	
3.	Biomass and Garbage burning/ Jhum cultivation					

Sl.No.	Source Group	Control Option	Implementation Period (Short/Mid/Long term)	Time target for Implementation	Responsible Agencies	Any other information
4.	Industries	<p>Identification of brick kilns and their regular monitoring including use of designated fuel, and closure of unauthorized units</p> <p>Conversion of natural draft brick kilns to induced draft kilns (zig zag Technology)</p> <p>Strict enforcement of air pollution control measures in all industries, includes those located in unauthorized areas and Action against non-complying industrial units</p> <p>Urgent ban on furnace oil, pet coke, which are dirty industrial fuels with high Sulphur and heavy metals:</p> <p>Air quality monitoring Station expansion.</p>	<p>Short term</p> <p>Long term</p> <p>Long term</p> <p>Mid term</p> <p>Long term</p>	<p>60 days</p> <p>180 days</p> <p>Regular activity</p> <p>120 days</p> <p>1 year</p>	<p>State Pollution Control Board/Industries Deptt.</p> <p>State Pollution Control Board/Industries Deptt.</p>	
5.	Air Quality Monitoring	<p>Air Quality Index to be calculated and disseminated to the people through website and print/ electronic media in local vernacular/on maximum weekly basis for manually operated monitoring stations and real time basis for continuous monitoring stations)</p> <p>Research studies including air pollution inventory, source apportionment, health impact studies, exposure impacts and other relevant studies</p> <p>Establish an Air Quality Management Division at SPCB/PCC Head Quarters to oversee air quality management activities in the State and interact with CPCB</p> <p>Set-up and publicize helpline in each city/town as well as SPCB/PCC HQ for complaints against reported non-compliance.</p> <p>Monitoring of DG sets to ensure that only those DG sets that meet the standards are allowed to operate and action against violations.</p>	<p>Long term</p> <p>Long term</p> <p>Long term</p> <p>Long term</p> <p>Long term</p>	<p>2 years</p> <p>1 year</p> <p>30 days</p> <p>Regular activity</p>	State Pollution Control Board	

Evaluation of Emission Control Options

Sl.No.	Source Group	Control Option	Expected reduction and Impacts	Technical feasibility	Requirement of Financial resources	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agencies	Any other information
1.	Vehicles	Prevent parking of vehicles in the non-designated areas	Medium	YES	-	long term	Regular activity	Superintendent of Police, Nongpoh, Ri-Bhoi District	
		Synchronize traffic movements/Introduce intelligent traffic systems for lane-driving	Medium	YES	To be provided by SP, Nongpoh	long term	Regular activity		
		Launch extensive drive against polluting vehicles for ensuring strict compliance - Strict vigilance and no tolerance for visible emissions – stop plying of visibly polluting vehicles by impounding or heavy fine.	High	YES	-	long term	Regular activity	District Transport Officer, Nongpoh, Ri-Bhoi District	
		Introduction of public transport system in Byrnihat - Nongpoh route section	Medium	Yes	To be provided by Urban Affairs Deptt	Long term	Regular activity	Urban Affairs under JNNURM	
		Introduction of electric vehicle in Byrnihat - Nongpoh route section	Medium	Yes	To be provided by Transport Deptt	Long term	Regular activity	Transport Deptt	
		Introducing of Mobile Vehicular Emission Testing unit in Nongpoh-Byrnihat section	Medium	Yes		Long term	Regular activity		
		Maintaining and enforcing of permissible loading limits of vehicle	Medium	Yes	-	Long term	Regular activity		
		Launch public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicles, lane discipline, etc..	High	YES	Rs. 5.0 lakhs	long term	Regular activity		M.S.P.C.B / District Transport Officer, Nongpoh, Ri-Bhoi District
		Setting up of Pollution under Control (PUC) certification	Medium	YES	To be provided by Transport	long term	180 Days	District Transport Officer, Nongpoh, Ri-	

