BEFORE THE NATIONAL GREEN TRIBUNAL SOUTHERN BENCH CHENNAI

Original Application No. 159 OF 2021 (SZ)

Versus

IN THE MATTER OF:

Kankana Das

Union of India and others

... Applicant

... Respondents

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Place: Chennai Date: 08.02.2023



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DEPONENT H.D. VARALAXMI, M.Tech Regional Director CENTRAL POLLUTION CONTROL BOARD (MOEF & CC. Govt of India) Regional Directorate (Chennai) 2nd Floor, 77-A. South Avenue Road. Ambattur Industnal Estate, Chennai - 600 059

Status report in compliance of Hon'ble NGT Southern Zone, Chennai Order dated 20.01.2023 in the matter of Kankana Das, Kolkata Vs UOI and others (OA No. 159/2021)

1.0 Introduction

The matter is related to preparation of State Action Plan by Southern States under NCAP along with the State of Kerala and Union Territory of Puducherry for improvement in air quality. Vide Order dated 20.01.2023 in the matter of OA No.159 of 2021, The Hon'ble NGT (SZ), Chennai directed as follows:

Para 6: Let the Central Pollution Control Board (CPCB) verify whether the State Action Plan submitted by others is in a template or otherwise, only to examine whether all the conditions given in the template are in order and file a detailed report.

Para 7: The CPCB is also directed to take inputs given by the individual Pollution Control Boards while finalizing the action plan given by the respective states.

Present Status:

- Ministry of Environment Forests & Climate Change (MoEF&CC) had shared an indicative template with States/UTs under NCAP for preparation of State Action Plan (SAP) addressing the activities that would help in improvement of air quality. It was directed that States under NCAP i.e. Andhra Pradesh, Karnataka, Tamil Nadu and Telangana may include the activities with respect to requirements in their respective States and finalize the State Action Plan under National Clean Air Program (NCAP).
- In this regard, State Action Plan (SAP) have been received from 3 SPCBs namely Andhra Pradesh, Karnataka and Telangana (copy enclosed as Annexure A1 – A3).
 CPCB has reviewed the plans and shared its observations with MoEF&CC and respective States. The details are enclosed as Annexure B.
- State Action Plan from Tamil Nadu is awaited till date.
- Kerala and Puducherry do not have any non-attainment cities, hence not covered under NCAP. On receipt of State Action Plan (SAP) from these States, CPCB shall review their SAP.



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"State Action Plan" of Andhra Pradesh to Control Air Pollution

Submitted to

Central Pollution Control Board, Delhi.



Andhra Pradesh Pollution Control Board, Vijayawada.

December, 2022

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1. Introduction:

The Ministry of Environment, Forests & Climate Change (MoEF & CC), Government of India has launched the National Clean Air Program (NCAP) on 10th January, 2019 as a time bound National level strategy for pan India implementation to tackle the air pollution problem across the country in a comprehensive manner.

Government of Andhra Pradesh constituted the following committees to monitor the activities to control air pollution in the State:

- i) Three committees viz., Steering Committee under the Chairmanship of the Chief Secretary, Monitoring Committee under the Chairmanship of Special Chief Secretary, EFS & T Department and District Level Implementation Committees headed by the District Collector under NCAP, vide EFS & T Department G. O. Rt. No. 46, dated 11.06.2020 for the effective implementation of NCAP in the State (Annexure – 1).
- ii) Air Quality Monitoring Committee (AQMC) under the Chairmanship of Principal Secretary, EFS & T Department, Government of Andhra Pradesh, vide EFS & T Department G. O. Rt. No. 167, dated 14.11.2018 for the formulation of action plans, particularly for the non-attainment cities and to monitor their implementation in the cities (Annexure – 2).
- iii) State Level Monitoring and Implementation Committee (SLMIC) constituted under the Chairmanship of Principal Secretary, Environment for performance assessment of each 15th FC recommended city / UA, vide G. O. Rt. No. 14, dated 21.02.2022 (Annexure – 3) for the purpose of:
 - a) To make performance assessment of each 15th FC recommended city / UA (within the State) and recommend release of grant to the MoEF & CC as per the indicators specified in the guidelines after ensuring compliance.
 - b) The State Urban Development Department (UDD) shall function as the Secretariat and in co-ordination with the State Environment department will convene meetings of the SLMIC as frequently as required or atleast every 6 months.

c) The State UDD shall place the proposals received from million-plus cities / UAs in the MoEF & CC prescribed format before the SLMIC meetings for recommendations & approvals. The State UDD shall forward the recommendations of the SLMIC to MoEF & CC for further action.

A total of 131 cities in the Country have been identified by the Central Pollution Control Board (CPCB) as non-attainment cities (NACs) for not meeting the National Ambient Air Quality Standards, particularly in respect of PM10 concentrations. Thirteen (13) of them are from Andhra Pradesh viz., Srikakulam, Vizianagaram, Visakhapatnam, Rajamahendravaram, Eluru, Vijayawada, Guntur, Ongole, Nellore, Chittoor, Kadapa, Kurnool and Anantapuramu. AQMC and CPCB approved city action plans are under implementation in all these 13 NACs.

State Action Plan (SAP) to control of air pollution has to be formulated by all the 23 States with non-attainment cities as per the NCAP guidance document.

S. No.	Component / Activities	Level for funding	Level for implementa tion	Agencies	Time lines
1.13.1	A preliminary state action plan for air pollution to be formulated for all the 23 states, which harbor 102 non-attainment cities	Centre	State	SPCB, CPCB and MoEF & CC	2020
1.13.2	SAP for air pollution to be taken up for implementation by the state government and city administration	State	State	State Governme nt	2020
1.13.3	The guidelines for the preparation of the SAP to be formulated	Centre	Centre	CPCB and MoEF & CC	2020

As per the NCAP document at Appendix-VI: NCAP agencies and timelines at S. No. 1.13 mentions about the State Action Plan for Air Pollution as detailed below:

Accordingly, CPCB has formulated the "Indicative Template" for preparation of State Action Plan and circulated to the States vide mail dated 15.11.2022.

The template covers actions on the headings, Industrial Emissions, Vehicular Emissions, Construction & Demolition waste, Road Dust, Emissions from burning of Wastes, Emissions due to burning of agro residues and household emissions.

Further, the action plan template covers the status of the activity, timelines for completion, target, financial implications, funds allocated and funds utilized as on date. The indicative template is placed at **Annexure - I**.

2. Andhra Pradesh State:

Andhra Pradesh was bifurcated into Andhra Pradesh and Telangana on 02.06.2014. The residual State of Andhra Pradesh spreads in an area of 1,62,975 Sq. Kms. and with a population of 4,93,86,799 (2011 census). The State Government has reorganized the 13 districts into 26 for administrative convenience and better reach to the public during April, 2022.



Andhra Pradesh is predominantly hot and dry climate. In the coastal plain, the summer temperatures are generally higher than the rest of the state, with temperature ranging between 20 and 44°C. July to September is the season for

tropical rains. About one-third of the total rainfall is brought by the northeast monsoon. October and November see low-pressure systems and tropical cyclones form in the Bay of Bengal which, along with the northeast monsoon, bring rains to the southern and coastal regions of the state. Since the State has a 974 kms long coastal belt, the winters are not very cold. The range of winter temperature is generally 12 to 30 °C. The areas covered by the Deccan plateau are characterised by hot summers with relatively mild winters. The mean maximum temperature varies between 40°C and 43°C and the mean minimum temperature is 13 to 17°C in December and January.

3. Ambient Air Quality Monitoring Program:

Andhra Pradesh Pollution Control Board is monitoring ambient air quality (AAQ) at 80 locations covering 20 cities and towns in the State. Of them, 71 are manual stations under National Air Quality Monitoring Program (NAMP), 2 are State Air Quality Monitoring Program (SAMP) and 7 are Continuous Ambient Air Quality Monitoring Stations (CAAQMS).

S.	City / town	AAQM Stations						
No.		NAMP	SAMP	CAAQMS	Total			
1	Srikakulam	3			3			
2	Pydibheemavaram	1			1			
3	Vizianagaram	3	1		4			
4	Bobbili	1			1			
5	Visakhapatnam	9	1	1	11			
6	Kakinada	4			4			
7	Rajahmahendravaram	4		1	5			
8	Eluru	4			4			
9	Vijayawada	9			9			
10	Guntur	4			4			
11	Ongole	4			4			
12	Nellore	4			4			
13	Chittoor	4		1	5			
14	Tirupathi	4		1	5			
15	Tirumala			1	1			
16	Kadapa	4			4			
17	Yerraguntla	1			1			
18	Kurnool	4			4			
19	Anantapuramu	4		1	5			
20	Amaraavathi			1	1			
	Total: 71 2 7 80							



Map showing the AAQ stations in State

The details of AAQ monitoring stations in the State:

S.	Location	Туре	Latitude	Longitude				
No.				-				
I	Anantapur District							
1	Jeevan Jyothi Hospital, Kamala	NAMP	14.680522	77.602875				
	Nagar, Anantapuramu.							
2	APIIC, Zonal Office, Industrial	NAMP	14.690618	77.572858				
	Estate, Anantapuramu.							
3	Cancer Unit. G.G.H. Sharada	NAMP	14.654627	77.609478				
	Nagar, JNTU Road, Anantapuramu.							
4	D.No.6/5/545, Ram Nagar Colony,	NAMP	14.668355	77.583737				
	Anantapuramu.							
5	Gulzarpet, Public Health Office,	CAAQMS	14.67588	77.593027				
	Court Road, Anantapuramu.							
	Tirupati District							
6	Near GNC Toll Gate, Tirumula.	NAMP /	13.6749737	79.35087129				
		CAAQMS	4					
7	Regional Science Centre, Chittoor	NAMP	13.3835206	79.2355392				
	Bypass, Tirupati.		8					
8	Municipal Office, Tilak Road,	NAMP	13.636466	79.422916				
	Tirupati.							

10 Sri Venkateswara Guest House, Near NAMP 13.628675 79.423863 11 Municipal Park, Vaikuntapuram, Trupati. NAMP 13.615387 79.409230 11 Municipal Park, Vaikuntapuram, Trupati CAAQM 13.615387 79.409230 12 Municipal flower Market (Shifted NAMP 13.216038 79.113297 13 O/O Mines and Geology, Old Collector Office, Greamspet, Chittoor. NAMP 13.201042 79.093335 14 Sankar Foundry, Industrial Estate, NAMP 13.222405 79.125702 Adjacent of DIC Office, Chittoor. 15 Rangachari street, Shanthapeta, Chittoor. NAMP 13.204880 79.097233 16 Gangineni Cheruvu park, Vellore Road, Chittoor NAMP 13.204880 79.097889 17 Ashram Diagnostic Centre, Eluru. NAMP 16.710507 81.094662 18 District Head quarters hospital, NAMP 16.705150 81.094662 18 Sunakhya, Near ITI College, NAMP 16.705150 81.113450 18-5, Thooru Veedhi, Eastern street, Paidichintaadu, Eluru. NAMP 16.292575 80.443566 20 Somalingeswara nilayam D.N.7B- Bungalow,	9	APPCB-Regional Office, 1st Floor, APSFC Building, NT Road, Tirupati.	NAMP	13.633352	79.4086
11 Municipal Park, Vaikuntapuram, Irupati CAAQM 13.615387 79.409230 11 Chittoor District 11 13.615387 79.409230 12 Municipal flower Market (Shifted from Nutrine Confectionery, Palamaner Road), Chittoor. NAMP 13.216038 79.113297 13 O/O Mines and Geology, Old Collector Office, Greamspet, Chittoor. NAMP 13.201042 79.093335 14 Sankar Foundry, Industrial Estate, Adjacent of DIC Office, Chittoor. NAMP 13.222794 79.097233 15 Rangachari street, Shanthapeta, CAAQM 13.204880 79.097889 Road, Chittoor CAAQM 13.204880 79.097889 Road, Chittoor CAAQM 13.204880 79.097889 Road, Chittoor Strittoor 81.094062 81.094062 14 Bistrict NAMP 16.710507 81.094062 19 Zilla Samakhya, Near ITI College, ITI College, ITIDC Building, Satrampadu, Eluru. NAMP 16.702480 81.106716 19 Zilla Samakhya, Near ITI College, Market Road/Municipal Travellers Bungalow, Guntur. NAMP 16.292575 80.443586 22 A.P. Pollution Control Board, D.N.Fb- 18.05150	10	Sri Venkateswara Guest House (TTD SV Rest House), Near APSRTC Bus Stand, Tirupati.	NAMP	13.628675	79.423863
III Chittoor District 12 Municipal flower Market (Shifted from Nutrine Confectionery, Palamaner Road), Chittoor. NAMP 13.216038 79.113297 13 O/O Mines and Geology, Old Collector Office, Greamspet, Chittoor. NAMP 13.201042 79.093335 14 Sankar Foundry, Industrial Estate, Adjacent of DIC Office, Chittoor. NAMP 13.222405 79.125702 15 Rangachari street, Shanthapeta, Chittoor. NAMP 13.222794 79.097233 16 Gangineni Cheruvu park, Vellore Road, Chittoor CAAQM 13.204880 79.097889 7 Ashram Diagnostic Centre, Eluru. NAMP 16.710507 81.094562 18 District Head quarters hospital, Eluru. NAMP 16.702480 81.06716 19 Zilla Samakhya, Near ITI College, ITDC Building, Satrampadu, Eluru. NAMP 16.705150 81.113450 20 Somalingeswara nilayam D.N.7B- Na-S, Thooru Veedhi, Eastern street, Paidichintaadu, Eluru. NAMP 16.321293 80.420008 21 Near Hindu College, Market Road/Municipal Travellers Bungalow, Guntur. NAMP 16.321293 80.420008 24	11	Municipal Park, Vaikuntapuram, Tirupati	CAAQM	13.615387	79.409230
III Chittoor District 12 Municipal flower Market (Shifted from Nutrine Confectionery, Palamaner Road), Chittoor. NAMP 13.216038 79.113297 13 O/O Mines and Geology, Old Collector Office, Greamspet, Chittoor. NAMP 13.201042 79.093335 14 Sankar Foundry, Industrial Estate, Adjacent of DIC Office, Chittoor. NAMP 13.222405 79.125702 15 Rangachari street, Shanthapeta, Chittoor. NAMP 13.222794 79.097233 16 Gangineni Cheruvu park, Vellore Road, Chittoor CAAQM 13.204880 79.097889 17 Ashram Diagnostic Centre, Eluru. NAMP 16.710507 81.094562 18 District Head quarters hospital, NAMP 16.7104365 81.094062 19 Zilla Samakhya, Near ITI College, ITDC Building, Satrampadu, Eluru. NAMP 16.702480 81.06716 17DC Building, Satrampadu, Eluru. NAMP 16.705150 81.113450 20 Somalingeswara nilayam D.N.7B- NAMP 16.292575 80.443586 Road/Municipal Travellers NAMP 16.321293 80.420008 22 A.P. Pollution Control Board, D.N.45-4/5C/4/3, Navabharath nagar, R					
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17Astrian Diagnostic Centre, Eldru.NAMP16.71030781.09436218District Head quarters hospital, Eluru.NAMP16.71436581.09406219Zilla Samakhya, Near ITI College, ITDC Building, Satrampadu, Eluru.NAMP16.70248081.0671620Somalingeswara nilayam D.N.7B- 18-5, Thooru Veedhi, Eastern street, Paidichintaadu, Eluru.NAMP16.70515081.11345020Somalingeswara nilayam D.N.7B- 18-5, Thooru Veedhi, Eastern street, Paidichintaadu, Eluru.NAMP16.70515081.11345021Near Hindu College, Market Road/Municipal D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road, Guntur.NAMP16.32129380.44358622A.P. Pollution Control Board, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road, Guntur.NAMP16.32209680.48134523Distirct Industries Center office Buiding Autonagar, Guntur.NAMP16.29841780.44149824Government General hospital, Guntur.NAMP16.51508380.51816725Security building terrace, Gate No-2, Secretariat, Amaravathi.CAAQMS16.51508380.518167VYSR Kadapa District26APPCBRegional Office, APHBNAMP14.461616778.828383	17	Eluru District		16 710507	91.004562
18DistrictHeadquartersHospital, Hospital,HAMP16.71436381.09400219Zilla Samakhya, Near ITI College, ITDC Building, Satrampadu, Eluru.NAMP16.70248081.0671620Somalingeswara nilayam D.N.7B- Paidichintaadu, Eluru.NAMP16.70515081.11345021NearHinduCollege, MarketNAMP16.29257580.44358621NearHinduCollege, MarketMAMP16.29257580.44358622A.P.PollutionControlBoard, NampNAMP16.32129380.42000822A.P.PollutionControlBoard, NampNAMP16.32209680.48134523DistirctIndustriesCenter office Buiding Autonagar, Guntur.NAMP16.29841780.44149824GovernmentGeneralhospital, Velagapudi, Amaravathi.NAMP16.51508380.518167VYSR Kadapa District26APPCBRegionalOffice, APHBNAMP14.461616778.828383	10	Ashram Diagnostic Centre, Eluru.		16.710007	81.094062
19Zilla Samakhya, Near ITI College, ITDC Building, Satrampadu, Eluru.NAMP16.70248081.0671620Somalingeswara nilayam D.N.7B- Namper NameNAMP16.70515081.11345020Somalingeswara nilayam D.N.7B- Paidichintaadu, Eluru.NAMP16.70515081.11345021Sentar Hindu Road/Municipal Bungalow, Guntur.Travellers Bungalow, Guntur.NAMP16.29257580.44358622A.P. Pollution D.No.4-5-4/5C,4/3, Buiding Autonagar, Guntur.NAMP16.32129380.42000823Distirct Industries Government Guntur.NAMP16.32209680.48134524Government General Muru.NAMP16.29841780.44149825Security building terrace, Gate No-2, Secretariat, Amaravathi.CAAQMS16.51508380.518167VIYSR Kadapa District26APPCBRegionalOffice, APHBNAMP14.461616778.828383	10	Fluru		10.714303	01.094002
20Somalingeswara nilayam 18-5, Thooru Veedhi, Eastern street, Paidichintaadu, Eluru.NAMP16.70515081.113450VGuntur District21Near Road/Municipal Bungalow, Guntur.NAMP16.29257580.44358622A.P. Pollution D.No.4-5-4/5C,4/3, Buiding Autonagar, Guntur.NAMP16.32129380.42000823Distirct Industries Guntur.NAMP16.32209680.48134524Government Guntur.General hospital, Amaravathi.NAMP16.29841780.44149825Security building terrace, Gate No-2, Secretariat, Amaravathi.CAAQMS16.51508380.518167VI YSR Kadapa District26APPCBRegionalOffice, APHBNAMP14.461616778.828383	19	Zilla Samakhya, Near ITI College, ITDC Building, Satrampadu, Eluru.	NAMP	16.702480	81.06716
VGuntur District21NearHinduCollege,MarketNAMP16.29257580.443586Road/MunicipalTravellersBungalow, Guntur.16.32129380.42000822A.P.PollutionControlBoard,NAMP16.32129380.420008D.No.4-5-4/5C,4/3,NavabharathNavabharath16.32209680.48134523DistirctIndustriesCenterofficeNAMP16.32209680.48134524GovernmentGeneralhospital,NAMP16.29841780.44149825Security building terrace, Gate No-2, Secretariat, Amaravathi.CAAQMS16.51508380.518167VIYSR Kadapa District26APPCBRegionalOffice,APHBNAMP14.461616778.828383	20	Somalingeswara nilayam D.N.7B- 18-5, Thooru Veedhi, Eastern street, Paidichintaadu, Eluru.	NAMP	16.705150	81.113450
VGuntur District21NearHinduCollege,MarketNAMP16.29257580.443586Road/MunicipalTravellersBungalow,Guntur.16.32129380.42000822A.P.PollutionControlBoard,NAMP16.32129380.420008D.No.4-5-4/5C,4/3,NavabharathNAMP16.32209680.48134523DistirctIndustriesCenterofficeNAMP16.32209680.481345Buiding Autonagar, Guntur.DistirctIndustriesCenter16.29841780.44149824GovernmentGeneralhospital, Guntur.NAMP16.29841780.44149825Security building terrace, Gate No-2, Secretariat, Amaravathi.CAAQMS16.51508380.518167VIYSR Kadapa District26APPCBRegionalOffice,APHBNAMP14.461616778.828383					
21NearHinduCollege, MarketMarket NAMPNAMP16.29257580.443586Road/MunicipalTravellers Bungalow, Guntur.Travellers Boungalow, Guntur.16.32129380.42000822A.P.PollutionControlBoard, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road, Guntur.NAMP16.32129380.42000823DistirctIndustriesCenteroffice Buiding Autonagar, Guntur.NAMP16.32209680.48134524GovernmentGeneral hospital, Guntur.NAMP16.29841780.44149825Security building terrace, Gate No-2, Secretariat, Amaravathi.CAAQMS16.51508380.518167VIYSR Kadapa District26APPCBRegionalOffice, APHBNAMP14.461616778.828383	V	Guntur District		40.000575	00.440500
22A.P.PollutionControlBoard, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road, Guntur.NAMP16.32129380.42000823DistirctIndustriesCenteroffice NAMPNAMP16.32209680.48134524GovernmentGeneral Guntur.NAMP16.29841780.44149825Security building terrace, Gate No-2, Secretariat, Amaravathi.CAAQMS16.51508380.518167VIYSR Kadapa District26APPCBRegionalOffice,APHBNAMP14.461616778.828383	21	Road/Municipal Travellers Bungalow, Guntur.	NAMP	16.292575	80.443586
23DistirctIndustriesCenterofficeNAMP16.32209680.48134524GovernmentGeneralhospital,NAMP16.29841780.44149824GovernmentGeneralhospital,NAMP16.29841780.44149825Security building terrace, Gate No-2, Secretariat, Amaravathi.CAAQMS16.51508380.518167VIYSR Kadapa District26APPCBRegionalOffice,APHBNAMP14.461616778.828383	22	A.P. Pollution Control Board, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road, Guntur.	NAMP	16.321293	80.420008
24Government Guntur.General hospital, Guntur.NAMP16.29841780.44149825Security building terrace, Gate No-2, Secretariat, Amaravathi.CAAQMS16.51508380.518167Vl gagapudi, Amaravathi.VI YSR Kadapa District26APPCBRegionalOffice, 	23	Distirct Industries Center office Buiding Autonagar, Guntur.	NAMP	16.322096	80.481345
25Security building terrace, Gate No-2, Secretariat, Amaravathi.CAAQMS16.51508380.518167Velagapudi, Amaravathi.VIYSR Kadapa District26APPCBRegionalOffice, APHBAPHBNAMP14.461616778.828383	24	Government General hospital, Guntur.	NAMP	16.298417	80.441498
VIYSR Kadapa District26APPCBRegionalOffice,APHBNAMP14.461616778.828383	25	Security building terrace, Gate No-2, Secretariat, Velagapudi, Amaravathi.	CAAQMS	16.515083	80.518167
26 APPCB Regional Office, APHB NAMP 14.4616167 78.828383	VI	YSR Kadana District			
	26	APPCB Regional Office. APHB	NAMP	14.4616167	78.828383

	Colony, Rajeev Park Road, Kadapa.			
27	DIC Office, Kadapa.	NAMP	14.464729	78.822726
28	Rajiv Gandhi Institute of Medical Sciences Kadapa	NAMP	14.43433	78.863039
29	Municipal Primary School, Kadapa.	NAMP	14.473437	78.828637
30	Near ICL Industries. Yerraguntla	NAMP	14.639874	78.530666
VII	Kakinada District			
31	APPCB Regional Office Building Ramanayyapeta, Kakinada.	NAMP	17.002372	82.246375
32	Suryaraopeta, Near Light House, Kakinada Rural.	NAMP	17.017778	82.284411
33	MEE Seva / MEPMA Office, Salipeta, Kakinada.	NAMP	16.955686	82.2327
34	Petro Chemical Engineering Block, JNTU , Pithapuram Road, Kakinada.	NAMP	16.979653	82.242361
VIII	Kurnool District		45.005044	70.007407
35	Mourya Inn, Krishna Nagar, Kurnool.	NAMP	15.805614	78.037107
36	APIIC Building Industrial estate, Kallur at IDA Bobbili Growth Center, Kurnool.	NAMP	15.80767	78.02406
37	Rajvihar Circle, Kurnool.	NAMP	15.82877	78.03816
38	Pump House, Venkataramana Colony, Kurnool.	NAMP	15.83369	78.03074
IX	Sri Potti Sriramulu Nellore District		1	
39	Terrace of the Regional Office Nellore .Andhra Kesarinagar, Nellore.	NAMP	14.418256	79.959967
40	D. No.15-471, James Garden, Venkata Ramapuram, Nellore.	NAMP	14.454083	79.988911
41	Chandramouli nagar, Nellore.	NAMP	14.414683	79.958583
42	Dr.P.V. Rama chandra Reddy	NAMP	14.453417	79.986997
	Hospital, Brindavanam, Nellore.			
X	Prakasam District		1	
43	Near Court Center/D.No. 7-324, Sri Nilayam, Sambasiva _T á Nagar, South bypass Road, Ongole, near	NAMP	15.506845	80.032977
	Mamgamri road.			
44	APIIC, Administrative Office, Growth	NAMP	15.6805555	80.01461111
A -	Centre, Gundiapalli, Ongole.		6	00.040000
45	Ongole Municipal Corporation, Ongole.		15.500352	80.046032
46	Prakasam Milk Product Company,	NAMP	15.5252777	80.01705833
	Ongole.		8	

XI	East Godavari District			
47	Staff Club Building, A.P. Paper Mill,	NAMP	17.022694	81.774714
	Sri Ramnagar,			
	Rajamahendravaram.			
48	GAIL Administrative Office, A.V.	NAMP	17.015017	81.800644
	Apparao Road,			
10	Rajamahendravaram.		47.00405	04 7000 47
49	MCH BIOCK , District Hospital, Near	NAMP	17.02105	81.792247
	Reiamahondravaram			
50	APEPDCI Circle Office Godavari	ΝΔΜΡ	16 998069	81 769472
00	Gattu, Rajamahendravaram.		10.000000	01.700472
51	Top of Sri Venkateshwara Anam	CAAQMS	17.00837	81.77142
	Kala Kendram building,			
	Lakshmivarapu pet, Seshayyametta,			
	Rajamahendravaram.			
				
	Srikakulam District		40.000407	00.005000
52	SKI M Old Bridge Srikekulam	NAMP	18.296167	83.885389
53	APIIC Building Kushalapuram	ΝΔΜΡ	18 20/////	83 862017
55	Srikakulam		10.234444	05.002917
54	Municipal corporation Office	NAMP	18,292444	83,896889
0.	Building, Old Bus Stand,		101202111	001000000
	Srikakulam.			
55	SAMKRG Pistons Quarters Building,	NAMP	18.146611	83.626917
	Near IDA, Pydibheemavaram.			
XIII			40 500 40	00 70000
56	NIR Veterinary college of Sciences,	NAMP	16.52642	80.78328
57	VP Siddbartha Engineering college		16 / 9529	90 60259
57	Kanuru Vijavawada	INAME	10.40330	00.09230
58	APIIC, IALA, IDA, Kondapili,	NAMP	16,642401	80,557574
	Vijavawada.		101012101	001001011
59	Benz Circle, Vijayawada.	NAMP	16.49880	80.65553
60	Autonagar, Vijayawada.	NAMP	16.50887	80.67799
61	Police Control Room, Vijayawada.	NAMP	16.51110	80.61795
62	A.P. Pollution Control Board, plot	NAMP	16.50424	80.66431
	no. 41, Sri Kanakadurga Officers			
	colony, Gurunanak Road,			
60	Vijayawada.		16 40000	90 66577
03	Venamalakuduru Vijavawada	INAIVIP	10.40220	11000.00
64	Indian Medical Association Hall	NAMP	16 51338	80 62342
04	Fluru Road Governorpet	1 1/7/11/1	10.01000	00.02042
	Vijavawada.			
		I		
XIV	Visakhapatnam District			

65	Industrial Estate, Autonagar, Visakhapatnam.	NAMP	17.69871	83.19136
66	Panchayat Raj office, Mindi, Visakhapatnam.	NAMP	17.69799	83.21434
67	Police Barracks, Visakhapatnam.	NAMP	17.7108	83.29895
68	ESI-Hospital, Gandhi Gram,	NAMP	17.68912	83.25948
	Malkapuram, Naval Area,			
	Visakhapatnam.			
69	Seethammadhara, Visakhapatnam.	NAMP	17.73807	83.31448
70	Ganapuram Area, Visakhapatnam.	NAMP	17.72169	83.28532
71	Pedagantyada, Gajuwaka,	NAMP	17.66818	83.20826
	Visakhapatnam.			
72	MVP Raitu Bajar, Visakhapatnam.	NAMP	17.74129	83.33573
73	GVMC Building, Ramnagar,	CAAQMS	17.722411	83.308183
	Visakhapatnam.			
74	APPCB Office, Madhavadhara,	SAMP	17.750212	83.248016
	Visakhapatnam.			
XV	Anakapalli District		[[
75	CWMP, RAMKY, Parawada	NAMP	17.64726	83.08253
	1			
XVI	Vizianagaram District		[[
76	APIIC Building, VT Agraharam,	NAMP	18.08859	83.38936
	Industrial area, Vizianagaram.			
77	Muncipal Kaspa High School, Near	NAMP	18.11340	83.41435
	3 Lamps Junction, Vizianagaram.			
78	Municipal Office, New Poorna	NAMP	18.11720	83.41022
	Junction, Vizianagaram.	-		
79	APPCB RO building, Sainagar,	SAMP	18.10373	83.40144
	Thotapalem, Vizianagaram.			
80	APIIC Building Growth Centre.	NAMP	18.55264	83.33016

Air Quality Index:

The ambient air quality in Andhra Pradesh ranges from good to Satisfactory. The details of which are as follows:

S. No.	City / town	2017	2018	2019	2020	2021	2022 (up to November)
1	Pydibeemavaram	69	74	73	65	75	71
2	Srikakulam	66	70	63	58	78	72
3	Bobbili	67	66	73	64	76	73
4	Vizianagaram	64	66	64	59	69	67
5	Visakhapatnam	72	78	76	73	84	79
6	Rajahmundry	69	90	63	58	70	64

7	Eluru	65	69	63	61	62	67
8	Vijayawada	90	82	71	56	67	72
9	Guntur	63	53	52	54	59	61
10	Ongole	65	65	60	50	54	50
11	Nellore	64	64	66	56	56	56
12	Kurnool	72	65	60	49	58	65
13	Anantapur	65	71	67	60	57	62
14	Chittoor	69	61	54	42	49	49
15	Yerraguntla	74	69	60	48	51	49
16	Kadapa	69	89	52	43	54	59
17	Kakinada	68	75	63	48	62	65
18	Tirupathi	68	60	54	41	46	50
19	Thirumala	66	77	58	44	52	64
20	Amaravati	56	83	75	54	56	49
State A	Average	68	71	63	54	62	63

AQI	Remark	Color Code	Possible Health Impacts
0-50	Good		Minimal impact
51-100	Satisfactory		Minor breathing discomfort to sensitive people
101-200	Moderate		Breathing discomfort to the people with lungs, asthma and heart diseases
201-300	Poor		Breathing discomfort to most people on prolonged exposure
301-400	Very Poor		Respiratory illness on prolonged exposure
401-500	Severe		Affects healthy people and seriously impacts those with existing diseases

4. <u>Strengthening of ambient air quality monitoring network in the</u> <u>State:</u>

Andhra Pradesh Pollution Control Board (APPCB) continued its efforts to further strengthen the ambient air quality network in the State as detailed below:

- a) Five (5) CAAQM stations are under installation at Vijayawada (4 Nos.) and Kadapa.
- b) Eleven (11) more CAAQM stations are under procurement to install at Srikakulam, Vizianagaram, Rajahmahendravaram (the existing will be shifted to Kakinada), Vijayawada, Eluru, Guntur, Ongole, Nellore & Kurnool @ one each and Visakhapatnam @ two stations.

- c) Three (3) manual stations have been sanctioned by CPCB to install at Amaravathi region.
- d) It is under consideration of APPCB to reorganize the existing NAMP stations in the State that the new district Head Quarters are also covered for monitoring of ambient air.

5. State Action Plan:

The State Action Plan is to provide a guidance and mandatory activities be implemented by different stakeholder departments, civil societies and others concerned towards reducing the emissions and improving the ambient air quality. The increasing evidence on the health effects of air pollution from the studies across the globe shall be an alarm for sensitising the public, stakeholder departments and civil societies towards concerted actions for reducing the air pollution and thus providing a better and healthier society for the future generations.

Of the twelve notified parameters as per the National Ambient Air Quality Standards (NAAQS), two viz., PM10 (Respirable Particulate Matter) & PM2.5 (Fine Particulate Matter) are found to be exceeding the limits, particularly in respect of annual average standards. The general sources of air pollution identified in the State are Road Dust, Vehicular Emissions, Burning of municipal solid wastes, Industrial Emissions, Construction & Demolition waste, Emissions due to burning of agro residues, Household emissions, etc.

The Health impacts of PM10 are known to cause nasal and upper respiratory tract health problems. Fine particles (PM2.5) penetrate deeper into the lungs and cause heart attacks, strokes, asthma, and bronchitis, as well as premature death from heart ailments, lung disease and cancer. Further studies of a UK based firm along with CII indicates loses of upto Rs.7.00 Lakh Crores annually i.e., about 3% of the GDP due to Premature mortality, loss of productivity and loss of consumer footfall. The Global Burden of Disease (GBD) – 2019 report also indicate 1.67 million deaths attributable to air pollution in India.

Action plans for improving the air quality by reducing the Particulate Matter emissions are under implementation in 13 non-attainment cities, viz., Srikakulam, Vizianagaram, Visakhapatnam, Rajamahendravaram, Eluru, Vijayawada, Guntur, Ongole, Nellore, Kurnool, Chittoor, Ananatapur & Kadapa. The State action plan is formulated in line with the existing city action plan which is under implementation in the non-attainment cities and in synchronization with the CPCB format communicated for preparation of the action plan.

The action plan provides the actions proposed for implementation targeting the following sources of pollution:

- 1. Industrial Emissions,
- 2. Vehicular Emissions,
- 3. Construction and Demolition waste and Road Dust,
- 4. Emissions from burning of Wastes,
- 5. Emissions from burning of agro residues and
- 6. Household emissions.

The action plan proposed for the above activities and others are tentative. The regulatory actions are continuous and any amendments in terms of the regulatory activities will be continued as they are in force. Those actions that require the budget will be taken as per the availability and approval of the financial allocations.

5.1 Industrial Emissions:

Andhra Pradesh is having a total of 9,609 industries. Of these, 3864 are Red category, 3,900 are Orange category, 1,355 are Green category and 490 are White category industries. These industries are monitored periodically by the Andhra Pradesh Pollution Control Board and action is initiated against non-complying industries. The District-wise details of industries are as follows:

S.	District		Total			
No.		Red	Orange	Green	White	
1	Srikakulam	253	395	35	28	711
2	Vizianagaram	195	153	55	21	424
3	Visakhapatnam	402	364	193	86	1045

4	East Godavari	203	395	154	32	784
5	West Godavari	130	356	109	68	663
6	Krishna	220	437	192	49	898
7	Guntur	275	483	124	33	915
8	Prakasam	466	212	103	46	827
9	Sri Potti Sriramulu Nellore	332	252	131	20	735
10	Kurnool	257	199	33	11	500
11	Anantapur	458	204	60	14	736
12	YSR	176	175	36	62	449
13	Chittoor	497	275	130	20	922
	Total	3864	3900	1355	490	9609

5.1.1 <u>Policy for permitting new industries in Critically Polluted</u> <u>Areas (CPAs):</u>

Central Pollution Control Board (CPCB) during the year 2009-10 has carried out comprehensive environmental assessment of 88 industrial clusters across the country and rated them on the concept of Comprehensive Environment Pollution Index (hereinafter referred to as CEPI). Out of 88 Industrial clusters, 43 industrial clusters in 16 States having CEPI score of 70 and above were identified as Critically Polluted Areas (CPAs). Further 32 industrial clusters with CEPI scores between 60 & 70 were categorized as severely polluted areas (hereinafter referred to as SPAs). It was suggested that areas having CEPI score between 60 to 70 i.e., severely polluted industrial cluster shall be kept under surveillance and pollution control measures should be effectively implemented. Whereas the Critically Polluted Industrial Areas need further detailed investigations in terms of extent of damage and formulation of appropriate remedial action plan.

Of the 88, two clusters, namely Visakhapatnam & Vijayawada have been identified as Critically Polluted and Severely Polluted Areas with the scores 70.82 & 60.57, respectively.

Accordingly, APPCB has submitted the action plan to CPCB for control of pollution in Visakhapatnam during November, 2010. Further as suggested by CPCB, vide its letter dated 20.12.2010, APPCB constituted a local committee with the concerned stakeholders for implementation and review of the action plan. The EFS&T Department, Government of Andhra Pradesh constituted the "Comprehensive Environmental Pollution Index (CEPI) Committee", vide G. O. Rt. No. 10, dated 29.01.2019 (Annexure – 4) as per the directions of Hon'ble NGT order dated 20.09.2018 in O.A. No. 1038/2018 for preparation of Action Plan for restoration of environmental conditions in the identified two Polluted Industrial Areas (PIA). Accordingly, APPCB has submitted the action plan to CPCB to control pollution for Vijayawada during November, 2020.

As per the interim assessment by CPCB the CEPI score is reduced from 70.82 to 52.31 in the year 2013. Accordingly, MoEF & CC has lifted the Visakhapatnam from the list of Critically Polluted Areas, vide its Office Memorandum dated 17.09.2013.

To improve the environmental quality in Visakhapatnam, as per Local Area Monitoring Committee recommendations, APPCB stipulated the following stringent standards in comparison with that of the general standards to the industries in the bowl area as detailed below:

Name of the industry	Parameter	National standard	APPCB standard to other areas	APPCB (stringent) standards for Visakhapatnam
M/s. Essar Steels Ltd,	SPM	150 mg/Nm ³	115 mg/Nm ³	50 mg/Nm ³
M/s. Rain CII India	SPM	150 mg/Nm ³	115 mg/Nm ³	70 mg/Nm ³
Ltd,	SO ₂			0.48 TPD
M/s. APCL	SPM	150 mg/Nm ³	115 mg/Nm ³	50 mg/Nm ³
M/s. HPCL,	SPM	150 mg/Nm ³	115 mg/Nm ³	50 mg/Nm ³
Refinery	SO ₂			11.5 TPD
M/s. Coromandel	SPM	150 mg/Nm ³	115 mg/Nm ³	50 mg/Nm ³
Fertilisers	Fluorine	25 mg/Nm ³	10 mg/Nm ³	5 mg/Nm ³
	SO ₂		2.0 Kg/T	0.65 Kg/T of H ₂ SO ₄
M/s. Hindustan Zinc Ltd.	SO ₂		4 Kg/T of H ₂ SO ₄	1.5 Kg/T of H ₂ SO ₄

In order to comply with the stringent standards, the industries in the bowl area made the following additional investment of Rs.1845.03 crores as detailed below:

S.	Name of the industr	Investment made f	or up-gradation of

No.		treatment systems during 2009-2013 (Rs. in crores)
1	M/s. Essar Steels (India) Ltd.	19.20
2	M/s. Rain CII (Vizag) Ltd.,	3.50
3	M/s. Andhra Petro Chemicals Ltd.	4.17
4	M/s. HPCL, Refinery	178.70
5	M/s. Coromandel International Ltd.	55.30
6	M/s. Visakhapatnam Port Trust	1569.50
7	M/s. Hindustan Zinc Ltd., (Closed	14.66
	since 2012)	
	Total	1845.03

Further, APPCB has monitored the environmental quality for assessment of CEPI scores in the two clusters during the year 2016-17 for Visakhapatnam and during the year, 2018 for Vijayawada, and the scores were found to be as follows:

S. No.	Name of the industrial cluster	CEPI Score
1.	Visakhapatnam Bowl area	42.04
2.	Vijayawada	30.79

APPCB through the circular No. APPCB/UH-IV/HO-VJA/Petcoke/2020 dated 13.03.2020 (Annexure – 5),

- a) Prohibited use of pet coke as fuel by the industries located in Critically Polluted Area (CPA) and Severely Polluted Area (SPA) and shall switch over to the clean fuels like LDO, CNG, etc. within one year,
- b) Industries using furnace oil as fuel in Critically Polluted Area (CPA) based on the CEPI sore shall install scrubbing system or any other proven system to reduce the SO₂ load with a minimum efficiency of 90% within six months. Large scale units shall install online continuous emission monitoring systems within six months.

5.1.2 <u>Restrictions on use of petcoke & furnace oil as fuel in the</u> industries:

APPCB through the circular No. APPCB/UH-IV/HO-VJA/Petcoke/2020 dated 13.03.2020, has issued the following directions:

5.1.2.1 Petcoke:

- a) Industries shall install the scrubbing system or any other proven system like Flue Gas Desulfurization (FGD) unit to reduce the SO₂ load with minimum efficiency of 90% within six months.
- b) Shall install all the requisite air pollution control systems and measures so as to achieve the emission standards for SO₂ and providing minimum stack height as prescribed in Schedule I of the Environment (Protection), Rules 1986 framed under the Environment (Protection), Act 1986 as amended from time to time.
- c) Large and medium scale units shall install online continuous emission monitoring systems within three months i.e., by 30.06.2020.

5.1.2.2 Furnace Oil:

a) Industries shall provide the stack height as per the following formula within six months:

 $H = 14 (Q)^{0.3}$

Where, H is the physical stack height

- Q is the SO₂ emission load at generation in kg/hr.
- b) As a general condition, APPCB is not permitting any industry to use Furnace oil as fuel in the industrial areas, viz., Jawaharlal Nehru Pharma City, Paravada & APSEZ, Atchyutapuram, Anakapalli District.

5.1.3 Installation of CAAQMS / OCEMS / Monitoring of the Industries:

5.1.3.1 APPCB insisting all the air pollution potential industries and for the stacks of boilers with capacity more than 10 TPH to install Online Continuous Emission Monitoring Systems (OCEMS). Accordingly, all the 17 category industries & other major air pollution potential industries such as Ferro alloys, grinding units, calcination, Pharma, Pesticides and other industrial sectors have installed OCEMS and the data transmitted to APPCB & CPCB.

- 5.1.3.2 370 no. of industries which includes 17 categories, highly air pollution potential industries, port activities, CETPs, CBMWTFs and common incinerators have installed 573 nos. of OCEMS for the point source emissions and linked to the data to the APPCB and CPCB website.
- 5.1.3.3 These industries have also provided the 417 Continuous Effluent Monitoring Systems which includes flow meter and web camera for ZLD units and 220 no. of Continuous Ambient Air Quality Monitoring Systems (CAAQMS) and are connected to the CPCB & APPCB website.
- 5.1.3.4 General to industry specific ambient air standards are stipulated to the industries to comply with through CFE & CFO orders. The industries are instructed for operation with enclosures, suction hoods with APC and to install sprinklers to control Fugitive Emissions. Compliance is monitored by APPCB at regular intervals.
- 5.1.3.5 Interlocking system of the Air Pollution Control (APC) equipment with the process plant is also made mandatory in all the industries to ensure the control of air pollution.
- 5.1.3.6 Separate Energy meters for the APC is also made mandatory for certain category industries viz., 17 category and Other Red category pollution potential industries to ensure the operation of the APC.
- 5.1.3.7 Siting guidelines for certain air pollution potential industries like sponge iron, cement grinding units, stone crushers, hot mix plants, tyre pyrolysis units, and the same are under implementation.
- 5.1.3.8 Greenbelt of 33% is being insisted to the industries to mitigate the dust pollution.
- 5.1.3.9 Most of the industries, particularly Cement industries are opting for heat recovery systems for better utilisation of the heat to generate power and to optimise the utilisation of the fossil fuels thereby reducing the emissions.
- 5.1.3.10 The industries are regularly monitored through randomized risk based inspections on half yearly basis under Ease of Doing Business (EoDB) for compliance verification and actions are being initiated in case of noncompliance by way of issuing directions, conditional Bank Guarantees and closure of the industry.

5.1.4 <u>Regulations for conversion of brick kilns to clean</u> <u>technologies:</u>

5.1.4.1 Existing guidelines:

Govt. of Andhra Pradesh, vide G.O. Ms. No. 80, dated 22.04.2010 (Annexure – 6) has specified:

- a) Industries Department shall issue acknowledgement subject to submission of NOC from local authority viz., Gram Panchayat, Zilla Parishad, Municipality or Municipal Corporation.
- b) Siting guidelines:
 - i) 1 km from any human habitation, hospitals, educational or any other institutions,
 - ii) 100 m as far as practicable, but in no case less than 50 meters from the neighbours agricultural / horticulture lands. The Brick Clamp shall have the accessibility without disturbing the surrounding crops,
 - iii) 100 mtrs from flood banks of river,
 - iv) 200 mtrs from the National Highways / State Highways / Expressways / Ring Roads, and
 - v) 25m from the village roads.
- c) The Revenue Authorities viz., Collector and District Magistrate / R. D. O. / Tahasildar shall continue to take action against defaulting units under the provisions of Cr. P Code as upheld by the Hon'ble High Court in the W.P. No. 12138/2008 and batch cases.

5.1.4.2 <u>Proposed Guidelines for conversion of Brick Kilns to</u> <u>Cleaner technologies:</u>

a) Inventorization of Brick Kilns in the State - Within one year by Industries Department / District Industries Center.

- b) Notification / G.O. to be issued for conversion of all Brick Kilns being operated with conventional technologies to cleaner technologies - Within one year by EFS & T Department.
- c) Conversion of all Brick Kilns from conventional technologies to cleaner technologies (zig-zag technology) Within five years by Industries Department / District Industries Center.

5.1.5 Policy to set up E-Waste recycling unit in Industrial areas and in the State as a whole:

5.1.5.1 Existing Guidelines:

Govt. of India, as per the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), and in supersession of the e-waste (Management and Handling) Rules, 2011, has notified the E-Waste (Management) Rules, 2016 in March 2016 and are effective from 23.03.2016. These Rules shall apply to Producer, Consumer or Bulk Consumer, Collection centre, Dismantler and recycler of e-waste involved in the manufacture, sale, purchase and processing of electrical and electronic equipment of components as specified.

APPCB has issued Authorizations for six facilities for collection & dismantling and three facilities for collection, dismantling & recycling of e-Waste in the State as detailed below:

S. No.	Name of the Facility	Installed capacity
I	Collection & dismantling units:	
1	M/s. Veera Waste Management Systems, Plot No. 42, Block-D Extension, IDA, Autonagar, Visakhapatnam District.	19.4 TPD
2	M/s. Ramky ARM Recycling Pvt. Ltd., Plot no. 84/A & B, Road No. 20/5, JNPC, Parawada, Visakhapatnam District.	5 TPD
3	M/s. Clean Earth Green Earth Solutions, R.S. No. 48 & 49, Jewellery Park, Machilipatnam, Krishna District.	75 Kgs / day
4	M/s. Binbag Recycling Services Pvt. Ltd., Plot No. 83 & 84, APIIC Growth Centre, Thumukunta,	300TPA

	Hindupuram, Anantapuram District	
5	M/s. World Scrap Recycling Solutions Pvt. Ltd., Old Sy. No. 31, R.Sy. No. 519 Part, Plot No. 5, Thukivakram, Renigunta, Chittoor District.	23 TPD
6	M/s. Green Waves Environmental Solutions, Sy. No. 43/1, Mindi Village, Gajuwaka, Visakhapatnam District	40 TPM
II	Collection, dismantling & recycling	
1	M/s. Sungeel India Recycling Pvt. Ltd., Plot No. 59 C & 59 D, APIIC Industrial Park, Gollapuram, Hindupur, Anantapur District.	865 TPM 150 TPM recycling of Lithium ion battery srap
2	M/s. APNA Bhomi E-waste Management Service, Sy. No. 119, Plot No. D5 & D6, IDA, Kusalapuram, Etcherla, Srikakulam District.	60 TPM
3	M/s. E-Parisara Pvt. Ltd., Plot No. 42 A/4, Sy.No. 285 Part and Sy. No. 288 (P), APIIC Industrial Park, Gollapuram, Hindupuram, Anantapuram District.	20.9205 TPD

The total e-waste collected in the State during FY 2020-21 is 229.10 tons / year. The filing of returns is mandated by all the e-waste handling producers, dismantlers and recyclers.

5.1.5.2 Proposed Guidelines:

- a) Inventorization of e-Waste generation in the State Within one year by APPCB.
- b) Notification / G.O. to be issued by the Govt. of A.P. for implementation of e-Waste (Management) Rules, 2016 in the State Within one year by EFS & T Department.
- c) Ear-marking or allocation of space for e-waste collection, dismantling & recycling in the existing and upcoming IEs / IDAs - Within two year by Industries Department.

5.1.6 Continuous Power Supply & Non-operation of DG sets:

Andhra Pradesh is one of the State in the Country selected for implementation of "Power for All" – flagship program of Govt. of India. Accordingly, Transmission Corporation of Andhra Pradesh Limited, vide Notification dated 14.06.2021 (Annexure – 7) formulated State Electricity Plan for the four years, FY 2020 to FY 2024 with the objective to supply 24x7 quality, reliable and affordable power supply to all domestic, commercial and industrial consumers within a fixed timeframe. This program covers the entire gamut of power sector, including generation, transmission, distribution, consumer initiatives, renewable energy, energy efficiency measures, financial health of the utilities and support required from Govt. of India to achieve the objectives of the program.

- The total installed capacity of Andhra Pradesh is 18589 MW as on 31.03.2022, comprising 4,850 MW of thermal (AP Genco 3410 MW & APPDCL 1440 MW), 1,774 MW of AP Genco Hydel, 216 MW of Gas projects, 1,981 MW of CGS Share, 1961 MW of IPP's & others and 7807 MW of NCE's.
- The total energy consumption in Andhra Pradesh during FY 2021-22 was 68,972 MU and the peak demand was 12032 MW.
- The total number of consumers in the state are184.93 lakhs out of which 184.80 lakhs LT consumers which includes 146.35 lakhs of domestic, 15.96 lakhs of commercial, 0.82 lakhs of industrial, 3.42 lakhs of institutional & others, 18.25 lakhs of agricultural categories and 0.13 lakhs consumers under H.T category as on 31.03.2022.
- Per Capita Consumption in Andhra Pradesh for the FY 2021-22 is 1285 Kwh.
- There is a continuous power supply to all the sectors except Agriculture, thus rendering the usage of the DG sets to a minimum period in the state.
- Demand and Supply of Energy in million units for the last five years (from FY 2017-18 to FY 2021-22).

Financial Year	Demand (MU)	Supply (MU)
2021-22	69153.72	68971.65
2020-21	63075.89	63070.26
2019-20	65084.75	65048.64
2018-19	63611.32	63604.82
2017-18	58714.61	58704.55

As per Central Electricity Authority's Estimates of Energy requirement in the 20th Electric Power Survey for the Andhra Pradesh State to meet the Power Demand in the next ten years is given in the table.

Financial Year	Energy Requirement (MU)
2022-23	72961
2023-24	78134
2024-25	84245
2025-26	90889
2026-27	98162
2027-28	105792
2028-29	113859
2029-30	123361
2030-31	130196
2031-32	137022

New Power Projects planned for the next five years as per the Power System Studies, AP Transco viz., Thermal, Hydel, Solar, Wind, etc. projects are as follows: (Units in MW).

Type of Projects	2022-	2023-	2024-	2025-	2026-	Total
	23	24	25	26	27	
APGENCO	-	-	-	-	-	-
Hydro Plants	-	-	-	-	-	-
Polavaram (12 x 80 MW)	-	-	560	400	-	960
Lower Sileru (2 x 115 MW)	-	-	230	-	-	230
Upper Sileru Pumped	-	-	-	-	1350	1350
Storage(9x150MW)						
Thermal Plants	-	-	-	-	-	-
Vijayawada TPP	800	-	-	-	-	800
Stage V (1x800 MW)						
Krishnapatnam TPP (JVP)	800	-	-	-	-	800
Stage II (1x800 MW)						
APGENCO Total	-	-	-	-	-	-
Medium / Case – 1 Bid	-	-	-	-	-	-
Sembcorp, Krishnapatnam	-	625	-	-	-	625
CGS Share	-	-	-	-	-	-
Bhavini (Nuclear)	-	100	-	-	-	100
Neyveli Stage 2	-	-	-	255	-	255
Private Projects	-	-	-	-	-	-
Solar (SECI from Rajasthan)	-	-	3000	3000	1000	7000
Total Capacity Addition	1600	725	3790	3655	2350	12120

The anticipated total capacity additionis12,120 MW for the FY 2022-23 to FY 2026-27. The Per MW Estimated Project Cost of the Generating Plants varies according to type of Generation Plant (Thermal - 8 Crores, Hydel - 5 Crores, Nuclear- 12 Crores, Solar 2-3 Crores)

Generation Planning in accordance with the 20 th Electric Power Survey by CEA							
_				ι	Jnits in MU		
Generator	2023	2024	2025	2026	2027		
AP Genco	30403	33384	32695	32551	33106		
CGS	14183	14845	14546	16081	16348		
IPPs	7639	7649	11405	11356	11545		
Gas	1386	1386	1386	1386	1386		
Wind	7467	7467	7467	7467	7467		
Solar	5980	7174	7174	7174	7174		
Others	665	665	665	665	665		
Hydel	4071	4483	4483	4564	6019		
SECI, Rajasthan	0	0	2616	7561	10761		
Total Despatch	71794	77053	82437	88805	94471		
Required Energy	72961	78134	84245	90889	98162		
Deficit(-)	-1167	-1081	-1808	-2084	-3691		
Market nurchases	1167	1081	1808	2084	3601		

It is programmed to cover the estimated deficits by purchasing power from the Market.

Solar Roof Top Installations – Implementation Status:

- MNRE, Gol, New Delhi has issued the Operational guidelines for implementation of Phase-II of Grid Connected Rooftop Solar Programme for achieving cumulative capacity of 40,000 MW from Rooftop Solar (RTS) Project by the year 2022 vide MNRE Office Memorandum dated 20.08.2019. The Grid Connected Roof Top Solar Programme Phase – II was further extended up to 31.03.2026, vide MNRE Office Memorandum dated 06.10.2022.
- MNRE has assigned AP DISCOMS as State Implementation Agencies (SIA) for implementation of Solar Rooftop Program under subsidy scheme for domestic consumers.
- Govt. of India, MNRE extending grant up to 40% of the system cost for domestic consumers.
- In the FY 2021-22, MNRE has set target of 25 MW to AP DISCOMS (8 MW APEPDCL and 17 MW – APSPDCL / APCPDCL).
- Domestic consumers are showing interest across the state in Solar Rooftop System and enquiring NREDCAP on MNRE subsidy scheme.

Solar Roof top Plants installed in Andhra Pradesh (Including SRT Phase-II)

Year	No. c	No. of Units Synchronized			Capacity in MW			
	EPDCL	CPDCL	SPDCL	Total	EPDCL	CPDCL	SPDCL	Total
As on	414	228	182	824	7.71	3.00	5.17	15.88
31.03.2017								
2017-18	490	195	214	899	8.74	2.48	16.14	27.36
2018-19	538	333	241	1112	15.38	4.52	10.18	30.08
2019-20	576	398	421	1395	17.00	4.47	17.63	39.10
2020-21	358	319	131	808	10.94	3.48	8.21	22.63
2021-22	483	479	187	1149	10.55	6.80	10.77	28.12
Total	2859	1952	1376	6187	70.32	24.75	68.10	163.17

Energy Efficiency Programs:

- AP ranked as one of the top ten best states in energy efficiency as per State Energy Efficiency Index (SEEI) - 2020 released by Ministry of Power, Gol.
- Initiated project of Construction of G+2 floors building in compliance with super ECBC-2017 norms for APEPDCL training institute at Sagar Nagar, Vizag to demonstrate the energy savings when compared with conventional buildings.
- Implemented IoT based technology project in MSMEs in co-ordination with IIT, Hyderabad and installed 65 Nos. IoT power monitoring devices in MSME units to improve their power factor enhance equipment life and their productivity.
- Implemented Perform Achieve & Trade (PAT) scheme in 30 high energy intensive industries and achieved savings of 0.295 million ton of oil equivalent equals to 3430 MU.
- Organized awareness and capacity building programs on ECONIWAS Samhitha to engineers/employees of GVWV & VSWS Department in 13 districts towards Implementation of Energy efficiency measures in 28.3 lakh houses under Jagananna colonies under Navaratnalu Pedalandariki Illu.
- Conducted an Investment Grade Energy Audit (IGEA) in Tirumala Tirupati Devasthanam (TTD) pumping stations and the study reveals an energy saving opportunity of 4.5 Million Units per annum by replacement of 213 Nos. inefficient pump Sets with Energy Efficient pump sets of various capacities.
- Research & Development of most Energy Efficient 5HP pump set prototype using Permanent Magnet Brush Less Direct Current (PMBLDC) technology for application in agricultural/Domestic/ commercial sectors is in progress through Andhra University.

- Organized Workshops and awareness Programs to the Pump Technicians, farmers, Municipal officials under Agricultural & Municipal Demand Side Management (AgDSM & MuDSM). Conducted state energy conservation awards – (SECA) 2020 and 2021 in energy intensive sectors, competitions to school children, mega workshop with SHG women etc as a part of energy conservation week 2021 celebrations.
- Conducting Investment Grade Energy Audit (IGEA) study in Aquaculture sector (Allied category of Agriculture) in selected 9 locations in state.
- Conducting of Investment Grade Energy Audit in 17 Nos. Municipal Corporations in 13 districts.
- Implementation of energy efficiency measures in EHT substations of APTRANSCO by replacing conventional lighting with LEDs.

S. No.	Name of the award	Award to	Date of award	Award given for
1	National Energy Conservation Awards-2015	AP State Energy Conservation Mission	14.12.2015	Best State Designated Agency (SDA) for effectively monitoring, devising, studying the best practices & advising the State Govt. for implementation of Energy Efficiency activities.
2	WORLD BANK	Andhra Pradesh State	04.11.2016	World Bank has ranked AP state as No. 1 in the country in the area of "Energy Efficiency Implementation Readiness"
3	National Energy Conservation Awards -NECA-2016	AP State Energy Conservation Mission	14.12.2016	2nd Prize in Best SDA category
4	Central Board of Irrigation and Power (CBIP) Awards-2016	AP State Energy Conservation Mission	29.12.2016	CBIP Award for Excellence in Promotion of Energy Efficiency

Awards for Energy Conservation Measures:

r			r	
5	ISGF - India Smart Grid Forum- Appreciation Award for Best Energy Efficiency Program of the year 2016	AP State Energy Conservation Mission	09.03.2017	Energy Efficiency
6	NationalEnergyConservationAwards-2017BureauofEfficiency,Gol-BestStateDesignatedAgency(SDA)foreffectivelymonitoring,devising,studying thebestpracticesadvisingtheStateGovt.forimplementationofEnergyEfficiencyactivities.	AP State Energy Conservation Mission	14.12.2017	Energy Efficiency

5.1.7 <u>Laying of City Gas Distribution networks and shifting of</u> <u>industries to gaseous fuels:</u>

5.1.7.1 Godavari Gas Pvt. Ltd.:

Godavari Gas Pvt. Ltd. is a joint venture organization of Andhra Pradesh Gas Distribution Corporation Ltd., (APGDC) and Hindustan Petroleum Corporation limited (HPCL) a Central Government Public Sector Enterprise (PSU). The objective of the company is to design and develop natural gas supply / distribution network systems to transport and distribute natural gas in entire East and West Godavari GA's of state of Andhra Pradesh.

The policy of GGPL for creation of natural gas distribution network in the State is as follows:

- To lay built and operate City Gas Distribution in the entire East and West Godavari GA's.
- To minimize the pollution in East and West Godavari GA's by establishing CNG Stations, PNG networks.

- To cater uninterrupted PNG supply to Domestic, Commercial, industrial Customers.
- To create a green CNG corridor along NH-16 from Eluru to Tuni.

Detailed action plan for creation of natural gas distribution network by GGPL in the geographical areas of EG & WG districts in the State on 100% basis are as follows:

S.	Particulars	Length in	Budget /	Timelines
No.		Kms	Expenditure	
			(Rs. in	
			crores)	
1	Pipeline network required to cover the	1470 KM /	535	March,
	State on 100% basis.	3600		2025
		Inch-Km		
2	Pipeline network completed (areas	726 KM/	-	March,
	covered: Kovvuru, Chagallu,	1654 Inch		2025
	Jangareddygudem, Nidadavolu, Eluru,	-KM		
	Tadepalligudem, Tanuku,			
	Narasapuram, Palacole, Bhimavaram,			
	Rajahmundry, Amalapuram,			
	Drakshramam, Mandapeta, Peruru,			
	Rajolu, Ramachandrapuram,			
	Kothapeta, Ravulapalem)			
3	Ongoing pipeline network (areas	744 Km/	-	March,
	covered: Rajahmundry, Kothapeta,	1946		2025
	Ravulapalem, Mandapeta,	Inch-Km		
	Draksharamam, Ramachandrapuram,			
	Razole, Bhimavaram, Palakole,			
	Narsapur, Eluru, Tadepalligudem,			
	Bhimadole)			
4	Proposal stage covering the rest of	-	Progressively	-
	the areas.		development	
			of CGD	
			network will	
			be taken up	
			in other cities	
			of East and	
			West	
			Godavari	
			districts.	

S. No.	Category	Actual requirement (in scm)	Supply as on date (in scm)	Action plan for meeting the demand
1	Industries	6,97,900	587032	Gas will be sourced from
2	Commercial	19,200	4936	GAIL KG Basin Network.
3	Domestic	76,900	21500	

Gas requirements:

The total investments of ~Rs 320 Crores has already been made till date in Andhra Pradesh for creating CGD infrastructure and the likely investment planned for next 2 years is ~Rs. 215 crores. Presently, CNG dispensing stations in Andhra Pradesh are 35.

5.1.7.2 Bhagyanagar Gas Ltd.:

Detailed action plan for creation of natural gas distribution network in the State (Vijayawada & Kakinada) on 100% basis by Bhagyanagar Gas Ltd., is as follows:

S. No.	Particulars	Length in Kms	Budget / Expenditure (Rs. in crores)	Timelines		
1	Pipeline network required to cover	993.00*	-	-		
	the State on 100% basis					
2	Pipeline network completed (areas	808.60**	-	Completed		
	covered : Vijayawada & Kakinada)					
3	Ongoing pipeline network (areas	184.40	-	Ongoing		
	covered : Vijayawada & Kakinada)					
4	Proposal stage covering the rest of	-	-	-		
	the areas.					
* Target as per PNGRB in inch per km & **BGL achievement in inch per km						

Gas requirements:

S. No.	Category	Actual requirement (in Scm)	Supply as on date (in Scm)	Action plan for meeting the demand
1	Industries	2,92,800	2,92,800	
2	Commercial	2,42,500	2,42,500	As per demand
3	Domestic	61,63,800	61,63,800	

The total investments of **~Rs 367 Crores** has already been made till date in Andhra Pradesh for creating CGD infrastructure and the likely investment planned for next **One year** is **~Rs. 100 crores**. Presently, CNG dispensing stations in Andhra Pradesh are **47 nos.** and it is proposed to expand to **~25 nos.** dispensing stations in the next one decade.

5.1.7.3 IOCL:

5.1.7.3.1 Vizag Gas Agency:

Vizag GA comprises of the 03 erstwhile districts of Visakhapatnam, Vizianagram & Srikakulam. There is a plan of laying around 2300 Inch Km of Steel Pipeline in the three districts within 08 years of the date of availability of Gas through Trunk Pipeline of APGDC (KSPL). The plan includes infrastructure to cater to 9.3 Lakhs of Domestic PNG connection and setting up of 211 CNG Retail outlets at an estimated expenditure of Rs. 1330 crores.

In Visakhapatnam city total 63 Km of Steel Pipeline network & 340 Km of MDPE Pipeline network has been laid by IOCL till now. However as Trunk Line connectivity is not available in Vizag due to delayed APGDC Pipeline from Kakinada to Srikakulam, there is no gas availability in Vizag. 13 CNG RO's are under operation by bringing Gas through Cascades from BGL Kakinada. Upon availability of Gas through Trunk Line the demand in the three districts will be around 2 MMSCMD in next 25 years.

5.1.7.3.2 Guntur Gas Agency:

Guntur GA comprises of 03 erstwhile districts of Guntur, Kurnool & Prakasam, There is a plan of laying around 1412 Inch Km of Steel Pipeline in the three districts within 08 years. The plan includes infrastructure to cater to 45 Lakhs of Domestic PNG connection and setting up of 301 CNG Retail outlets at an estimated expenditure of Rs. 1420 crores.

The total investments of ~Rs 157 crores has already been made till date in Andhra Pradesh for creating CGD infrastructure and the likely investment planned for next 8 years is ~Rs. 2593 crores. Presently, IOCL CNG dispensing stations in Andhra

Pradesh (Visakhapatnam & Guntur District) are 14 and it is proposed to expand to 512 dispensing stations in the next one decade.

5.1.8 LPG Coverage in Andhra Pradesh:

"Pradhan Mantri Ujjwala Yojana" was launched by Prime Minister of India on 1st May, 2016 to distribute 50 million LPG connections to women of Below Poverty Line families. Pradhan Mantri Ujjwala Yojana - 2.0 to offer 1 crore more LPG connections. The same is under implementation. The penetration of the LPG - as per Active Consumer count in the Andhra Pradesh is 104.0 % as on March, 2022.

S. No.	Category / Service provider / Oil company	No. of households covered	% of coverage	Gap	
Ι	Below Poverty Line (B	BPL):			
1	IOCL	2887977	104.8	Nil	
2	BPCL	1389549			
3	HPCL	2691628			
	Total	6969154			
II	General (Non BPL & C	commercial):			
1	IOCL	3812860	104.8	Nil	
2	BPCL	2025749			
3	HPCL	5069538			
	Total	10908147			

There are 372 distributorships and 9 exclusive non domestic packed distributorships across Andhra Pradesh to cater to commercial / industrial LPG needs operated by HPCL and 460 distributorships and 2 exclusive non domestic packed distributorships across Andhra Pradesh to cater to commercial / industrial LPG needs operated by IOCL.

5.1.9 PNG Coverage:

The new townships are encouraged to opt for PNG coverage wherever feasible. Status of PNG existing & ongoing connections and volume of gas consumption company-wise and year-wise is as follows:

S. No.	Gas agency	Cities / towi	าร	No. of households	Year	Volume (SCM)
1	BGL	Vijayawada	&	1,18,000	2019-20	5287699

		Kakinada		2020-21	5624572	
				2021-22	8028788	
2	AGPCGP	Anantapur, YSR	19,400	2019-20	Nil	
		Kadapa District		2020-21	Nil	
		and Naidupeta,		2021-22	Nil	
		Gudur & Nellore				
3	GGPL	Rajahmundry,	2,451	2019-20	155825	
		Amalapuram,		2020-21	291831	
		Tadepalligudem,		2021-22	268024	
		Kovvur, Eluru and				
		Bhimadole				
4	MEIL	Nuzvid, Agiripalli,	21,000	2019-20	2000	
		Nunna,		2020-21	5200	
		Gannavram,		2021-22	8400	
		Nagyalanka,				
		Avanigadda,				
		Vijayawada				
		Rural,				
		Gudlavalleru,				
		Pedana				
				2019-20	5445524	
		Total in the State:	1,60,851	2020-21	5921603	
				2021-22	8305212	
SCM: Standard Cubic Meter.						

5.1.10 <u>CNG Coverage:</u>

As on date, 128 CNG stations covering 50 cities & towns in the State have been installed for auto gas supply and public transport vehicles.

5.1.11 Co-processing of Hazardous Waste in Cement Kilns:

The incinerable waste generated in the state is being used for co-processing in the cement industries as a result of which the fuel used for incineration and the cost of operation of the APC are saved leading to lesser air pollution and is managed in an environmentally sound methods. The amount of material co-processed in cement plants during the year 2019-20, 2020-21 & 2021-22 is 1,30,669 MT, 80,475 MT& 80,914 MT respectively.
5.1.12 Management of Thermal Power Plants Fly Ash:

APPCB is implementing the MoEF & CC, Gol Fly Ash Notification, dated 31.12.2021 in the State for better monitoring and utilization of Fly Ash generated by coal based Thermal Power Plants (TPPs).

In this regard, APPCB has organized an implementation review meeting with the representatives of TPPs and other user agencies on 10.06.2022 and directed to strictly comply with the provisions of Fly Ash Notification, 2021.

The State is having 10 thermal power plants generated about 14.12 million metric tons of ash and utilized an amount of 13.76 million metric tons of ash in the year 2021-22 as detailed below:

S.	Generation of		2021-2022			
No.	Electricity in MW	Fly Ash	Fly Ash	Percentage		
	(as per CFO)	Generation	Disposed	of fly ash		
				disposal		
1	M/s. Rashtriya Ispat Nigam Limited, Kurmannapalem, Visakhapatnam.					
	325	5,11,145	4,66,745	91		
2	M/s. NTPC Ltd, Simhadr	i Thermal Power Pla	nt, Simhadri, Visak	hapatnam.		
	2000	35,91,587	40,17,370	111.86		
3	M/s Hinduja National Po	wer Corporation Ltd	, Palavalasa (V), T	Devada (P),		
	Pedagantyada (M), Visal	khapatnam.				
	1040	84,494	4,04,704	479		
4	Dr. Narla Tata Rao Thei	rmal Power Station,	Ibrahimpatnam (V	&M), Krishna		
	District.	strict.				
	1750	3,98,552	4,92,324	123.53		
5	M/s Sri Damodaram Sa	anjeevaiah Thermal	Power Station of	APGENCO,		
	Nelatur and Pynapuram	villages, Muthukur N	landal, SPSR Nello	re District.		
	1600	12,32,856	7,63,865	63.46		
6	M/s Sembcorp Energy	India Limited, Pro	ject 1, Painamp	uram, SPSR		
	Nellore District	ſ	ſ	ſ		
	1320	16,99,373	16,99,912	100		
7	M/s Sembcorp Energy	India Limited, Pro	ject 2, Ananthava	aram Village		
	Varakavipudi Panchayat	TP Gudur Mandal, S	SPSR Nellore Distri	ct.		
	1320	6,90,990	6,81,685	100		
8	M/s Meenakshi Energy Pvt. Ltd., Sy. Nos. 45, 46, etc., Thammenapatnam,					
	Chillakur (M), SPSR Nell	ore District.				
	1000	17,175	1,633.8	9.513		
9	M/s Simhapuri Energy F	vt. Ltd., Thammena	apatnam and Mom	midi Villages,		
	Chillakur (M), SPSR Nell	ore District.				
	600	N	ot In Operation			

10	M/s Rayalaseema Therma	al Power Plant, V.V	. Reddy Nagar, Mu	iddanur, YSR			
	Kadapa District.						
	1650	2,14,0407	1565173	73.13			
Total	12605	1,03,66,579	1,00,93,411.8				

Further, APPCB has issued directions to all the Thermal Power Plants of the State for disposal of the fly ash through APEMCL to end users. Accordingly, APEMCL developed the fly ash module for disposal of fly ash through APEMCL online portal for effective monitoring of fly ash generation and disposal.

5.1.13 Formation of Andhra Pradesh Environment Management Corporation Limited:

Government of Andhra Pradesh, Environment, Forests, Science & Technology Department, vide G. O. Ms. No. 39 dated 05.12.2019 (Annexure – 8) formed Andhra Pradesh Environment Management Corporation Limited (APEMCL) under its aegis for providing effective mechanism of collection, transportation, storage, treatment, processing, delivery and disposal of the industrial waste and other wastes from their generation until the end of its lifecycle, in close coordination with APPCB.

The APEMCL commenced its Platform Business Model operations from 05.11.2020. About 987 (A.P State - 961, Other states - 26) number of waste generating industries, 171 (A.P State - 108, Other state - 63) number of waste receiving industries, 170 number of transporters, 1279 number of transporting vehicles are registered in APEMCL portal till date and successfully utilizing the online portal for exchange of the wastes to benefit out of the disposal.

Since inception, the APEMCL has successfully handled 8,32,225 MT (Landfill waste - 3,98,358.81 MT, Incinerable waste - 9,134.73 MT, recyclable waste - 14,502.87 MT, Utilizable waste - 4,10,228.57 MT) of hazardous waste (solid) through 49,587 online manifests. Similarly, 6,03,016 KL of liquid waste handled through 32,273 of online manifests, till 21.12.2022.

5.1.14 <u>Control of VOC emissions from Storage of Petroleum Crude</u> <u>and its Products:</u>

The Petroleum and Explosives Safety Organization (PESO) grants licenses under Petroleum Rules, 2002 stipulated the conditions that storage of hazardous petroleum products shall be provided with floating roofs and double seals for the storage tanks to ensure prevention of escape of fugitive VOC emissions into the environment.

5.1.15 Control of Emissions from Fire Crackers:

In compliance of Hon'ble Supreme Court of India directions in I. A. No. 44727/2021 in writ petition No. 728/2015, in respect of fire crackers PESO has approved the improved and new formulation (green crackers) fireworks composition to all the manufacturers and submitted to the Chief Controller of Explosives, Nagpur for implementation.

5.1.16 <u>Common guidelines / Action points for implementation in</u> <u>industrial estates and areas to reduce the air pollution:</u>

- Insisting the industries to have 33% green cover in their premises through CFE & CFO Orders and also in the industrial areas - Concerned industries, industrial associations, APIIC.
- The roads in the industrial estates / areas are to be maintained regularly without potholes, end-to-end pavement and sweeping to remove the silt -**APIIC, IALA**.
- The loading and unloading operations are to be taken up in covered areas to prevent any lofting of dust – APPCB, APIIC, Industries Department & Industries.
- Industries shall be mandated with suitable air pollution control equipment to meet the environmental standards **APPCB**.
- All in-charges of industrial estates and areas to monitor the construction works, loading and unloading activities. Also to have a dedicated public redressal system to address the grievances - APIIC & IALA.

- Monitoring of all the industrial estates and areas to be carried out at regular intervals for EC, CFE & CFO compliance verification and to take corrective measures required if any – APPCB.
- All the air polluting industries with boilers, furnaces and any other should be monitored for compliance verification at regular intervals. The Online Continuous Emission Monitoring and Ambient Air Quality Systems shall be made mandatory based on the category of the industry - APPCB.
- All concerted efforts are to be made for switching over to cleaner fuels like CNG & LPG and for the new industries subject to availability of these fuels - APIIC, APPCB, Civil Supplies & Industries Department.
- The Pollution Under Control (PUC) for the vehicles plying in the estates shall be mandatory **Industries concerned and IALA**.
- All measures to be taken to prevent any sort of open burning and all such incidents shall be stopped and punitive action to be initiated APPCB, APIIC & IALA.
- All fire accidents within the industrial estate / area are to be mitigated at the earliest and the environmental damage need to be fixed as per the procedures -APIIC, APPCB, Industries & IALA.
- Hotspots for air pollution need to be identified within 30 days of approval of the State action plan by APIIC, APPCB, Inspector of Factories and Industries Department. A micro action plan has to be prepared for mitigation of the air pollution at such hotspots and placed before the competent authority (District Collector) for approval and implementation.
- A half yearly report has to be prepared by APPCB, APIIC and Industries Department on the compliance status of air pollution with respect to PM₁₀ and PM_{2.5} along with the actions initiated as per the State Action Plan and approved micro action plan. The recommendations, if any are to be made.

5.2 <u>Vehicular emissions:</u>

Andhra Pradesh along with other States has been recording a sustained growth in the number of vehicles over the years. The development of good infrastructure, besides, the State has the proposals to develop industrial corridors along the coast line accelerated the growth of vehicles. The following table provides the details of the vehicles in the state:

	Details of total vehicles in the State with break-up in Vehicular fleet							
	As Per Bharath Stage Norms Vehicle Strength as On 31/03/2022							
S. No.	Category	BOV	BSII	BSIII	BSIV	BSVI	Grand Total	
1	Auto rickshaw	2889	33308	253697	109352	26276	425522	
2	Contract Carriage	1	953	2479	1051	335	4819	
3	Educational Institute Buses	0	2377	6231	2628	196	11432	
4	e- Rickshaw/e- Cart	0	0	0	0	0	0	
5	Goods Carriages	314	37640	127164	85148	61538	311804	
6	Maxi Cab	1	1985	1948	3096	911	7941	
7	Motor Cab	225	2995	8510	11405	5654	28789	
8	Motor Car	4756	2039	75708	170189	154584	407276	
9	Motor Cycle	27003	367950	3509494	2693546	1515354	8113347	
10	Other Vehicles	635	1647	13819	8519	2380	27000	
11	Private Service Vehicles	2	137	424	199	165	927	
12	Stage Carriages	11	1115	5174	82	2	6384	
13	Tractor and Trailers	0	363	25944	2	0	26309	
C	Grand Total	35837	452509	4030592	3085217	1767395	9371550	

The total number of vehicles using CNG in Andhra Pradesh is autorikshaws 22,391, four wheelers 9,054 and Public transport buses 212.

5.2.1 <u>Notification of phasing out old vehicles (Commercial: 10</u> years and private: 15 years):

The Govt. issued G.O. Ms. No. 124, dated 07.10.1999 prescribing that no fourwheeler and above vehicles of more than 15 years old are allowed to ply unless scientifically tested and certified by competent authority. 3 wheeler vehicles which

Category Wise, 15 Years Old Vehicles As On 31.03.2022					
S. No.	Category	Count			
1	Autorickshaw	42,728			
2	Contract Carriage	1,018			
3	Educational Institute Buses	3,315			
4	Goods Carriages	71,985			
5	Maxi Cab	2,761			
6	Motor Cab	12,668			
7	Motor Car	1,58,456			
8	Motor Cycle	22,70,936			
9	Other Vehicles	26,968			
10	Private Service Vehicles	573			
11	Stage Carriages				
12	Tractor and Trailers	1,48,194			
13	APSRTC Buses	8,341			
	Total 27,47,943				
Note: All the	APSRTC buses are treated as Stage Carria	ges.			

have covered 15 years shall not ply within Vijayawada and Visakhapatnam. The details of the vehicles category wise, 15 years old vehicles as on 31.03.2022.

5.2.2 Policy of Scrapping the old vehicles:

Ministry of Road Transport and Highways, Govt. of India has issued Notification G.S.R. 653 (E) dated 23rd September, 2021 on Motor Vehicles (Registration and Functions of Vehicle Scrapping Facility) Rules, 2021 as required sub-section (1) of section 212 of the Motor Vehicles Act, 1988 (59 of 1988).

Industries Department, Govt. of Andhra Pradesh has prepared draft policy on Vehicle Scrap Yards Promotion to promote the establishment of vehicle scrapping units and Automated Testing Stations and submitted for approval.

5.2.3 Policy / Plan for Li-battery waste management from scrapped vehicles:

The State has adopted and implementing the Battery Waste Management Rules, 2022 issued through Notification by Govt. of India, vide S. O. 3984 (E), dated 22.08.2022.

As per the Rules, the producer shall have the obligation of Extended Producer Responsibility for the Battery that they introduce in the market to ensure the attainment of the recycling or refurbishing obligations. Producer shall meet the collection and recycling and / or refurbishment targets as mentioned in Schedule II for Battery made available in the market. Waste Battery collected by the Producer shall be sent for recycling or refurbishing and shall not be sent for landfilling or incineration.

S.	Mandatory Waste Battery	Mandatory Waste Battery collection		
No.	collection target and 100%	target, and 100% refurbishment and/or		
	of refurbishment or	recycling target for every fourteen year		
	recycling of the collection	cycle (Weight)		
	target (Weight)			
I	For Electric Vehicles (EV) Bat	tery of two wheelers		
	Minimum 70% of the quantity	Collection of 100% Waste Battery and of		
	of batteries placed in the	100% of refurbishment / recycling shall		
	market in a financial year shall	be mandatory by end of seven year		
	be collected after three (3)	compliance cycle (end of 7th year)		
	years.	against the Battery placed in the market		
		during seven year compliance cycle.		
II	Electric Vehicles (EV) Battery of E-rickshaw (three wheelers)			
	Minimum 70% of the quantity	Collection of 100% Waste Battery and of		
	of batteries placed in the	100% of refurbishment / recycling shall		
	market in a financial year	be mandatory by end of seven year		
	shall be collected after two (2)	compliance cycle (end of 7th year)		
	years.	against the Battery placed in the market		
		during seven year compliance cycle.		
III	For Electric Vehicles (EV) Bat	tery comprising of four wheelers		
	Minimum 70% of the quantity	Collection of 100% waste battery and of		
	of batteries placed in the	100% of refurbishment or recycling shall		
	market in a financial year	be mandatory by end of fourteen year		
	shall be collected after seven	compliance cycle (end of 14 th year)		
	(7) years.	against the Battery placed in the market		
		during fourteen year compliance cycle.		
		However, there may be a carry forward of		
		up to 60% of the average quantity of		
		Battery placed in the market per year		
		during the fourteen year cycle to the next		
		compliance cycle.		

5.2.4 Policy for Augment of E-vehicles:

Industries & Commerce Department, Andhra Pradesh has notified the "Electric Mobility Policy 2018-23", vide G.O. MS. No. 74, dated 08.06.2018. Under the policy,

- All forms of government vehicles, including vehicles under government corporations, boards and government ambulances etc. will be converted to electric vehicles in two years by 31.12.2024.
- Target to have 10 lakh Evs, combined across all segment of vehicles in two years by 31.12.2024.
- Target to have 1,00,000 slow and fast charging stations in three years by 31.12.2025.

Under this policy, Government approved the following benefits covering the areas of (1) Manufacturing (2) Charging Infrastructure (3) Demand Creation (4) Research and Development in order to make projects under these areas viable. The "Electric Mobility Policy 2018-23" of the State is enclosed **(Annexure – 9)**.

5.2.4.1 Status of Implementation of E-mobility policy in the State:

Industries & Commerce Department has issued "Electric Mobility Policy 2018 -23", vide G.O. MS. No. 74, dated 08.06.2018. Under the said Policy, Transport Department granted exemption of tax and registration fees to motor vehicles operated with batteries / ultra capacitors / fuel cells registered on or before 07.06.2023, vide G.O. Ms. No. 69 & 70 of Transport, Roads & Buildings (Tr. I) Department, dated 27.12.2018 (Annexure – 10) in addition to G.O. Ms. No. 57 of Transport, Roads & Buildings (Tr. I) Department, Roads & Buildings (Tr. I) Department, dated 01.11.2018 (Annexure – 11).

This exemption is applicable to all categories of vehicles. Permit is also exempted in respect of vehicles operated with battery, ethanol / methanol, vide Govt. of India notification No. S.O. 5333 (E) dated 15.10.2018. The cumulative numbers of electric vehicles registered in Andhra Pradesh are 35,837.as on 31.03.2022.

Govt. of Andhra Pradesh has issued G.O. Ms. No. 4, dated 06.07.2021 (Annexure – 12) facilitating the supply of E-2 Wheelers to the Government employees on EMI basis through NREDCAP. NREDCAP has converted 5 numbers of ICE 3 Wheeler Passenger Autos into Electric Autos with swapping facility on pilot basis in Tirupati City.

10 nos. of E- Garbage Autos have been deployed at 4 Grampanchayaths with a total cost of Rs. 28,36,000/-

300 numbers of Electric cars have been deployed to various government departments in Andhra Pradesh.

	Deployment of Electric Vehicles in Andhra Pradesh						
S.	District	Department	No. of	Total Vehicles			
No.		-	Vehicles	District Wise			
1	Visakhapatnam	APEPDCL	32	63			
		GVMC	30				
		DC Vizag	1				
2	Krishna	APSPDCL	24	55			
		VMC	24				
		APCRDA	5				
		NREDCAP	1				
		EESL	1				
	Guntur	AP Secretariat					
3	Guntur	APSPDCL	14	14			
4	East Godavari	APEPDCL	4	19			
		RMC	15				
5	West Godavari	APEPDCL	1	1			
6	Vizianagaram	APEPDCL	1	1			
7	Srikakulam	APEPDCL	2	2			
8	Chittoor	APSPDCL, Tirupati					
	Chittoor	APSPDCL, Chittoor	56	56			
9	Prakasam	APSPDCL,Ongole	12	12			
10	Nellore	APSPDCL, Nellore	27	27			
11	Kadapa	APSPDCL	12	12			
12	Kurnool	APSPDCL	13	13			
13	Anantapur	APSPDCL	11	21			
	-	AMC	9				
				296			

The vehicles are provided through EESL on dry lease basis @ Rs. 16,000/- per month.