Sl.No.	Source Group	Control Option	Expected reduction and Impacts	Technical feasibility	Requirement of Financial resources	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agencies	Any other information
		Centres			Deptt			Bhoi District	
		Strict vigilance and enforcement of PUC norms and Link PUC certificates with annual vehicle insurance to ensure 100 % compliance.	Medium	YES		long term	180 Days		
		Prepare action plan to check fuel adulteration and random monitoring of fuel quality data	Medium	YES		long term	180 Days	Deputy Commissioner (Supply), Ri-Bhoi District, Nongpoh	
		Control measures for fugitive emissions from material handling, conveying and screening operations through water sprinkling, curtains, barriers and dust suppression units.	High	YES	To be provided by PWD, MIDC & Industries Deptt	Long term	Regular activity	District Administration/Executive Engineer, Public Works Department (Rds), Nongpoh Division/ Managing Director, MIDC, Upland Road, Shillong.	
		Ensure carriage of construction material in closed/covered vessels	Medium	YES		Short term	90 days		
		Blacktopping of metalled road including pavement of road shoulders	High	YES	To be provided by PWD	Long term	180 days		
		Prepare plan for widening of road and improvement of infrastructure for decongestion of road	High	YES		Long term	180 days		
		Prepare plan for construction of expressways/bypasses to avoid congestion due to non-destined vehicles	High	YES *		Long term	180 days		
		Maintain potholes free roads for free-flow of traffic	High	YES		Short term	90 days		
		Prepare plan for creation of green buffers along the traffic corridors	High	YES	To be provided by Forest & Environment Deptt, MIDC, Industries Deptt	Short term	90 days	Forest & Environment Deptt./ Managing Director, MIDC, Upland Road, Shillong.	
		Introduce water fountains at major traffic intersection, wherever feasible	High	YES		Short term	90 days		
2.	Road Dust								

Sl.No.	Source Group	Control Option	Expected reduction and Impacts	Technical feasibility	Requirement of Financial resources	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agencies	Any other information
		Greening of open areas, gardens, community places, schools and housing societies	High	YES		Long term	180 days		
		Industrial units to install water spraying system of internal roads and washing of tyres of vehicles	Medium	YES	-	Long term	Regular	Industrial units	
3.	Biomass and Garbage burning	Launch extensive drive against open burning of bio-mass, crop residue, garbage, leaves etc.	High	YES	-	Long term	Regular activity	District Administration/ District Agriculture Officer, Nongpoh, Ri Bhoi District.	
		Proper collection of horticulture waste (bio-mass) and its disposal following composting-cum-gardening approach	Medium	YES	-	Long term	Regular activity		
		Ensure ban on burning of agriculture waste and crop residues and its implementation	High	YES	-	Long term	180 days		
		Creation of awareness to farmers to stop burning of crops residue and biomass	High	YES	To be provided by Agriculture Deptt	Long term	180 days		
		Stress on promotion of horticulture programme and use of organic manures/compost	High	YES		Long term	180 days	Agriculture Deptt	
4.	Industries	Identification of brick kilns and their regular monitoring including use of designated fuel, and closure of unauthorized units	High	YES	-	Short term	60 days		
		Conversion of natural draft brick kilns to induced draft kilns (zig zag Technology)	Medium	Yes	-	Long term	180 days		
		Strict enforcement of air pollution control measures in all industries,	High	Yes	Rs. 10.0 lakhs				

Sl.No.	Source Group	Control Option	Expected reduction and Impacts	Technical feasibility	Requirement of Financial resources	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agencies	Any other information
		includes those located in unauthorized areas and Action against non-complying industrial units				Long term	Regular activity		
		Urgent ban on furnace oil, pet coke, which are dirty industrial fuels with high Sulphur and heavy metals:	Medium	Yes		Mild term	120 days		
		Air quality monitoring Station expansion.	Medium	Yes	Rs. 20.0 lakhs	Long term	1 year		
5.	Air Quality Monitoring	Air Quality Index to be calculated and disseminated to the people through website and print/electronic media in local vernacular (on maximum weekly basis for manually operated monitoring stations and real time basis for continuous monitoring stations)	Medium	Yes		Long term	Regular activity	Meghalaya State Pollution Control Board	
		Research studies including air pollution inventory, source apportionment, health impact studies, exposure impacts and other relevant studies	Low	Yes	Rs. 10.0 lakhs	Long term	2 years		
		Establish an Air Quality Management Division at SPCB/PCC Head Quarters to oversee air quality management activities in the State and interact with CPCB	Medium	Yes	Rs. 50.0 lakhs Annually	Long term	1 year		
		Set-up and publicize helpline in each city/town as well as SPCB/PCC HQ for complaints against reported non-compliance.	Medium	Yes	Rs. 50.0 lakhs Annually	Short term	30 days		

Sl.No.	Source Group	Control Option	Expected reduction and Impacts	Technical feasibility	Requirement of Financial resources	Implementation period (Short/Mid/Long term)	Time target for Implementation	Responsible Agencies	Any other information
		Monitoring of DG sets to ensure that only those DG sets that meet the standards are allowed to operate and action against violations.	Medium	Yes	Rs. 10.0 lakhs Annually	Long term	Regular activity		