5.2.4.2 Electric Vehicle Charging Stations:

A total of 148 charging stations have been installed in the State covering 25 Districts under private sector. Further, 103 institutional charging stations have been installed in the State under Govt. sector. Apart from these, it is proposed to install 3,032 more charging stations in the State by the private and public sector organizations by 31.03.2024. NREDCAP has empanelled 12 service providers as Charge Point Developers (CPD) in the State as detailed below:

S. No.	Name of the CPD	Address
1	Icharge Energy	Plot No. 4/B, Hitendranagar Sahakari Audhyogik
	Solutions Private	Vasahat Ltd., Nr. Naroda Railway Crossing, B/h.
	Limited	Cartec Honda Showroom, Naroda, Ahmedabad -
		382 340, Gujarat.
2	Sharify services	Nasscom, Plot No.1 Udyog vihar
	private limited	phase 1. Sector 20,gurugram, Haryana 122011,
		India.
3	Volty NXT energy	Level 3, Spacion Towers, next to The Westin Hotel
	private limited	Road, Vittal Rao Nagar, HITEC City, Hyderabad,
		Telangana 500081.
4	TVSAS Electric	Registered Office
	Solutions Private	New Colony, Bijaura Bhawarnath,
	Limited	Azamgarh, Uttar Pradesh, 276001.
		Corporate Office
		Sector 64 Noida, Uttar Pradesh, 201201, India.
5	ETO Motors Pvt.	My Home Hub, 5th Floor, Block - II, HITEC City,
	Ltd.	Madhapur, Telangana 500081.
6	GOEGO	GOEGO Office, Apramey Building, Lane Number 3,
	Network	Behind Westside Mall, Laxman Nagar, Baner, Pune,
	(Impactware)	Maharashtra - 411045.
7	Joule Point Private	3-1- 429, road no 11, Maithri Nagar Colony
	Limited	Dhanapuram, L B Nagar Hyderabad.
8	Sahana Systems	A901, Mondel Square, Near Prahalad Nagar Cross
	Limited	Road, S.G. Highway, Ahmedabad-380015.
9	Verde Mobility	Plot#32, Zone-D/4, Phase-1, GIDC Estate, V.U.
		Nagar, Gujarat - 388 121.
10	26 Eleven Solutions	Ground floor, 3-119/10/a, Daspalla layout, Near St.
	Private Limited	James school, Yendada, Visakhapatnam, AP –
		530045.
11	Evigo Charge	D-1, Udyog Sadan No3, MIDC Marol Industrial Area,

	Private Limited	Andheri East – 400093.
12	TecSo Charge Zone	401, Benison Complex, Opp. Shiv Mahal Palace, Old
	Limited	Padra Road, Vadodara – 390007, Gujarat.

The development of Charging Infrastructure is taken up with private investment and operational guidelines are awaited from Industries Department based on that incentives will be extended and demand will be generated based on the demand cost can be arrived.

5.2.5 Public Transport:

5.2.5.1 <u>Andhra Pradesh State Road Transport Corporation</u> (APSRTC):

The total fleet of State owned APSRTC is 9014, of it 77 are >15 years old, 212 are CNG driven and rest are diesel driven buses as on 31.03.2022. The corporation is also operating city services in the million-plus cities, viz., Visakhapatnam & Vijayawada with a fleet of 532 and 426, respectively. In Vijayawada city, 212 out of 426 are CNG driven buses.

In a bid to reduce carbon emissions in the pristine Tirumala hills and Seshachalam forests, which is a world renowned pilgrimage center, the State Government has sanctioned 100 e-buses to Tirupati region to operate by APSRTC during November, 2021 has issued supply order to the Olectra and Every Trans Consortium to supply 100 electric buses under FAME-II scheme of the Government of India and to operate on a Gross Cost Contract (GCC) / OPEX model basis for 12 years. Of the 100, 50 buses will ply between Tirupathi & Tirumala and 50 buses will ply between Tirupati and other neighbouring towns.

Accordingly, the first batch of 10 e-buses was delivered to APSRTC on 27.09.2022 to ply between Tirumala and Tirupati.

5.2.5.2 Bus Rapid Transport System (BRTS):

<u>Visakhapatnam City:</u> A total length of 42 kms of two BRTS corridors, (1) Pendurthi Transit Corridor – Pendurthi to Hanumanthawaka covering Pendurthi to NAD junction, NAD to Thatichetlapalem via Marripalem, Thatichetlapalem to Railway Station, Rama Talkies to Maddilapalem & Maddilapalem to Hanumanthawaka, and (2) Simhachalam Transit Corridor - Simhachalam to Hanumanthawaka was developed and made available in Visakhapatnam city.

<u>Vijayawada City:</u> BRTS corridor covering a distance of 3.8 km from Padavalarevu Junction to CK Reddy Road is available in Vijayawada city.

5.2.6 Notification and enforcement of PUC norms:

In the state, there are a total of 429 PUC testing centers and out of which 300 are active and 129 are expired. The integration of the issue of certificates is maintained through online and with calibration.

Transport Department, Govt. of AP has issued Memo. No.768854 / K1 / 2017, dated 05.10.2017 (Annexure – 13) wherein,

- a) All Pollution Under Control (PUC) centres to be informed to take up calibration of their machines every year. One month time may be given to PUC centres which have no calibration certificate.
- b) The Deputy Transport Commissioners should conduct random checks of PUC centres every month and also carry enforcement drives for PUC certificates on regular basis.

5.2.7 Green Tax:

S. No.	Class of Vehicles	Amount of Tax
1	Transport Vehicles that have completed 7 years	Rs.5000/- (Per annum)
	of age from the date of their registration	
2	Non-Transport Vehicles that have completed 15	
	years of age from the date of their registration.	
	(a) Motor Cycles	Rs.1000/- (Per Annum)
	(b) Other than motor Cycles	Rs.5000/- (Per Annum)

There shall not be any levy of Green Tax if the vehicle is operated by LPG, CNG, Battery or Solar Power.

5.2.8 Refilling stations retrofitted with vapor recovery system:

CPCB through its O.M., vide Lr. No. B-13011/1/2019-20/AQM/10802-10847, dated 07.01.2020, issued guidelines for setting up of new petrol pumps in compliance of Hon'ble NGT order dated 18.01.2019 in O A No. 86/2019. As per the guidelines the newly coming up petrol pumps / filling stations have to install Vapour Recovery System (VRS) to control VOC emissions as detailed below:

S. No.	Population	Sale potential of MS/month (KL)	Remarks
1	> 1 Lakh	300	VRS should be made functional by the time of sale of MS touch 300 KL, failing which environmental compensation will be levied by SPCB / PCCs equivalent to the cost of VRS and this will further increase proportionate to the period of non-compliance.
2	> 10 Lakhs	100	VRS should be installed within a period of 3 months from the day of sale of MS touch 100 KL, failing which environmental compensation will be levied by SPCB / PCCs equivalent to the cost of VRS and this will further increase proportionate to the period of non-compliance.

Oil Manufacturing Companies (OMCs) are responsible for maintaining the installed VRS. Working of dispenser shall be interlinked with VRS functioning. Work zone monitoring for TOCs and Benzene shall be conducted by OMCs for petrol pumps selling more than 300 KL per month and more than 10 lakhs population. There are 14 petrol pump stations in the million-plus cities with a sale potential of >100 KL MS per month each, of which five have been provided with VRS. Similarly, there are 26 petrol pump stations in the 11 non-attainment cities with a sale potential of >300 KL month MS each, which have to be provided with VRS.

5.2.9 <u>Developing of parking facilities:</u>

In Greater Visakhapatnam Municipal Corporation (GVMC), a multi-level car parking project with an estimated cost of Rs.11.45 crores is being developed at Jagadamba area under Smart City project to provide parking facility for 100 cars. 31 more

parking facilities in the city have also been proposed, of which three are under construction stage.

Visakhapatnam Metropolitan Region Development Authority (VMRDA) has also plans for development of 4 multi-level car parking facilities which can provide space for 300 vehicles under its jurisdiction.

Municipal Corporation, Ananthapuramu is developing a multi-layer two-wheeler parking facility at Old Market, Near Pavani Hospital, Sai Nagar & Police Complex @ 30 units per location with an estimated cost of Rs.50.00 lakhs under NCAP which will be completed by 31.03.2023.

In all the 17 Municipal Corporations, designated parking sites are earmarked for the para-transit vehicles and cabs. Bus shelters and bay areas have also been provided to avoid obstruction of the free flow of the traffic. Impounding of the vehicles with penalties for parking at non-designated areas including towing facilities were provided at all major towns.

Transport, Roads & Buildings Department, Govt. of Andhra Pradesh has issued G. O. Ms. No. 21 dated 21.10.2020 (Annexure – 14), under section 190 (2) MV Act, 1988, Rs.1500/- to 3000/- can be charged as fine.

5.2.10 <u>Common guidelines / Action points for implementation to</u> reduce the traffic congestion and road dust:

- All commercial goods vehicles shall not be allowed to enter and ply within the city and major towns from 8.00 am to 10.00 pm. This will reduce the traffic congestion and also the disturbances caused due to loading and unloading activities - ULB and Traffic Police.
- Construction / erection of medians with greenary / dividers may be ensured on all the main arterial and radial roads duly encouraging lane discipline - ULB and Traffic Police
- Separate bus bays and designated parking for para-transit modes is to be developed to prevent traffic congestion and facilitate commuters - ULB and Traffic Police.

- Minimize the no. of traffic intercepts / signals to optimize the average speed, and 'U' turns shall be provided to facilitate smooth flow of traffic - ULB and Traffic Police.
- Online linking of PUC for the vehicles and verification **RTA and Traffic police**.
- Enforcing lane discipline at major traffic junctions through linking of IP cameras to command control centre and levying penalties **Traffic Police**.
- Earth works on the main traffic corridors to be restricted with containment of loose soil and providing enclosures **ULB and other stakeholders**.
- Enforcement of parking restrictions along the arterial & sub-arterial roads, commercial places, cinema halls / multiplexes, etc. in the cities & towns - ULB and Traffic Police.

5.3 <u>Construction & Demolition (C & D) Waste and Road Dust</u> <u>Management:</u>

5.3.1 C & D Waste Management:

5.3.1.1 Status on implementation of C & D Rules, 2016:

Government of Andhra Pradesh (GoAP) is following the Construction and Demolition (C & D) Waste Management Rules, 2016 to manage the C & D waste generated in the State. The GoAP in G.O. Ms. No. 350, MA & UD (B2) Department, dated 29.10.2018 (Annexure – 15) (a Model notification on handling of C & D Waste Rules, 2016) issued instructions to follow the C&D Waste Management Rules, 2016 which was communicated to all Commissioners in the State, vide Endt. Roc. No. 11119 / C & D W / 2016-M3, dated 30.10.2018 of C&DMA (Annexure – 16). Instructions were also issued to all MCs, vide circular Roc.No.12057/27/2020-M3, dated 15.06.2020 of CDMA (Annexure – 17) to ensure notifications issued on bylaws for implementation of C & D Waste Management Rules, 2016.

There are 123 ULBs in the State. Out of 123 ULBs, 73 ULBs have taken Council Resolutions for implementation of C & D Waste Management Rules, 2016. The total C & D waste generation is 521 TPD (GVMC: 80 TPD, VMC: 70 TPD & other ULBs: 401 TPD). 5 nos. of C & D recycling plants exist in 5 ULBs with a total capacity of 270 TPD are under operation as detailed below:

S. No.	City / ULB	Generation (TPD)	Plant Capacity (TPD)
1	Vijayawada	70	80
2	GVMC	80	80
3	Tirupathi	25	80
4	Kakinada	04	15
5	Kurnool	40	15
	Total	219	270

City-wise proposals for C & D waste processing facilities are in pipeline in other nonattainment cities viz., Srikakulam, Vizianagaram, Rajahmundry, Eluru, Guntur, Nellore, Chittoor & Ananthapuram.

The process of identifying suitable sites to establish the C & D waste processing facilities in the ULBs on standalone basis wherever it is feasible is under progress. Cluster approach will be adopted for establishment of processing units / crushing units for ULBs with smaller quantities of C & D waste generation.

Separate site for storing C & D waste has been earmarked in 86 ULBs. In the remaining ULBs separate sites will be provides by 31.03.2023. 44 ULBs have levied penalties on instances of illegal debris dumping by making bye-laws with suitable provisions.

MA & UD Department, Govt. of Andhra Pradesh through the G.O. Ms. No. 168 MA, dated 07.04.2012 (Annexure – 18), made it mandatory to obtain Environmental Clearance from MoEF & CC, Govt. of India for the buildings with \geq 20,000 sq. mts of built-up area and to have an Environmental Management Plan (EMP) for compliance.

5.3.1.2 Proposed Action points:

- 5.3.1.2.1 Development of cluster based (atleast one facility per district) C & D Waste Management facility so as to cover both rural and urban population – CDMA and PR & RD.
- 5.3.1.2.2 Ensure strict compliance of air pollution control measures as per the EC, CFE & CFO conditions – **APPCB**.

- 5.3.1.2.3 Strict enforcement of C & D Waste Management Rules, 2016 & its amendments at construction site, material handling, transportation and till disposal to the C & D waste management facility **ULBs & APPCB.**
- 5.3.1.2.4 Utilization of the products made out of C & D waste by the ULBs & private establishments **ULBs.**

5.3.2 Road Dust Management:

5.3.2.1 Road Dust Management by ULBs:

As per the guidelines of Ministry of Housing & Urban Affairs, Govt. of India and as per the provisions of Solid Waste Management Rules, 2016 and its amendments thereof, all the ULBs of the State are ensuring regular sweeping of streets, lanes and by-lanes either manually or using mechanical road sweepers depending on the population & road conditions and disposing of the swept road dust in the low lying areas.

Segregation of the swept road material for plastics, biomass, etc. is ensured and disposed of as per the provisions of their respective waste management rules.

ULBs / City	Total ro (I	ad length km)	Road length	No. of mechanical	No. of mechanical	Action plan for 100 %
/ Town	Paved	Unpaved	covered through manual sweeping	sweepers required to cover remaining road length	sweepers in operation and their coverage	coverage
123 ULBs	16144	5788	15016	1461	848	For balance road length, sweeping will be covered with manual sweeping.

Maintenance of the Road is being practiced by all the ULBs and R & B.

The maintenance work fall in three categories of maintenance as under:

5.3.2.1.1 Routine Maintenance:

The following are the routine activities performed on regular basis throughout the year. It consists of both off-carriageway and on-carriageway activities:

- Filling potholes, patching surface and repair edges of pavement.
- Repair shoulders and side slopes.
- Clear drains, allowing free passage of water.
- Remove debris from roadway and drains.
- Maintain road sign boards and pavement markings.

5.3.2.1.2 Periodic Maintenance:

Periodic maintenance covers renewal of road surface depending upon the initial construction standards and quality, traffic and weathering effect.

5.3.2.1.3 Others:

During emergencies on account of natural phenomena or any other situations like accidents.

The plantation activity is being taken up regularly on the kerbside and also in the medians under State Programme of Haritha Nagaralu, NCAP and 15th FC grants under air quality improvement component.

State has initiated the Project "Jagananna Haritha Nagarulu" a Green City Challenge in the Urban Local Bodies with selected species and the said initiative was commenced and completed by 30th December, 2022. Under this programme a total road length of 1500 kms (224 kms in Central Medians & 1276 kms Avenue Plantation) will be covered with 3 lakh Plants (45,000 in Central Median & 2,55,000 Avenue). The entire programme is being monitored through comprehensive IT Solutions including Geo Tagging of Plants.

5.3.2.2 Road Dust Management by NHAI:

The State is having total length of 8,255 kms of National Highways. Of it, 2,714 km of Highways has been laid by NHAI. Laying of 1,008 km length of road by NHAI is in progress which will be completed by 31.05.2023 with a total estimated cost of Rs. 20,324.11 crores.

Projects for laying of 298 kms awarded by NHAI for an estimated cost of Rs. 10,802.24 crores which are waiting for appointed date. There are also proposals for laying down of 1682 kms with a total estimated budget of Rs. 51,712 crores under Bharath Mala and port connectivity (PC) projects with the timelines for awarding between 2022-23 and 2024-25.

For providing port connectivity with the main highways, NHAI has taken up for laying of 327.45 kms with a total estimated cost of Rs. 14,245.76 crores, which are under different stages, viz., in-progress (16.18 kms), awarded (99.14 kms) and DPR stage (211.62 kms).

NHAI has a well defined protocol as per the scope of work (Annexure – 19: Scope of Work) for,

- Road maintenance and horticulture development for their projects Section 6.2,
- Performance standards for road maintenance (pot hole filling, rutting, cracking, etc.) as per MOST guidelines Section 6.8.1,
- Performance standard for carrying out cleaning, removing of dust /silt / thrash from carriageway Section 6.10.

NHAI has policy guidelines for development of avenue and median plantations all along the National Highways, vide circular dated 12.07.2022 (Annexure – 20).

5.3.3 Action points to reduce the emissions from Road dust:

5.3.3.1 End-to-end pavement in all the identified traffic corridors and junctions within two years in a phased manner – ULBs, Roads & Buildings and NHAI.

- 5.3.3.2 Ensure pothole free roads ULBs, Roads & Buildings and NHAI.
- 5.3.3.3 Streamlining of cleaning of roads and removal of silt from roads particularly during monsoon season and at regular intervals throughout the year ULBs, Roads & Buildings and NHAI.
- 5.3.3.4 Identification sites for greenery development (including vertical gardens) within the ULBs, along the State & National Highways within two years in a phased manner ULB, Roads & Buildings and Forest Department.
- **5.3.3.5** Earth works on the main traffic corridors to be restricted with containment of loose soil and providing enclosures ULB and other Stakeholders.
- 5.3.3.6 Sprinkling of water as a dust suppression measure wherever required during earthworks till completion of the pavement / road work ULBs, Roads & Buildings and NHAI.

5.4 Emissions from burning of the waste:

Generally, municipal solid wastes and bio-medical wastes are susceptible for burning in the cities, towns and rural areas thereby causing air pollution in the surroundings. To control these emissions, the provisions of the Solid Waste Management Rules, 2016 and Bio-Medical Waste Management Rules, 2016 are being implemented for safe handling and disposal of these two wastes in the State. Circular instructions were issued by CDMA in Roc.No.11119/SWM/2016-M3, dated 09.02.2017 for strict implementation on control of open burning of waste on lands including landfill sites **(Annexure – 21)**.

5.4.1 <u>Handling of Municipal Solid Waste at city / town and rural</u> <u>level:</u>

5.4.1.1 At city / town level:

The MA & UD Department, Govt. of Andhra Pradesh Memo No. 1872299/UBS/2022, dated 17.10.2022 issued directions to all the 123 Municipal Corporations & Municipalities on handling of wet & dry Municipal Solid Waste as an interim plan till the full-fledged Waste-to-Energy and Compost plants came up at individual ULB level (**Annexure – 22**).

The State is having 123 ULBs, 17 Municipal Corporations and 106 Municipalities and the expected quantity of generation of municipal solid waste is 6,890 TPD. In the State there are 29 waste-to-compost plants covering 33 ULBs are functional, 4 Bio-methanation plants covering 8 ULBs are functional, 37 Integrated Solid Waste Management (ISWM) Plants covering 51 ULBs are awarded and in 15 ULBs ISWM plants under tender process. There are 2 Waste-to-Energy projects at Guntur and Visakhapatnam each with 1200 TPD capacity and 15 MW power generation covering 50 ULBs and 1 Waste-to-Energy project at Rajahmundry covering 22 ULBs with 400 TPD is in proposal stage.

Total population	Total quantity of	Quantity & % of MSW	Segregated compor MSW	nents of	Gap (TPD)
of ULBs	MSW	collection	Туре	Quantity	
	generated	(TPD)		(TPD)	
	(TPD)				
1.49 crores	6890	6890	Plastic for recycling	945	0
(44.57 lakhs		(100%)	Refuse Derived Fuel		
households)			(RDF) to Cement	410	
			Factories		
			Compostable	1265	
			Biomethanation	174	
			Windrow Composting	2296	
			Waste To Energy	1900	
			Plant	1800	
			Landfill waste	0	
			Other material	0	
			recovered	0	

Details of existing, ongoing & under proposal stage plants in the State to treat the different components of MSW in the ULBs:

5.4.1.1.1 Details of Waste-to-Energy plants:

S.	ULBs covered	Expected	RDF	Proposed
No.		quantity of	quantity	action plan for
		RDF from	received	100%
		ULBs (TPD)	presently for	coverage
			combustion	
			(TPD)	

I	Existing Plants			
1	Visakhapatnam cluster - 15 N	IW		
	M/s. Jindal Urban Waste Mar	nagement (Vis	akhapatnam) L	imited, Sy. Nos.
	410 & 415, Kapuluppada (V), Bheemunipatnam (M), Visakhapatnam District			
	15 ULBs - GVMC,	1200	900	Completed
	Srikakulam, Vizianagaram,			
	Nellimarla, Amudalavalasa,			
	Rajam, Palakonda, Bobbili,			
	Parvathipuram, Salur,			
	Narsipatnam, Yelamanchili,			
	Tuni, Ichchapuram & Palasa-			
	Kasibugga.			
2	Guntur cluster - 15 MW	L		I
	M/s. Jindal Urban Waste Mana	igement (Gunt	ur) Limited at S	y. No.933 & 938,
	Kondaveedu(V), Edlapadu(M),	Guntur District		
	35 ULBs - Vijayawada,	1200	900	Completed
	Guntur, Mangalagiri-Tadepalli,			
	Chilakaluripet, Sattenapalli,			
	Narasaraopeta, Ponnur,			
	Tenali, Nuzivid, Jaggaihpet,			
	Nandigama, Tiruvuru,			
	Gudivada, Machilipatnam,			
	Pedana, Vuyyuru, YSR			
	Tadigadapa, Kondapalli,			
	Bapatla, Repalle, Piduguralla,			
	Vinukonda, Ongole,			
	Chimakurthy, Addanki,			
	Chirala, Darsi, Dachepalli,			
	Markapur, Kanigiri, Macharla,			
	Kandukur, Kavali, Gurajala,			
	Podili.			
		•		•
II	Proposed Plants			
1	Rajahmundry cluster – 7 MW	1	1	1
	22 ULBs - Kakinada,	700	-	Proposal
	Rajahmundry, Gollaprolu,			Submitted to
	Pithapuram, Peddapuram,			Energy Dept for
	Samalkot, Yeleswaram,			Approval To
	Ramachandrapuram,			Treat the
	Mandapeta, Mummidivaram,			Combustible
	Amalapuram, Eluru,			Waste.
	Tadepalligudem, Tanuku,			
	Palacole, Narsapur,			Till the

Bhimavaram, Nidadavole,	commencement
Kovvur, Jangareddygudem,	of the Project,
Akiveedu & Chintalapudi	these ULBs are
	Mapped with
	WtE,
	Visakhapatnam
	& WtE Guntur.

5.4.1.1.2 Status of Waste-to-Compost plants:

S. No.	ULBs	Installed capacity	Present processing
1	Addapki		
		10	11
2	Anagadda	12	11
3	Robbili	10	16
- 4 - 5	Chirolo	10	25
5	Ciddolur	40	20
7		520	510
0		10	11
0	lommolomodugu	10	10
9	Kalvandurgam	23	12
10	Kanjandurgam Kanjairi Cluster – 2 ULBs:		
11	Kanigiri & Podili	16	15
12	Macherla Cluster – 2 ULBs:	22	24
12	Macharla & Gurajala		2 7
13	Markapur	26	19
14	Narsipatnam	19	16
15	Nuzivid	28	16
16	Palamaneru	20	15
17	Palasa- kasibugga	18	17
18	Ponnur	14	16
19	Pulivendula	24	19
20	Punganur	23	16
21	Puttaparthi Cluster – 2 ULBs: Puttaparthi & Penukonda	11	13
22	Rajam	12	12
23	Rayadurgam	31	18
24	Salur	18	16
25	Tadipatri	53	31
26	Tenali	45	44
27	Tiruvuru	10	9
28	Vijayawada Cluster – 2 ULBs: Vijayawada & YSR Tadigadapa	290	298

29	Yellamanchili	14	13
	Total	1377	1265

5.4.1.1.3 <u>Status of Integrated Solid Waste Management (ISWM)</u> plants:

ULBs have awarded for establishment of 37 ISWM plants on individual and cluster basis with a total installed capacity of 2926 TPD to cater the needs of 51 ULBs.

5.4.1.1.4 Status of Material Recovery Facility (MRF) plants:

All the 123 ULBs have their own Material Recovery Facilities (MRFs) installed and is recovering a total quantity of 945 TPD in the State.

5.4.1.1.5 Details of biomethanation	plants exist	ting in the State:
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S. No.	ULBs	Installed capacity of the plant (TPD)	Present processing quantity (TPD)
1	Piduguralla Cluster – 4	45	45
	ULBs: Piduguralla (L),		
	Narasaraopeta, Sattenapalle,		
	Dachepalli		
2	Madanpalle	30	28
3	Adoni Cluster – 2 ULBs:	45	46
	Adoni (L), Yemmiganur		
4	Tirupati	55	55
	Total	175	174

5.4.1.1.6 <u>RDF & other incinerable waste sent to cement industries</u> for co-incineration:

A total quantity of 410 TPD of RDF & other incinerable waste is being sent by the 51 ULBs to Cement Industries for co-incineration.

5.4.1.1.7 Management of legacy waste dump sites:

Quantification of legacy waste is completed in all the 123 ULBs & estimated the quantity of legacy waste as 86 lakh tones. Status of management of legacy waste as on date in the State is as follows:

ULBs with above one (1) lakh population (32 ULBs):

- In 2 ULBs Vijayawada & Tirupati, Bio-remediation completed.
- In remaining 30 ULBs work awarded for Bio-remediation of legacy waste and work commenced in all ULBs.

ULBs with below one (1) lakh population (91 ULBs):

- 91 ULBs (below 1 lakh population) have been grouped into 10 clusters and tenders have been called for management of legacy waste.
- Work awarded and work commenced in all 91 ULBs.

S. No.	Particulars	Cities / towns	Total quantity of waste (lakh tons)	Status / Action Plan proposal
1	Total no. of legacy waste dump sites identified in the State	123	85.59	-
2	No. of legacy waste dump sites identified for treatment	123	85.59	-
3	No. of legacy waste dump sites cleared	2	8.52	Completed
4	Balance	121	77.07	Work awarded in all ULBs

Action plan to clear all the legacy waste dumpsites at city / town level on 100% basis:

- Work awarded in all 121 ULBs
- Timeline for Completion: March, 2023.

5.4.1.1.8 <u>Action plan to bridge gap between Installed Capacity and</u> <u>Current Utilization of processing facilities (if Gap > 20%)</u>

i. Initiated on-site composting across the State of Andhra Pradesh by Bulk Waste generators and home composting by individual households.

- ii. CDMA vide Cir.Roc.No.12057/31/2022/L, dated 18.10.2022 have issued instructions for implementation of Interim action plan to process wet waste (Annexure 23).
 - For processing of wet waste, ULBs within 25 kms radius are tied up with existing Waste-to-Compost (WtC) / Bio-CNG plants. Thus 41 ULBs are covered by existing 33 WtC / Bio-CNG plants. In remaining 82 ULBs, windrow composting is started.
 - MRFs are established in all 123 ULBs to sort out recyclables & combustible waste.
 - The combustible waste sorted out through MRFs from 27 ULBs of Visakhapatnam cluster (ULBs from 8 Districts) is being sent Waste-to-Energy plant, Visakhapatnam, 45 ULBs of Guntur cluster (ULBs from 9 Districts) is being sent to Waste-to-Energy plant, Guntur & 51 ULBs of Rayalaseema cluster (ULBs from 8 Districts) is being sent to tied up nearby 7 cement plants in Rayalaseema cluster.
- iii. Enhancing capacities of DRCC to meet 100% dry waste handling within 6 months.
- iv. Waste-to-Compost plants were completed in 29 ULBs. Four ULBs are clustered with completed WtC plants. 5 No. of agencies, (1) M/s. Sanghamitra Research Training & Consultancy Services, (2) M/s. CUBE Bio-Energy Pvt. Ltd., (3) M/s. Harsha Eco projects, (4) M/s. Ecopie Services LLP, (5) M/s. Mahindra Waste to Energy Solutions Ltd., have been shortlisted and are proposed to provide MSW processing facilities in 14 ULBs.

5.4.1.2 At rural level:

The State is having 660 Mandals, 13,301 Gram Panchayats and 47 Census towns with a total households of 99,98,955 with a population of 4,93,86,799 in the State and the expected quantity of generation of municipal solid waste is 1400 TPD. Of the 1400 TPD, 878 TPD is being handled by the local authorities as 500 TPD compostable and 378 TPD of mixed waste.

The Government of Andhra Pradesh is aimed to achieve 100% door-to-door collection of segregated waste in all villages by January 2023. A 100 Day comprehensive sanitation advocacy campaign was launched by the Government of Andhra Pradesh under **Jagananna Swaccha Sankalpam - Clean Andhra Pradesh** (**JSS-CLAP**) from 01.10.2021 to "Create Litter free – Garbage free - Visually clean Villages" to manage both Solid and Liquid Wastes in rural areas covering 13,371 villages. The objectives and their compliance are as follows:

Out of 13301 Gramapanchayats in 12,060 GPs Door to door Collection of waste is being taking place.

S. No.	Objective point	Compliance
1	Construction of a Solid Wealth Processing Centre (SWPC) in every village for scientifically processing the garbage.	Solid Wealth Processing Center (SWPC) sheds have been constructed and made operational in 41 of the 47 Census Towns and 10,458 SWPCs have been constructed and made functional in villages / Gram Panchayats under MGNREGS.
2	Deployment of sanitary workers (CLAP-Mitras) for ensuring 100% door-to-door collection of segregated garbage @ one worker per 250 households.	Door-to-Door collection of garbage by 36,770 Clap-Mitras. 10,314 Clap-Mitras at shed for second level segregation.
3	Provide Garbage Tippers, High Pressure Toilet Cleaners and Fogging Machines, etc., to all Gram Panchayats for effective utilization.	Transportation through 24,000 tri- cycles, 1000 garbage trippers supplied to the villages
4	Vermi-composting, segregation of reusable materials etc., at all SWPCs to generate income.	Production of organic rich vermi compost out of wet waste in 7414 Gram Panchayats
5	End-to-End implementation (collection of garbage, treatment & disposal) in all villages.	Production of organic rich vermi compost out of wet waste in 7307 Gram Panchayats. 100% will be achieved by June, 2023. Recyclables are sold to the bulk purchasers & non-recyclables are sent to nearby ULBs to RDF

		(Refuse Derived Fuel) units, Waste
		to Energy Plants (WtE) and Cement
		Factories.
6	SOP for disposal of legacy waste and	SOP issued on Surveillance
	garbage heaps.	Information Response Analysis
		(SIRA) framework. Clearance of the
		dumps by utilizing available Skid
		Steer Loaders & Tractors.
7	Mapping of Gram Panchayats within	Cluster mapping of Gram
	25 km radius of waste-to-energy	Panchayats within 25 km radius of
	plants.	the waste to energy plant.
		Guntur District has taken on pilot
		basis for implementation, and
		replicates the same to other
		Districts.
8	Sensitization of District, Mandal &	Involvement of Stakeholders for
	Panchayat functionaries and other	better results to achieve Visually
	Stake holders groups on sanitation	Clean Villages.
9	Capturing real time data through JSS	Integration of JSS-APP, Citizen
	app and web application and	APP and Vector Control & Hygiene
	monitoring through State and District	APP.
	level Command Control Centers.	

Government of Andhra Pradesh has declared 945 villages as Model villages in respect of compliance of environmental norms in the State. Of the 13,301, 12,060 Gramapanchayats have been covered for door-to-door collection of waste. 100% will be achieved by March, 2023.

Government of Andhra Pradesh has issued SOP on Surveillance Information Response Analysis (SIRA) framework for the field level functionaries from District level to the Grama Panchayat level in respect of Sanitation activities for achieving Visually Clean Andhra Pradesh, vide Panchayat Raj & Rural Development (PR & RD) Department Memo dated 25.07.2022 (Annexure – 24).

PR & RD Department has formulated SOPs on solid, liquid and plastic waste management and issued Memo No. PRR02 - 23026 (31) / 14 / 2022 - SWM - PMU, dated 10.11.2022 (Annexure – 25). SOP is also issued on operation & maintenance of community sanitary complexes, legacy dumps and littering hotspots to comply

with. Alert notifications facility was also made available to the citizens on daily garbage collection and recording citizen response.

PR & RD Department has made available the following machinery to the Grampanchayaths to manage solid waste and sanitary activities:

ltem	Supplied Quantity
Tri-Cycles	22426
Incinerators	6056
High Pressure-Toilet Cleaners	11440
Fogging Machines	11239

Government accorded permission for procurement of two (2) crore dustbins for an amount of Rs. 121.00 crores to distribute to the individual households and for procurement of 5,500 tractors & trailers to tractors with an amount of Rs. 309.50 crores & Rs. 152.10 crores, respectively to handle the solid waste.

5.4.1.2.1 <u>Action plan to bridge gap between installed capacity and</u> <u>current utilization of processing facilities (if Gap > 20%):</u>

- Along with existing 10,458 SWPC sheds, 2837 sheds are in under construction and will be completed by 31.03.2023 to ensure availability & functionality of SWPC shed in all the Grampanchayats.
- Develop two Model SWPCs in each Mandal and keep them ready by December, 2022 for inspection by the teams constituted. (These villages should be visibly clean, and SWPC adopted Standard Procedures under SWM).
- Planned to establish Material Recovery Units at Constituency level for effective plastic waste management.

5.4.2 Handling of Bio-Medical Waste at city / town and rural level:

Under the provisions of the Bio-medical Waste Management Rules, 2016, APPCB has issued authorizations to 13,058 Health Care Establishments (HCE) viz., Hospitals (bedded & non-bedded), Laboratories, Clinics, Diagnostics, etc. for collection, segregation, storage, partial treatment & disposal to Common Bio-Medical Waste Treatment Facilities (CBMWTF). The District-wise details of HCEs authorized,

quantity of BMW generated and quantity of BMW collected & treated by CBMWTF is as follows:

S. No.	District	Number of Health Care Facilities (Hospitals (bedded & non- bedded), Laboratories, Clinics, Diagnostics, etc.)	Quantity of BMW generation (approx in Kgs per month)	Quantity of collection (approx in Kgs per month)	Gap, if any
1	Srikakulam	573	9357.29	9357.29	
2	Vizianagaram	470	7971.027	7971.027	
3	Visakhapatnam	1673	89403	89403	
4	East Godavari	1431	45877	45877	
5	West Godavari	1132	33503.3	33503.3	Collection
6	Krishna	1451	70755.8	70755.8	of 100%
7	Guntur	1312	68468.71	68468.71	BMW
8	Prakasam	616	9155.1	9155.1	generated
9	Nellore	924	70853	70853	in the State
10	Chittoor	1076	42392	42392	is ensured.
11	Kadapa	691	12234.24	12234.24	
12	Kurnool	766	30440	30440	
13	Anantapur	943	13253.76	13253.76	
	Total:	13,058	5,03,664.2	5,03,664.2	

Details of CBMWTFs authorized by APPCB for collection, transport, treatment and safe disposal of BMW generated in the State are as follows:

S No	Area coverage	Installed capacity					
0.110.	(erstwhile districts)	Incinerator	Autoclave	Shredder			
	M/s. Rainbow Industries,	Sy. No. 21/1,	Pathakunkam (V	/), Laveru(M),			
1	Srikakulam District.						
1	Srikakulam &	100 Kac/br	100 tro	100 Kas/br			
	Vizianagaram	100 Kgs/III	100 Lus.	100 Kgs/III			
	M/s. Maridi Eco Industries (Andhra) Pvt. Ltd., Sy. No. 314, Kapulupada,						
2	Bheemunipatnam (M), Visakhapatnam district.						
	Visakhapatnam	250 Kgs/hr	3500 Kg/day	3500 Kg/day			
	M/s. Vasishta Environ Care, Plot No 27A25, Denotified Area AP SEZ,						
3	Atchutapuram Rambilli (M), Visakhapatnam district.						
	Visakhapatnam	200 Kg/hr	350 Kg/day	350 Kg/day			
	M/s. EVB Technologies (P) Ltd., Sy. No. 560, Kanavaram (V), Rajanagaram						
4	(M), East Godavari District.						
	East Godavari	100 Kg/hr	1800 Kg/day				
5	M/s Safenviron & Associates, R. S. No.181/1, Nallamadu (V), Ungutur (M),						
5	West Godavari District.						

	West Godavari	100 Kg/hr	70 Kg/hr	600 Kg/day			
	M/s. Safenviron Private	Limited (Fo	rmerly Safenvir	on (Unit-II)),			
6	Sy.No.164/1A,Dharmavarap	upadu Thanda	(V), Jaggaiahpet	: (M), Krishna			
0	District.						
	Krishna	270 Kg/hr	1680 Kg/day				
	M/s. Safenviron Private Lin	nited (Formerly	M/s. Safenviron)	, Chinakakani			
7	(V), Mangalagiri (M), Guntur	District.					
	Guntur	200 Kg/hr	70 Kg/hr	50 Kg/hr			
	M/s. Ongole Medical Waste	e Treatment Fac	cility, Sy. No. 316	6/1, Kanduluru			
8	(Village), Tanguturu (Mandal), Prakasam District.						
	Prakasam	150	25 Kg/hr	100 Kg/hr			
	M/s. AWM Consulting Ltd, Pachikapalem post, Vedurukuppam Mandal,						
9	Chittoor District.						
	Chittoor	100 Kg/hr	850 Kg/day	2150 Kg/day			
	M/s. Medical Waste Solutions, Sy. No. 200, Chetlamallapuram (V), Kalluru						
10	(M), Kurnool District.		1				
	Kurnool	100 Kg/hr	840 ltrs/day	1440 Kg/day			
	M/s. Sriven Environ technologies, Sy. No. 277-1A, Dumpetla (V),						
11	Dharmavaram (M), Anantapur District.						
	Anantapur & YSR Kadapa	150 Kg/hr	150 ltrs/hr	50 Kg/day			
	M/s. S S Bio Care, Sy. No. 61, Plot No-2, APIIC, Attivaram village, Ozili						
12	(M), SPSR Nellore District.						
	SPSR Nellore	100 Kg/hr	35 Kg/hr	20 Kg/hr			

All most 100% BMW generated in the State is being collected and treated by these above listed 12 CBMWTFs. Further, APPCB issued work order to M/s. Andhra Pradesh Environmental Management Corporation Limited, Vijayawada to conduct gap analysis study, vide order dated 06.07.2021, and the study is in progress.

5.4.3 <u>Action points for implementation to stop the burning of the</u> waste:

- Public awareness to be increased on the segregation and on open burning ULBs, Grampanchayats & APPCB.
- Awareness to the ULBs / Grampanchayat staff for stopping the open burning practice ULBs & Grampanchayats.
- Levying of penalties on offences of open burning of waste ULBs / Panchayat Raj department and APPCB.
- Public Grievance Redressal Portal (PGRP) to be strengthened for tracking of open burning related complaints and recurrence areas to be kept under surveillance through IP cameras – ULBs, Grampanchayats & APPCB.

 Segregation of the waste to be promoted for easy disposal of waste – ULBs & Grampanchayats.

5.5 Emissions due to burning of agro residues:

The stubble leftover in the fields after harvesting is generally treated as waste and subjected to burning in the fields. Burning of stubble is also treated as a control mechanism of weeds and pests.

But, burning of the stubble is contributing to air pollution in the surroundings and global warming to some extent with the emissions of greenhouse gases like CO₂, Methane and Oxides of Nitrogen.

Burning also contributes to nutrient losses from the stubble approximately by 80% Nitrogen, 50 – 80% Sulphur and 40% of Phosphorous.

Burning of stubble can be minimized by adopting the following Integrated Crop Reside Management techniques:

- 1) Use of Happy Seeder device for sowing seeds,
- 2) Composting, biochar production and mechanization of farming activities,
- 3) Use of Rotavator, Rotary Slasher, Rotary Mulcher and Shrudder for land preparation and to incorporate crop residue in the soil,
- 4) Use of Zero-till seed drill for land preparation and directly sowing seeds in the previous crop's stubble,
- 5) Use of baler's to collect and compress residue into compact bales for easy transportation of the stubble to the briquette manufacturing units,
- 6) Use of stubble as fuel / co-fuel in the boilers in the form of briquettes.

Agriculture, Horticulture and Forest departments to take up the following actions:

- Agriculture and Horticulture department to establish mechanisms for preventing open fires and burning of agro residues - Agriculture and MA & UD and Swatch Andhra Corporation.
- Awareness campaigns are to be conducted to the farmers on the air pollution issues related to the stubble burning **Agriculture Department.**

- Develop use of biomass / crop residue based pellets mass blending with coal and its co-firing in thermal power plants with blending ratio which needs no modification in boilers – Industries Department, EFS & T Department / APPCB & individual Industries.
- A Policy for supply chain mechanism for in-situ and ex-situ management of stubble burning to be made and awareness on the same to be created – Agriculture Department.
- Collaboration with ISRO and preparation of Satellite based maps for monitoring of fire incidence Forest, APSAC and Agriculture Department.

5.6 Household emissions:

Mainly, air emissions are expected from households is due to use of wood, coal, kerosene, saw dust, rice husk, etc. for cooking purpose. One of the main alternative fuels to ward-off toxic air emissions during cooking is use of LPG by the households and commercial establishments like, Hotels, Restaurants, Eateries, Sweet houses, Dhabhas, etc. with LPG as fuel in the State.

"Pradhan Mantri Ujjwala Yojana" was launched by Prime Minister of India on 1st May, 2016 to distribute 50 million LPG connections to women of Below Poverty Line families. Pradhan Mantri Ujjwala Yojana - 2.0 to offer 1 crore more LPG connections. The same is under implementation. The penetration of the LPG in the Andhra Pradesh is 104 % as on March, 2022 as detailed below:

S. No.	Category / Service provider / Oil company	No. of households covered	% of coverage	Gap			
Ι	I Below Poverty Line (BPL):						
1	IOCL	2887977	104.8	Nil			
2	BPCL	1389549					
3	HPCL	2691628					
	Total	6969154					
	General (Non BPL & C	commercial):					
1	IOCL	3812860	104.8	Nil			
2	BPCL	2025749					
3	HPCL	5069538					
	Total	10908147					

5.6.1 Control of Emissions from Fire Crackers:

In compliance of the Hon'ble NGT directions in the order, dated 05.11.2020 in O. A. No. 249 of 2020, Health, Medical & Family Welfare Department, Government of Andhra Pradesh has issued G. O. Rt. No. 692, dated 10.11.2020 for implementation by the concerned stakeholders on the use of fire crackers and the G. O. is enclosed (Annexure – 26).

As per the G. O., only green crackers shall be sold and used and the timings for use and bursting of crackers is restricted to 2 hours i.e., 08.00 P.M to 10.00 P.M. on Deepavali day. All shops selling crackers shall maintain 10 feet distance between each shop and the persons coming for purchasing the crackers shall be made to maintain 6 feet social distance in the queue before shops. The purchasers shall also be advised to not to use hand sanitizer during the Diwali celebrations but use normal soap in its place while bursting crackers and lighting diyas / candles.

Further, APPCB has addressed all the District Collectors, vide letter dated 18.12.2020 (Annexure – 27) communicating the Hon'ble NGT orders dated 01.12.2020 in O.A. No. 249/2020 for implementation of directions on the use of firecrackers during various occasions viz., Deepavali, Gurupurab, Chatt, Christmas Eve, New Year Eve, etc.

<u>Annexure – I</u> Indicative template for State Action Plan

1. Industrial Emissions:

S.	Activities	Status of activity	Timeline for	Target	Financial	Funds	Funds Utilized
No.		(Completed / Ongoing /	completion	(Coverage/	implications	Allocated	as on date
		To be Started)		Percentage)	(Yes/ No)	(Rs. crore)	(Rs. crore)
1	Policy for permitting new industries in Critically Polluted Areas (CPAs).	No Red and Orange category industry is permitted in the bowl area of Visakhapatnam. Notification to this effect to be issued.	1 year by 31.12.2023 for framing of guidelines and subsequent notification.	100%	No	Nil	Nil
2	Policy for replacement of heavy oil (eg., furnace oil, diesel etc.) based industries to alternate energy sources (CNG / PNG / Electricity)	To be formulated.	December, 2023.	100%	No	Nil	Nil
3	Rules and regulations on uninterrupted power supply in State.	Policy of AP Transco, vide Notification dated 14.06.2021 formulated State Electricity Plan for four years from FY 2020 to 2024 to ensure uninterrupted power supply in the state.	Completed and ongoing	100% coverage	No	Nil	Nil
4	Policy for use of DG sets in industries.	Supply of uninterrupted power to the industries is	Ongoing	100% coverage	No	Nil	Nil

S.	Activities	Status of activity	Timeline for	Target	Financial	Funds	Funds Utilized
NO.		(Completed 7 Ongoing 7 To be Started)	completion	(Coverage/ Percentage)	(Yes/ No)	(Rs. crore)	as on date (Rs. crore)
		ensured as per the AP Transco Notification dated 14.06.2021.					
		APPCB has issued the order no. APPCB/NGT/ 681- 2018 / DG sets / HO / 2020, dated 05.11.2020 shall retrofit with emission control devices for the DG sets of 125 KVA and above in the State of Andhro Bradach	Ongoing	100% coverage	No	Nil	Nil
5	Policy regarding installation of CAAQMS based on the emission potential or capacity of air polluting industries.	All 17 category & Red hazardous industries have to install the CAAQMSs.220 no. of Continuous Ambient Air Quality Monitoring Systems (CAAQMS) and are connected to CPCB & APPCB website.	Ongoing	100%	No	Nil	Nil
6	Policy regarding installation of OCEMSs based on the emission potential or capacity of air polluting industries.	All 17 category & red hazardous industries have to install the OCEMSs. 370 no. of industries which includes 17 categories, highly air pollution potential industries installed 573 nos.	Ongoing	100%	No	Nil	Nil
Activities	Status of activity	Timeline for	Target	Financial	Funds	Funds Utilized	
------------------------------	---	--	---	--	---	---	
	(Completed / Ongoing /	completion	(Coverage/	implications	Allocated	as on date	
	To be Started)		Percentage)	(Yes/ No)	(Rs. crore)	(Rs. crore)	
	of OCEMS for the point						
	the data to APPCB and						
	CPCB website.						
Mechanisms to control	Industry-specific conditions	Ongoing	100%	No	Nil	Nil	
fugitive emissions	are being stipulated in the						
sources in the industries.	CFO Orders to comply with.						
Regulations for	Govt. of Andhra Pradesh,	Completed	100%	No	Nil	Nil	
conversion of brick kilns	vide G.O. Ms. No. 80, dated						
to clean technologies.	22.04.2010, specified siting						
	guidelines, authority for						
	enforcement.						
	Inventorization of brick-kilns	One year	100%	No	Nil	Nil	
	in the State.	by					
		31.12.2023					
	Conversion from	Five years	100%	No	Nil	Nil	
	technology	Dy 31 12 2027					
Policy to set up e-waste	Industry department / APIIC	Two years	100%	No	Nil	Nil	
recycling unit in industrial	shall ensure ear-marking or	by	10070				
areas in compliance with	allocation of space for e-	31.12.2024					
e-Waste Management	waste collection, dismantling						
Rules, 2016.	& recycling in the existing						
Number of the sector is	and upcoming IEs / IDAs.		4000/	NL	N.!'!	N1''	
the state complying	industries are regularly	Ungoing	100%	NO	NII	NII	
emission standards.	compliance of stipulated air						
	Activities Mechanisms to control fugitive emissions sources in the industries. Regulations for conversion of brick kilns to clean technologies. Policy to set up e-waste recycling unit in industrial areas in compliance with e-Waste Management Rules, 2016. Number of industries in the state complying emission standards.	ActivitiesStatus of activity (Completed / Ongoing / To be Started)(Completed / Ongoing / To be Started)of OCEMS for the point source emissions and linked the data to APPCB and CPCB website.Mechanisms to control fugitive emissions sources in the industries.Industry-specific conditions are being stipulated in the CFO Orders to comply with.Regulations to clean technologies.for Govt. of Andhra Pradesh, vide G.O. Ms. No. 80, dated 22.04.2010, specified siting guidelines, authority for issuing licenses and enforcement.Nentorization of brick kilns to clean technologies.Conversion of brick-kilns in the State.Policy to set up e-waste recycling unit in industrial areas in compliance with e-Waste Management Rules, 2016.Industry department / APIIC shall ensure ear-marking or allocation of space for e- waste collection, dismantling & recycling in the existing and upcoming IEs / IDAs.Number of industries in the state complying emission standards.Industries are regularly monitored for their compliance of stipulated air	ActivitiesStatus of activity (Completed / Ongoing / To be Started)Inmelline for completionofOCEMS for the point source emissions and linked the data to APPCB and CPCB website.OngoingMechanisms to control fugitive emissions sources in the industries.Industry-specific conditions are being stipulated in the CFO Orders to comply with.OngoingRegulations to clean technologies.Govt. of Andhra Pradesh, vide G.O. Ms. No. 80, dated 22.04.2010, specified siting guidelines, authority for issuing licenses and enforcement.CompletedInventorization of brick-kilns in the State.One year by 31.12.2023District by 31.12.2023Policy to set up e-waste recycling unit in industrial areas in compliance with e-Waste Management Rules, 2016.Industry department / APIIC shall ensure ear-marking or and upcoming IEs / IDAs.Two years by 31.12.2024Number of industries in the state complying emission standards.Industries are regularly monitored for their compliance of stipulated airOngoing	ActivitiesStatus of activity (Completed / Ongoing / To be Started)Timeline for completionTarget (Coverage/ Percentage)ofOCEMS for the point source emissions and linked the data to APPCB and CPCB website.Mechanisms to control fugitive emissions sources in the industries.Industry-specific conditions are being stipulated in the CFO Orders to comply with.Ongoing100%Regulations conversion of brick kilns to clean technologies.Govt. of Andhra Pradesh, vide G.O. Ms. No. 80, dated 22.04.2010, specified siting guidelines, authority for issuing licenses and enforcement.Completed by 31.12.2023100%Policy to set up e-waste recycling unit in industrial areas in compliance with e-Waste Management Rules, 2016.Industries are regularly shall ensure ear-marking or allocation of space for e- waste collection, dismantling & recycling in the existing and upcoming IEs / IDAs.Two years shall ensure ear-marking or allocation of space for e- waste collection, dismantling & recycling in the existing and upcoming IEs / IDAs.Ongoing 100%100%	ActivitiesStatus of activity (Completed / Ongoing / To be Started)Interimetion completionTarget completionHandrai implicationsofOCEMS for the point source emissions and linked the data to APPCB and CPCB website.of OCEMS for the point source anissionsOngoing100%NoMechanisms to control fugitive emission sources in the industries.Industry-specific conditions are being stipulated in the CFO Orders to comply with.Ongoing100%NoRegulations to clean technologies.Govt. of Andhra Pradesh, vide G.O. Ms. No. 80, dated 20.42.2010, specified siting guidelines, authority for issuing licenses and enforcement.Completed100%NoNoConversion of brick kilns in the State.Conversion from by 31.12.2023100%NoPolicy to set up e-waste recycling unit in industrial areas in compliance with e-Waste Management Rules, 2016.Industry department / APIIC shall ensure ear-marking or allocation of space for e- shall ensure ear-marking or allocation of space for e- waste collection, dismantling & recycling in the existing and upcoming IEs / IDAs.Ongoing100%NoNumber of industries in the state complying emission standards.Industries are regularly monitored for their compliance of stipulated airOngoing100%No	ActivitiesStatus of activity (Completed / Ongoing / To be Started)Interfere completionTarget (Coverage/ Percentage)Intradia (Percentage)Financial (Percentage)Finan	

S.	Activities	Status of activity	Timeline for	Target	Financial	Funds	Funds Utilized
No.		(Completed / Ongoing / To be Started)	completion	(Coverage/	implications (Yes/ No)	Allocated	as on date
		emission standards through automated and manual means.		T eroentage/	(103/110)		
11	Shifting of industries / commercial units to gaseous fuels (CNG / PNG).	Policy to be formulated. No new industry is allowed to use fuels other than gaseous fuels (CNG / PNG) after 01.01.2030.	One year by 31.12.2023.	100%	No	Nil	Nil
		Ensuring the supply of required quantity of gaseous fuels (CNG / PNG).	Two years by 31.12.2024.	100%	No	Nil	Nil
		Shifting of industries / commercial units to gaseous fuels (CNG / PNG).	Seven years by 31.12.2029. 20% year- by-year for the existing industry from 31.12.2024 onwards.	100%	No	Nil	Nil
12	Number of households shifted to PNG / LPG.	100% households are covered with LPG in urban areas of the State.	Completed & ongoing	100%	No	Nil	Nil
		99.2% households are covered with LPG and 3.5% with PNG in rural areas of the State.	One year by 31.12.2023 for LPG and three years	100%	No	Nil	Nil

S. No.	Activities	Status of activity (Completed / Ongoing /	Timeline for completion	Target (Coverage/	Financial implications	Funds Allocated	Funds Utilized as on date
		To be Started)	•	Percentage)	(Yes/ No)	(Rs. crore)	(Rs. crore)
			by 31.12.2025 for PNG.				
13 14	Restriction on use of pet coke as fuel by the industries. Restriction on use of furnace oil as fuel by the industries	APPCB circular No. APPCB / UH-IV / HO-VJA / Petcoke / 2020 dated 13.03.2020.	Completed	100%	No	Nil	Nil
15	Siting guidelines for establishment of SEZs, IDAs, IEs, etc. in the State.	G. O. Ms. No. 275, MA & UD Department, GoAP, dated 18.07.2017.	Completed	100%	No	Nil	Nil

2. Vehicular Emissions:

S.	Activities/ Action plan	Status of activity	Timeline for	Target	Financial	Funds	Funds
No.		(Completed / Ongoing / To	completion	(Coverage /	implications	Allocated	Utilized as on
		be Started)		Percentage)	(Yes / No)	(Rs. crore)	date (Rs.
		T		4000/		N 1'1	crore)
1	Notification / G. O. for	I o be formulated by	One year by	100%	NO	NI	NII
	phasing out old vehicles	Industrial Department.	31.12.2023.				
	Private & Covernment: 15						
	vears).						
2	Policy for scrapping old	To be formulated by	One year by	100%	No	Nil	Nil
	vehicles.	Industrial Department.	31.12.2023.				
3	Policy for augment e-	Industries & Commerce	Completed	100%	No	Nil	Nil
	vehicles.	Department has issued					
		"Electric Mobility Policy					
		2018 -23", vide G.O. MS.					
		NO. 74, dated 08.06.2018.		4000/	Nia	N I:I	N I:I
		industries Department is to	Six months	100%	INO	INII	INII
		for implementation	30 06 2023				
3(a)	Conversion of 100% of	To be initiated in a phased	Seven years	100%	No	Nil	Nil
0(4)	APSRTC bus fleet of over	manner.	bv	10070			
	11,000 buses into electric		31.12.2029.				
	buses (BEVs / FCEVs).						
3(b)	First phase of 100%	Govt. has sanctioned 100 e-	Two years	100%	No	Nil	Nil
	conversion of bus fleet in	Buses to Tirupati region to	by				
	top 4 cities, viz.,	operate by APSRTC under	31.12.2024.				
	Visakhapatnam,	FAME –II of Gol. First batch					
	Vijayawada, Amaravathi	of 10 e-Buses was delivered					
	& Tirupati.	during September, 2022.					

S. No.	Activities/ Action plan	Status of activity (Completed / Ongoing / To be Started)	Timeline for completion	Target (Coverage / Percentage)	Financial implications	Funds Allocated	Funds Utilized as on date (Ps
		be Started)		i ercentage)	(163/10)		crore)
3(c)	Phase out all fossil fuel based commercial fleets and logistics vehicles.	Industries Department is to issue operational guidelines for implementation in top 4 cities, viz., Visakhapatnam, Vijayawada, Amaravathi & Tirupati by 31.12.2024 and all cities by 31.12.2030.	Six months by 30.06.2023.	100%	No	Nil	Nil
4	Notification & enforcement of PUC norms.	Enforcing PUC norms through licensing the PUC testing stations for issue of certificates.	Ongoing	100%	No	Nil	Nil
5	Online monitoring of PUC implementation.	Integration with NIC, Vahan software is initiated.	One year by 31.03.2023.	100%	No	Nil	Nil
6	MechanismforcentralizedrecordmaintenanceofPUCchecks, certificationandcrosscheckbythetransportauthoritiestobeincorporated.	Transport Department, Govt. of AP Memo. No. 768854 / K1 / 2017, dated 05.10.2017.	Completed	100%	No	Nil	Nil
7	Construction of bypass / ring roads	Constructed a length of 247.45 kms bypasses / ring roads covering 25 ULBs in AP.	Completed	100%	-	-	-
		Construction of 162.026 kms length of bypasses / ring roads covering 14 ULBs	In progress	100%	Yes	5,334.89	-

S. No.	Activities/ Action plan	Status of activity (Completed / Ongoing / To	Timeline for completion	Target (Coverage /	Financial implications	Funds Allocated	Funds Utilized as on
		be Started)	-	Percentage)	(Yes / No)	(Rs. crore)	date (Rs. crore)
		of AP are in progress.					
8	Petrol / Diesel / Gas filling stations retrofitted with Vapor Recovery System.	CPCB O.M., vide Lr. No. B- 13011 / 1 / 2019-20 / AQM / 10802 - 10847, dated 07.01.2020.	Ongoing	100%	No	Nil	Nil
9	Incentive of setting up R&D facilities related to EVs.	Industries & Commerce Department has issued "Electric Mobility Policy 2018 -23", vide G.O. MS. No. 74, dated 08.06.2018. Industries Department is to issue operational guidelines for implementation.	Six months by 30.06.2023.	100%	No	Nil	Nil
10	Prepare action plan to check fuel adulteration and random monitoring of fuel quality data.	As per the laid down protocol of Oil Companies.	Continuous as a Regular activity.	100%	No	Nil	Nil
11	Alternative clean fuel policy for vehicles.	To be formulated.	One year by 31.12.2023.	100%	No	Nil	Nil
12	Development of Multi- layer parking	Ongoing at Visakhapatnam & Ananthapuramu.	31.12.2023 & 31.03.2023, respectively.	304 & 60 Units, respectively	Yes	11.56 & 0.50, respective ly	-
		To be developed at 15 Municipal Corporations	Two years by 31.12.2024.	100%	-	-	-

S.	Activities/ Action plan	Status of activity	Timeline for	Target	Financial	Funds	Funds
No.		(Completed / Ongoing / To be Started)	completion	(Coverage /	implications	Allocated	Utilized as on date (Rs
				r creentage)	(1037110)		crore)
13	Penalize parking of vehicles in non- designated areas.	As per G. O. Ms. No. 21 dated 21.10.2020, of Tr, R & B (TR. I) Department (under section 190 (2) MV Act, 1988, Rs.1500/- to 3000/- can be charged as fine.	Ongoing	100%	No	Nil	Nil
14	CNG infrastructure for auto gas supply in the city and transition of public transport vehicles to CNG mode.	128 CNG stations covering 50 cities & towns in the State have been installed for auto gas supply and public transport vehicles.	Continuous as a Regular activity.	-	-	-	-
15	Steps for promoting battery operated vehicles (like e-rickshaw, e- cart etc.).	Industries & Commerce Department has issued "Electric Mobility Policy 2018 -23", vide G.O. MS. No. 74, dated 08.06.2018. Industries Department is to issue operational guidelines for implementation.	Six months by 30.06.2023.	100%	No	Nil	Nil
16	Launch extensive drive against polluting vehicles for ensuring strict compliance.	Regular checks are being conducted by Transport Officials. Valid PUC certificates are being insisted for all transactions.	Completed & regular activity.	100%	No	Nil	Nil
17	To increase fine on	As per G. O. Ms. No. 21	Ongoing	100%	No	Nil	Nil

S. No.	Activities/ Action plan	Status of activity (Completed / Ongoing / To be Started)	Timeline for completion	Target (Coverage / Percentage)	Financial implications (Yes / No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)
	vehicle owners (not drivers) where the visible smoke is emitted and noticed.	dated 21.10.2020, of Tr, R & B (TR. I) Department (under section 190 (2) MV Act, 1988, Rs.1500/- to 3000/- can be charged as fine.					

3. Construction & Demolition Waste and Road Dust Management:

S. No.	Activities/ Action plan	Status of activity (Completed / Ongoing / To be Started)	Timeline for completion	Target (Coverage / Percentage)	Financial implications (Yes / No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)
1	Policy for development of projects / plants for C & D waste management.	Municipal Administration and Urban Development (B2) Department G.O. MS. No. 350, dated 29.10.2018.	Completed	100%	No	Nil	Nil
1(a)	Targeting the 13 non- attainment city Municipal Corporations.	Existing in 5 Municipal Corporations. City-wise proposals are in pipeline for remaining non-attainment city Municipal Corporations.	By 31.12.2023	100%	-	-	-
1(b)	Targeting the other 4 Municipal Corporations and 106 Municipalities.	Individual / Cluster approach will be adopted for establishment of processing units / crushing units in Municipalities.	By 31.12.2023	100%	Yes	0	0
2	Policy for use of C & D waste in laying and construction of State highways.	"IRC: 121-2017 Guidelines for use of Construction and demolition waste in Road section" is being used for laying and construction of National Highways.	Ongoing	100%	No	Nil	Nil
3	Demand creation for C & D waste and alternative use of C & D waste material.	Demand creation for C & D waste utilization in preparation of paver blocks used in road construction, filling of low lying areas,	Six months by 30.06.2023.	100%	Yes	11.03	1.68

S. No.	Activities/ Action plan	Status of activity (Completed / Ongoing / To be Started)	Timeline for completion	Target (Coverage / Percentage)	Financial implications (Yes / No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)
		laying of kucha roads. In Corporations, the contractors are insisted to use fabricated paver blocks made from C & D waste in laying end-end dust free roads.		, ereentage,	(1007110)		
4	Schemes for development of greenery in open spaces and street sides greening on State highways.	"Jagananna Haritha Nagaralu" is being implemented for development of Greenery.	Ongoing	100%	Yes	34.31	7.47
5	Penalty provisions for non-compliance of C&D waste management rules at construction sites.	In 73 ULBs, Council Resolutions were taken for enforcement. 44 ULBs have levied penalties on instances of illegal debris dumping by making bye-laws with suitable provisions.	One year by 31.12.2023.	100%	No	Nil	Nil
6	Maintenance, repair and paving of state highways	State Highways are passing through 73 ULBs. 5 ULBs i.e., Srikakulam, Guntur, Tiruvuru & Tenali have allocated & utilized funds for maintenance of State Highways.	Ongoing / Regular activity. Mechanical / Manual sweeping	100%	Yes	1.28	0.82
7	Monitoring of road dust especially in and around	Mechanised / Manual sweeping along with water	Regular activity	100%	No	Nil	Nil

S. No.	Activities/ Action plan	Status of activity (Completed / Ongoing / To be Started)	Timeline for completion	Target (Coverage / Percentage)	Financial implications (Yes / No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)
	hotspot areas and in the vicinity of State highways.	sprinkling in and around hotspot areas and in the vicinity of State Highways.					
8	Mechanism for development and maintenance of road infrastructures for industrial estates and clusters.	Industrial Estates infrastructure development by AP Industrial Infrastructure Corporation Limited (APIIC) and maintenance by APIIC – Industrial Area Local Authorities (IALAs).	Ongoing and continuous process	100%	No	Nil	Nil

S. No.	Activities/ Action plan	Status of activity (Completed/	Target Number	Target Number	Funds Allocated	Timeline for completion	Target completed	Funds Utilized as
		Started)	(110.)7 (%)	(TPD)7 Coverage (Acres)	crores)		as on date	(Rs. crores)
9	C&D waste processing plants.	Existing in 5 Municipal Corporations. City-wise proposals are in pipeline for remaining 8 non- attainment city Municipal Corporations. Individual / Cluster approach will be adopted for establishment of processing units /	123 ULBs / 100%	521 TPD	Nil	One year by 31.12.2023.	219 TPD	Nil

S. No.	Activities/ Action plan	Status of activity (Completed/	Target Number	Target Number	Funds Allocated	Timeline for completion	Target completed	Funds Utilized as
		Ongoing/ To be Started)	(No.) / (%)	(TPD) / Coverage (Acres)	(Rs. crores)		as on date	on date (Rs. crores)
		crushing units in 110 Municipal Corporations & Municipalities under PPP mode.						
10	Greening of open spaces / parks development.	The activity going on in 123 ULBs	123 ULBs /100%	-	77.52	One year by 31.12.2023.	23 ULBs	33.65
11	Control measures for fugitive emissions from material handling, conveying and screening operations through water sprinkling, curtains, barriers and dust suppression units at C & D processing facilities.	Implementation of CFE & CFO conditions followed by enforcement, after establishment of C&D Waste Processing Plants in all ULBs.	123 ULBs / 100%	-	Nil	One year by 31.12.2023.	-	Nil
12	Strict enforcement of CPCB guidelines for construction activities (use of green screens, side covering of digging sites, etc.).	Council Resolutions were obtained by 73 ULBs. Notifications have been issued by the 5 ULBs.	All 123 ULBs / 100%	-	Nil	One year by 31.12.2023.	23 ULBs	Nil
13	Greening of open areas, gardens,	A.P. Building Rules 2017 issued in G.O. Ms.	All 123 ULBs / Ongoing	100%	15.02	Ongoing	-	5.75

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Target Number (No.) / (%)	Target Number (TPD) / Coverage (Acres)	Funds Allocated (Rs. crores)	Timeline for completion	Target completed as on date	Funds Utilized as on date (Rs. crores)
	community places, schools and housing societies.	No. 119, dated 28.03.2017.	activity.					
14	Prepare plan for widening of roads and improvement of infrastructure for decongestion of roads.	Prepared Master Plan in 33 ULBs and in remaining ULBs preparation of plans were under progress.	All 123 ULBs	100%	104.87	One year by 31.12.2023.	33 ULBs	57.31
15	Blacktopping of metalled roads, including pavement of road shoulders.	Length of paved road is16,144 kms, length of unpaved road is 5,788 kms.	All 123 ULBs	100% @ 25% per year	85.11	Ongoing 31.12.2026.	18 ULBs	33.05
16	Maintain potholes free roads for free- flow of traffic.	Phase-I: 44,412 potholes identified and filled	Completed	100%	-	-	-	58.20
		Phase-II: 20,180 potholes identified	2097/10.39%	100%	22.98			1.35

4. Emissions from burning of waste:

S. No.	Activities/ Action plan	Status of activity (Completed / Ongoing / To be Started)	Timeline for completion	Target (Coverage / Percentage)	Financial implications (Yes / No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)
1	NotificationandEnforcement of MunicipalSolidWasteManagementRules,2016.	Municipal Administration and Urban Development (B2) Department G.O. Ms. No. 348 dated 29.10.2018	Completed	100%	No	Nil	Nil
1(a)	Notification / Counsel resolution at Municipal Corporation / Municipality level for enforcement of MSW Rules, 2016.	Notifications issued in 7 ULBs. Resolutions taken in 70 ULBs.	Six months by 30.06.2023	100%	No	Nil	Nil
1(b)	Notification / GO for Enforcement of MSW Rules, 2016.	PR & RD Department has formulated SOPs on solid, liquid and plastic waste management and issued Memo No. PRR02 - 23026 (31) / 14 / 2022 - SWM - PMU, dated 10.11.2022.	Completed	100%	No	Nil	Nil
2	Policy for MSW management.	Municipal Administration and Urban Development (B2) Department G.O. Ms. No. 348 dated 29.10.2018.	Completed	100%	No	Nil	Nil
3	Policy for legacy waste management at dumpsites.	Municipal Administration & Urban Development (UBS) Department G.O. Rt. No.	Completed	123 ULBs / 100%	No	Nil	Nil

S. No.	Activities/ Action plan	Status of activity (Completed / Ongoing / To be Started)	Timeline for completion	Target (Coverage / Percentage)	Financial implications (Yes / No)	Funds Allocated (Rs.	Funds Utilized as on date (Rs.
		100 100 140 00 0001				crore)	crore)
		102 dated12.03.2021.				N 111	N 111
4	of ban on single use plastics.	2022 / L Sec dated 18.11.2022 of CDMA.	Completed	123 ULBs / 100%	NO	NII	NII
5	Policy for development and construction of Waste-to-Energy plants.	Municipal Administration and Urban Development (B2) Department G.O. Ms. No. 348 dated 29.10.2018.	Completed	123 ULBs / 100%	No	Nil	Nil
5(a)	Non-recyclable / combustible dry waste.	Two WtE plants at Visakhapatnam & Guntur are functioning. One at Rajahmundry is on proposal.	One year by 30.12.2023	100%	Yes	PPP Mode	-
5(b)	Bio-methanation / Bio CNG.	4 Bio CNG Plants Covering 8 ULBs are functional, 2 plants are in progress.	Three months by 30.03.2023	100%	Yes	PPP Mode	-
5(c)	Composting plant etc.	29 Waste to Compost plants functional, 14 Waste to Compost plants are In progress, and 37 ISWM plants covering 51 ULBs are awarded. 15 ISWM plants pending in 15 ULBs.	Three months by 30.03.2023.	100%	Yes	PPP Mode	-

S.	Activities/ Action plan	Status of activity	Target	Total	Funds	Timeline	Target	Funds
No.		(Competed/ ongoing/ To	Number	Capacity	Allocated	for	Completed	Utilized
		be Started)	(NO.)/	(IPD)/	(Rs.	completion	as on date	as on
			(%)		crore)			
				(Acres)				(NS Crore)
6	Municipal Solid Waste	Total waste generation:	123	6890	Nil	-	6890 TPD	-
_	collection status in the	6890 tons / day.	ULBs /					
	State.	,	100%					
		Door-to-door collection:	123	6890	Nil	-	6890 TPD	-
		6890 tons / day.	ULBs /					
			100%					
		Compostable waste:	123	3790 TPD	Nil	-	3735TPD	-
		3735 tons / day.	ULBs /					
			100%					
		Dry waste: 3155 tons /	123	3155 IPD	NII	-	3155 IPD	-
		day.	100%					
		100% Door-to-door	123	6890 TPD	Nil	lt is a	_	-
		collection.	UIBs/	0000112		continuous		
			100%			activity		
7	MSW segregation status	98.16 % source	123	6890 TPD	Nil	It is a	6763 TPD	-
	in the State.	segregation.	ULBs /			continuous		
			100%			activity		
8	Material Recovery	Established in all ULBs.	123	945 TPD	PPP	-	945 TPD	-
	Facility.		ULBs /		Mode			
			100%					
9	Waste to Energy plants.	Existing: One plant at	72	3100 TPD	PPP	One year	1800 TPD	-
		Visakhapatnam covering	ULBs		Mode	by		
		15 ULBs and one plant at	tied up			31.12.2023		
		Guntur covering 35	/ 100%					
		ULBS.						

S. No.	Activities/ Action plan	Status of activity (Competed/ ongoing/ To be Started)	Target Number (No.)/ (%)	Total Capacity (TPD) / Coverage (Acres)	Funds Allocated (Rs. crore)	Timeline for completion	Target Completed as on date	Funds Utilized as on date (Rs crore)
		Proposed: One plant at Rajahmundry covering 22 ULBs.						
10	Waste to compost plants.	29 waste-to-compost plants covering 33 ULBs are functional.	123 ULBs / 100%	3561 TPD	PPP Mode	One year by 31.12.2023	3561 TPD	-
11	Remediation of dumpsites in the city.	Of the 123 ULBs, 2 ULBs remediated and 121 ULBs have awarded work order.	123 ULB's / 100 %	85.59 Lakh Tones	352.00	30.03.2023	8.52 lakh tons	-
12	Control open burning of MSW.	Municipal Administration and Urban Development (B2) Department G.O. Ms. No. 348 dated 29.10.2018. Circular instructions were	123 ULB's / 100 %	-	-	Regular activity	-	-
		issued by CDMA in Roc.No.11119/SWM/201 6-M3, dated 09.02.2017 for strict implementation on control of open burning of waste on lands						
13	Launch extensive drive	including landfill sites. Circular instructions were	-	-	-	Regular	-	-

S. No.	Activities/ Action plan	Status of activity (Competed/ ongoing/ To be Started)	Target Number (No.)/ (%)	Total Capacity (TPD) / Coverage (Acres)	Funds Allocated (Rs. crore)	Timeline for completion	Target Completed as on date	Funds Utilized as on date (Rs crore)
	against open burning of biomass, crop residue, garbage, leaves, etc.	issued by CDMA in Roc.No.11119/SWM/201 6-M3, dated 09.02.2017 for strict implementation on control of open burning of waste on lands including landfill sites.				activity		

5. Emissions due to burning of agro residues:

S. No.	Activities/ Action plan	Status of activity (Completed / Ongoing /	Timeline for completion	Target (Coverage /	Financial implications	Funds Allocated	Funds Utilized as
		To be Started)		Percentage)	(Yes / No)	(Rs.	on date (Rs.
1	Policy for management and ban on open burning of agricultural wastes.	To be formulated by Agriculture Dept. & Horticulture Dept.	Six months by 30.06.2023	100%	No	Nil	Nil
2	Awareness campaign among the farmers on control of crop residue burning.	Ongoing Taking measures to include in the curriculum of all farmer training programmes under different schemes of Department.	Once in six months.	100%	No	Nil	Nil
3	Schemes for purchase / installation of balers / pellet / briquette machines, etc.	Ongoing Promoting straw balers with subsidy of 40% under cluster level CHCs under the Centrally sponsored scheme, Sub – Mission on Agriculture Mechanization (SIMA).	Ongoing	40 units	Yes	0.48	0.14
4	Use of decomposer for in-situ crop residue management.	Ongoing Encouraging the farmers to adopt insitu crop residue management using waste decomposer.	Ongoing	1,000 Ha of Sugarcane, 10,000 Ha of Paddy.	No	Nil	Nil
5	Assistance for	Ongoing	31.03.2023	200 units	Yes	1.00	0.50

	establishment of farm machinery banks / custom hiring centers.	Promoting chaf cutters with 40% subsidy in CHCs.					
6	Collaboration with ISRO and preparation of Satellite based maps for monitoring of fire incidence.	In proposal stage. Planned to meet AP Space Application Center (APSAC) & Planning Department during January, 2023 for obtaining satellite based maps for monitoring of fire incidents.	One year by 31.12.2023	100%	-	-	-

6. Household emissions:

S.	Activities/ Action plan	Status of activity	Timeline for	Target	Financial	Funds	Funds
NO.		To be Started)	completion	Percentage)	(Yes / No)	(Rs. crore)	on date (Rs. crore)
1	Schemes for LPG / PNG coverage to all the households as cooking fuels.	Ongoing under "Pradhan Mantri Ujwal Yojana" (PMUY), Central Govt. scheme.	Ongoing	100%	-	-	-
2	Policy for coverage of all Hotels, Restaurants, Eateries, Sweet Houses, Dhabhas, etc. with LPG / PNG.	Ongoing with sufficient numbers of 381 HPCL and 462 IOCL distribution agencies across the State.	Ongoing	100%	-	-	-
3	Amendments to the Building by-laws for "Indoor Air Quality Management".	A.P. Building Rules 2017 issued in G.O. Ms. No. 119, dated 28.03.2017.	Ongoing	100%	No	Nil	Nil
4	Use of firecrackers during various occasions viz., Deepavali, Gurupurab, Chatt, Christmas Eve, New Year Eve, etc.	HM&FW Department, Govt. of AP, G. O. Rt. No. 692, dated 10.11.2020 and APPCB Lr. dated 18.12.2020.	Ongoing	100%	No	Nil	Nil



STATE ACTION PLAN ON AIR POLLUTION FOR KARNATAKA (SAPAP-K)





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State Action Plan on Air Pollution for Karnataka (SAPAP-K)



Environmental Management and Policy Research Institute Department of Forest, Ecology & Environment, Government of Karnataka

November 2022

Disclaimer

The report "State Action Plan on Air Pollution for Karnataka" Version I, is prepared by compiling the information collected from various line departments and includes the indicative template provided by the Ministry of Environment, Forest & Climate Change, GoI. This report is the depiction of various measures/initiatives "As is" undertaken by departments to control air pollution.

While every effort has been made to ensure the correctness of the data and information put forward in this report, neither the authors nor EMPRI accepts any legal liability for the accuracy or inferences of the material contained in this report or for any consequences arising from the use of this material.

The opinions expressed do not necessarily reflect those of EMPRI, nor should they be attributed to the organization.

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Vehicular Emissions

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Construction & Demolition Waste and Road Dust Management

Directorate of Municipal Administration National Highway Authority of India, Regional Office, Bengaluru Karnataka State Highway Improvement Project, Bengaluru Karnataka Forest Department

Emissions from Burning of Waste

Bruhat Bengaluru Mahanagara Palike Directorate of Municipal Administration

Emissions from Burning of Agro residues Department of Agriculture Karnataka Renewable Energy Development Limited

Household Emissions

Food & Civil Supplies Department Indian Oil Corporation Limited, Karnataka Office Gas Authority of India Limited

Smart Cities Initiatives

Shivamogga Smart City Limited Tumakuru Smart City Limited

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List of Abbreviations

Acronym	Expansion
AAQ	Ambient Air Quality
AAQMS	Ambient Air Quality Monitoring Station
AC	Alternative Current
APC	Air Pollution Control
AQMC	Air Quality Monitoring Cell
BBMP	Bruhat Bengaluru Mahanagara Palike
BenSCL	Bengaluru Smart City Limited
BESCOM	Bangalore Electricity Supply Company Limited
BIPV	Building Integrated Photo Voltaic
BMRCL	Bangalore Metro Rail Corporation Limited
BMTC	Bengaluru Metropolitan Transport Corporation
BTX	Benzene / Toluene / Xylene
CAAQMS	Continuous Ambient Air Quality Monitoring Stations
CBG	Compressed Bio Gas
C & D	Construction & Demolition
CEPI	Comprehensive Environmental Pollution Index
CFBC	Circulating Fluidized Bed Combustion
CFE	Consent For Establishment
CGD	City Gas Distribution
CMC	City Municipal Councils
CNG	Compressed Natural Gas
СО	Carbon Monoxide
СОР	Conference of the Parties
CPA	Critically Polluted Areas
CPCB	Central Pollution Control Board
CSTEP	Center for Study of Science, Technology, and Policy
DC	Direct Current
DCC	Department for Climate Change
DG	Diesel Generator
DMA	Directorate of Municipal Administration

DPR	Detailed Project Report
DUDC	District Urban Development Cells
DWCC	Dry Waste Collection Centre
EMPRI	Environmental Management & Policy Research Institute
FAME	Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles
FCS	Food & Civil Supplies
FEE	Forest, Environment & Ecology
GA	Geographical Area
GAIL	Gas Authority of India Limited
GoI	Government of India
GoK	Government of Karnataka
GSR	General Statutory Rules
HAM	Hybrid Annuity Mode
IDD	Infrastructure Development Department
IRC	Indian Road Congress
ISO	International Organization for Standardization
ITPL	International Tech Park Bangalore
JSW	Jindal Steel Works
KCDC	Karnataka Compost Development Corporation
KERC	Karnataka Electricity Regulatory Commission
KIABD	Karnataka Industrial Authority Development Board
KL	kilo litre
KMVT	Karnataka Motor Vehicles Taxation
KPCL	Karnataka Power Corporation Limited
KSHIP	Karnataka State Highway Improvement Project
KSPCB	Karnataka State Pollution Control Board
KSRTC	Karnataka State Road Transport Corporation
KSSIDC	Karnataka State Small Industries Development Corporation
KVA	kilovolt-ampere
LPG	Liquefied Petroleum Gas
MDPE	Medium Density Poly Ethylene
MoEF & CC	Ministry of Environment, Forest & Climate Change

MoPNG	Ministry of Petroleum & Natural Gas
MoRTH	Ministry of Road Transport and Highways
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
MT	Metric Tonnes
MTA	Million Metric Tonnes Annually
MTPD	Metric Tonnes Per Day
MVA	Motor Vehicle Act
MW	Mega Watt
NAC	Non-Attainment Cities
NAMP	National Ambient Air Quality Monitoring Programme
NCAP	National Clean Air Programme
NDIR	Non-Dispersive InfraRed
NG	Natural Gas
NGT	National Green Tribunal
NH ₃	Ammonia
NHAI	National Highway Authority of India
NIMHANS	National Institute of Mental Health and Neuro-Sciences
NO	Nitrous Oxide
NO ₂	Nitrogen Dioxide
NOx	Nitrogen oxides
NTPCL	National Thermal Power Corporation Limited
OCEMS	Online Continuous Effluent/Emission Monitoring System
O ₃	Ozone
OPA	Other Polluted Areas
Pb	Lead
PDS	Public Distribution System
PHH	Priority House Hold
PM _{2.5}	Particulate Matter of diameter 2.5 microns or less
PM ₁₀	Particulate Matter of diameter 10 microns or less
PMUY	Pradhan Mantri Ujjwala Yojana
PNG	Piped Natural Gas

PNGRB	Petroleum & Natural Gas Regulatory Board
PUC	Pollution Under Control
RDF	Refuse Derived Fuel
RMC	Ready Mix Concrete
RTO	Regional Transport Office
RVSF	Registered Vehicle Scrapping Facility
SAPAP-K	State Action Plan on Air Pollution for Karnataka
SCMD	Standard Cubic Meters Per Day
SEZ	Special Economic Zone
SLC	State Level Committee
SO_2	Sulphur Dioxide
SP	Special Provision
SPA	Severely Polluted Areas
SPCB	State Pollution Control Board
SSCL	Shivamogga Smart City Limited
SWM	Solid Waste Management
SZ	South Zone
TD	Transport Department
TERI	The Energy Resource of India
TMC	Town Municipal Councils
TP	Town Panchayat
TPA	Million Tonnes Per Annum
TPD	Metric Tonnes Per Day
TSCL	Tumakuru Smart City Limited
UDD	Urban Development Department
ULB	Urban Local Bodies
mg/m ³	Milligram per cubic metre
$\mu g/m^3$	Microgram per cubic metre

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1. Background

Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India (GoI) launched the National Clean Air Program (NCAP) on 10th January 2019 as a timebound National level strategy for pan-India implementation to tackle the air pollution problem across the country in a comprehensive manner.

The National Clean Air Programme (NCAP) 2019 is being implemented primarily in urban agglomerates and specifically in 132 non-attainment cities concerning PM_{10} identified by Central Pollution Control Board (CPCB) based on the monitoring results from 2010 to 2015 across India. City actions plans for 4 non-attainment cities of Karnataka (Bengaluru, Hubli-Dharwad, Davanagere, and Kalaburgi) were prepared by the Air Quality Monitoring Cell (AQMC), as per the programme objectives, approved by CPCB and are under implementation in these cities intending to reduce the Particulate Matter emission by 20 to 30% by 2024.

Further in this regard, the Hon'ble NGT (SZ), Chennai in the matter of OA No. 159 of 2021 issued an order dated 29.07.2021, which inter-alia states that:

"The Central Pollution Control Board and State Pollution Control Boards of Tamil Nadu, Karnataka, and Telangana and the respective State Governments through their Environment Secretary are directed to file independent statements and reports regarding the action taken by them for preparing the State Action Plan as envisaged by in National Clean Air Programme (NCAP) Plan Program and what is the present stage of its implementation and how it is being effectively monitored and implemented by the regulators and if there is any gap, what is the action taken by the respective State Governments for filling the gap and fully implement the scheme within the respective States".

According to the guidance document of NCAP, a State Action Plan (SAP) for addressing air pollution is to be prepared. As per the NCAP document in Appendix-VI: NCAP agencies and timelines at Sl. No.1.13 mentions the State Action Plan for Air Pollution detailed below:

SI. No	Component/Activities	Level for funding	Level for implementation	Agencies	Timelines
1.13.1	A preliminary state action plan for air pollution is to be formulated for all 23 states, which harbour 102 non- attainment cities	Centre	State	SPCB,CPCB & MoEF&CC	2020

1.13.2 SAP for air pollution is to be taken up for implementation by the State State State 2020 state government and city administration 1.13.3 The guidelines for the CPCB & preparation of the SAP Centre Centre 2020 MoEF&CC to be formulated

State Action Plan on Air Pollution for Karnataka (SAPAP-K) 2022

The guidelines are to be formulated by the Centre (MoEF&CC and CPCB) as mentioned in 1.13.3. CPCB communicated the State Action Plan template through mail dated: 15.11.2021.

In the background, a meeting was held on 08.04.2022 with the line Departments under the chairmanship of Additional Chief Secretary, Department of Forest, Ecology & Environment, Government of Karnataka (GoK), wherein it was decided to entrust the work of preparing the State Action Plan on Air Pollution for Karnataka to **Environmental Management and Policy Research Institute (EMPRI)**, **Bengaluru.** EMPRI was directed to form a committee involving experts and the Institutes of Repute. The line departments: Karnataka State Pollution Control Board (KSPCB), Industries, Directorate of Municipal Administration (DMA), Bruhat Bengaluru Mahanagara Palike (BBMP), transport, Gas Authority of India Limited (GAIL), Indian Oil Corporation Limited (IOCL), agriculture, Bengaluru Development Authority (BDA), Food & Civil Supplies (FCS) and, Forest Department are required to share the necessary data/information and for preparation of State Action Plan on Air Pollution and to nominate a nodal officer for coordination with EMPRI.

EMPRI constituted the following Committee for the preparation of the State Action Plan on Air Pollution for Karnataka (SAPAP-K) vide OM No. EMPRI/CR-02/CCC/2022-23/372 dated: 22.06.2022.

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- 6. Dr. Pratima Singh, Research Scientist, CSTEP, Bengaluru
- 7. Shri. Akshay Kumar V Ganeshker, Research Associate, DCC, EMPRI

The Meeting of the committee for preparation of the "State Action Plan on Air Pollution-Karnataka (SAPAP-K)" was held on **29.06.2022 at EMPRI**.

The committee deliberated on the agenda items and the following decisions were taken:

Agenda 1: Status of the nomination of Departmental Nodal Officers.

- **Decision:** Follow-up needs to be done via phone and a few additional departments such as Forest and Energy Department and Corporations such as NHAI, KSHIP, BMTC, KRSTC, and KRDCL are required to be added to the list of line departments.
- Agenda 2: Template provided by MoEF& CC to be used to collect the required data.
- **Decision:** The committee decided to host a consultative workshop tentatively on 11th July 2022, with the nominated departmental nodal officers to explain the template and the information that needs to be provided by them.

Agenda 3: Framework for preparation of the action plan.

Decision: The committee suggested considering the framework used by the State of Gujarat and Telangana for the preparation of SAPAP-K and improvising the framework if necessary.

Decisions on other aspects of SAPAP-K:

1. The committee agreed to submit the first draft of the report after the compilation of the data (as per the template prescribed by MoEF & CC) as Phase-1. Further, prepare and submit the State Action Plan as phase II.

2. The committee suggested EMPRI, KSPCB, and CSTEP nominate three personnel to collect information by dividing the departments among the three.

3. The committee opined to include all the smart cities of Karnataka for the collection of necessary data.

2. Karnataka State

Karnataka is situated in the south western region of India. It is one of the most prosperous states in India. Karnataka has made tremendous progress in the fields of education, industry, agriculture, literature, and tourism. Bengaluru is the capital of Karnataka, known as the Silicon Valley of India due to its flourishing Information Technology industry. Karnataka was formed on 1st November 1956 when the States Reorganisation Act came into effect. At that time Karnataka was known as the State of Mysore. It was renamed Karnataka in the year 1973.

Karnataka is the seventh largest state in India in terms of area. It has 31 districts. Karnataka is bounded by the Arabian Sea and the Laccadive Sea (Lakshadweep Sea) on the west, Goa on the north-west, Maharashtra on the north, Telangana on the north-east, Andhra Pradesh on the east, Tamil Nadu on the south-east and Kerala on the south-west.

The major rivers flowing through Karnataka are Cauvery, Kabini, Krishna, and Tungabhadra. There are three distinct geographical regions in Karnataka: the Coastal Plains, the Western Ghats, and the Deccan Plateau. Karnataka covers about 750 km from North to South and about 400 km from East to West. The coastline of Karnataka stretches for about 320 km.

Karnataka ranks ninth in terms of population in India. The population density of the state is 319 per sq. km. The decadal growth rate of Karnataka's population is 15.7%. Karnataka's population was recorded as 61.13 million as per the 2011 Census of India. Out of this, 61.43% reside in rural areas.

The climate changes from place to place due to the region's altitude, topography, and distance from the sea. Karnataka receives a mean annual rainfall of around 1355 millimetres. The southwest monsoon brings maximum rainfall to the state. The district of Udupi gets the highest average rainfall while the districts such as Chitradurga, Koppal, and Vijayapura receive the lowest rainfall.

3. Ambient Air Quality Monitoring Program

Karnataka State Pollution Control Board (KSPCB) is monitoring the Ambient Air Quality (AAQ) at 70 locations in the state. The monitoring of AAQ is carried out through Continuous and Manual stations under two programs called as National Air Monitoring Program (NAMP) and Board Air Monitoring Program (BAMP).

No. of Aml	Total No.			
NAMP	BAMP	CAAQMS	of stations	
30	13	39	82	
RSPM(PM ₁₀), FPM(PM _{2.5}), SO ₂ , NO ₂ , NH ₃ , Pb, Ni	RSPM(PM ₁₀), FPM(PM _{2.5}), SO ₂ , NO ₂ , NH ₃ , Pb, Ni	RSPM (PM ₁₀), FPM (PM _{2.5}), SO ₂ , NO, NO ₂ , NOx, NH ₃ , CO, O ₃ , C ₆ H ₆ , CH ₄ , NMHC, THC, Eth-Benzene, Toluene, Xylene & Meteorological parameters like Temp, RH, WS, WD, SR, BP, VWS		

(Source: KSPCB)

Ambient Air Quality Monitoring Stations in Karnataka

Manual Stations	Bengaluru	Other than Bengaluru	Total
NAMP	09	21	30
Board Program	06	3	9
NCAP	0	4	4
Total	15	28	43

(Source: KSPCB)

CAAQMS	Bengaluru	Other than Bengaluru	Total
Existing	07	24	31
Additional	04	04	08
Total	11	28	39
		(6	VCDCL

(Source: KSPCB)

Total No. of Stations in 29 Districts of Karnataka State = 82 (43 Manual + 39 CAAQMS)





Figure 1: Map showing the Network of AAQ stations in Karnataka State (*Source: KSPCB*) **3.1 Continuous Ambient Air Quality Monitoring Stations (CAAQMS)**

The KSPCB has established a total of 31 numbers of CAAQMS for 8 parameters in Karnataka in a phased manner. There are 24 CAAQM Stations in other cities of Karnataka and the Compiled Statistical Data is sent to CPCB, New Delhi electronically and also uploaded to the Board Website (https://kspcb.karnataka.gov.in/) and displayed to the public.

- There are 7 CAAQM stations established in Bengaluru and 24 CAAQM Stations in other cities of Karnataka.
- In 2022, 4 new CAAQM stations under National Clean Air Programme. In each nonattainment city viz., Hubli-Dharwad, Kalaburgi, and Davangere, for each district one CAAQM station, the said stations are functioning.
- Chikkaballapur, Ramanagar, Udupi, Haveri, Koppal Yadagiri, Gadag, Mysore, Chamarajanagar, Hassan, Shimoga, Karwar, Raichur, Bidar, Chikkamagaluru, Vijayapura, Bagalkote, and Kolar – each district one CAAQM Station.



Figure 2: Map showing the AAQ stations in Bengaluru Urban District (Source: KSPCB)

Sl.	Location of the Stations	Name of the	Тур	station	
No.		District	CAAQMS	NAMP (Manual)	BAMP (Manual)
1	Graphite India White Field Road, Bengaluru			NAMP	
2	AMCO Batteries Mysuru Road Bengaluru			NAMP	
3	KHB Industrial Area Near R.R. Founders Yelahanka Bengaluru			NAMP	
4	Ace Designers, Peenya Industrial Area, Bengaluru	Bengaluru		NAMP	
5	Victoria Hospital, Bengaluru			NAMP	
6	Yeshwanthpura Police Station, Bengaluru			NAMP	
7	TERI office premises, Bengaluru			NAMP	
8	RV College of Engineering, Mysuru Road,			NAMP	

Table 1: The details of AAQ Monitoring stations in Karnataka

	D 1
	Bengaluru
9	Bengaluru University, Bengaluru
10	Central Silk Board, Hosur Road, Bengaluru
11	Indira Gandhi Children Health Care Hospital, Bengaluru
12	Mr.Madavachari House, Khajisonnenahalli Village, Bengaluru
13	Urban Eco Park, KSPCB Office Premises, Peenya, Bengaluru
14	Govt. S.K.S.J. Technological institute, K.R circle, Bengaluru
15	Banaswadi Police Station, Bengaluru
16	City Railway Station, Bengaluru
17	KSPCB office Building, Nisarga Bhavan, Saneguruvanahalli, Bengaluru
18	HSR Layout, Near Central Silk Board Flyover, Bengaluru
19	Rajeev Gandhi Child Care Institute, NIMHANS, Bengaluru
20	Veterinary College, Hebbal, Bengaluru
21	Kavika –Mysuru Road, Bengaluru
22	Shalini Ground, Jayanagara 5 th Block, Bengaluru
23	RV College of Engineering, Mysore Road, Bengaluru
24	NTTF, Peenya Industrial Area, Bengaluru
25	RTO Office, Indiranagara,

	1
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			(~	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	Bengaluru		(NCAP)		
26	Jigani Industrial Area, Bengaluru		CAAQMS (NCAP)		
27	KSPCB Office Premises, Tumakuru	Tumakuru		NAMP	
28	KSPCB OfficePremises, Tumakuru	Tumukuru	CAAQMS (NCAP)		
29	KSPCB Office Premises, Kolar	Kolar		NAMP	
30	KSPCB Office Premises, Kolar	Rota	CAAQMS		
31	KSRTC Building, K.R. circle, Mysuru			NAMP	
32	KSPCB Office Premises, Mysuru	Mysuru		NAMP	
33	KSPCB Office Premises, Mysuru		CAAQMS		
34	KSPCB Office Premises, Mandya	Mandya		NAMP	
35	KSPCB Office Premises, Kodagu	Kodagu			BAMP
36	KSTDC Hotel Mayura, Madikeri	Madikeri	CAAQMS		
37	KSPCB Office Premises, Chamarajanagar	Chamarajanagar			BAMP
38	KHB Layout, Opp. Stadium, Chamarajanagar	enunnarajanagai	CAAQMS		
39	KSPCB Office Premises, Hassan	Hassan		NAMP	
40	KSPCB Office Premises, Hassan	i iussuii	CAAQMS		
41	Baikampady Industrial Area, Mangaluru	Mangaluru		NAMP	
42	Circuit Guest House Circle, Mangaluru	wangaturu	CAAQMS		
43	Ranichannamma Circle, Hubballi			NAMP	
44	KSPCB Office Premises, Dharwad	Dharwad		NAMP	
45	University of Agricultural Sciences, Dharwad				BAMP (NCAP)

46	HDMC office premises, Hubballi Town		CAAQMS		
47	Lingarajanagara, Samudaya Bhavana, Hubballi Town		CAAQMS (NCAP)		
48	Kadapa Maidan, Kalabhavan premises, Dharwad		CAAQMS (NCAP)		
49	Port Directors Office, Karwar	Karwar		NAMP	
50	Karwar		CAAQMS		
51	KSPCB Office Premises, Davanagere				BAMP
52	Traffic Police Station (South), PB Road, Davangere			NAMP	
53	Canteen building, M/s HPF Ltd., Kumarapattanam, Ranebennur	Davangere		NAMP	
54	The site yet to be identified, Davanagere				BAMP (NCAP)
55	KSPCB Office Premises, Davanagere		CAAQMS		
56	VISL, Bhadravathi			NAMP	
57	Vinoba Nagara, Shivamogga	Shivamogga	CAAQMS		
58	KSPCB Office Premises, Chitradurga	Chitradurga		NAMP	
59	KSPCB Office Premises, Belagavi	Belagavi		NAMP	
60	KSPCB Office Premises, Belagavi	Delagavi	CAAQMS		
61	KSPCB OfficePremises, Vijayapura	Vijayapura		NAMP	
62	Ibrahimpur, Vijayapura		CAAQMS		
63	KSPCB Office Premises, Bagalkote	Bagalakote		NAMP	
64	Vidyagiri, Bagalakote		CAAQMS		
65	KSPCB Office premises, Kalaburgi	Kalahurgi		NAMP	
66	City Corporation building, Kalaburgi	Kulubulgi			BAMP (NCAP)

67	Office of Weights & Measures, Ring Road, Opp. High Court, Kalaburgi				BAMP (NCAP)
68	Opp. To Govt.Depot, Jewargi Road, Kalburgi		CAAQMS		
69	Near KSPCB Office premises, Kalaburgi		CAAQMS (NCAP)		
70	KSPCB Office Premises, Bidar	Bidar		NAMP	
71	KSPCB Office Premises, Bidar	Ditta	CAAQMS		
72	KSPCB Office Premises, Raichur	Raichur		NAMP	
73	Haji Colony, Raichur		CAAQMS		
74	CMC Building, Ballary	Ballary			BAMP
75	Govt. Junior College, Near DDPI Office Chikkaballapura	Chikkaballapura	CAAQMS		
76	Vijay Nagar, Ramanagara	Ramanagara	CAAQMS		
77	Brahmagiri, Udupi	Udupi	CAAQMS		
78	Ashwini Nagar, Haveri	Haveri	CAAQMS		
79	Diwator Nagar, Koppala	Koppala	CAAQMS		
80	Collector Office, Yadgiri	Yadgiri	CAAQMS		
81	Panchal Nagar, Gadag	Gadag	CAAQMS		
82	Kalyana Nagara, Chikkamagaluru	Chikkamagaluru	CAAQMS		
		Total	39	30	13

(Source: KSPCB 2020-21 Annual Report)

3.2. Air Quality Index

Air Quality Index (AQI) is a tool for effective communication of air quality status to people in terms, which are easy to understand. It transforms complex air quality data of various pollutants into a single number (index value), nomenclature and colour. There are six AQI categories, namely GOOD, SATISFACTORY, MODERATE, POOR, VERY POOR, and SEVERE. Each of these categories is decided based on ambient concentration values of air pollutants and their likely health impacts (known as health break-points). The index has SIX colour schemes indicating the six categories. AQ sub-index and health breakpoints are evolved for eight pollutants which include PM₁₀, PM_{2.5} besides, NO₂, SO₂, CO, O₃, NH₃, and Pb for which short-term (up to 24-hours) National Ambient Air Quality Standards are prescribed. The worst sub-index determines the overall AQI. AQI categories and health breakpoints are given below. The ambient air quality in Karnataka ranges from good to moderate.

District	Sl. No.	Locations	CAAQMS/ Manual AAQM	2016	2017	2018	2019	2020	2021	2022 (June)
	1	Graphite India White Field Road, Bengaluru	Manual AAQM (NAMP)	116	109	111	90	71	65	100
	2	AMCO Batteries Mysuru Road Bengaluru	Manual AAQM (NAMP)	103	86	102	67	68	69	72
Bengaluru	3	KHB Industrial Area Yelahanka Bengaluru	Manual AAQM (NAMP)	104	95	103	58	80	117	66
Denguluru	4	Ace Designers, Peenya Industrial Area, Bengaluru	Manual AAQM (NAMP)	96	100	89	76	67	80	79
	5	Victoria Hospital, Bengaluru	Manual AAQM (NAMP)	84	65	66	42	55	67	108
	6	Yeshwanthpura Police Station, Bengaluru	Manual AAQM (NAMP)	94	88	104	52	64	88	108

Table 2: Air Quality Index of Karnataka

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7	TERI office premises, Bengaluru	Manual AAQM (NAMP)	109	115	93	90	94	64	58
8	RV College of Engineering, Mysuru Road, Bengaluru	Manual AAQM (NAMP)	67	109	*	34	40	92	90
9	Bengaluru University, Bengaluru	Manual AAQM (NAMP)	*	52	41	66	16	15	13
10	Central Silk Board, Hosur Road, Bengaluru	Manual AAQM (Board Programme)	123	120	110	104	76	85	55
11	Indira Gandhi Children Health Care Hospital, Bengaluru	Manual AAQM (Board Programme)	88	73	69	59	52	*	*
12	Mr. Madavachari House, Khajisonnenahalli Village, Bengaluru	Manual AAQM (Board Programme)	83	67	81	83	69	70	85
13	Urban Eco Park, KSPCB Office Premises, Peenya, Bengaluru	Manual AAQM (Board Programme)	104	101	102	97	78	91	96
14	Govt SKSJ Technological Institute, K R circle, Bengaluru	Manual AAQM (Board Programme)	73	80	85	66	104	92	*
15	Banaswadi Police Station, Bengaluru	Manual AAQM (Board Programme)	79	78	74	74	109	64	52
16	City Railway Station, Bengaluru	CAAQMS	*	*	*	110	90	69	79
17	KSPCB office Building, Nisarga Bhavan,	CAAQMS	*	*	*	45	42	41	45

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		Saneguruvanahalli,]						
	18	HSR Layout, Near Central Silk Board Flyover, Bengaluru	CAAQMS	*	*	*	78	68	74	112
	19	Rajeev Gandhi Child Care Institute, NIMHANS, Bengaluru	CAAQMS	*	*	*	55	57	57	59
	20	Veterinary College, Hebbal, Bengaluru	CAAQMS	*	*	*	55	60	63	95
	21	KAVIKA – Mysuru Road, Bengaluru	CAAQMS	*	*	*	68	65	74	99
	22	Shalini Ground, Jayanagara 5th Block, Bengaluru	CAAQMS	*	*	*	63	64	61	89
Tumakuru	23	KSPCB Office Premises, Tumakuru	Manual AAQM (NAMP)	128	115	102	76	61	60	70
Kolar	24	KSPCB Office Premises, Kolar	Manual AAQM (NAMP)	64	66	81	80	89	102	117
ixolui	25	KSPCB Office Premises, Kolar	CAAQMS	*	*	*	*	*	42	86
	26	KSRTC Building, K.R. circle, Mysuru	Manual AAQM (NAMP)	52	58	52	53	47	41	51
Mysuru	27	KSPCB Office Premises, Mysuru	Manual AAQM (NAMP)	45	48	*	*	30	38	47
	28	KSPCB Office Premises, Mysuru	CAAQMS	*	*	*	*	*	50	49

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Mandya	29	KSPCB Office Premises, Mandya	Manual AAQM (NAMP)	42	44	44	43	37	34	41
Kodami	30	KSPCB Office Premises, Kodagu	Manual AAQM (Board Programme)	*	*	*	*	*	*	*
Kouagu	31	KSTDC Hotel Mayura, Madikeri	CAAQMS	*	*	*	*	*	36	47
Chamarajanagar	32	KSPCB Office Premises, Chamarajanagar	Manual AAQM (Board Programme)	*	*	*	*	*	*	*
enunnarajanagar	33	KHB Layout, Opp. Stadium, Chamarajanagar	CAAQMS	*	*	*	30	48	50	40
Hassan	34	KSPCB Office Premises, Hassan	Manual AAQM (NAMP)	29	31	33	37	36	45	70
	35	KSPCB Office Premises, Hassan	CAAQMS	*	*	*	*	*	64	81
Mangaluru	36	Baikampady Indl. Area, Mangaluru	Manual AAQM (NAMP)	54	75	57	48	47	46	40
Mangaluru	37	Circuit Guest House Circle, Mangaluru	CAAQMS	*	*	*	*	*	*	*
	38	Rani Channamma Circle, Hubballi	Manual AAQM (NAMP)	*	87	84	76	57	56	74
Dharwad	39	KSPCB Office Premises, Dharwad	Manual AAQM (NAMP)	*	*	*	*	64	45	46
	40	HDMC office premises, Hubballi Town	CAAQMS	*	*	*	*	*	74	87
Karwar	41	Port Directors Office, Karwar	Manual AAQM (NAMP)	*	*	*	*	*	*	*

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	42	Karwar	CAAQMS	*	*	*	*	*	*	*
	43	KSPCB Office Premises, Davangere	Manual AAQM (NAMP)	55	44	48	61	40	32	50
	44	Traffic Police Station (South), P B Road, Davanagere	Manual AAQM (NAMP)	*	113	123	100.5	*	*	*
Davanagere	45	Canteen building, M/s HPF Ltd. Kumarapattanam, Ranebennur	Manual AAQM (NAMP)	*	*	*	*	*	*	*
	46	KSPCB Office Premises, Davanagere	CAAQMS	*	*	*	*	*	53	72
Shiyamogga	47	VISL, Bhadravathi	Manual AAQM (NAMP)		36	43	31.2	*	*	*
Shivaniogga	48	Vinoba Nagara, Shivamogga	CAAQMS	*	*	*	*	*	49	55
Chitradurga	49	KSPCB Office Premises, Chitradurga	Manual AAQM (NAMP)	*	43	53	41	41	38	46
Belagavi	50	KSPCB Office Premises, Belagavi	Manual AAQM (NAMP)	81	79	95	95	72	90	70
Deluguvi	51	KSPCB Office Premises, Belagavi	CAAQMS	*	*	*	*	*	*	*
Vijavanura	52	KSPCB Office Premises, Vijayapura	Manual AAQM (NAMP)	92	82	76	80	75	52	71
Vijayapura	53	Ibrahimpur, Vijayapura	Manual AAQM (NAMP)	*	*	*	*	*	49	50
Bagalakote	54	KSPCB Office Premises,	CAAQMS	46	51	65	41	42	65	74

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		Bagalkote								
	55	Vidyagiri, Bagalakote	CAAQMS	*	*	*	*	65	39	47
Kalahurgi	56	Govt. Hospital, Kalaburgi	Manual AAQM (NAMP)	*	51	67	83	96	85	81
Kuluburgi	57	Opp. To Govt. Depot, Jewargi Road, Kalaburgi	Manual AAQM (NAMP)	*	*	*	*	*	80	100
Bidar	58	KSPCB Office Premises, Bidar	Manual AAQM (NAMP)	*	*	*	57	65	56	69
	59	KSPCB Office Premises, Bidar	CAAQMS	*	*	*	*	*	74	111
Raichur	60	KSPCB Office Premises, Raichur	Manual AAQM (NAMP)	*	*	84	90	73	*	*
	61	Haji Colony, Raichur	CAAQMS	*	*	*	*	*	91	106
Ballary	62	CMC Building, Ballary	Manual AAQM (Board Programme)	*	*	*	*	*	*	*
Chikkaballapura	63	Govt. Junior College, Near DDPI Office, Chikkaballapura	CAAQMS	*	*	61	72	65	57	69
Ramanagara	64	Vijay Nagar, Ramanagara	CAAQMS	*	*	*	*	*	52	66
Udupi	65	Brahmagiri, Udupi	CAAQMS	*	*	*	*	*	32	24
Haveri	66	Ashwini Nagar, Haveri	CAAQMS	*	*	*	*	*	*	47
Koppala	67	Diwator Nagar, Koppala	CAAQMS	*	*	*	*	*	40	58
Yadgiri	68	Collector Office, Yadgiri	CAAQMS	*	*	*	*	*	59	74
Gadag	69	Panchal Nagar, Gadag	CAAQMS	*	*	*	*	32	54	*

Chikkamangaluru	70	Kalyana Nagara, Chikkamagaluru	CAAQMS	*	*	*	*	49	40	45
* Not Monitored										

(Source: KSPCB)

AOI	Domoniz	Colour Codo	Descible Health Impacts
AQI	кетагк	Colour Code	Possible Health Impacts
0-50	Good		Minimal impact
51-100	Satisfactory		Minor breathing discomfort to sensitive people
101-200	Moderate		Breathing discomfort to people with asthma and heart diseases
201-300	Poor		Breathing discomfort to most people on prolonged exposure
301-400	Very Poor		Respiratory illness on prolonged exposure
401-500	Severe		Affects healthy people and seriously impacts those with existing diseases

Table 3: AQI Categories

Sl.No	Name of the Station	SO ₂ µg/m ³	NO ₂ µg/m ³	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	NH3 µg/m ³	Pb µg/m ³	O3 µg/m ³	CO mg/m ³
1	Export promotional Park, ITPL, Whitefield Industrial Area	BDL	21.0	73.0	33.0	17.0	*	*	*
2	Rail Wheel Factory, Yelahanka	BDL	22.0	113.0	38.0	17.0	*	*	*
3	Yeshwanthpura Police Station	BDL	20.0	59.0	30.0	17.0	*	*	*
4	Central Silk Board, Hosur Road	BDL	22.0	69.0	52.0	19.0	*	*	*
5	Rajeev Gandhi Institute of Chest Diseases, NIMHANS (CAAQMS)	10.3	15.5	53.2	24.8	7.9	*	36.2	0.6
6	Central Silk Board (CAAQMS)	BDL	23.2	63.0	26.9	10.5	*	31.9	0.6
7	Urban Eco park, Peenya	BDL	21.0	79.0	30.0	18.0	*	*	*
8	Ace Designers Ltd., Peenya	BDL	22.0	62.0	26.0	19.0	*	*	*
9	AMCO Batteries, Mysore Road	BDL	23.0	68.0	35.0	19.0	*	*	*
10	Banaswadi police station	*	*	*	*	*	*	*	*
11	Kavika, Mysuru Road (CAAQMs)	9.5	28.5	67.6	34.5	11.1	*	27.8	0.6
12	Kajisonnenahalli	BDL	21.0	68.0	33.0	18.0	*	*	*
13	TERI Office, Domlur	BDL	21.0	69.0	32.0	19.0	*	*	*
14	Govt. SKSJ Technology Institute	BDL	17.0	116.0	*	19.0	*	*	*
15	Victoria Hospital, Bangalore	BDL	24.0	56.0	27.0	14.0	*	*	*
16	Indira Gandhi Child Health Care Centre	*	*	*	*	*	*	*	*
17	Veternary College, Hebbel (CAAQMS)	8.4	20.5	63.3	27.8	6.2	*	23.6	0.5
18	Jayanagara 5th Block	BDL	18.1	64.3	33.9	9.6	*	33.7	0.5

Table 4: Annual average values of Air Pollutants in Bengaluru city during the year 2020-2021

	(CAAQMS)								
19	S.G.Halli, Nisarga Bhavan (CAAQMS)	4.5	22.3	39.9	*	*	*	*	0.6
20	City Railway Station (CAAQMS)	7.9	39.8	95.8	*	*	*	*	1.2
	Standards	50.0	40.0	60.0	40.0	100.0	0.50	100.0	2.0
* Not Monitored; BDL: Below Detection Limit [SO2 lower detection limit is 4.00 µg/m ³]									

(Source: KSPCB 2020-21 Annual Report)

3.3. Air Quality in different districts of Karnataka

KSPCB during 2020-21 has monitored the ambient air quality at 22 locations of 19 major cities of Karnataka using manual equipment under the National Ambient Air Quality Monitoring Programme (NAMP). Ambient air quality monitoring is being carried out twice a week throughout the year for 24 hours, for PM₁₀, PM_{2.5}, SO₂, NO₂, Ammonia & Lead using manual equipment as per Central Pollution Control Board guidelines, and the data is sent to CPCB, New Delhi electronically and also uploaded on the Board's website (<u>https://kspcb.karnataka.gov.in/</u>).

Sl.No	Name of the Monitoring		(24 hrs.	Time Wo	eighted A	verage)	
	Station	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	NH3 µg/m ³	Pb µg/m ³
1	KSPCB Office Premises, Kolar	98.0	57.8	BDL	18.2	14.5	*
2	KSPCB Office Premises, Tumakuru	56.7	32.4	BDL	24.0	14.4	*
3	KSRTC, Building, K. R. Circle, Mysuru	48.0	18.0	BDL	14.7	14.3	*
4	KSPCB Office Premises, Mysuru	36.3	*	BDL	28.0	13.3	*
5	KSPCB Office Premises, Mandya	37.3	19.9	BDL	12.9	12.1	*
6	KSPCB Office Premises, Kodagu	69.7	10.1	BDL	10.6	10.1	*
7	KSPCB Office Premises, Chamarajanagar	46.3	23.1	BDL	14.2	13.8	*
8	KSPCB Office Premises,	39.0	24.8	BDL	19.7	6.5	*

Table 5: Annual average values of Air Pollutants in other districts of Karnataka during the year 2020-2021

State Δ ction Plan on Δ ir Pollution for Karnataka (S Δ P Δ P-K)	2022
State Action Flan on An Fonution for Kamataka (SAFAF-K)	

	Hassan										
9	Biakampady Ind. Area, Mangaluru	48.0	26.0	6.2	9.8	0.2	*				
10	Gokul Rd. Opp. to New Bus stand, Hubbali	55.8	17.6	4.8	17.9	21.1	*				
11	Lakkamanahalli Ind.area, Dharwad	44.4	14.5	4.0	14.3	20.3	*				
12	Karwar Port, Director's Office, Karwar	*	*	*	*	*	*				
13	Traffic Police Station, Davangere	128.3	*	15.9	13.9	6.9	*				
14	KSPCB Office Premises, Davangere	41.0	10.3	BDL	5.3	5.7	*				
15	HPF Intake Well, Ranibennur	32.2	*	BDL	4.5	4.9	*				
16	VISL, Bhadravathi,	37.1	7.0	6.1	11.1	6.0	*				
17	KSPCB Office Premises, Chitradurga	38.3	9.3	BDL	4.5	5.8	*				
18	KSPCB Office Premises, Belagavi	84.9	33.6	BDL	12.0	8.5	*				
19	KSPCB Office Premises, Vijyapura	76.6	20.4	BDL	13.0	7.8	*				
20	KSPCB Office Premises, Bagalkote	52.7	19.2	BDL	11.6	9.6	*				
21	KSPCB Office Premises, Ballari	59.3	16.6	4.1	15.5	*	*				
22	Government Hospital, Kalaburagi	78.7	41.8	BDL	9.3	19.6	*				
23	KSPCB Office Premises, Raichur	*	*	*	*	*	*				
24	KSPCB Office Premises, Bidar	60.3	37.4	BDL	6.8	*	*				
	Standards 60.0 40.0 50.0 40.0 100.0 0.50										
* Not n	onitored; BDL: Below Det	ection Li	mit [SO ₂]	lower det	ection lim	nit is 4.00	μg/m ³]				

(Source: KSPCB 2020-21 Annual Report)

The Concentration of PM₁₀ exceeded the National Ambient Air Quality standard at 6 cities viz., Kolar, Kodagu, Davanagere, Belagavi, Vijayapura, and Kalaburgi. PM_{2.5} values exceeded only at Kolar & Kalaburgi. The remaining 3 parameters are well within the

national ambient air quality standards. PM_{10} concentrations have exceeded the standard limits due to the emissions from construction activities, vehicular emissions, and road dust.

Table 6: Annual Average of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) in other cities of Karnataka for the year 2020-2021

Sl.No	Name of the Station	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	NH3 µg/m ³	O3 µg/m ³	CO mg/m ³
1	KSPCB Premises, Mysuru	34.9	15.2	3.5	15.6	16.4	35.9	0.4
2	KSPCB Premises, Shivamogga	45.0	21.3	2.6	23.3	24.7	35.6	0.6
3	KSPCB, Premises, Chikamangaluru	43.7	21.6	2.5	19.2	20.3	33.2	0.5
4	KSPCB Premises, Vijayapura	44.3	24.6	3.6	7.7	6.2	37.0	0.5
5	Near District Stadium, Chamrajanagar	45.6	20.1	3.1	13.6	14.8	36.6	0.4
6	Basaveshwar Engineering College, Bagalkote	43.7	23.1	4.4	13.5	15.5	30.5	0.4
7	Government PU College, Chikkaballapur	60.2	30.5	12.8	19.7	19.6	30.5	0.7
8	Yadgiri	61.3	29.7	10.9	18.3	3.3	47.8	0.8
9	Hotel KSTDC, Mayura valley, Madikeri	41.3	21.0	12.2	4.6	2.6	48.9	0.6
10	KSPCB Regional Office-Ramanagar	47.0	23.4	21.3	16.7	7.3	33.1	0.4
11	KSPCB Premises, Bidar	60.4	32.1	36.3	37.7	6.5	11.9	0.4
12	Central Excise & Customs Office Devaraj URS layout, Davanagere	47.3	15.2	21.9	9.7	7.2	6.7	0.6
13	Mundaragi Road, Near Chirayu Hospital, Gadag	56.9	44.9	19.9	13.7	11.8	20.8	0.4
14	Corporation Garden Opposite, Hubbali	65.5	26.3	8.9	23.7	14.2	16.9	0.7

15	KSPCB Premises, Hassan	59.7	23.5	5.4	18.4	13.7	14.5	0.7
16	KSPCB Premises, Haveri	31.6	25.2	31.9	15.3	50.2	17.9	1.6
17	KSPCB Premises, Karwar	*	*	*	*	*	*	*
18	Govt. ITI College, Kalaburgi	107.8	36.5	11.6	18.7	13.8	17.9	1.1
19	KSPCB Premises, Kolar	43.7	22.8	19.6	12.2	4.9	14.0	0.7
20	DC Office Compound, Koppal	51.6	20.4	10.8	15.5	39.5	20.8	0.5
21	Vasanth Vihar, Mangalore	71.4	25.7	6.6	11.1	4.7	12.4	1.4
22	DC Office compound, Raichur	70.9	29.1	19.9	15.2	12.1	7.3	0.7
23	High School compound, Udupi	86.0	70.0	17.2	26.9	5.8	24.1	1.0
24	KSPCB Premises, Belagavi	146.7	73.4	10.5	31.3	15.8	59.6	1.0
	Annual Standards	60.0	40.0	50.0	40.0	100.0	100.0	2.0
* Mon	* Monitoring not carried out							

(Source: KSPCB 2020-21 Annual Report)

The PM₁₀ values are within the standards in all cities except **Chikkabalapur**, **Yadagiri**, **Bidar**, **Hubli**, **Kalaburgi**, **Mangalore**, **Udupi**, and **Belagavi**. PM_{2.5} values are well within the National Ambient Air Quality standard at all monitoring locations except **Belagavi**, **Udupi** & **Gadag**. All other parameters are well within the National Ambient Air Quality standards. PM₁₀ values are exceeded due to construction activities and vehicular movement and road dust.

3.4. Mobile Ambient Air Quality Monitoring Vans

The KSPCB has procured two mobile ambient air quality monitoring Vans, one for North Karnataka and another for South Karnataka. The Mobile Vans are equipped with instruments to monitor Sulphur dioxide (SO₂), Nitrogen dioxide (NO₂), Ammonia (NH₃), Benzene (C₆H₆), Carbon monoxide (CO), Ozone (O₃), Particulate matter (Size less than 2.5 microns) PM_{2.5} and Particulate matter (Size less than 10 microns) PM₁₀ analyzers along with weather monitoring equipment to measure Wind Speed (WS), Wind Direction (WD), Atmospheric Temperature (AT), and Relative Humidity (RH), etc.,



Figure 3: Continuous Air Quality Monitoring Van (Source: KSPCB 2020-21 Annual Report)

3.5. Mobile Vehicular Emission Monitoring Vehicles

To assess the impact of vehicular emission on the ambient air quality, the Karnataka State Pollution Control Board has procured 12 vehicular emission monitoring vehicles fitted with a smoke density meter and gas analyzer (6 Nos) deployed in Bangalore city and one each in Mysore, Mangalore, Dharwad, Kalaburgi, Chitradurga and Bellary. The Board has conducted "Joint monitoring of vehicular emission at major cities" along with the Transport & Road Safety Department, Traffic Police, BMTC, and Zonal Office CPCB.

Vehicular emission monitored in Karnataka State for the year 2020-21 (Nov)							
Type of Vehicle	Total	Confirm	Percentage	Non- Confirm	Percentage		
Petrol	7994	7729	96.7	265	3.3		
Diesel	5405	4754	87.8	650	12		
Total	13398	12483	93.2	915	6.8		

(Source: KSPCB 2020-21 Annual Report)

4. State Action Plan

The State Action Plan is to provide guidance and mandatory activities to be implemented by different stakeholder departments, civil societies, and others concerned with reducing emissions and improving ambient air quality. The increasing evidence on the health effects of air pollution from studies across the globe shall be an alarm for sensitizing the public, stakeholder departments, and civil societies towards concerted actions for reducing air pollution and thus providing a better and healthier society for future generations.

The ambient air quality data of the KSPCB and that of the CPCB indicate that 2 out of the 12 notified parameters in ambient air under the National Ambient Air Quality Standards (NAAQS) are exceeding the standards. The Particulate matter of size less than 10 microns called Respirable Suspended Particulate Matter (PM₁₀) and Fine Particulate Matter (PM_{2.5}) are exceeding the standards in some of the places in the State. The major sources of air pollution in Karnataka are industrial emissions, vehicular emissions, construction and demolition waste, road dust, emissions from the burning of solid waste, emissions due to the burning of agro residues, and household emissions.

The Health impacts of PM_{10} are known to cause nasal and upper respiratory tract health problems. Fine particles ($PM_{2.5}$) penetrate deeper into the lungs and cause heart attacks, strokes, asthma, and bronchitis, as well as premature death from heart ailments, lung disease, and cancer.

A separate action plan for improving the air quality by reducing Particulate Matter emissions is under implementation in Bengaluru, Hubli-Dharwad, Davanagere, and Kalaburgi. The action plan is prepared in line with the existing action plan under implementation in the non-attainment cities (<u>https://kspcb.karnataka.gov.in/invites-industries-join-green-company-movement</u>) and taking into account the CPCB Graded Action Plan communicated for preparation of the action plan during 2019.

The action plan provides the actions to mitigate

- 1. Industrial Emissions
- 2. Vehicular emissions
- 3. Construction and Demolition waste and Road Dust Management
- 4. Emissions from burning of Waste
- 5. Emissions from burning of agro residues
- 6. Household emissions

The action plan proposed for the above activities and others is tentative. The regulatory actions are continuous and any amendments in terms of the regulatory activities will be continued as they are in force. Those actions that require the budget will be taken as per the availability and approval of the financial allocations. The indicative template for State Action Plan on Air Pollution can be found in **Annexure I**.

4.1. Industrial Emissions

As of August 2022, Karnataka has a total of 28716¹ industries, out of which, 2652 are in the Red category, 8710 are Orange category, 8975 are Green category and 8379 are White category industries. These industries are monitored periodically by the KSPCB and action is initiated against non-complying industries. The district-wise details of the industries are placed in **Annexure II**.

4.1.1. Policy for permitting new industries in Critically Polluted Areas (CPAs)

The CPCB has revised the criteria for determining of Comprehensive Environmental Pollution Index (CEPI) of industrial areas in the year 2016 and laid out components which include the scale of industrial activity, scale of exceedance of Environment Quality (Level of Exposure), health-related statistics and compliance status of industries. Where the CEPI score crosses 70, the areas are designated as Critically Polluted Areas (CPA's) where the index is between 60 and 70 those areas are designated as Severely Polluted Areas (SPA's), and those below 60 are designated as other polluted Areas (OPA's).

Based on the revised criteria, CPCB carried out Environment Quality Monitoring in the year 2017-18 wherein it was found that the number of identified polluted industrial clusters went up to 100 in the country. This number includes 38 critically polluted industrial areas, 31 severely polluted industrial areas, and the remaining 31 as other polluted industrial areas. In the state of Karnataka, two industrial clusters were declared as critically polluted areas, one as severely polluted industrial areas, and three as other polluted industrials area.

Sl. No	Name of the Industrial Area	CEPI Score	Remarks
1	Peenya Industrial Area, Bengaluru	78.12	Critically Polluted Area
2	KIADB Industrial Area, Jigani-Anekal, Bengaluru	70.99	Critically Polluted Area
3	Kolhar Industrial Area, Bidar	65.64	Severely Polluted Area
4	Bhadravathi, Shivmogga	58.48	Other Polluted Area

Table 8: The CEPI scores of the six industrial areas identified in the State

¹ Information received from KSPCB

5	Baikampady Industrial Area, Mangaluru	58.20	Other Polluted Area
6	Raichur Growth Centre, Raichur	53.42	Other Polluted Area

(Source: KSPCB 2020-21 Annual Report)

The Hon'ble NGT has registered a Suo Motu petition vide OA No. 1038/2018 and issued various directions to the Ministry of Environment, Forest and Climate Change, Central Pollution Control Board, State Pollution Control Boards, and State Governments. Accordingly, the Karnataka State Pollution Control Board has prepared action plans and got them approved by the Committee headed by the Additional Chief Secretary and Development Commissioner in the State Level Committee Meeting held on 11.04.2019 and submitted to CPCB. Local Area Committees have been constituted for all Three Polluted industrial areas to oversee the implementation of Action Plans submitted to the CPCB to Improve Environmental Quality.

The Hon'ble NGT in its order Dated 10/7/2019 has directed SPCBs not to grant Consent for Establishment /Expansion of Red and Orange Category industries in the Critically Polluted Areas (Peenya and Jigani- Bommasandra Industrial; Area) till these industries satisfy the pollution control norms.

Subsequently in the NGT order dated 19.8.2019, it is stated that there is no absolute bar to such units (Red and Orange Category) being set up if they are found to be viable. MoEF & CC to devise an appropriate mechanism to ensure that new legitimate activity or expansion can take place after due precautions are taken by these units. The MoEF & CC, GoI devised a Mechanism on 25.10.2019 for the Environment Management of CPAs and SPAs for the said direction and communicated to SPCB for implementation and the same is being followed.

4.1.2. Guidelines for laying city gas distribution network²

The Infrastructure Development Department (IDD) is the nodal Department for all the Gas Pipeline Projects and City Gas Distribution (CGD) Projects in Karnataka. As of date, 8 entities have been authorized by Petroleum & Natural Gas Regulatory Board (PNGRB) to establish and operate a gas distribution network under various Geographical areas (GA) covering all 30 districts of Karnataka. As per the request of the Ministry of Petroleum and Natural Gas (MOPNG), GoI, a special desk was created in IDD for coordinating with all entities carrying out gas pipeline projects, city gas distribution projects, compressed bio-gas projects, etc., in the state of Karnataka. The focus of the special desk was to expand the

² Information received from IDD via letter No. IDD 52 ITS 2022 dated:19.07.2022

availability of natural gas to domestic households, industries, and transport sectors which will facilitate meeting India's CoP-21 commitments for the reduction of Carbon emissions. The City Gas Distribution (CGD) Project is a part of the Government of India's vision for a gasbased economy and raising the share of natural gas in the country's primary energy basket to 15% by 2030, from 6.2% currently. Greater use of natural gas will cut fuel costs as well as bring down carbon emissions, helping the nation meet its COP-26 commitments. The primary objective of the City Gas Distribution (CGD) Project is to supply natural gas through Piped Natural Gas (PNG) to domestic households, commercial/ industrial consumers, and through Compressed Natural Gas (CNG).

4.1.3. Policy for replacement of heavy oil-based industries to alternate energy sources

State Initiative: GAIL India has developed and is operating two major gas pipeline networks in Karnataka namely; Dhabol-Bangalore (DBPL) and Kochi-Koottanadu-Mangalore-Bangalore pipeline (KKMPL).

4.1.4. Policy for restriction on the usage of Pet coke for industrial use

KSPCB concerning the Order of the Hon'ble National Green Tribunal, New Delhi, regarding the use of pet coke as fuel, has declared Pet Coke as an "approved" fuel under Section 2(d) of the Air (Prevention and Control of Pollution) Act, 1981 in Cement Kilns including captive power plants of Cement Plants only, vide Board Notification dated: 22.07.2017.

The Government of Karnataka because of the Orders of Hon'ble NGT, New Delhi has prohibited the use of pet coke as fuel in the entire State of Karnataka on 11.08/2017 under the provisions of Section 19(3) of the Air (Prevention and Control of Pollution) Act, 1981 except for the following activities.

- 1) The Cement Kilns
- Captive Power Plants within Cement Plants having the facility of Circulating Fluidized Bed Combustion (CFBC) Boilers, wherein SO₂ emissions are controlled by the use of limestone.

To regulate the use of Pet Coke, the Board has issued directions under Section 31(A) of the Air (Prevention and Control of Pollution) Act, 1981 to M/s Mangalore Refinery and Petrochemicals Limited, Mangaluru, Dakshina Kannada on 15.06.2018 which is the only producer of pet coke in the state to sell the pet coke only to industries having the permission

of the Board and submit the details on the quantity of pet coke generated and sold every month.

As per the Office Memorandum of the Ministry of Environment, Forest and Climate Change, Government of India dated: 10.09.2018, the quantity of pet coke permitted for use in the Cement Kiln has been specified in the Consent Order.

KSPCB, given the Order of Hon'ble Supreme Court, issued in respect of WP (C) No. 13029 of 1985 issued a Modification to Office Memorandum issued on 22.07.2017 wherein the approval granted under Section 2(d) of the Air (Prevention and Control of Pollution) Act, 1981 for use of pet Coke was withdrawn. Instead, the Board permitted the use of Pet coke as a feedstock only in cement industries for clinker production, lime kiln, calcium carbide, gasification plants, and calcined Pet coke for anode making in Aluminium Industries.

4.1.5. Rules and Regulation on uninterrupted power supply in State³

- Electricity (Rights of Consumers) Rules, 2020 issued by GoI Vide Gazetted Notification No. G.S.R. 818(E) dated 31st December, 2020, stipulates 24 X 7 Power supply to consumers.
- Karnataka Electricity Regulatory Commission (KERC) (Standards of Performance) Regulation, Notification No. D/01/03 dated 24.05. 2004 is already in place which specifies minimum standards of performance with reference to quality and reliability of services that a Licensee shall achieve in the discharge of its obligations as a licensee.
- KERC Draft regulation Electricity (Rights of Consumers) Rules vide Notification No. KERC/3/DDD/2021-22/996 dated 10.11.2021, the draft is published in the Karnataka State Gazette on 23.11.2021. The final regulation is awaited.

Measures/ Initiatives taken by Energy Department:

- Significant Capacity addition of more than 10 GW in the renewable energy sector during the last 6 years, with a cumulative achievement of 15579 MW.
- Aligning with the GoI's Mission of 500 GW by 2030, GoK has come up with a new holistic "Karnataka Renewable Energy Policy 2022-2027" that aims to achieve energy security primarily from Renewable energy sources.
- Deployment of Electric Vehicle Charging Stations across the State in order to achieve net zero emission target by 2070.

³ Information received from the Energy department via letter Nos. ENERGY 313 VSC 2022 dated: 18.07.2022 and 29.10.2022.

- State's Discoms through EESL & CESL encouraging sale of LED bulbs, LED Tubelights and energy efficient fans under UJALA & GRAM UJALA programme and use of LED bulbs under various Government schemes.
- Implementation of Battery Storage system, Hybrid Park and Pumped Hydro Storage Projects are under progress.
- Development of Green Hydrogen Policy is under progress.

4.1.6. Policy For use of DG sets

KSPCB has issued an order, vide No. KSPCB/SEO-INFRA/DG-RETROFITTING/2021-22/2887 dated 17th September 2021 (**Annexure III**); Establishments, projects, buildings, utilities, airports, railway stations or any other places operating DG sets of capacity 125 KVA and above, within the jurisdiction of the State of Karnataka are directed to retrofit all operational DG sets of capacity 125 KVA and above with an emission control device/equipment having a minimum specified particulate matter capturing efficiency of at least 70% in 5-mode D2 cycle and also should result in the increase of fuel efficiency. The emission control device/equipment must be tested over an ISO-8178 5-mode D2 cycle for an equivalent KVA rating by one of the five CPCB, GoI-recognized/approved laboratories. However, as per the Hon'ble NGT (SZ) directions, the process of implementation is kept on hold for want of CPCB guidelines on certification entity.

4.1.7. Policy Regarding CAAQMS based on the emission potential or capacity of air polluting industries

Installation of an Online Continuous Effluent/Emission Monitoring System (OCEMS) as per the CPCB directions issued on 05.02.2014 has been made mandatory. KSPCB is also asserting major industries have Continuous Ambient Air Quality Monitoring Stations (CAAQMS) and publish the air quality on their website.

4.1.8. Mechanism to be devised for the expansion of OCEMS to air-polluting industries is not covered currently (Such as emission from utility stacks in 17 categories, etc.)

Karnataka has 246 industries operating under this category; KSPCB is asserting these 17 category industries to have an Environmental Cell with qualified Environmental Engineers/Scientists with required staff and also to establish a self-monitoring system. The details of various categories of industries connected with OCEMS are provided in table No.9.

	Table 9: Status of OCEMS in the State							
Sl.	17-Category Industries	Total No.	Connected	Not Connected				
No.		of industries						
1	Aluminium	1	1					
2	Bulk Drugs & Pharmaceutical	83	83					
3	Caustic Soda	1	1					
4	Cement	23	23					
5	Distillery	14	14					
6	Dyes & Dye Intermediates	2	2					
7	Fertilizer	3	3					
8	Oil Refinery	1	1					
9	Pesticides	1	1	N;1				
10	Petrochemicals	1	1	INII				
11	Pulp & Paper	5	5					
12	Sugar (Sugar & Co-gen, Sugar,	71	71					
	Co-gen and Distillery)							
13	Thermal Power	10	10					
14	Integrated Iron & Steel	30	30					
15	Tannery	0	0					
16	Copper Smelter	0	0					
17	Zinc Smelter	0	0					
	17- Category Industries Total	246	246	0				

(Source: KSPCB 2020-21 Annual Report)

4.1.9. Mechanisms to control fugitive emission sources

- The Fugitive Emission Standards are prescribed for the industries wherever required and regular monitoring of the same is being carried out. The industries were instructed to operate with enclosures, suction hoods with APC, and sprinklers.
- The interlocking system of the Air Pollution Control (APC) equipment with the process plant is also made mandatory in all industries to ensure the functioning of the APC.
- Separate Energy meters for the APC are also made mandatory for certain category industries to ensure the operation of the APC.
- Siting guidelines for certain air-polluting industries like stone crushers are notified and the same are under implementation.
- A green belt of 33% area is being insisted in the industries with air pollution sources to mitigate the air pollution.
- Most industries are opting for heat recovery systems for better utilization of the heat and to cut the utilization of fossil fuels thereby reducing emissions.

• The industries are regularly being monitored for compliance verification and actions are being initiated in case of non-compliance by way of issuing directions and closure of the industry.

4.1.10. Policy to set up e-waste recycling units in industrial areas in compliance with e-waste management rules⁴

- Electronic waste (e-waste) is the waste arising from end-of-life electronic products. It is the fastest-growing waste stream in the world at present.
- Annual global production of e-waste is estimated to surpass 50 million tons in 2020, It is reported that India is contributing over 3.2 million tons out of which Karnataka contributes approximately 0.1 million tons.
- All e-waste is valuable as it is highly rich in some valuable and rare metals i.e., e-WEALTH.
- Environmentally sound management of electrical and electronic waste is currently one of the most critical and challenging issues, not only for India but for the World.
- India is one of the fastest-growing markets for electronics and the demand was about USD 400 billion in the year 2020.
- Presently bulk of the e-waste recycling is done by the informal sector in India, wherein recovery of valuable materials is just 10–20%.

The Issues:

1. Lack of infrastructure:

- a. The gap between e-waste collected and recycled by authorized dismantlers/recyclers and the quantum generated is huge.
- b. The existing recycling facilities face issues from a lack of suitable environmentally friendly technologies to a lack of a steady supply of raw materials.
- c. The reason is a lack of awareness about the hazardous impact of inappropriate e-waste recycling, consumers do sell their electronic waste to informal recyclers for quick money as it is easier and faster.
- d. Thus, registered recycling units are deprived of a regular supply of e-waste which is crucial for their sustenance.
- 2. Boosting the formal e-waste recycling industry: The Amendment to the E-waste (Management) Rules, 2016 was made to channel the same towards authorized

⁴ KSPCB's Parisara Vahini, January 2022

dismantlers and recyclers to formalize the e-waste recycling sector and this would further boost the economy as well.

3. High cost of setting up recycling facilities:

- a. Advanced recycling technology is expensive and makes large investments risky, especially when sourcing e-waste is a challenge.
- b. Most of the formal recycling companies in India limit their role to only preprocessing of e-waste, wherein the crushed e-waste with precious metals is exported to smelting refineries outside India.
- c. An end-to-end solution for e-waste recycling has become a prime requirement.

Challenges in E-Waste Management in India:

- 1. As per data, India is the 3rd largest generator of e-waste in 2019 with 3.2 million Tonnes.
- 2. The Factual data on the quantum of Electrical and Electronic Equipment (EEE) put into the market is not available.
- 3. A proper digital tracking and monitoring system at a national level is a need of the hour to track all EEE during its complete life cycle.
- 4. Even after 10 years of enforcement of the e-Waste Rules, the share of the formal sector is just 10-15 %. The industry is dominated by the informal sector with 85-90%. The Rules have set an EPR target from 10 % to 70% (by 2023).
- 5. There is no proper digital mechanism to check compliance with EPR targets met by the producers of EEE.
- 6. The Authorizations for (Producer Responsibility Organization) PROs under E-Waste Rules are being issued by the nation's highest technical body i.e., CPCB. In reality, these authorized PROs are approaching informal sectors or aggregators to collect e-waste on behalf of Producers to achieve the Extended Producer Responsibility (EPR) targets.
- As per recent data, India generated around 3.2 Million Tonnes of e-waste in 2019 and as per CPCB's annual report, the authorized capacity of re-processors across the nation is only 1.2 Million Tonnes per annum.

Despite this huge gap, formal re-cyclers are facing the problem of insufficient raw materials (input e-waste). This gap has to be addressed to bring re-processing quantity on par with its generation and the govt. has to support more and more re-cyclers of e-waste with both financial and technical assistance.

A few important goals that contribute to the objective of a robust e-waste system are:

1. Facilitate an e-waste management supply chain that integrates the informal sector in a manner that recognizes the right to livelihoods of the workers.

- 2. Develop a regularly updated and publicly available inventory of generation of e-waste quantities by e-waste type (e.g. computers, mobiles, and appliances), waste composition, and flows. Concerning Karnataka, work in this regard has been entrusted to EMPRI and work is underway.
- 3. Create a policy framework for the development of indigenous technologies and technology transfer to encourage the widespread application of environment-friendly e-waste recycling technologies.
- 4. Identify and employ public policy instruments that incentivize the manufacturers/producers to invest in achieving 'design for environment' changes in their product design.
- Generate greater awareness of e-waste and its impacts on society, the responsibilities of various stakeholders under current regulations, and responsible actions that citizens can take.

4.1.11. Number of Industries in the State complying with emission standards

Zonal Office	Category	Total No. of Operating Industries	APC system under Operation	Defaulters (No adequate facility)
Ban ashumu Citu	Red	342	337	Nil
Bengaluru City	Orange	744	666	Nil
Bangalum Fast	Red	195	195	Nil
Dengaluru Last	Orange	359	346	Nil
Dan aaluum Sauth	Red	499	499	Nil
Bengaluru South	Orange	748	748	Nil
Dan aaluum Nauth	Red	299	298	1
Bengaluru North	Orange	464	464	Nil
Margana	Red	176	176	Nil
Mysuru	Orange	497	497	Nil
M	Red	117	116	1
Mangaluru	Orange	976	959	Nil
Delleri	Red	148	148	Nil
Ballari	Orange	548	548	Nil
Chitme dumes	Red	105	105	Nil
Chitradurga	Orange	683	677	6

Table 10: Air Pollution Control (APC) Status of Industries

Dharwad	Red	217	216	1
	Orange	640	632	8
T7 1 1	Red	90	90	Nil
Kalaburgi	Orange	195	195	Nil
Total		8042	7912	17

(Source: KSPCB 2020-21 Annual Report)

4.1.12. Shifting of industries/commercial units to gaseous fuels (CNG/NG/CBG)

The Infrastructure Development Department (IDD) of Karnataka is responsible for providing natural gas pipeline connections to the industries. In the four non-attainment cities (NAC) in Karnataka namely, Bengaluru, Davanagere, Hubli-Dhaward, and Kalaburgi, the city gas distribution projects are being carried out by GAIL Gas Ltd., Unison Enviro Pvt. Ltd., Indian Oil Adani Gas Pvt. Ltd. and AG&P Pvt. Ltd. respectively.

Table 11: Details of Industrial	Areas ready	with natural	gas supply f	or industries	with requirements up
	to or l	ess than 5000	00 SCMD		

SI. No	Entity Name	Geographical Area	The Industrial area has already been connected with the Natural gas pipeline network	Industrial area to be connected with Natural gas pipeline network and charged in the Financial Year 2022-23
1	Gail Gas Limited	Bengaluru Rural & Urban	Bommasandra, Jigani, Veerasandra, Singasandra, Whitefield, Hoskote, Software Park, Hardware Park (Bagalur), Yelahanka New Town, Peenya- Phase-2	Attibele, Dabaspet, Doddaballapur, Aerospace Park
2	Gail Gas Limited	Dhakshin Kannada	Baikampady Industrial Area	Karnad Industrial Area
3	Maharashtra Natural Gas Ltd	Ramanagara	Bidadi Industrial Area	Harohalli Industrial Area, KIABD
4	Megha Engineering & Infrastructure Limited	Tumakuru District	Vasanthnarasapura, Hirehalli, Kunigal, Antharasanahalli	Sathyamangala, Sira Industrial Area, Gubbi

5	Megha Engineering & Infrastructure Limited	Belgaum District	Auto Nagar Belgaum, Macche Industrial Area, Udambagh Industrial Area, Honga Industrial Area, Navage Industrial Area, kangrali KIADB, Angol Industrial Area, Santi Bastwad Industrial Area, Waghawade Industrial Area	Kittur Industrial Area, Kanagia Industrial Estate, Aeques SEZ, Bailhongai, Gokak
6	AGP City Gas Private Limited	Bagalkot, Koppal and Raichur	Not connected	Kapnoor KIADB/KSSIDC Koppal-Ginigera Industry Area
				Koppal-Bhanapur Industry Area
				Raichur-Wadloor Cross-Industry Area
				Raichur-KIADB Area
7	AGP City Gas	Chikkmangaluru	Not connected	Hassan KIADB
		, Hasssan, and Kodagu		Special Economic Zone Textile specific Hassan
				Kushalnagar KIADB
8	AGP City Gas Private Limited	Kalaburgi and Vijaypura	Not connected	Kapnoor Industrial Area Phase-I, Phase- II, Phase-III
				Nandur Industrial Area Phase-I & Phase-II,
				Mahalbagyat Industrial Area
9 AGP City Gas Private Limited Mandya Chamar		Mysuru, Mandya and Chamarajnagar	Nanjangud KIADB, Hebbal KIADB	Hebbal Industrial Area
				Kadakola Industrial Area
				Tandya Industrial Area
				Adakanahalli Industrial Area
				Hootagalli Industrial Area Metagalli Industrial Area Bellagola Industrial Area Kadakola KIADB
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10	AGP City Gas Private Limited	Uttar Kannada, Haveri and Shivvamogga	Not connected	Machenahally KIADB Area, Shivamogga Haveri Grasim Junction
11	AGP City Gas Private Limited	Chitoor, Vellor and Kolar	Not connected	Malur KIADB Narsapura KIADB Jakkasandra KIADB
12	Adani Total Gas Limited	Udupi	Not connected	KIADB, Padubidri, Udupi
13	Indian Oil Adani Gas Pvt Ltd.		Rayapur, Gokul Industrial, Mommigatti, Bellur	Tarihal, Gamangatti
14	Bharat Gas Resources Ltd.	Bidar	Not connected	Kolhar Industrial Area
15	Unison Enviro Private Limited	Chitradurga & Davangere Districts	Not connected	Ready with Virtual Pipeline (Mobile Cascade) to provide Natural Gas within GA

(Source: Information received from IDD via letter No. IDD 52 ITS 2022 dated: 19.07.2022)

Table 12: Details of Industrial Areas ready with natural gas connectivity to industries with requirements of more than 50000 SCMD through GAIL's natural gas pipeline network

Entity	Industrial Area	District
	Dobaspet, Aerospace, Doddaballapura	Bengaluru Rural
	Attibele, Bommasandra, Jigani, Peenya	Bengaluru Urban
GAIL India Limited	Chitradurga, Kelagote, Hiriyur	Chitradurga
Liniteu	Belagvi, Kittur, Kanagale	Belgavi
	Baikampady, Mangalore SEZ	Dakshina Kannada
	Bidadi, Harahalli	Ramnagara

Kunigal, Vasanthnarasapura, Antharasanahalli, Sira	Tumkuru
Hubli Industrial Estate	Hubli
No consumers to date	Gadag

(Source: Information received from IDD via letter No. IDD 52 ITS 2022 dated: 19.07.2022)

4.1.13. The number of households shifted to PNG/LPG

The Infrastructure Development Department is the Nodal Department for all the Gas Pipeline projects and City Gas Distribution Projects in Karnataka. As of date, 8 entities have been authorized by Petroleum & Natural Gas Regulatory Board (PNGRB) to establish and operate a city gas distribution network under various Geographical areas (GA) covering all 30 districts of Karnataka.

Sl. No	Geographical Area (GA) Name	No. of domestic PNG connections	No. of commercial connections	No. of industrial connections	No. of CNG stations	Total Length of gas pipeline network (Kms)
1	Bengaluru Urban & Rural	47,542	143	174	52	1490.52
2	Kalaburgi & Vijayapura	1,292	Nil	Nil	08	9.10
3	Hubli-Dharwad	14,138	12	04	06	581.02
4	Chitradurga & Davanagere	1,000	Nil	Nil	10	72

Table 13: City-wise Gas Distribution Network progress details as of 30.06.2022

(Source: Information received from IDD via letter No. IDD 52 ITS 2022 dated: 19.07.2022)

4.1.14. Co-processing of Hazardous Waste in Cement Kilns

The incinerable waste generated in the state is being used for co-processing in the cement industries as a result of which the fuel used for incineration and the operation of the APC are saved leading to lesser air pollution and is managed in an environmentally sound method. The amount of material co-processed in 9 cement plants during the year 2020-21 is 1,27,103 Metric Tonnes and for the year 2021-22 is 2,32,045 Metric Tonnes respectively.

4.1.15. Inventory of fuel consumed in the industries (type and quantity)

	Zonal Office	Total No. of Industries		Type and Quantity of fuel used in Kg/per day					Status of Emission		Total No.	No. Of Industrie	Total No. of Industrie				
		Red	Ora nge	Gree n	Whit e	High Speed Diesel (HSD)	Furnace Oil (FO)	CNG	PNG	LPG	Solid fuels/ Briquettes	Coal/ Coke	Confir ming	Non Confir ming	Industries provided OCEMS	s provided CAAQM	s having PNG connectio n
1	Mysuru	226	955	1065	1772	8,40,489.81	5,22,721.11	-	-	96,400	66,40,432.2	67,70.580.8	All	-	16	-	-
2	Bengaluru City	164	808	1246	1743	1,86019.14	5535	-	1200	-	42,227.70	-	All	-	-	-	25
3	Mangaluru	166	1445	915	4.0	4,83,890.76	6,12,020	-	-	-	26,48,274.0	1,17,87,744	All	-	7	2	-
4	Dharwad	312	1184	1067	3580	81,996.53	10,979	1.7	-	89	1,18,49,595	4,27,622	All	-	22	2	-
5	Bengaluru North	217	448	768	55	16,917	7440	96.84	589	16	45,130	37,656	-	-	-	-	-
6	Kalab uragi	100	401	315	470	13,761.83	10,000	-	-	1633	39,83,949	94,09,538.6	All	-	39	9	-
7	Bengaluru East	315	659	724	98	13,05,974	5710	200	3,26,893	3349	35,263.55	1678	All	-	4	-	5
8	Bengaluru South	602	1072	1586	220	14,50,563.3	4,40,724.33	55,863.23	9251.11	2020	66,59,246.69	18,727	76	15	22	2	-
9	Chitra durga	148	1039	626		1,55,384.1	8570	1,60,100	2442	5400	3,50,426	24,14,479	18	3	20	3	-
10	Ballary	216	828	767	717	5,79,889	14,800	-	-	-	7,76,200	1,20,52,648	All	-	56	15	-
	Total	2466	8839	9079	8659	51,14,885.	16,38,499	21,62,623	3,40,375	1,08,906	3,30,30,744	4,29,20,674	94	18	186	33	30

Table 14: Abstract of the fuel consumed in the industries (type and quantity) from the all Zonal offices of Karnataka

(Source: KSPCB)

4.1.16. Any other Policy/Rules/standards/Guidelines pertaining to industrial emissions

The Status of fly ash utilization as per Fly Ash Notification SO 2084 E dated 03.11.2009 for the period 01.04.2020 to 31.03.2021 (**Annexure IV**) is given in the table below:

Sl. No.	Name & Address of the Industry	Power Generating Capacity	Quantity of fly ash generated	Utilizat ion (%)	Utilization
1	Karnataka Power Corporation Limited, Raichur Thermal Power Station, Shaktinagar, Raichur	[MW] 7 x 210 MW and 1 x 250 MW (Total 1720 MW)	(in MTA) 23,87,353.73	81.70	Supplied to Cement Industries, Bricks & Tile Manufacturing industries.
2	Karnataka Power Corporation Limited, Ballari Thermal Power Station, K.P.C.L. Kudithini Village, Ballari	2 x 500 MW 1 x 700 MW	10,72,510.33	76.68	Supplied to Cement industries, Brick manufacturers
3	Udupi Power Corporation Ltd., Yelluru Village, Pilar Post, Padubidri, Udupi	2 x 600 MW	79,066.61	99.42	Supplied to Cement Industries, Bricks manufacturing, and RMC units, and bottom ash is stored in an ash pond
4	JSW Energy Limited, Thoranagallu, Ballari	2 x 130 MW 2 x 300 MW	1,45,776	100	Supplied to the Cement industry, Brick units and used for slime pond bund construction
5	Kesoram Industries Limited, Unit: Vasavadatta Cements, Sedam, Kalaburagi	79.2 MW (Captive)	1,15,155	100	Used for Cement making (captive consumption)
6	Ultratech Cement (Formerly Rajashree Cements), Malkhed Kalaburagi	58.2 MW (Captive)	1,49,708	100	Used for Cement making (captive consumption)
7	ACC Ltd., (Previously Tata Power Corp. Ltd,) Wadi, Kalaburagi	125 MW (Captive)	21,54,173	100	Used for Cement making (captive consumption
8	Grasim Industries Ltd, Kumarapatnam, Ranebennur- Haveri	20 MW (Captive)	46,675.94	100	Sent to Brick and Cement industries
9	West Coast Paper Mill, Dandeli, Uttara Kannada	74.8 MW	73,572	100	Sent to Brick and Cement industries

n

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10	Gulbarga Power Private Limited, Chatrasala village, Chincholi Taluk, Kalaburagi	30 MW (captive)	19,437	100	Used for Cement making
11	Chettinadu Cement Corporation, Kallurand Sangam villages, Chincholi Taluk, Kalaburagi	30 MW (captive)	18,501.26	98.85	Used for Cement making
12	N T P C Limited Kudigi Super Thermal Power Project Kudigi Basavanabagewadi taluk, Vijayapura	3 x 800 MW	8,93,027	100	Sent to Brick manufacturers
13	Himatsingka Linens, Plot No. 1, SEZ, KIADB Industrial Area, Hanumanthapura Post, Hassan	12.5 MW (captive)	4,334	90.52	Disposed to brick manufacturers
14	Yermarus Thermal Power Station	2 x 2800 MW	1,28,367.80	83.66	Cement industry, Brick units, and RMC
15	BMM Ispat Ltd, Ballari	25MW Power plant 3x70 M W Power plant	39,036	100	Cement industry and Brick Industries
16	Dalmia Cement Limited Yedwad village Gokak taluk, Belgaum	40 MW	30,415	100	Used for Cement making
17	Orient Cement Limited Chittapura taluk, Kalburagi	45 MW	64,788	100	Used for Cement making
18	JK Cement Works, Muddapur, Bagalkot	2 x 25 MW	23,947	100	Used for Cement making
19	Star Metallics and Power Private Limited, Hanumanahalli Vyasanakaere Post, Hospet Taluk, Bellarv	1 x 32 MW	14,652	92.87	Disposed to Cement and brick making

(Source: KSPCB 2020-21 Annual Report)

4.1.17. Common Action points for implementation in industrial estates and areas to reduce air pollution

- Extensive Plantation is to be taken up within the industries and also in the industrial areas by the concerned industries, industrial associations, KIADB, KSSIDC, and others.
- The roads in the industrial estates/areas are to be maintained regularly without potholes, end-to-end pavement, and sweeping to remove the silt- KIADB, KSSIDC, and ULB.

- The loading and unloading operations are to be taken up in covered areas to prevent any lofting of dust-ULBs and the Industries Department.
- Industries shall be mandated with suitable air pollution control equipment to meet the environmental standards- KSPCB
- All in charge of industrial estates and areas to monitor the construction works, loading, and unloading activities. Also to have a dedicated Public Redressal System to address the grievances-KSPCB and ULBs.
- The monitoring of all the industrial estates and areas is to be carried out at regular intervals for compliance verification and to take corrective measures required if any-KSPCB
- All the air-polluting industries with boilers, furnaces and any other air-polluting sources should be monitored for compliance verification at regular intervals. The online Continuous Emission Monitoring and Ambient Air Quality Systems shall be made mandatory based on the category of the industry-KSPCB.
- All concerted efforts are to be made for switching over to cleaner fuels like CNG, and LPG, and wherever new industries are coming up they should be mandated to use cleaner fuels wherever available- KSPCB & Infrastructure dept.
- The Pollution Under Control (PUC) for the vehicles plying in the estates shall be mandatory-Transport and Police Dept.
- All measures to be taken to prevent any sort of open burning and all such incidents shall be stopped and punitive action to be initiated- ULB's
- All fire accidents within the industrial estate/area are to be mitigated at the earliest and the environmental damage needs to be fixed as per the procedures-Dept. of Factories
- Hot spots for air pollution need to be identified within 30 days of approval of the state action plan by KSPCB and other line departments. A micro-action plan has to be prepared for mitigation of the air pollution at such hot spots and placed before the competent authority (District Collector) for approval and implementation.
- A half-yearly report has to be prepared by KSPCB and ULBs on the compliance status of air pollution for PM₁₀ and PM_{2.5} along with the actions initiated as per the state action plan and approved micro action plan.

4.2 Vehicular Emissions

4.2.1 Notification for phasing out old vehicles (Commercial: 10 years; Private: 15 years)

As per the Government notification TD 187 TDO 2020, dated 03-02-2022, the Renewal of Fitness certificate for 2-stroke auto rickshaw plying in Bengaluru has been restricted. The notification can be found in **Annexure V**.

Sl. No	Category of Vehicle	Karnataka State
	NON TRANSPORT VEHICLE	
1	Two-wheelers	51,94,956
2	Cars	12,53,062
3	Omni Buses	18,903
4	Tractors	1,99,299
5	Trailers	1,25,948
6	Construction Moving Equipment	165
7	Private Service Vehicle	470
8	Other Vehicles	22,325
	TOTAL NON TRANSPORT VEHICELES(A)	68,15,128
9	TRANSPORT VEHICLE	·
а	Multi-Axled/Articulated Vehicle	8,724
b	Trucks and Lorries	2,74,621
	TOTAL	2,83,345
10	LIGHT GOODS VEHICLES	
a	Four Wheeler	2,61,861
b	Three Wheeler	77,816
	TOTAL	3,39,677
11	Buses	61,045
	TOTAL	61,045
12	TAXIES	
а	Motor Cabs	67,147
b	Maxi Cabs	47,540
С	Others	01
	TOTAL	1,14,688
13	LMV PASSENGER	

Table 16: The details of more than 15 years old vehicles in Karnataka State as on 31.03.2022

а	Three Seater (A/R)	31,00,02
14	Other Vehicles	84,357
	TOTAL	3,94,359
	TOTAL TRANSPORT(B)	11,93,114
	TOTAL (A)+(B)	8,00,8242

(Source: 2021-22 Annual Report of Transport Department)

4.2.2. Policy of scrapping the old vehicles

Ministry of Road Transport and Highways (MoRTH), New Delhi has issued a notification vide GSR 653 (E), dated: 23-09-2021. For the State, the policy is under finalization for the establishment of RVSF (Registered Vehicle Scrapping Facility).

Karnataka State Road Transport Corporation (KSRTC) as a public sector has adopted the scrapping Policy as below:

For ordinary vehicles: 09 lakh km

For Corona seater: 10 lakh km

For Corona sleeper: 11 lakh km

For Volvo vehicles: 13 lakh km

Bengaluru Metropolitan Transport Corporation (BMTC) as a public sector has adopted the scrapping policy of 8.5 lakh kilometres or 11 years whichever is earlier.

4.2.3. Policy/Scheme for Eco-Friendly Mass Rapid Transport Systems⁵

Metro rail is a vital component of the transformation of the urban transport scenario in India. With the urban population continuously growing, there is a need for green solutions. Mass Rapid Transit Systems are fast, safe, and comfortable to travel. This alone will encourage people to switch from personalized vehicles to public transport.

Bangalore Metro Rail Project Phase-1

Metro services have been in operation 56 Km on the East-West corridor - 25.6 km long, starting from Baiyappanahalli in the East and terminating at Kengeri Terminal in the West and on 30.4 km North-South corridor commencing at Nagasandra in the North and terminating at Silk Institute in the South.

Bangalore Metro Rail Project Phase-2

Phase 2 of the Bangalore Metro Rail Project was sanctioned by GoI in February 2014. The Project consists of Four Extensions to the existing lines and two New Lines. The total length

of Phase-2 is 72.095 km with 61 stations (49 Elevated and 12 Underground). The sanctioned project cost is Rs.26,405.14 Crore. The entire network is programmed to be completed by March 2025. The physical progress of Phase 2 up to July 2022 was 71%. The construction of Phase-2 is under progress in all the Reaches.

Bangalore Metro Rail Project Phase-2A and Phase-2B

BMRCL has initiated the process of setting up a separate Metro line from Central Silk Board Junction to Kempegowda International Airport via K.R.Puram and Hebbal on the Outer Ring Road and thereafter by the side of NH-44 with a total length of 58 Km and 30 stations. The GoK has approved the project and the sanction of the GoI was received on 07.06.2021 with a completion plan targeted for June 2026. The approved project cost for Phase-2A & 2B of the BMRC project is estimated at Rs.14,788.101 Crore. The physical progress up to July 2022 is 18.5%. The construction of Phase-2A & 2B is under progress in all packages. The entire network is programmed to be completed by September 2025.

Bangalore Metro Rail Project Phase-3

BMRC proposes to take up metro projects in the following lines:

- ORR West line is from Kempapura to J.P.Nagar 4th Phase-32 km.
- Magadi Road line is from Hosahalli Meto station (Phase-1) to Kadabagere-13 Km. The preparation of DPR for the ORR West line and Magadi Road line have been entrusted to M/s RITES. At present, a draft DPR has been submitted.
- New Metro line from Sarjapur to Hebba;-36 Km. Work for the preparation of DPR has been awarded to M/s. Rina Consulting S.p.A.

4.2.5. Policy for augment e-vehicles

Karnataka is encouraging the registration of electric vehicles. In this regard, Transport Department has entered MoU with BESCOM at a cost of Rs.4.0 Crores to make it convenient to the owners of electric vehicles by establishing 100 AC and 26 DC charging stations by the BESCOM within BBMP limits. These charging stations can be viewed through a mobile app and the charging unit fee can be paid. Further, it is proposed to establish such charging units on Highways of the State. To promote the use of electric vehicles and to control air pollution 1190 charging stations are under development, the proceedings of the GoK can be found in **Annexure VI**.

BMTC has already incorporated 90 electric buses in its fleet, a financial provision of Rs.50.0 Crores was provided by Bengaluru Smart City Limited (BenSCL) and Rs.25.0 Crores is being utilized. A fleet of 300 electric vehicles will be incorporated by October 2022 for which a financial provision of Rs.157.0 Crores is being provided under the FAME II scheme,

implemented in April 2019 by the Department of Heavy Industries, Govt. of India and Rs.20.0 Crores is being utilized. BMTC has a vision of replacing all diesel buses with electric buses by 2030.

Similarly, KSRTC has incorporated 50 electric buses in its fleet, a financial provision of Rs.27.50 Crores was provided under the FAME II scheme and Rs.5.5 Crores is being utilized.

4.2.6. Notification and enforcement of PUC norms

A provision has been made under the Motor vehicles Act, 1988 to impose a penalty of Rs.1500/- for 2-wheelers or 3-wheelers and Rs.3000/- for LMV, Heavy & others in regards to the violation of standards prescribed with air pollution. During the year 2021-22 checking was conducted on polluting vehicles and 10,73,018 vehicles were checked, cases were booked against 42,563 vehicles and Rs.5.39 Crore is collected as a fine⁶.

4.2.7. Online monitoring of PUC implementation

Directions have been given to manufacturers and distributors of the gas analyzer and smoke meters to give training to the staff at Emission Testing Centres. According to rule 231(b) of Karnataka Motor Vehicles Rules, 1989, all the Emission Testing Centres are being inspected regularly for their proper functioning. If defects are found at the time of inspection, notices will be issued to them to rectify the defects. If more defects are found and bad functioning is noticed, action is taken to suspend or cancel the licenses of those centres. As of 31- 03-2022, there are 542 centres in Bengaluru and 1,342 centres in other places. All the Emission testing centres are computerized for proper functioning and to check vehicles more scientifically and transparently.

4.2.8. Mechanism for centralized record maintenance of PUC checks, certification, and cross-check by the concerned transport authorities to be incorporated

As per rule 231 (b) of Karnataka Motor Vehicles Rules 1989, licenses are being issued to open new Emission Testing Centres only after a detailed inspection of the centres and fulfilment of prescribed norms. The Emission Testing Centres should keep the approved gas analyzers and smoke meters and this equipment have to be maintained properly by calibrating them from time to time. All the centres are being issued detailed and strict instructions for proper functioning. Periodical inspections are also conducted to ensure the proper functioning of these Centres.

Emission testing centres check the levels of exhaust emitted from motor vehicles to guide vehicle owners for rectification. The Transport Department, Government of Karnataka has

⁶ Transport Department, 2021-22 Annual Report

provided an online networking facility to all the emission testing centres in Karnataka. This is achieved in Karnataka by employing software that provides test details of motor vehicles and it uploads online test data to a centrally located server. The Motor Vehicle Inspectors also cross-check the test data of vehicles through the website http://etc.karnataka.gov.in. This project will cover approximately 2.85 Crores vehicles⁷. The existing Emission Testing Centres have been converted to the new system. This is a secure way to monitor the Emission data across the state and it helps to take the necessary step to reduce pollution. The said system has been inaugurated in Bangalore City on 22-11-2010. Since December 2016, the system of online networking of emission testing centres in the State is being maintained by the Transport Department.

4.2.9. Any other Policy/Rules/standards/Guidelines pertaining to vehicular emissions⁸

A. Use of air pollution measuring equipment:

Action is being taken by KSPCB and Forest-Environment and Ecology department to set up air pollution measuring equipment and to display the level of air pollution at important traffic junctions and other such places to make people aware of the quality of air and the details shall be published in all daily newspapers. Action in this regard is in progress. Regular Vehicle checks are organized through special squads. For monitoring the air quality in Bengaluru city in association with KSPCB installation of the CAAQMS station at RTO, Bengaluru (East) is under progress.

B. Use of LPG as base fuel in motor vehicles:

By amending Section 52 of the MV Act 1988, a provision has been made for use of LPG in vehicles. The use of LPG in Auto rickshaws and Light motor vehicles is being popularized. Department has already approved 42 LPG Kit models and gave permissions for 76 retro fitment centres in Bangalore City and 210 retro fitment centres in Karnataka state. Encouragement is given to those who apply to establish retro fitment centres. These centres fit approved LPG Cylinders to Auto rickshaws and Light Motor vehicles (Motor cars).

C. Insertion of section 3(b) under Karnataka Motor Vehicles Taxation Act-1957:

A new Section 3 (b) of KMVT Act 1957 with effect from 01-04-2002, green tax is being collected in respect of non-transport vehicles which are more than 15 years old and in respect of transport vehicles that are more than 7 years old. The details are in Table No.17.

^{7,8} Transport Department, 2021-22 Annual Report

Sl. No	Class and age of the vehicle	Rate of tax (Rs.)
1	Non-Transport vehicles completed 15 years from the date of their registration, at the time of renewal of the certificate of registration as per sub-section (10) of section 41, of the Motor Vehicles Act 1988.	
	(1) Two-wheeled vehicles	250.00
	(2) Four-wheeled vehicles	500.00
2	Transport vehicles completed 7 years from the date of their registration, at the time of renewal of fitness certificate as per Sec.56 of Motor Vehicles Act 1988.	200.00 Per annum

(Source: 2021-22 Annual Report of Transport Department)

D. Development and encouragement of eco-friendly alternative fuels in vehicles:

To reduce vehicular air pollution, vehicle manufacturers are introducing new vehicles in the market with eco-friendly alternative fuels like electricity, battery operated, LPG, CNG, etc. which are less or zero emission of pollutants. To encourage and popularize the use of these vehicles, the department is assisting to get loans for battery-operated vehicles through financial institutions.

The Government has proposed to promote ethanol mixed with petrol as fuel to control air pollution in the State by selling the same through petrol bunks for which the oil companies and sugar manufacturing companies have to jointly work out the scheme. Further, M/s GAIL Gas Ltd. has established CNG re-filling stations in Bangalore City. To control vehicular pollution and also to encourage the usage of CNG fuel, the Transport Department has granted permission to four CNG retro fitment centres in Bangalore City. During the year 2020-21, permission has been accorded for the establishment of 02 CNG retro fitment centres in Bangalore City, so far a total of 8 centres are functioning. Further, permission will be sanctioned for the establishment of CNG retro fitment centres in other parts of the State also.

E. November month is observed as pollution awareness and control month:

Due to urbanization and industrialization, the demand for Transport has also increased considerably. The exponential rise in petrol and diesel vehicles in turn has led to the deterioration of air quality. Presently, some Indian cities are recognized as the most polluted cities in the world due to which there is an urgent need to bring awareness among the general public regarding vehicular pollution.

Every year, Transport Department observes November month as Air Pollution awareness month. In this regard various programmes are carried out during the month, to enlighten the public on the ill effects of vehicular pollution.

4.3. Construction & Demolition Waste and Road Dust Management

4.3.1. Policy for development of projects/plants for C& D waste management

KSPCB is enforcing the Construction and Demolition Waste Management Rules, 2016 notified by the MoEF & CC. The local bodies are responsible for characterizing the waste to recycling facilities and creating the required infrastructure.

4.3.2. Schemes for development of green belt/open spaces and street sides greening on State highways

Greening is an integral part of the Concessionaire Agreement. The guidelines followed for greening in National Highway Authority of India (NHAI) projects are IRC: SP: 21-2009 and Green Highways (plantation, transplantation, beautification & maintenance), Policy-2015.

As per the information received from the various Regional Offices of NHAI in the State, it is estimated that 4,64,891 avenues of plantation (plantation on both sides of the road) and 10,20,895 median of plantation are being carried out⁹.

4.3.3. Penalty provisions for non-compliance of C & D waste management rules at construction sites

The Karnataka State Highways Improvement Project (KSHIP) has no such provision made under the concession agreement. Further, the authority can suspend the whole or part of the work for environmental reasons after the recommendation of the Independent Engineer.

4.3.4. Maintenance, repair, and paving of State highways

Maintenance of roads is carried out regularly to keep the roads in good condition. The shoulders of roads are either compacted earthen or paved surfaces where dust is not emitted.

4.3.5. C & D waste processing plants

Existing plants¹⁰:

KSPCB has given authorization to M/s. Rock Crystals, No. 184, Chikkajala, near Vidyanagar Camp, Bengaluru for the operation of Construction & Demolition waste processing plant for the production of aggregate using the infrastructure of existing stone crusher in an area of 2 acres 3 guntas with capacity 1000TPD.

⁹ Information received by NHAI via Letter No. NHAI/RO-BNG/GHM/25057/5/2021-22/1438 dated: 22.07.22

¹⁰ KSPCB 2020-21 Annual Report

Proposed plants¹¹:

- M/s. Rubbel Revival Pvt. Ltd., has obtained Consent For Establishment (CFE) from KSPCB on 28.05.2020 to establish a 750 MTPD C & D plant in BBMP land, located at Kannur village, Bangalore to process C&D waste. Sites for C& D wastes have been identified at Shivalli of capacity 50TPD in Hubbali – Dharwad at Vantamuri, Srinagar Belagavi, Mangaluru, Mysuru, and Kalaburgi.
- City Corporation, Mangalore has obtained Consent For establishment (CFE) of the 20 TPD C&D Waste processing facility at Pachanady on 30.12.2020.

4.3.6. Any other Policy/Rules/Standards/Guidelines pertaining to C&D waste and Road dust management

A. To monitor the management of the C & D waste generated by institutions, residential and commercial establishments, KSPCB has issued a notification Vide No. PCB/031/C & D/2016/5753 dated 30.01.2019 (**Annexure-VII**). In this regard all the Regional Officers are required to follow:

- 1. Collect the information regarding the estimated quantity of construction and demolition waste proposed to be generated and managed during the time of CFE and get certification in case of demolition activities.
- Collect the information regarding the quantity of construction and demolition waste generated and managed during the time of CFO and collect certification regarding the management of the said waste and verify, and enclose the certificate while forwarding the consent application
- 3. RSEOs and ROs shall monitor the implementation of construction and demolition waste management rules 2016, by the bulk generators.

B. ULBs may also propose imposition of User Fee as per Rule 3(54) of SWM Rules 2016 on the waste generation to cover full or part cost of providing solid waste collection, transportation, processing and disposal services. Pertaining to C&D waste, Section 4(5) of C&D Waste Management Rules 2016 mandates that every waste generator generating more than 20 TPD or 300 TPM shall have to pay for processing and disposal of C&D waste. The total expected income from imposition of user fee for SWM and C&D waste and SWM processing in Bengaluru alone is around Rs.1030 Crores.¹²

¹¹ KSPCB 2020-21 Annual Report

¹² Karnataka Economic Survey Report 2021-22

4.4. Emission from burning of waste

4.4.1. Notification and Enforcement of Municipal Solid Waste (MSW) management rules/Policy for MSW management

A direction under section 5 of the Environment (Protection) Act, 1986 for implementation of the Solid Waste Management Rules, 2016 is issued vide No. KSPCB/SEO-WMC/MSW/4421 dated 01.12.2021 (Annexure VIII) by KSPCB.

The directions for Deputy Commissioners are as follows:

- Deputy Commissioner shall hold a review meeting as per section 12 (b) of the SWM Rules, 2016, and GoK Order No. FEE 07 ENG 2019, dated 13.02.2019, and take corrective measures in consultation with the Commissioner or Director of Municipal Administration or Director of local bodies and Secretary-in-charge of the State Urban Development.
- 2. Facilitate identification and allocation of suitable land for setting up solid waste processing and disposal facilities to local authorities.
- Take necessary actions with the directions issued by the Hon'ble NGT in O.A.606/2018 from time to time.

For Urban Local Bodies (ULBs):

- 1. Comply with Rule 15 of SWM Rules, 2016.
- Segregation of waste at source is to be made mandatory for ensuring the safe disposal of MSW. Wet waste should be composted and dry waste should be sent to a Material Recovery Facility (MRF) for further segregation and usage.
- 3. Every ULB shall adhere to applicable Guidelines issued by CPCB.

4.4.2. Policy for legacy waste management at dumpsites¹³

As per the SWM Rules – 2016, guidelines have been issued to convert legacy waste landfill sites to useful sites by doing Bio-Mining. A grant of Rs.100.00 Crores for biomining of the Mandur landfill site is given. The work is initiated and biomining of nearly 100 Acres of land will be taken up subsequently, the said land will be planned to develop as a biodiversity park.

It is planned to take up bioremediation of the landfill site at Bellahalli to make use of 22 acres of land.

¹³ UDD Annual Report 2021-22

4.4.3. Policy for implementation of the ban on single-use of plastics

Implementation of the Plastic Waste Management Rules, 2016:

The MoEF & CC has notified the Plastic Waste (Management and Handling) Rules, 2016 which is in effect from 18th March 2016. The prescribed authority for enforcement of the provisions of these Rules related to registration, manufacture of plastic products, multi-layered packaging, processing, and disposal of plastic wastes is SPCB.

State Initiative: The Forest, Ecology and Environment Secretariat, GoK vide Notification No. FEE 17 EPC 2012, Bengaluru, dated 11.03.2016 (Annexure IX) in the exercise of the powers conferred under the Environment (Protection) Act, 1986, issued directions imposing a ban on the manufacture, supply, sale, and use of plastic carry bags, plastic banners, flex, plastic flags, plastic plates, plastic cups, plastic spoons, cling films and plastic sheets used for spreading on dining table including the above items made out of thermocol and plastic which use plastic microbeads in the Karnataka State. In the said notification of GoK, the role of KSPCB is enforcement regarding functions specified in clause (a) of Rule 4 of the Plastic (Management & Handling) Rules, 2011.

The Board has initiated the following action against violating industries.

- 1. Closure directions issued 104
- 2. Notice of proposed directions issued 36
- 3. Criminal cases filed for violations
 - a. Bellary 09
 - b. Mysuru 03

KSPCB has conducted raids at different places in the State in coordination with Local bodies. Violation of Rules has been observed and the director of municipal administration has conducted 8357 raids, Rs.88,77,318/- fine has been collected and about 2205 tons of banned plastic seized during raids (As per CPCB).

KSPCB has permitted ten cement industries to co-processing of plastic waste in their kilns. Approx. 49056 TPA of low-value plastic is supplied to cement plants. Approx. 73584 TPA is supplied for recycling.

As per Plastic Waste Management Rules, 2016 plastic waste recyclers require registration. As of 31-03-2021, the KSPCCB has given authorization to 83 plastic waste recycling units.

4.4.4. Policy for development and Construction of Waste to Energy Plants¹⁴

BBMP has spread across a 709 sq. km. area and has a population of 1.30 Crores. The total quantity of waste generated from domestic generators, commercial waste generators, and bulk waste generators is approximately 5500 MTPD. It is the duty of BBMP and the Government to carry out day-to-day management of solid waste.

In the BBMP area, the quantity of waste generated from domestic waste generators and small establishments (excluding bulk waste generators) is around 4000 to 4500 MTPD. To do scientific collection, transportation, and processing of this waste vide G.O. No. UDD/150/MNY/2019 dated: 04-11-2019 under the "Shubra Bengaluru" Project the Government sanctioned Rs.999.00 Crores for the year 2019-20, 2020-21, and 2021-22. This allocation of funds is purely provided for the creation of SWM Infrastructure.

Under these Shubra Bengaluru, Waste to Energy Plant of capacity 11.5 MW power generation with 600 MT of RDF waste to be provided by BBMP and executed by M/s. KPCL at Bidadi. The work is under progress at a project cost of Rs.260.00 Crores. The cost-sharing for the project is 50:50 to be shared between KPCL and BBMP. By commissioning this project around 25% of waste will be taken up by this project.

a) Non-recyclable/combustible dry waste¹⁵

Dry Waste Collection Centres (DWCC) are planned to construct at a project cost of Rs.50.00 Crores. Work Orders have been issued and work is under progress at 7 locations at present. Overall around 30 dry waste collection centres each capacity of 4 MT will be constructed by the year 2023.

b) Bio-Methanation/Bio CNG

Establishment of Bio- Methanation Plants of capacity 5 TPD to 50 TPD at various locations in BBMP at a project cost of Rs.40.00 Crores are planned to construct. The tenders are under process.

GAIL India Ltd., has proposed setting up 300 Tonnes per day (TPD) capacity Compressed Bio Gas (CBG) Plant in North Bengaluru at their cost. It is been proposed to utilize 300 TPD of segregated wet waste from BBMP and convert this into Compressed Bio Gas and Manure. The CBG produced will be utilized in CNG stations for fueling vehicles or the GAIL GAS Bengaluru's CGD network. The Infrastructure Development Department is encouraging the CGD entities to develop CBG plants in the districts along with the municipal corporations.

^{14,15} UDD Annual Report 2021-22

c) Composting plant etc.

A plan to upgrade existing processing plants at Kannahalli, Seegehalli, Lingadheeranahalli, Subbarayanapalya, Chikkajala, Nagamangala, Doddabidarakallu and Karnataka Compost Development Corporation (KCDC) at a cost of Rs.25.00 Crores by the year 2023.

4.4.5. Waste collection & waste segregation status in the city (%)

As reported by the DMA, 97% of door-to-door waste collection is achieved in 6739 wards out of 6932 wards and 4865 wards (77%) of source segregation is achieved. 7154.22 (64%) tons of Municipal Solid Waste is processed daily (out of 11085 TPD total waste generated in the State).

4.4.6. Material Recovery Facility (MRF)

As reported by the DMA, 55 MRFs have been completed and 309 new MRFs are targeted to be developed in the 309 ULBs for an allocated fund of Rs.362.47 Crores by March 2026.

4.4.7. Waste to Energy plants

As reported by the DMA, 14 Waste to Energy plants have been completed. 600TPD-11.5 MW waste-to-energy plant is being built by BBMP and KPCL and 200TPD by NTPCL at Dharwad City Corporation.

4.4.8. Waste to compost plants

As reported by the DMA, 185 Waste to compost plants have been completed and 124 new plants are yet to be developed to achieve the target of 309 ULBs for an allocated fund of Rs.214.18 Crores by March 2026.

4.4.9. Remediation of the dumpsite in the city

As reported by the DMA, remediation of 5 dumpsites is ongoing and additional 190 dumpsites are yet to be remediated to achieve the target in 195 ULBs for an allocated fund of Rs.451.83 Crores by December 2023.

4.4.10. Control open burning of MSW

As per the notification, FEE 6 ENG 2017 (Annexure X), issued by the Department of Forest Ecology and Environment, Government of Karnataka, imposed a complete ban on burning solid waste of any kind including twigs and leaves of plants in open places within the jurisdiction of all urban local bodies including BBMP and solid waste landfill sites throughout the State.

4.4.11. Any other Policy/Rules/Standards/Guidelines pertaining to MSW Management

The state strategy for solid waste management "Karnataka State Urban SWM Strategy-2020" prepared in compliance with the SWM rules, 2016, contains an overview of the waste flow from generation to disposal including the different options available to the ULB for processing solid waste while recovering the maximum resources from it. It also provides a framework for the implementation and monitoring of waste management systems and the strategy to be adopted by the ULB to effectively manage the different streams of waste generated within their jurisdictions. In addition, the State Government, by way of this strategy, determines the roles and responsibilities of Urban Local Bodies, statutory and regulatory agencies in implementing solid waste management strategies detailed here, and as per timelines for compliance recording. This would be undertaken in comprehensive compliance with provisions of the Environment Protection Act and its subordinate rules and notifications, in particular SWM Rules 2016, and also all other applicable laws and rules, to produce a socially just, environmentally wise, and economically viable management approach to solid waste management across Karnataka. The State Government resolves to provide all necessary financial, managerial, and infrastructure support to ensure these strategies are effectively implemented.

In this context, this Karnataka State Urban SWM Strategy applies to all urban areas in the state of Karnataka. It is meant for key players, relevant authorities, and other functionaries of "local bodies" in the state of Karnataka to prepare SWM-related plans and procedures for the management of solid waste (including plastic waste) within their jurisdictions. It is clarified that hazardous waste, bio-medical waste, e-waste, faecal sludge and sewage, construction and demolition waste, and industrial waste (solid and liquid components) are not covered by this strategy because they do not fall within the scope of SWM Rules, 2016 and are governed by different regulations. The State of Karnataka shall prepare separate policies, strategies, and regulations for such waste streams as required under applicable law and requirements of the state.

The Karnataka State Urban SWM Strategy will be reviewed and amended at least every two years (or earlier, if there it is deemed necessary by the government), to accommodate the innovations and research on the processing of solid waste management and any other developments that are relevant in the waste sector.

4.4.12. Strategies for effective Solid Waste Management¹⁶

- Integrated MSW management to ensure safe and environmentally sound disposal of waste.
- Encourage decentralized collection centres as mandated by MSW Rules 2016, Section 3(15) to process dry waste to avoid contamination by wet waste and minimize transportation.
- Set up advanced wet waste processing units for composting and bio-methanation.
- Sensitize general public about effective SWM techniques and create awareness regarding the consequences of poor waste management.
- Establish source segregation of MSW through performance-based incentive scheme.
- Minimize the gap in generation and processing of MSW by emphasizing 5 R's of waste hierarchy i.e. 'reduce, re-use, recycle and recover and disposal' as mandated by MSW Rules 2016, Section 3(57).
- Adopt environmentally sound technologies like composting, bio-methanation, RDF and waste to energy initiatives.
- Boost the incomes of ULBs through earnings from effective MSW processing like recycling, composting, and RDF.
- Set up zone-wise segregation and processing facilities to ensure 100% processing of MSW and minimize land-filling.
- Reduce transportation of MSW to minimize the dependence on fossil fuels and impact on air quality.

¹⁶ Karnataka Economic Survey Report 2021-22

4.5. Emission due to burning of Agro residues

4.5.1 In-Situ treatment of Biomass residues for management of stubble burning

A. Schemes for procurement of agriculture machinery¹⁷:

Under farm mechanization scheme 50% subsidy is being provided for general category farmers and 90% subsidy is provided for farmers belongs to Scheduled Caste and Scheduled Tribes limited to Rs.1.00 Lakh per annum for various Farm Machineries. For small tractors (up to 45 PTO HP) Rs.0.75 lakhs subsidy to general category farmers and 90% limited to Rs.3.00 Lakh subsidy is being provided for farmers belonging to SC and ST. The amount provided under State Farm mechanization is used as matching / top-up grants with the centrally sponsored schemes sub mission on agriculture mechanization) to provide the subsidy. The details of expenditure incurred under farm mechanization programme in Karnataka during 2019-20 is Rs.39819.32 lakhs and in 2020-21 is Rs.46504.78 lakhs.

Sub mission on agricultural mechanization (SMAM): The scheme is being implemented to promote the usage of farm mechanization and increase the ratio of farm power to a cultivable unit area up to 2.5 kW/ha. The beneficiaries covered under the scheme in 2020-21 is 17,753 and the expenditure was found to be Rs.5024.82 lakhs.

B. Assistance for the establishment of farm machinery banks/custom hiring and service centres: Department of Agriculture implemented 'Krishi Yantra Dhare' for the establishment of farm machinery banks/custom hiring centres, implemented in the State in 2014; the project aims to provide farm machinery to small and marginal farmers at nominal hiring charges in all districts of the State.

From 2014-15, 696 centers have been established with a budget of Rs.28734.52 lakhs. During 2021-22, the budget allocated for implementation of CHSC is Rs.3533.30 lakhs (Rs.3000 Lakhs under state and Rs.33.30 Lakhs under RKVY), of which Rs.1933.30 Lakhs (Rs.1400 Lakhs under state and Rs.533.30 Lakhs under RKVY) has been released till date and 25.12 lakh farmers have been benefited so far¹⁸.

4.5.2. Ex-Situ treatment of biomass residues for management of stubble burning

Schemes for balers/pellet/briquette machines, etc.

Balers are included under farm machinery as one of the components under farm machinery schemes. For the year 2021-22, 2 balers are procured and the procurement of 4 numbers of balers is targeted by 31.03.2023 with an allocated fund of Rs.10 lakhs.

^{17,18} Economic Survey Report of Karnataka 2021-22

4.5.3. Biomass projects with respect to the hotspots of crop residue burning¹⁹

There is no exclusive project with respect to the hotspots of crop residue burning, Agriculture department is motivating farmers to take up solid and liquid organic fertilizers production on their own at the farm level by effective use of bio-waste produced in crop cultivation. The use of organic fertilizers in crop cultivation helps to reduce air pollution and also improves soil health, water-holding capacity, and soil fertility.

In addition, under the organic fertilizers promotion programme, the department is giving subsidies to firms for the distribution of city compost directly to farmer's field. It helps to effectively utilize waste generated in city municipal and panchayats. Using compost in crop cultivation helps to reduce air pollution and also increases soil organic carbon.

4.5.4. Any other scheme/program that may help in reducing air pollution²⁰

A. Under the organic and millet promotional scheme of the State, natural/traditional/organic millet growers are being provided with an incentive of Rs.6000/- per ha, thereby reducing their carbon footprint. Organic/natural farming systems are being promoted in the farmer's field incorporating best practices of organic farming system and ZNBF system, wherein incorporation of crop residues into the soil or bio digestor along with multi-cropping, intercropping, and crop rotation practices. Stubble burning is discouraged under these systems.

The state needs the Crop Residue Management (CRM) scheme of GoI, as the practice of residue burning is being followed in the State.

B. Action Plan for control of stubble burning in Karnataka (2020-21)

In Response to direction VI of the orders of the Hon'ble NGT at Delhi in OA No.681/2018, the Department of Agriculture, GoK, has an action plan implemented in the State. The copy can be found in **Annexure XI**.

4.5.5. Common Action points for implementation for effective management of crop residue burning²¹

- Encouragement of private companies and Public Private Partnerships (PPP) in biomass based energy and fuel plants.
- Crop residues can be showcased as a portable and valuable source of additional income.

^{19,20} Information received by Department of Agriculture via letter No. DDA/FM&MI/EMPRI/SAP/2022-23 dated 22.08.2022.

²¹ Indian Council of Food and Agriculture Report on Crop Residues Burning: Challenges & Solutions

- Providing incentives to companies using crop residues as raw materials.
- Linking Corporate Social Responsibility (CSR) activities of large oil companies who are also into biofuel production.
- Development of agro-ecological zones for management of crop residues and implement the same under the Annual Work Plan (AWP) of various ongoing schemes or programmes.
- Dedicated agencies for educating, awareness building, and monitoring crop residue burning.
- Collaboration with ISRO and preparation of Satellite based maps for monitoring of fire incidences.

4.6. Household emissions

4.6.1. Scheme for use of LPG/PNG for cooking fuels

To make Karnataka State Kerosene free and to provide LPG Connections to the non-gas Priority Household (PHH) cardholders instead of kerosene. The "Mukhya Mantri Anila Bhagya" scheme has been introduced in the year 2017-18. Presently a target of 1 lakh beneficiaries has been fixed for the scheme and 98,731 installations (data as of 11.07.2022) have been completed²².

Due to Covid-19 Lockdown, an order was issued (FCS 162 DRA 2020 (E-Office)) to provide three free refill cylinders to beneficiaries who already have LPG connections. Under this scheme about 96,695 beneficiaries have received the 1^{st} refill cylinder, about 96,462 beneficiaries have received the 2^{nd} refill cylinder and 96,138 beneficiaries have received the 3^{rd} refill cylinder.

4.6.2. Any other Policy/Rules/Guidelines pertaining to Household Emissions

A. In May 2016, the Ministry of Petroleum and Natural Gas (MOPNG), introduced the 'Pradhan Mantri Ujjwala Yojana' (PMUY) as a flagship scheme to make clean cooking fuel such as LPG available to rural and deprived households which were otherwise using traditional cooking fuels such as firewood, coal, cow-dung cakes etc. The usage of traditional cooking fuels had detrimental impacts on the health of rural women as well as on the environment. Total connections released under PMUY (earlier PMUY and Ujjwala 2.0 schemes) for the Karnataka State are 36,99,255²³.

B. For the control of air pollution and to make Karnataka State kerosene free, through the Public Distribution System (PDS), the distribution of kerosene from April 2016, is been cut down gradually in phases. At present only a few districts and taluks have been approved for kerosene distribution, and 2 liters of kerosene is being distributed to households that do not have an LPG connection. For the year 2018-19, the central government released 155968 KL of kerosene to the State. In the year 2021-22, the central government released 2230 KL of kerosene, this quantity exceeds the demand of the State and hence the excess quantity is being surrendered back to the central government²⁴.

^{22,24} Data received from FCS department via letter No. FCS/CS/PTL/33/2009-10 dated: 13.07.2022

²³ Data downloaded from www.pmuy.gov.in on: 27/9/2022 11:19:08 AM

5. Environmental initiatives undertaken by Smart Cities of Karnataka²⁵

5.1. Shivamogga Smart City Limited (SSCL)

- The scheme for the development of street sides greening on smart roads (Tree corridor in smart roads-Planting of tree saplings and shrubs) is partially completed with estimated cost and expenditures included in the Road Package cost. This activity will achieve complete target coverage by October 2022.
- 17 parks are planned to be developed, out of which 14 parks are completed and the development of 03 parks is ongoing, with an allocated budget of Rs.142.26 Crore.
 Rs.105.68 Crore is being utilized and this activity has achieved complete target coverage by August 2022.
- Greening of open spaces (at 19 places, 8630 saplings are planted) is completed. Rs.2.82 Crore was allocated and Rs.2.49 Crore is being utilized. This activity is currently under Operation and Maintenance.
- The public bike sharing system (Bicycles on rent under the PPP system. 300 bicycles with 30 docking stations at different parts of the city) is ongoing, with an allocated budget of Rs.4.43 Crore and Rs.0.04 Crore being utilized.
- A dedicated bicycle track (total 30 kms) is ongoing with estimated cost and expenditures included in the Road Package cost. This activity will achieve complete target coverage by October 2022.

5.2. Tumakuru Smart City Limited (TSCL)

- Climate Smart Cities: Initiative by GoI to create awareness among the citizen on the importance of the environment and containing pollution at different levels. TSCL has conducted many activities viz., Workshop, Seminar, and Climate Audit at Government Schools, etc.
- Environmental Sensors: This is one of the integrated components in the Integrated Command and Control Centre and Smart Pole projects implemented at Rs.30 Crore and Rs.1Crore respectively.
- Street Light (PPP): LED-based Street Light project implemented across the city. 32,620 lights are commissioned in the city.
- 06 KW and 50 KW centralized Off-Grid Solar Power Plant with LED-based Solar street lighting system: The 06 KW system with an allocated budget of Rs.29.90 lakhs, is

²⁵ Information received from Tumakuru Smart City Limited via letter No. TSCL/ADMN/CR/18-19/237 dated 18.07.2022 and Shivamogga Smart City Limited via email.

designed to cater electricity through clean energy for 72 street lights in 3 streets of Vidyanagar in Tumakuru city. This system operates from dusk to dawn mode with a remote monitoring system imbibed in it, which allows one to pinpoint if any fault occurs in the system and such an issue can be addressed at the exact location of the fault immediately.

The 50KW innovation is planned with the following activities with an allocated budget of Rs.65.53 lakhs.

- 1. Micro Grid: The system designed and implemented would be independent of the Grid which is called a Micro grid or Mini Grid
- 2. Remote Monitoring Solution
- 3. CO₂ emission reduction
- 4. Savings on Electricity
- **300 KW- on-grid BIPV Solar Roof-Top Photo Voltaic (SRTPV) system:** An areabased development with an allocated budget of Rs.2.9 Crore. Amanikere Lake is a beautiful lake that recently got revived in Tumakuru. On its banks, is a magnificent Glass House of an area of 2100 Sq.m constructed over its roof is an innovative energy generation plant using Building Integrated Photo Voltaic (BIPV). Together it has become a cynosure in the mid of the City.
- Solar Smart Bench: Part of a Park development Project implemented across the city. The Solar Smart Bench is capable of generating 7.92 kWh/day and is self-sustainable. The project has additional components summing to Rs.3.00 Crore.
- Solar Street Lights: Part of a Park development Project implemented across the city. The Solar LED Street Light so far has 1322.64 kWh of total power generation and is self-sustainable. The project has additional components summing to Rs.3.00 Crore.

No information received from the Smart Cities of Belagavi, Bengaluru, Mangaluru, Davangere, and Huballi-Dharwad.

Annexures

Annexure I: Indicative template for State Action Plan on Air Pollution

1. Industrial Emission

Sl. No	Activities	Status of activity (Completed/ongoing /To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implication (Yes/No)	Funds Allocated (Rs. crore)	Funds Utilized as of date (Rs. crore)	
1	Policy for permitting new industries in Critically Polluted Areas (CPAs)	New red and orange category permitted only after submission of the scheme for complete treatment & reuse of wastewater	Ongoing	As and when proposals are received	Nil	-	-	
2	Guidelines for laying city gas distribution network	Policy and guidelines for laying city gas distribution are being prepared	December 2022	100%	Under the scope of the territorial distributors	-	-	
3	Policy for replacement of heavy oil (e.g., furnace oil, diesel etc., based industries to alternate energy sources (CNG/PNG/Electricity)	Policy on the usage of CNG/ LPG is in place for non-attainment cities	Ongoing	Implemented depending on the technical feasibility by the factory	Nil	-	-	
4	Policy for restriction on the usage of Pet coke for industrial use.	KSPCB has issued directions under Section 31(A) of the Air (Prevention and Control of Pollution) Act, 1981 to M/s Mangalore Refinery and Petrochemicals Limited, Mangaluru, Dakshina Kannada on 15.06.2018 to sell the pet coke only to industries having the permission of the KSPCB and submit the details on the quantity of pet coke generated and sold every month.						
5	Rules and Regulations on uninterrupted power supply in	Electricity (Rights of Cons (E) dated 31 st December 2	sumers) Rules, 2 020, stipulates 2	020 issued by GoI 4 X 7 power supply	Vide Gazetted N to consumers	otification No.	G.S.R. 818	

	State/UT								
6	Policy for use of DG sets	KSPCB has issued an order, vide No. KSPCB/SEO-INFRA/DG-RETROFITTING/2021-22/2887 dated 17 th September 2021 (Annexure III)							
7	Policy regarding the installation of CAAQMS based on the emission potential or capacity of air-polluting industries	33 industries have installed the CAAQMS & OCEMS	Ongoing	100%	Nil	-	-		
8	Mechanisms to be devised for expansion to air polluting industries are not covered currently (Such as emission from utility stacks in 17 categories,	Karnataka has 246 industries operating under this category and all the industries have installed OCEMS.	Completed	100%	Nil	-	-		
	etc.,)	The details are provided in Table 9, section 4.1.8.							
9	Mechanisms to control fugitive emission sources	Stipulated at the time of issue of Consent for Operation toreduce the fugitive emissions by installing appropriate APC to meet the prescribed standards	Completed and ongoing	100%	Regulatory activity	-	_		
10	Regulations for conversions of brick kilns to clean technologies	To be started	Two years	50% percent to be completed by Dec-2025	Regulatory	-	-		
11	Regulations for Emission Trading Scheme (ETS)	Yet to be initiated	-	-	-	-	-		
12	Policy to set up e-waste recycling unit in industrial areas in compliance with e- waste	State E-waste policy to be developed	Two years	50% percent to be completed by Dec-2024	Regulatory	-	-		

	management rules									
13	Any other Policy /Rules/ Standards/Guidelines pertaining to industrial emissions	Siting Guidelines for the establishment of red, orange, and green industries (Annexure XII)	Completed	100%	Regulatory activity	-	-			
14	Number of industries in the state complying emission standards	Industries are regularly monitored through Automated and manual systems. The details are provided in Table 10, section 4.1.11.	Completed and ongoing	100%	Regulatory activity	-	-			
15	Inventory of fuel consumed in the industries (type and quantity)	The details are provided in section 4.1.15.	Table 14,	-	-	-	-			
16	Shifting of industries / commercial units to gaseous fuels (CNG/NG/CBG)	The policy is already laid down and is ongoing	ongoing	Five years initially with a 10% target	Subsidies are being proposed	-	-			
17	Number of households shifted to PNG/LPG	The details are provided in As per National Family Hea fuel for cooking.	The details are provided in Table 13, section 4.1.13. As per National Family Health Survey (NHFS)–5 (2019-21), 79.7% Households in Karnataka use clean fuel for cooking.							
18	Any other activity/project pertaining to industrial emissions	Source Apportionment and Emission inventory studies for Non-attainment cities: Bengaluru- completed. Hubli-Dharwad, Davanagere and Kalaburgi is ongoing	Hubli- Dharwad, Davanagere and Kalaburgi to be completed by Dec 2023	4 non- attainment areas	Yes	0.6	0.25			

(Source: KSPCB)

2. Vehicular Emission²⁶

Sl. No	Activities	Status of activity (Completed/ongoing /To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implication (Yes/No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)
1	phasing out old vehicles (Commercial: 10 years; Private: 15 years)	As per the Government notification TD 187 TDO 2020, dated 03-02-2022, the Renewal of Fitness certificate for 2 -stroke auto rickshaw plying in Bengaluru has been restricted (Annexure V)	2020-23	100%	No	No	No
		MORTH, New Delhi enhanced the fees of Renewal of Fitness certificate and registration certificate to discourage the use of old vehicles	2020-23	100%	Yes	No	No
		Green Tax is being collected at the time of Renewal of fitness certificate and registration certificate as per 3-B of KMVT, 1957	2020-23	100%	Yes	15.0	6.0
2	Policy for scrapping old vehicles	MoRTH, New Delhi has issued a notification vide GSR 653(E), dated: 23-09- 2021. For the State, the policy is under finalization for establishment of RVSF	Ongoing	100%	Yes	No	No

²⁶ Transport Department letter No. CT/Env & EGov/Pr-22/2020-21 dated 25.07.2022, BMTC's letter No. BMTC/CO/ME/619/2022-23 dated: 06.07.2022, and KSRTC's letter No. KST/CO/ME/811/2022-23 dated: 11.07.2022.

		(Registered Vehicle Scrapping Facility)							
		KSRTC as a public Sector has adopted the scrapping Policy as below: For ordinary vehicles 09 lakh kms, For Corona sleeper 11 lakh kms, for Volvo vehicles 13 lakh kms							
		BMTC as a public sector has a	dopted the scrap	ping policy of 8	.5 lakh kilometres	or 11 years whichever	is earlier		
3	Policy/Plan for Li- battery waste management from scrapped vehicles	To be started	NA	NA	NA	NA	NA		
4	Policy/Scheme for Eco-Friendly Mass Rapid Transport Systems	Ongoing: Bangalore Metro Rail Project Phase-2A and Phase-2B	Sept 2025		Yes	14,788.101	2735.8 (July 2022)		
5	Policy for augment e- vehicles	Fees tax and permit exemption for EV vehicles. Setting up of EV charging stations in the State	Ongoing		Yes	In the FY 2018-19, Rs.4.00 Cr and in the FY 2021-22 Rs.3.00 Cr was transferred to BESCOM for setting up of EV charging stations in Karnataka	7.0 Crore		
		KSRTC: ongoing A) 50 Buses	Apr-2023	NA	Yes	FAME-II is providing Rs.27.5 Crore	5.5 Crore		
		BMTC: Ongoing a) 90 buses b) 300 buses c) 921 buses (to be started)	a) completed b) October- 2022	NA	NA	a) Bengaluru SmartCity Ltd (BenSCL)provided Rs.50 Crb) FAME-II is	 a) Rs.25 Cr provided by BenSCL b) Rs.20 Cr provided by 		

						providing Rs.157 Cr	MHI	
6	Notification and enforcement of PUC norms	Enforcement is in place and penalty is being imposed on vehicles that do not comply with the Emission norms	Ongoing	100%	No	No	No	
		KSRTC & BMTC: Completed	NA	NA	NA	NA	NA	
7	Online monitoring of PUC implementation	Ongoing: There are 1945 Emiss centralized servers through onli	tion Testing Ce ne networking	entres in Karnata	ka and these centr	es are being connected	d with the	
		KSRTC & BMTC: Completed	NA	NA	NA	NA	NA	
8	Mechanism for centralized record maintenance of PUC checks, certification and cross-check by the concerned	All Emission Testing Centres are connected with the centralized servers through online networking for centralized monitoring and maintenance of PUC check	On going	NA	NA	NA	NA	
	transport authorities to be incorporated	KSRTC & BMTC: Completed	NA	NA	NA	NA	NA	
9	Construction of bypass/ring roads	To be started	3 years	-	-	14,934	-	
10	Re-filling stations retrofitted with Vapour Recovery System (VRS)	oadsCPCB on January 07, 2020 in Compliance of the Hon'ble NGT order dated January 18, 2019 in OA No. 86/2019,thissued guidelines for setting up of new petrol pumps, recommending installation of VRS in all new petrol pumpsvveryhaving sale potential of more than 100 KLPM and located in million plus cities, and petrol pumps with sale potentiaS)of more than 300 KLPM and located in cities with population between 01 lakh to 01 million.CPCB in exercise of the power vested under section 5 of the E(P) Act, 1986, the direction dated 18.09.2020 issued OMCs to install VRS as per the following timelines:•VRS stage II: 100% retail outlets by October 2022 out of which 50% of retail outlets shall have VRS by Ju 2022.						

		Dec.2021.VRS stage IA (Storage Terminals): March 2024.							
11	Incentive of setting up R&D facilities	Karnataka Electric Vehicle and	arnataka Electric Vehicle and Energy Storage Policy-2017 tps://indianstates.csis.org/uploads/KarnatakaStateElectricVehicleEnergyStoragePolicy2017.pdf						
12	Any other Policy/Rules/Standar ds/ Guidelines pertaining to vehicular emissions	Ongoing, Green Tax Fund No. TD 113 TDO 2022, dated: 23- 05-2022. (Creating awareness regarding controlling Air Pollution)	2022-23	100%	Yes	15.00 Lakhs	6.00 Lakhs		
		BMTC has a vision of replacing	all diesel buse	s with electric b	uses by 2030				

3. Construction & Demolition Waste and Road dust Management²⁷

Sl. No	Activities	Status of activity (Completed/ongoing /To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implication (Yes/No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)
1	Policy for development of	DMA: Ongoing	Dec-2022	100	Yes		Nil
	projects/plants for C&D waste	BBMP: Ongoing	3 years	90	NA	NA	NA
	management	KSHIP: Ongoing	Sept-2023	100	HAM project estimates	, the cost is	included in the
2	Policy for use of C&D waste in	DMA: Ongoing		100	Yes	-	Nil
	Highways	KSHIP: Ongoing	Sept-2023	70	HAM project estimates	, the cost is	included in the
3	3 Demand creation for C&D waste and alternative use of C&D waste material	DMA: Ongoing		100	Yes	-	Nil
		KSHIP: Ongoing	Sept-2023	30	HAM project estimates	, the cost is	included in the
4	Schemes for the development of green belts/open spaces and street sides greening on State highways	KSHIP: to be started	Sept-2023	100	HAM project estimates	, the cost is	included in the
		NHAI: Greening is an greening in National H Highways (plantation,	integral part of Highway Author transplantation	of the Concession ority of India (N a, beautification	onaire Agreeme HAI) projects a & maintenance	nt. The guidel re IRC: SP: 22), Policy-2015	ines followed for 1-2009 and Green
5	Penalty provisions for non-	DMA: Ongoing	-	100	Yes	-	Nil
	management rules at construction sites	KSHIP: No such provision was made under the concession agreement. Further, the authority can suspend the whole or part of the work for environmental reasons after the recommendation of the Independent Engineer.					
6	Maintenance, repair and paving of State highways	KSHIP: Ongoing	Sept-2023	30	HAM project estimates	, the cost is	included in the

²⁷ Information received from DMA via letter No. 565640/DMA/16/2020-21/4504 dated: 17.09.2022, KSHIP's Letter No: PIU/KSHIP-III/Env/SAPAP/Pkg-1, 2 & 3/2022-23/1112 dated: 22.07.2022 and NHAI's letter NO. NHAI/RO-BNG/GHM/25027/5/2021-22/1438 dated: 22.07.2022.

		NHAI: Maintenance of roads is carried out regularly to keep the roads in good condition. The shoulders of roads are either compacted earthen or paved surfaces where dust is not emitted.							
7	Monitoring of road dust especially in and around hotspot areas and in	KSHIP: Ongoing	Sept-2023	30	HAM project estimates	t, the cost is	included in the		
	the vicinity of State highways	NHAI: Usually wher continuous sprinkling	ever earthworl of water is don	ks are taken d e	uring the proje	ect construction	on, to avoid dust		
8	Mechanism for development and maintenance of road infrastructures for industrial states and clusters	Karnataka Industrial A issued with regard to C	Areas Develop Consent For Est	nent Board is retablishment by H	esponsible for this activity based on the orders XSPCB				
9	Any other Policy /Rules/Standards	DMA: To be started	31.03.2025	-	-	-	-		
	waste and Road dust management	KSHIP: Ongoing	Sept-2023	30	Policy of Con	Policy of Concession Agreement followed			
10	C&D waste processing plants	DMA: Ongoing		100	Yes	-	Nil		
		BBMP: Completed (C	hikkajala, Kan	nur)		•			
11	Greening of open spaces/parks developed	KSHIP: Ongoing	Sept-2023	30	HAM project estimates	t, the cost is	included in the		
		 Karnataka Forest Department (KFD): An amount of Rs.591.11 Lakhs has been spent for Pl in green belt area of Bangalore City, Development of Parks and maintenance work in BDA I KFD provides certain facilities for general public through a number of schemes involve planting and/or raising of awareness, some of the schemes include: (a) Tree Park & Daivivana - provides facilities to general public for recreation and environawareness; and (b) Chinnara Vana Darshana - provides facilities to school children to visit forest and wildl to increase their environmental awareness. UDD: Under the 14th Finance commission Grants, Maintenance of Community properties in the scheme in the sch					bent for Plantation in BDA Layouts. nes involving tree and environmental and wildlife areas roperties including		
12	Any other activity/project pertaining to C&D waste and Road	KSHIP: Ongoing	Sept-2023	30	HAM project estimates	t, the cost is	included in the		
	dust management	BBMP has procured 17 self-propelled; 8 truck mounted and 2 rides on mechanical sweeping machines							

4. Emissions from burning of waste²⁸

SI. No	Activities	Status of activity (Completed/ongoing /To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implication (Yes/No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)			
1	Notification and Enforcement of municipal solid waste (MSW) management rules	SWM Rules 2016	A direction under section 5 of the Environment (Protection) Act, 1986 for implementation of the Solid Waste Management Rules, 2016 is issued vide No. KSPCB/SEO-WMC/MSW/4421 dated 01.12.2021 (Annexure VIII) by							
2	Policy for MSW management	SWM Rules 2016	For ULB's: Mee	et the terms with rea	spect to Rule 15	of SWM Rule	es, 2016			
3	Policy for legacy waste management at dumpsites	SWM Rules 2016	Karnataka State Urban SWM Strategy-2020							
4	Policy for implementations of ban on single use plastics	The Forest, Ecology a Bengaluru, dated 11.0 Environment (Protection	The Forest, Ecology and Environment Secretariat, GoK vide Notification No. FEE 17 EPC 2012, Bengaluru, dated 11.03.2016 (Annexure IX) in the exercise of the powers conferred under the Environment (Protection) Act, 1986.							
5	Policy for development and Construction of Waste to Energy Plants a) Non-recyclable/ combustible	The State strategy for prepared in compliance generation to disposal while recovering the m	r solid waste ma ce with the SWM including the dif naximum resource to management as	anagement " Karna A rules, 2016, cor ferent options avai es from it. It also p	ataka State Ur ntains an overvi lable to the UL provides a frame	ban SWM S ew of the wa B for process work for the i	Strategy-2020" aste flow from ing solid waste implementation			
	dry waste	manage the different	streams of wast	e generated within	n their jurisdict	ions. In addi	tion, the State			
	c) Composting plant etc.,	statutory and regulator per timelines for comp	Government, by way of this strategy, determines the roles and responsibilities of Urban Local Bodies statutory and regulatory agencies in implementing solid waste management strategies detailed, and a per timelines for compliance recording.							
6	Any other Policy /Rules /Standards / Guidelines pertaining to MSW Management	NA	-	-	-	-	-			

²⁸ Information received from DMA via letter No. 565640/DMA/16/2020-21/4504 dated: 17.09.2022 and BBMP through E-mail dated 13.07.2022.
State Action Plan on Air Pollution for Karnataka (SAPAP-K)	2022

SI. No	Activities	Status of activity (Completed/ongoing /To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implication (Yes/No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)
1	Waste collection status in the	BBMP: Ongoing	N/A	100%	Yes	325.0	100%
	city (%)	DMA: 97%	Dec-2022	309 ULBs	No	-	-
2	Waste segregation status in the	BBMP: Ongoing	N/A	100%	Yes	325.0	100%
	city (%)	DMA: 77%	Dec-2022	309 ULBs	No	-	-
3	Material Recovery Facility	Ongoing	N/A	138 Wards	Yes	70.0	100%
		Completed: 55 To be started: 309	March -2026	309 ULBs	Yes	362.47	Nil
4	Waste to Energy plants	BBMP : Ongoing	N/A	Nil	Nil	Nil	Nil
		DMA:14 Completed	-	-	-	-	-
5	Waste to compost plants	BBMP: Ongoing		6 Plants	Yes	44.0	100%
		DMA: Completed:185 To be started: 124	March -2026	309 ULBs	Yes	214.18	Nil
6	Remediation of dumpsites in the	BBMP: Ongoing	3 years	7 Sites	Yes	100.0	Nil
	city	DMA: Ongoing: 05 To be started: 124	Dec-2023	195 ULBs	Yes	451.83	Nil
7	Control open burning of MSW	BBMP: Ongoing	1 year	100%	Yes	12.0	Nil
		As per the notification and Environment, Gov	, FEE 6 ENG 20 ernment of Karns	17 (Annexure X) ataka, imposed a c	, issued by the D omplete ban on o	Department of pen burning so	Forest Ecology olid waste.

8	Any other activity/project pertaining to MSW Management	BBMP: Ban of single use of plastic, Zero waste management, 3R Principles and Awareness to capacity building.	1 year	100%	Yes	10.00	Nil
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Note: The information provided by BBMP is only for Bengaluru City and that provided by DMA is for the State.

5. Emissions due to burning of Agro residues²⁹

Sl. No	Activities	Status of activity (Completed/ongoing /To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implication (Yes/No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)
1	In-Situ treatment of biomass residue	s for management of stu	bble burning				
a.	Schemes for procurement of agriculture machinery	Ongoing : Farm mechanization programme	-	-	Yes	-	-
b.	Assistance for establishment of farm machinery banks/custom hiring centres	Ongoing scheme	-	696 CHSC & 447 FMB have been established	yes	60	-
с.	Use of decomposer for in-situ Crop residue management	NA	-	-	-	-	-
2	Ex-Situ treatment of biomass residue	es for management of stu	bble burning	-			
a.	Schemes for balers/pellet/briquette machines, etc.,	Balers are included un schemes.	nder farm ma	chinery as one of	the component	nts under fai	rm machinery
		For the year 2021-22, the activity is completed	-	For the year 2021-22 out of 6 targets for balers, 2 have been procured	yes	0.06	0.02
		For the current year, the activity is yet to be started	31.03.2023	04 Nos	No	0.04	

²⁹ Information received from Department of Agriculture via letter No. DDA/FM&MI/EMPRI/SAP/2022-23 dated 22.08.2022.

3	Biomass projects with respect to the hotspots of crop residue burning	There is no exclusive department is motivatin own at the farm level by fertilizers in crop cultiv holding capacity, and so the department is giving field. It helps to effec compost in crop cultivation	project with re g farmers to ta effective use vation helps to bil fertility. In g subsidies to f tively utilize	espect to the hotspeake up solid and lique of bio-waste produce or reduce air pollution addition, under the irms for the distribut waste generated in duce air pollution ar	ots of crop re- uid organic fer ed in crop cult on and also in organic fertiliz tion of city con city municip nd also increas	sidue burning tilizers produ ivation. The un proves soil laters promotion mpost directly al and panch es soil organi	g, Agriculture ction on their use of organic health, water- n programme, to a farmers' hayath. Using c carbon.
4	Use of biomass/crop residue based pellets mass blending with coal and its co-firing in thermal power plants with blending ration which needs no modification in boilers	As per the Karnataka capacity of 395.13 MW a potential for generati different districts of https://kredl.karnataka.g	Renewable E and commissi ing 1000 MW. the State und gov.in/storage/	nergy Development oned capacity as on KREDL has Com der various Electr pdf-files/bio-cogen-	t Ltd (KREDI 31.08.2022 is missioned 20 icity Supply wte/Bio_com.p	L), State has 139.03 MW. Biomass Por Commission	an allocated The State has wer Plants in s (ESCOMs)
5	Policy for supply chain mechanism for in-situ and ex-situ management of stubble	-	-	-	-	-	-
6	Supply chain for crop residues to cow shelters	-	-	-	-	-	-
7	Development of an effective protocol for monitoring fire incidents including crop area consideration and crop fire area data	-	-	-	-	-	-
8	Collaboration with ISRO and preparation of Satellite-based maps for monitoring fire incidence	-	-	-	-	-	-
9	Any other scheme/program that may help in reducing air pollution	Under the organic and growers are being prov footprint. Organic/natur best practices of organic into the soil or bio dige Stubble burning is total	millet promot ided with an i cal farming syste c farming syste estor along wit y discouraged	ional scheme of the ncentive of Rs.6000 stems are being pro- em and ZNBF system h multi-cropping, in under these systems	e State, natura D/- per ha, the moted in the fa n, wherein inc ntercropping, a S.	Il/traditional/or reby reducing armer's field orporation of and crop rotat	organic millet g their carbon incorporating crop residues ion practices.

6. Household Emissions³⁰

Sl. No	Activities	Status of activity (Completed/ongoing /To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implication (Yes/No)	Funds Allocated (Rs. crore)	Funds Utilized as on date (Rs. crore)
1	Schemes for use of LPG/PNG for cooking	Ongoing: Total LPG con Karnataka State are 36,9	nnections released und 99,255 as on 27.09.202	er PMUY (earlier PM 2.	UY and Ujjwal	a 2.0 schemes)	for the
	fuels	Ongoing Chief Minister Anila Bhagya Yojane	NA	1 lakh Connections	Yes	143.35	59.28
		PNGRB has authorized CNG. IDD in coordinat CGD projects in the Stat	8 entities to establish ion with district and te.	a CGD network in a other state agencies is	Ill the districts working for s	of Karnataka uccessful impl	to supply PNG & ementation of the
2	Amendments to the building by-laws for "Indoor air quality management"	The Municipal Corporat 2020 vide Notification N are as per National Build	ion Model Building B No: UDD 12 TTP 201 ding Code of India.	ye-Laws, 2017 has be 8, dated: 05-02-2020,	en published in for indoor air q	the State Gaz uality, the ven	ette Dated: 13-02- tilation provisions
3	Any other Policy/ Rules/Standards/Guidelines pertaining to Household emissions	-	-	-	-	-	-

³⁰ Information received from FCS Department via letter No. FCS/CS/PTL/33/2009-10 dated 13.07.2022 and letter No. FCS/CSTT/03/2019-20 dated 18.07.2022.

Annexure II: District-wise details of the industries in Karnataka

Zonal Office	Particulars of the Regional Office	Name of the District	Red	Orange	Green	White	Grand Total
Bengaluru City	Bengaluru City-East	Bengaluru Urban	58	188	107	673	1026
	Bengaluru City-South	Bengaluru Urban	103	292	387	899	1681
	Bengaluru City-West	Bengaluru Urban	3	161	138	6	308
	Bengaluru - Peenya	Bengaluru Urban	138	167	614	165	1084
		Total	302	808	1246	1743	4099
Bengaluru North	Dasarahalli	Bengaluru Urban	17	83	12	0	112
	Doddaballapur	Bengaluru Rural	49	85	146	53	333
	Nelamangala	Bengaluru Rural	112	182	452	1	747
	Yelahanka (Byatarayanpura)	Bengaluru Urban	39	98	158	1	296
		Total	217	448	768	55	1488
Bengaluru South	Anekal	Bengaluru Urban	149	161	333		643
	Bommanahalli	Bengaluru Urban	172	272	386	59	889
	Rajarajeswari Nagar	Bengaluru Urban	57	193	229	2	481
	Ramnagara	Ramanagara	90	218	202	2	512
	Sarjapura	Bengaluru Urban	188	228	436	157	1009
		Total	656	1072	1586	220	3534
Bengaluru East	Chikaballapura	Chikaballapura	16	151	91	7	265
	Hoskote	Bengaluru Rural	50	135	167	8	360
	Kolar	Kolar	77	144	241	8	470
	Mahadevpura	Bengaluru Urban	172	229	225	75	701
		Total	315	659	724	98	1796
Mysuru	Chamrajnagara	Chamrajanagar	5	73	41	158	277
	Hassan	Hassan	33	197	322	460	1012
	Kodagu (Coorg)	Kodagu	4	66	158	100	328
	Mandya	Mandya	30	218	155	314	717
	Mysuru - 1	Mysuru	94	259	223	464	1040

	Mysuru - 2	Mysuru	60	142	166	276	644
		Total	226	955	1065	1772	4018
Mangaluru	Chikkamagaluru	Chikkamagaluru	10	106	180	0	296
	Karwar	Karwar	20	177	144	0	341
	Mangaluru	Mangaluru	115	617	225	0	957
	Udupi	Udupi	21	545	366	4	936
		Total	166	1445	915	4	2530
Dharwad	Bagalkot	Bagalkot	86	104	161	274	625
	Belgaum - 1	Belagavi	91	427	299	2576	3393
	Belgaum - 2 (Chikkodi)	Belagavi	40	6	5	0	51
	Dharwad	Dharwad	76	355	240	37	708
	Haveri	Haveri	8	89	122	245	464
	Gadag	Gadag	5	74	136	168	383
		Total	306	1055	963	3300	5624
Ballary	Bellary	Bellary	132	452	255	314	1153
	Koppal	Koppal	39	207	201	16	463
	Raichur	Raichur	45	169	311	387	912
		Total	216	828	767	717	2528
Chitradurga	Chitradurga	Chitradurga	21	110	134		265
	Davangere	Davangere	23	233	163		419
	Shimoga	Shimoga	21	281	51		353
	Tumukur	Tumakur	83	415	278		776
		Total	148	1039	626	0	1813
Kalaburgi	Vijayapura	Vijayapura	15	148	133	360	656
	Bidar	Bidar	34	39	52		125
	Kalaburagi	Kalaburagi	37	166	60		263
	Yadgiri	Yadgiri	14	48	70	110	242
		Total	100	401	315	470	1286
		Grand Total	2652	8710	8975	8379	28716

State Action Plan on Air Pollution for Karnataka (SAPAP-K) 2022

(Source: KSPCB)

Annexure III: Retrofitting of Emission Control Devices to DG sets

ಫ್ಯಾಕ್ಸ್ / Fax : 080-25586321 ಈಮೇಲ್ / Email : ho@kspcb.gov.in ವೆಬ್ಸ್ಟ್ / Website : http://kspcb.gov.in



080-25581383, 25589112 **1** 080-25589113, 25589114

ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ Karnataka State Pollution Control Board "ಪರಿಸರ ಭವನ", 1 ರಿಂದ 5ನೇ ಮಹಡಿಗಳು, ನಂ. 49, ಚರ್ಚ್ ಸ್ಪೀಟ್, ಬೆಂಗಳೂರು - 560 001, ಕರ್ನಾಟಕ ರಾಜ್ಯ, ಭಾರತ "Parisara Bhavan", 1st to 5th Floor, # 49, Church Street, Bangalore - 560,001, Karnataka State, India No. KSPCB/SEO-INFRA/DG-RETROFITTING/2021-22/ ХX 17 SEP 2021 ORDER Sub: Mandatory Retrofitting of Emission Control Devices/Equipment to DG sets with Capacity of 125 KVA and above in the State of Karnataka. Ref: 1) Honourable NGT Directions in OA 681/2018 dated. 6.8.2019 2) Standing Committee Directions to the Honourable Chief Minister dated. 20.8.2020 >>><<< Whereas, the particulate matter emissions due to operation of DG Sets have also been identified as one of the major sources of emissions in the National Clean Air Programme and by the Honourable National Green Tribunal in the Original Application No. 681/2018, as shown vide ref.1. Whereas, the Government of India, MoEF & CC has launched the National Clean Air Programme (NCAP) for the prevention, control and abetment of air pollution level in the Country at an urban and regional level. The Government of India, recognized major sources of air pollution such as vehicles, DG sets, construction dust etc. As per National Clean Air Programme (NCAP) of Government of India, Diesel Generator sets are found to be one of the major source of air pollution in Indian cities and states. Whereas, there is a plan for national level target of 30% reduction of PM2.5 and PM10 concentration in the ambient air under the National Clean Air Programme (NCAP) of Govt of India. The Hon'ble NGT vide order dated 06/08/2019 has observed that the timeline to reduce the air pollution by 30% needs to be reduced and the target of reduction needs to be increased, having regard to adverse effect on public health and in view of constitutional mandate of fundamental right to breathe clean air. The Honourable NGT has further stated, that the air pollution caused by DG sets needs to be a part of the action plan, which may, if necessary, require retrofitting of Emission Control Devices / Equipment on generators under existence already. Now, therefore, with the above background, and in exercise of powers vested with the Board under Section 17 (1) J read with section 31 (A) of Air (Prevention and Control of Pollution) Act, 1981 and section 5 of the Environment (Protection) Act 1986, all the Industries,

'ಪ್ಲಾಸ್ಟ್ರಿಕ್ ಬಳಕೆ ನಿಲ್ಲಿಸಿ, ಪರಿಸರ ಹಾನಿ ತಪಿಸಿ"

AVOID USE OF PLASTIC BE 'ECO' FRIENDLY

Establishments, Projects, Buildings, Utilities, Airports, Railway Stations or any other places operating DG sets of capacity 125 KVA and above, within the jurisdiction of the state of Karnataka, are hereby directed to:

1) Retrofit all operational DG sets of capacity 125 KVA and above with an Emission Control Device / Equipment having a minimum specified Particulate Matter capturing efficiency of at least 70% in 5 mode D2 cycle and also should result in the increase of fuel efficiency. The Emission Control Device Equipment must be tested over a ISO-8178 5 mode D2 cycle for equivalent KVA rating by one of the five Central Pollution Control Board, Govt of India, recognized /approved laboratories as given below:

a. Automotive Research Association of India, Pune (Maharashtra)

- b. International Centre for Automotive Technology, Manesar (Haryana)
- c. Indian Oil Corporation, Research and Development Centre, Faridabad (Haryana)
- d. Indian Institute of Petroleum, Dehradun (Uttarakhand); or
- e. Vehicle Research Development Establishment. Ahmednagar (Maharashtra)

(or)

1) Shifting to gas based generators by employing new gas based generators or retrofitting the existing DG sets for partial gas usage.

This is to be complied with within a period of 120 days from the date of issuance of this order by all stake holders.

The above order will come with an immediate effect for all the DG Sets of 125 KVA and above within the stipulated time period, failing which action as warranted under the provisions of Environment (Protection) Act, 1986 and Air (Prevention and Control of Pollution) Act, 1981 shall be initiated.



То

1)All CEOs/SEOs/ZSEOs/Ros for information and to strictly follow above.

2) The President and Chairman (Environment) KASSIA to circulate the directions among the industries

3) The President, Peenya Industries Association, 18/B Peenya Trade Centre, 1st Cross Rd, Peenya 1st Stage, Peenya, Bengaluru, Karnataka 560058, to circulate the directions among the industries

4) The President, CREDAI, 6th Floor, 607, Barton Centre, Near-Lawrence & Mayo, Mahatma Gandhi Road, Bengaluru, Karnataka 560001, to circulate the directions among the industries.

5) Office Copy.

Annexure IV: Utilization of Fly ash generated by coal based Thermal Power

plants operating in the State of Karnataka

අම්ලුන්, / Fax : 080-25586321 25581383, 25589112 25588151, 25588270 ಈಮೇಲ್ / E-mail : ho@kspcb.gov.in 25588142, 25586520 ವೆಬ್ಯ್ ಸ್ಟ್ರಾಪ್ / Website : http://kspcb.gov.in ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ Karnataka State Pollution Control Board "ಪರಿಸರಭವನ", 1 ರಿಂದ 5ನೇ ಮಹಡಿಗಳು, ನಂ.49, ಚರ್ಚ್ ಸ್ಪೀಟ್, ಬೆಂಗಳೂರು - 560 001, ಕರ್ನಾಟಕ, ಭಾರತ "Parisara Bhavana", 1st to 5th Floor, # 49, Church Street, Bengaluru - 560 001, Karnataka, INDIA No: PCB/Fly Ash/2018-19 5350 Dated: To; 1) The Additional Chief Secretary to the 7) The Chief Engineer, Public Works Government, Urban Development Department (Communication and Department, Room No. 436, Vikas Building)- North, Sir M.V. Marg, Dharwad-Soudha, Bangalore 560 001. 580 008. 2) The Additional Chief Secretary & 8) The Chief Engineer, National Highways, **Development Commissioner, Rural** PWD Annexe, K.R.Circle, **Development and Panchayat Raj** Bangalore- 560001. 3rd Gate, 3rd Floor, MS Building Bangalore-560001. 3) The Principal Secretary, Public Works, 9) The Chief Engineer, Karnataka Road Ports and Inland Water Transport Development Corporation, 16J, Millers Department, Tank Bund Road, Bangalore 560 052. Karnataka Government Secretariat, 3rd Floor, Vikasa Soudha, M.S.Building, Dr.Ambedkar Road, Bangalore-560001 4) The Secretary to the Government, 10)The Managing Director, Karnataka Road Urban Development Department, Room **Development Corporation Limited,** No. 434, Vikasa Soudha, Bangalore. "Samparka Soudha", Survey No.8, B.E.P Premises (Opp. Orion Mall), Dr. Rajkumar Road, Rajajinagar 1st Block, Bangalore- 560010. 5) The Director, Department of Mines and 11) The Chief Project Officer, Geology,#49, Khanija Bhavan, Karnataka State Highways Race Course Road, Improvement Project, PWD, Annexure, K.R.Circle, Bangalore 560 001. Bangalore 560 001. 6) The Chief Engineer, Public Works Department (Communication and Building) - South, K.R. Circle, Bangalore 560 001. 1 AVOID USE OF PLASTICS- BE 'ECO' FRIENDLY "ಪ್ಲಾಸ್ಟಿಕ್ ಬಳಕೆ ನಿಲ್ಲಸಿ, ಪರಿಸರ ಹಾನಿ ತಪ್ಪಿಸಿ"

Sir,

Sub: Utilization of fly ash generated by Coal or Lignite based Thermal Power Plants operating in the State of Karnataka – Reg.

Ref:

- Notification issued by Ministry of Environment, Forest and Climate Change, Government of India, S.O.763 (E) dated: 14.09.1999 and its amendments on 27.08.2003, 03.11.2009 and 25.01.2016.
- 2. Board Office letter No. PCB/17 Cat/Flyash/2016-17/462 Dated: 12.01.2017
- 3. Letter of Department of Ecology and Environment, Government of Karnataka, No.APG23ENV 2014 dated: 03.03.2017.
- 4. Board Office letter No. PCB/17 Cat/Fly ash/2016-17/462 dated: 12.01.2017.
- 5. Board Office letter No.PCB/17Cat/Fly Ash/2016-17/611 Dated: 25.03.2017.
- Proceedings of the Meeting of State Monitoring Committee held on 16.11.2017 under the Chairmanship of Additional Chief Secretary, Forest, Ecology and Environment. Government of Karnataka.
- Directions issued by Central Pollution Control Board under Section 18(1) (b) of the Water (Prevention and Control of Pollution)Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 No.B-33018/07/IPC-II/12521 dated: 08.11.2018.

With reference to the above subject, it is to be informed that, the Ministry of Environment, Forest and Climate Change, Government of India has issued Notification under Section 5 of the Environment (Protection) Act, 1986 on utilization of fly ash, bottom ash or pond ash generated by Coal and lignite based thermal power plants for use in manufacture of bricks and other construction activities. As per the provisions of the said notification and subsequent amendments issued from time to time, the concerned authorities are required to comply with the following provisions in order to protect the environment, conserve top soil and promote utilization of ash generated from Coal/lignite based thermal power plant operating in the State;

- (1A). Every construction agency engaged in construction of buildings within a radius of 300 kms from coal or lignite based thermal power plant shall use only fly ash based products for construction, such as cement or concrete, fly ash bricks or tiles or clay fly ash bricks or blocks or tiles or cement fly ash bricks or blocks or similar products or a combination or aggregate of them in every construction project.
- (1B) The provisions of Sub-paragraph (1A) shall be applicable to all construction agencies of Central or State or Local Government and private or public sector and it shall be responsibility of the agencies either undertaking construction of approving the design or both to ensure compliance of the provisions of Sub-paragraph (1A) and to submit annual returns to the concerned State Pollution Control Board.

- 1. (1.C). Minimum fly ash content for building materials or products to qualify as "fly ash based products" category" shall be as per Table –I of the Fly Ash Notification.
- 1. (5). No agency, person or organization shall, within a radius of 300 kms from coal or lignite based thermal power plant undertake construction or approve design for construction of roads or fly over embankment with top soil...
- (7) No agency, person or organization shall, within a radius of 300 kms from coal or lignite based thermal power plants undertake or approve or allow reclamation and compaction of low lying areas with soil; only fly ash shall be used for compaction and reclamation...
- 1. (8)(i). No person or agency shall, within fifty kilometers (by road) from coal or lignite based thermal power plants undertake or approve stowing of mines without using at least 25% of fly ash on weight to weight basis, of the total stowing materials used....
- (8)(ii) No person or agency shall, within fifty kilometers (by road) from coal or lignite based thermal power plant under take or approve without using at least 25% of fly ash on volume to volume basis of the total materials used for external dump of overburden and same percentage in upper bencher of backfilling of open cast mines....

'Further, as per amended Notification issued by MoEF & CC on 25.01.2016;

- It shall be the responsibility of the State approving various construction projects to ensure that Memorandum of Understanding or any other arrangement for using fly ash or fly ash based products is made between the thermal power plants and the construction agency or contractors.
- The State shall amend building bye laws of the cities having population one million or more so as to ensure the mandatory use of fly ash bricks keeping in view of specification necessary as per technical requirements for load bearing structures.
- The concerned authority shall ensure mandatory use of ash based bricks products in all the Government Scheme or programmes e.g., Mahatma Gandhi National Rural Employment Guarantee Act, 2005 (MNERGA), SWATCH BHARATH ABIYAN, Urban and Rural Housing Scheme, where built up area is more than 1000 square feet and infrastructure construction including building in designated industrial estates or parks or Special Economic Zones.
- The Ministry of Agriculture may consider the promotion of ash utilization in agriculture as soil conditioner.

In this regard the Board vide letters cited at reference (4) and (5) informed to take necessary action to implement the said notification and to furnish the details on action taken in this regard. Till date Board has not received action taken report regarding implementation of the said notification.

The Chairman, Central Pollution Control Board, Delhi has issued directions vide reference (7) under Section 18(1)(b) of the Water Act, 1974 and Air Act, 1981 and directed as under (Copy enclosed);

- 1) To enlist all agencies and authorities undertaking the construction or approving the design or both within radius of three kilometers from coal or lignite based thermal power plants in the state (and keep updating the list every quarter) and co-ordinate at the State level as well as district level with the designated enforcement authority i.e., State Government, so as to ensure compliance of relevant provisions of the Notification by all such agencies and authorities.
- 2) To enlist the entire road and fly over projects within radius of 300 kms from coal or lignite thermal power plants and update the list every quarter to ensure compliance with relevant provisions of the fly ash notification and submit annual implementation report to CPCB every vear.

In view of the above, you are once again requested to furnish the action taken report within 15 days to comply with provisions of the said Notification and also furnish the list of agencies coming under your Department responsible of direct implementation of the provisions of the notification and regularly furnish list of projects indicated in the said CPCB directions along with Annual Returns as per para(1B) of the said Notification with a copy to the Department of Ecology and Environment, Government of Karnataka.

Encl: As above.

Yours faithfully, Sd/-MEMBER SECRETARY KARNATAKA STATE POLLUTION CONTROL BOARD

Copy to:

- 1) Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex East Arjun Nagar, Delhi - 110 032, India
- 2) Zonal Central Pollution Control Board, Nisarga Bhavan, Thimmaiah Road, 7th D Main Rd, Shivanagar, Bengaluru, Karnataka 560079
- 3) The Principle Secretary, Department of Ecology and Environment for information.
- (4) EO, e-governance to upload this letter in the Board's website.

Mh CHIEF ENVIRONMENTAL OFFICER-1 KARNATAKA STATE POLLUTION CONTROL BOARD

Annexure V: Notification for the Renewal of Fitness certificate for 2-stroke auto rickshaw plying in Bengaluru City

ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ನಡವಳಿಗಳು	
ನಿಷೆಯ: ಬೆಂಗಳೂರು ನಗರದಲ್ಲಿ 2ಸ್ಟೋಕ್ ಆಟೊರಿಕ್ಟಾಗಳ ಅರ್ಹತಾ ಪ್ರಮಾಣ ಪತ್ರ ನವೀಕರಣದ ಅವಧಿಯನ್ನು ವಿಸ್ತರಿಸುವ ಬಗ್ಗೆ ಆದೇಶ. ಓದಲಾಗಿದೆ: 1 ಸರ್ಕಾರದ ಅದೇಶ ಸಂಖೆಪ ಸಾರಿಣ 267 ಸಾಇಪ	
2018, ದಿನಾಂಕ: 23-10-2018. 2. ಆಯುಕ್ತರು, ಸಾರಿಗೆ ಮತ್ತು ರಸ್ತೆ ಸುರಕ್ಷತೆ ಇವರ ಪತ್ ಸಂಖ್ಯೆ:ಸಾಆ/ಪ್ರವರ್ತನ-2/ಪಿಆರ್-661/2016-17, ದಿನಾಂಕ: 09-07-2020.	

ಪ್ರಸ್ತಾ <u>ಪನ:-</u>	
ಮೇಲೆ ಓದಲಾದ (1)ರ ಆದೇಶದಲ್ಲಿ ಬೆಂಗಳೂರು ನಗರದಲ್ಲಿ ಸಂಚರಿಸುತ್ತಿರುವ ಎಲ್.ಪಿ.ಜಿ ಕಿಟ್ ಅಳವಡಿಸಿರುವ 2-ಸ್ಟ್ರೋಕ್ ಆಟೋರಿಕ್ಟಾಗಳನ್ನು ರದ್ಧುಪಡಿಸಿರುವುದನ್ನು ಹಿಂಪಡೆದು ಈ ಆಟೋರಿಕ್ಟಾಗಳ ಅರ್ಹತಾ ಪ್ರಮಾಣ ಪತ್ರವನ್ನು ದಿನಾಂಕ:31-03-2020 ರವರೆಗೆ ನವೀಕರಿಸಲು ಅನುಮತಿ ನೀಡಿ ಆದೇಶಿಸಲಾಗಿರುತ್ತದೆ.	
ಮೇಲೆ ಓದಲಾದ (2)ರ ಪತ್ರದಲ್ಲಿ ಆಯುಕ್ತರು, ಸಾರಿಗೆ ಮತ್ತು ರಸ್ತೆ ಸುರಕ್ಷತೆ ಇವರು ಸರ್ಕಾರಕ್ಕೆ ಪ್ರಸ್ತಾವನೆ ಸಲ್ಲಿಸಿ, ಇಲಾಖೆಯ ಹಿರಿಯ ಅಧಿಕಾರಿಗಳು ಮತ್ತು ಆಟೋ ಸಂಘಟನೆಗಳನ್ನೊಳಗೊಂಡ ಸಮಿತಿಯು ದಿನಾಂಕ: 10-06-2020ರಂದು ನಡೆದ ಸಭೆಯಲ್ಲಿ ಚರ್ಚಿಸಿ ಕೈಗೊಂಡ ನಿರ್ಣಯದಂತೆ ಬೆಂಗಳೂರು ನಗರದಲ್ಲಿನ ಎಲ್.ಪಿ.ಜಿ ಕಿಟ್ ಅಳವಡಿಸಿರುವ 2-ಸ್ಪ್ರೋಕ್ ಆಟೋರಿಕ್ಟಾಗಳ ಅರ್ಹತಾ ಪ್ರಮಾಣ ಪತ್ರದ ಅವಧಿಯು ದಿನಾಂಕ: 31-03-2020ಕ್ಕೆ ಅಂತ್ಯಗೊಂಡಿದ್ದು, ಈ ಅವಧಿಯನ್ನು ಮುಂದಿನ ಎರಡು ವರ್ಷಗಳ ಅವಧಿಗೆ ಅಂದರೆ ದಿನಾಂಕ: 01-04-2020ರಿಂದ 31-03-2022ರವರೆಗೆ ಅರ್ಹತಾ ಪ್ರಮಾಣ ಪತ್ರಗಳನ್ನು ನವೀಕರಿಸಲು ಅನುಮತಿ ನೀಡಿ ಸೂಕ್ತ ಆದೇಶ ಹೊರಡಿಸಲು ಕೋರಿರುತ್ತಾರೆ.	
ಸಾರಿಗೆ ಆಯುಕ್ತರ ಪ್ರಸ್ತಾವನೆಯನ್ನು ಕೂಲಂಕಷವಾಗಿ ಪರಿಶೀಲಿಸಿ, ಸರ್ಕಾರವು ತೀರ್ಮಾನಿಸಿ ಈ ಕೆಳಕಂಡಂತೆ ಆದೇಶಿಸಿದೆ.	
<u>ಸರ್ಕಾರದ ಆದೇಶ ಸಂಖ್ಯೆ: ಟಿಡಿ 187 ಟಿಡಿಓ 2020 , ಬೆಂಗಳೂರು, ದಿನಾಂಕ: 03-02-2022.</u>	
ಪ್ರಸ್ತಾವನೆಯಲ್ಲಿ ವಿವರಿಸಿರುವ ಅಂಶಗಳ ಹಿನ್ನೆಲೆಯಲ್ಲಿ, ಬೆಂಗಳೂರು ನಗರದಲ್ಲಿ ಸಂಚರಿಸುತ್ತಿರುವ ಎಲ್.ಪಿ.ಜಿ ಕಿಟ್ ಅಳವಡಿಸಿರುವ 2-ಸ್ಪೋಕ್ ಆಟೋರಿಕ್ಷಾಗಳ ಅರ್ಹತಾ ಪ್ರಮಾಣ ಪತ್ರವನ್ನು ದಿನಾಂಕ:31-03-2022 ರವರೆಗೆ ನವೀಕರಿಸಲು ಅನುಮತಿ ನೀಡಿ ಆದೇಶಿಸಿದೆ.	
ಕರ್ನಾಟಕ ರಾಜ್ಯಪಾಲರ ಆದೇಶಾನುಸಾರ ಮತ್ತು ಅವರ ಹೆಸರಿನಲ್ಲಿ,	
(ಪುಷ್ಪ ವಿ.ಎಸ್) ಸರ್ಕಾರದ ಅಧೀನ ಕಾರ್ಯದರ್ಶಿ, ಸಾರಿಗೆ ಇಲಾಖೆ	
1. ಪ್ರಧಾನ ಮಹಾಲೇಖಪಾಲರು, (ಜಿ & ಎಸ್.ಎಸ್.ಎ)/ (ಇ & ಆರ್.ಎಸ್.ಎ),(ಎ & ಎ) ಕರ್ನಾಟಕ, ಬೆಂಗಳೂರು.	
ಶಾಂತಿನಗರ, ಬೆಂಗಳೂರು. ತಾಂತಿನಗರ, ಬೆಂಗಳೂರು.	
ು. ಬರಲ್ಲಿ ಬರದ 700ವ ನಾರಿಗ ಆಯುಕ್ತರು (ನಾರಿಗ ಆಯುಕ್ತರ ಕಥೀರಿಯ ಮುಖಾರಿತಿರ). 2	

Annexure VI: Installation of 1190 Electric Vehicles Charging stations by BESCOM



ಸದರಿ ಪ್ರಸ್ತಾವನೆಯನ್ನು ವಿವರವಾಗಿ ಪರಿಶೀಲಿಸಿ, ಈ ಕೆಳಗಿನಂತೆ ಆದೇಶಿಸಿದೆ.

ಸರ್ಕಾರಿ ಆದೇಶ ಸಂಖ್ಯೆ: ಎನರ್ಜಿ 267 ವಿಎಸ್ ಸಿ 2021, ಬೆಂಗಳೂರು, ದಿನಾಂಕ: 02.02.2022

-2-

ಪ್ರಸ್ತಾವನೆಯಲ್ಲಿ ವಿವರಿಸಿರುವ ಅಂಶಗಳ ಹಿನ್ನಲೆಯಲ್ಲಿ. ರಾಜ್ಯದಲ್ಲಿ ವಿದ್ಯುತ್ ವಾಹನಗಳ ಬಳಕೆಯನ್ನು ಉತ್ತೇಜಿಸಲು ಹಾಗೂ ವಾಯು ಮಾಲಿನ್ಯವನ್ನು ನಿಯಂತ್ರಿಸಲು 1190 ವಿದ್ಯುತ್ ಚಾಲಿತ ವಾಹನಗಳ ಚಾರ್ಜಿಂಗ್ ಕೇಂದ್ರಗಳನ್ನು ಸಾರ್ವಜನಿಕ ಖಾಸಗಿ ಸಹಭಾಗಿತ್ವದಲ್ಲಿ ಸ್ಥಾಪಿಸಲು ನೋಡಲ್ ಸಂಸ್ಥೆಯಾದ ಬೆಂಗಳೂರು ವಿದ್ಯುತ್ ಸರಬರಾಜು ಕಂಪನಿ ಮುಖಾಂತರ ಅನುಬಂಧದಲ್ಲಿ ಲಗತ್ತಿಸಿರುವ ಕ್ರಿಯಾ ಯೋಜನೆಯಂತ ಅನುಷ್ಠಾನಗೊಳಿಸಲು ಆದೇಶಿಸಿದೆ.

ಈ ಆದೇಶವನ್ನು ಆರ್ಥಿಕ ಇಲಾಖೆಯ ಟಿಪ್ಪಣಿ ಸಂಖ್ಯೆ: FD 476 Exp-1/2021 ದಿನಾಂಕ: 18.01.2022 ಮತ್ತು ಯೋಜನಾ ಇಲಾಖೆಯ ಟಿಪ್ಪಣಿ ಸಂಖ್ಯೆ: ಪಿಡಿಎಸ್ 7 ಎಂಸಿಎಂ 2022-ಪಿಪಿಡಿ ದಿನಾಂಕ: 28.01.2022 ರ ಸಹಮತಿಯಂತೆ ಹೊರಡಿಸಲಾಗಿದೆ.

ಬೆಂಗಳೂರು ವಿದ್ಯುತ್ ಸರಬರಾಜು ಕಂಪನಿಯು KTPP ಅಧಿನಿಯಮ ಮತ್ತು ಕೇಂದ್ರ ಇಂಧನ ಮಂತ್ರಾಲಯದಿಂದ ಕಾಲಕಾಲಕ್ಕೆ ಹೊರಡಿಸುವ ಮಾರ್ಗಸೂಚಿ ಮತ್ತು ಮಾನದಂಡಗಳನ್ವಯ ಯೋಜನೆಯನ್ನು ಅನುಷ್ಠಾನಗೊಳಿಸುವುದು.

> ಕರ್ನಾಟಕ ರಾಜ್ಯಪಾಲರ ಆದೇಶಾನುಸಾರ ಮತ್ತು ಅವರ ಹೆಸರಿನಲ್ಲಿ,

N. mala 600 (ಎನ್. ಮಂಗಳಗೌರಿ)

ಸರ್ಕಾರದ ಅಧೀನ ಕಾರ್ಯದರ್ಶಿ,

ಕಾರ್ಯಧನ್ಗೆ ಇಲಾಖೆ.

ಇವರಿಗೆ,

ಸಂಕಲನಕಾರರು, ಸರ್ಕಾರಿ ಮುದ್ರಣಾಲಯ, ಕರ್ನಾಟಕ ರಾಜ್ಯ ಪತ್ರ ಪ್ರಕಟಣೆಗಾಗಿ.

ಪ್ರತಿ:-

ಸರ್ಕಾರದ ಮುಖ್ಯ ಕಾರ್ಯದರ್ಶಿಗಳು, ವಿಧಾನಸೌಧ, ಬೆಂಗಳೂರು.

2. ಸರ್ಕಾರದ ಅಪರ ಮುಖ್ಯ ಕಾರ್ಯದರ್ಶಿಗಳು, ಆರ್ಥಿಕ ಇಲಾಖೆ, ವಿಧಾನಸೌಧ, ಬೆಂಗಳೂರು.

Annexure VII: Implementation of C & D waste management Rules, 2016 by the Infrastructure Projects



so as to prevent obstruction to the traffic or the public or drains.

The Board is conducted review meeting with various stake holders and also the Government of Karnataka has conducted meetings regarding implementation of Construction and Demolition Waste Management Rules, 2016.

The Board is granting consent under the Water (Prevention & Control of Pollution) Act, 1974 to the many bulk generators as defined under the Construction and Demolition Waste Management Rules, 2016.

As per Rule 8 of said rules the State Pollution Control Board is require to monitor the implementation of the provision rules. In order to monitor the Management of the C&D waste by institutions, residential and commercial establishment. In this connection all the Regional Officers are require to follow;

- 1. Collect the information regarding the estimated quantity of Construction and Demolition Waste proposed to be generated and management during the time of CFE & to get certification in case demolition activities.
- 2. Collect the information regarding the quantity of Construction and Demolition Waste generated and managed during the time of CFO and to collect certification regarding the management of the said waste and to verify, enclose the certificate while forwarding consent application.
- 3. RSEOs and ROs shall monitor the implementation of Construction and Demolition Waste Management Rules, 2016 by the bulk generators.

Sd/-MEMBER SECRETARY

To,

All ROs & RSEOs

Copy to:

- 1. SEO, Infrastructure Cell for information & necessary action.
- 2. EO, E-Governance for information to upload in Board Website and also make provision in XGN for uploading the certificate as a mandatory field.
- 3. Technical Officer to Chairman for information and to bring to the kind notice of the Chairman.

Senior Environmental Officer

Annexure VIII: Directions for implementation of SWM Rules 2016

-		
	द्भु हूर् / Fax : 080-25586321	
	ಈಮೇಲ್ / Email : ho@kspcb.gov.in = 080-25589113, 25589114	
	ವೆಬ್ ಸೈಟ್ / Website : http://kspcb.gov.in	
Exp: / Fax: 800-25586321		
	with exp / Fax: 080-25586321 with exp / Faxi: hog(kspcb.govin with exp / Faxi: hog(kspcb.govin <td></td>	
	"ಪರಿಸರ ಭವನ", 1 ರಿಂದ 5ನೇ ಮಹಡಿಗಳು, ನಂ. 49, ಚರ್ಚ್ ಸ್ಪೀಟ್, ಬೆಂಗಳೂರು – 560 001, ಕರ್ನಾಟಕ ರಾಜ್ಯ, ಭಾರತ	
	"Parisara Bhavan", 1st to 5th Floor, # 49, Church Street, Bangalore - 560 001, Karnataka State, India	
	No. KSPCB/SEO-WMC/MSW/ 4421 Date:	
	To 0 1 DEC 2021	
	All Deputy Commissioners Karnataka State	
	All Urban Local bodies	
	Karnataka State	
	Sub.: Direction under Section 5 of Environment (Protection) Act, 1986 for implementation of the Solid Waste Management Rules, 2016	
~	1. WHEREAS, as per rule 12 (a) of the Solid Waste Management (SWM) Rules, 2016, the Deputy commissioner shall facilitate identification and allocation of suitable land as per clause (f) of rules 11 for setting up solid waste processing and disposal facilities to local authorities in his district in close coordination with the Secretary-in-charge of State Urban Development Department within one year from the date of notification of these rules;	
	 WHEREAS, as per rule 12 (b) of the SWM Rules, 2016, Deputy Commissioner shall review the performance of local bodies, at least once in a quarter on waste segregation, processing, treatment and disposal and take corrective measures in consultation with the Commissioner or Director of Municipal Administration or Director of local bodies and secretary-in-charge of the State Urban Development; 	
	 WHEREAS, Government of Karnataka (GoK) vide Order No. FEE 07 ENG 2019, Dated 13.02.2019 formed District Level Special Task Force (DLSTF) under the chairmanship of Deputy commissioner; 	
	4. WHEREAS, GoK vide Order No. FEE 07 ENG 2019, Dated 13.02.2019 formed DLSTF under the chairmanship of Deputy commissioner who shall hold meeting periodically to review the progress of the compliance of the Solid Waste Management Rules, 2016 and submit action taken report to the State level committee with regard to implementation of the SWM rules, 2016;	
	 WHEREAS, the DLSTF shall take necessary actions to comply with the directions issued by the Hon'ble National Green Tribunal in O.A.606/2018 from time to time; 	
	6. WHEREAS it has been reported that there are several complaints/litigations with regard to non-implementation of SWM Rules, 2016;	
	 WHEREAS, local authorities and village Panchayats of census towns and urban shall comply with Rule 15 of SMW Rules, 2016; 	
	"ಪ್ಲಾಸ್ಟ್ರಿಕ್ ಬಳಕೆ ನಿಲ್ಲಿಸಿ, ಪರಿಸರ ಹಾನಿ ತಪ್ಪಿಸಿ" (V WMC Section) AVOID USE OF PLASTIC BE 'ECO' FRIENDLY	
	· · · · · · · · · · · · · · · · · · ·	

- 8. WHEREAS, more than four years have been passed from the notification of SWM Rules, 2016 and majority of Municipal Authorities and Deputy Commissioners have failed to comply with provisions of the Rules;
- 9. WHEREAS, most of MSW dumpsites have been exhausted in a city/town, however, dumping of mixed MSW is continued;
- 10. WHEREAS, Hon'ble National Green Tribunal upon hearing all the States/UTs passed several order in the matter of OA No. 606/2018;
- 11. WHEREAS, as per as pert the Regional officers of KSPCB have reported serious deficiencies in compliance of provisions of Solid Waste Management Rules, 2016;
- 12. WHEREAS, several local body have hove not taken Environmental clearance in accordance with Ministry of Environment, Forest and Climate Change, 2006 S.O 1533 (E), dated the 14th September, 2006; and
- 13. NOW THEREFORE, in view of the above observations on implementation of the provisions of the rules under SWM Rules, 2016 and in exercise of powers vested to the Chairman, Karnataka State Pollution Control Board under Section 5, Environment (Protection) Act, 1986 to Chairman, DCs and ULBs are hereby directed as under:

For Deputy Commissioners:

- 1. Deputy commissioner shall hold review meeting in accordance with 12 (b) of the SWM Rules, 2016, and GoK Order No. FEE 07 ENG 2019, Dated 13.02.2019 and take corrective measures in consultation with the Commissioner or Director of Municipal Administration or Director of local bodies and secretary-in-charge of the State Urban Development.
- 2. Facilitate identification and allocation of suitable land for setting up solid waste processing and disposal facilities to local authorities
- Take necessary actions to comply with the directions issued by the Hon'ble National Green 3. Tribunal in O.A.606/2018 from time to time.

For Urban Local Bodics (ULBs):

- 1. Comply with Rule 15 of SMW.Rules, 2016.
- 2. Segregation of waste at source is to be made mandatory for ensuring safe disposal of MSW. Wet waste should be composted and dry waste should be sent to Material Recovery Facility (MRF) for further segregation & its usage.
- 3. Every ULB shall adhere to applicable Guidelines issued by CPCB



Annexure IX: Notification on Plastic ban in Karnataka

FOREST, ECOLOGY AND ENVIRONMENT SECRETARIAT NOTIFICATION

No. FEE 17 EPC 2012, Bangalore, Dated: 11.03.2016

Whereas, plastic carry bags and other plastic items used in daily life cause short term and long term environmental damage and health hazard;

And whereas, Article 48-A of the Constitution of India, inter alia, envisages that the State shall endeavor to protect and improve the environment;

And whereas, it has come to the knowledge of the Government that, the use of plastic carry bags, banners, buntings, flex, plastic flags, plastic plates, plastic cups, plastic spoons, cling films and plastic sheets used for spreading on dining table and items that are made of thermocol are causing serious environmental hazards and affects health of human beings as well as animals;

And whereas, it is observed that the plastic wastes is also causing blockage of gutters, sewers and drains apart from resulting in pollution of water bodies in urban areas;

And whereas, with a view to prevent the recurrence of such problems, the State Government in exercise of the powers conferred under Section 5 of the Environment (Protection) Act, 1986, issues the following directions imposing ban on manufacture, supply, sale and use of plastic carry bags, plastic banners, plastic buntings, flex, plastic flags, plastic plates, plastic cups, plastic spoons, cling films and plastic sheets used for spreading on dining table including the above items made of thermocol and plastic which use plastic micro beads in the state. This notification comes into effect from the date of its publication in the Official Gazette.

DIRECTION

1. No person including shopkeeper, vendor, wholesaler, retailer, trader, hawker or salesmen shall use plastic carry bags, plastic banners, plastic buntings, flex, plastic flags, plastic plates, plastic cups, plastic spoons, cling films and plastic sheets used for spreading on dining table irrespective of thickness including the above items made of thermocol and plastic which use plastic micro beads. Further, no industry or person shall manufacture, supply, store, transport, sale and/or distribute plastic carry bags, plastic banners, plastic buntings, fiex, plastic flags, plastic plates, plastic cups, plastic spoons, cling films and plastic sheets used for spreading on

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dining table irrespective of their thickness including the above items made o	f thermocol and
Provided that, the plastic used for the following purposes and circumstance	es are exempted
a) The plastic carry bags manufactured exclusively for export purpose aga	ainst any export
Units (EOU).	Export Oriented
are scaled, prior to use at manufacturing/processing units.	in which goods
orders from the Govt Departments or from the firms concerned.	ries against the
 That the following Officers shall enforce this direction in exercise of power confer law in their jurisdiction 	rred on them by
a) The Commissioner, Joint Commissioners, Revenue Officers, all Health Engineers of BBMP.	Officers and all
b) All Deputy Commissioners of the districts. c) All Commissioners of City Corporations, Chief Officers, Haelth C	
Engineers of Urban Local Bodies. d) All Assistant Environmental Officers, Deputy Environmental Officers	Environmental
 Officers and Senior Environmental Officers of KSPCB. e) All Assistant Commissioners of Revenue Sub Divisions. 	
 fahsildars of all Taluks. g) All officers of Commercial Tax Department. 	
 i) The Controller, Deputy Controller and Regional Officers of La Department 	egal Metrology
3. That the following officers shall take cognizance of offences and initiate legal ac noncompliance of this direction as per the powers conferred on them used	ction in case of
Environment (Protection) Act, 1986 and to file complaint in the jurisdictional cou- violators.	rt of law on all
a) Secretary to Government (Ecology & Environment), Forest, Environme Department.	nt and Ecology
b) Chairman and Member Secretary, KSPCB.c) Deputy Commissioners of the Districts.	
 a) Assistant Commissioners of Revenue Sub Divisions. b) Regional Officers of KSPCB. 	21 *
(PE), poly vinyl chloride (PVC), high and low density poly ethylene (HDPE & LDPE), poly which is also called thermocol, poly amides (Nylon), poly terephthalate (PT), methacrylate (PMM) and plastic micro heads	de out of poly , poly ethylene oly styrene (PS) poly methyl
Explanation 2- The word "carry bag" will have the same meaning that is provided in the Plastic Waste (Management and Handling) Rules, 2011. In this definition exempti for plastic bag that constitute or form an integral part of packaging in which goods a	n Rule 3 (b) of on is provided
to use. Explanation 3- Karnataka State Pollution Control Board shall be responsible for regarding the functions specified in clause (a) of Rule 4 of the Plastic Waste (Mar Handling) Rules, 2011 and Urban Local Bodies shall be responsible for the	r enforcement nagement and
functions specified in clause (b) of rule 4 of the said Rules;	regarding the
16.04.1987 amended from time to time are authorized to file complaints agains directions included in this Notification under Section 19 of the Environment (Protection	394 (E) dated it violation of 1) Act, 1986.
By Order & in the name of the Governor of	Karnataka,
Mahendra Jain Additional Chief Secretary to Govern Forset Facher and Facility of Paris	ment,
ಸರ್ಕಾರಿ ಮುದ್ರಣಾಲಯ, ವಿಕಾಸ ಸೌಧ ಕಟಕ, ಬೆಂಗಟಿಯ (ಸಿಬ್ಬ 500 ಸಂಗಳು)	artment
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Annexure X: Ban on open burning of Solid Waste

GOVERNMENT OF KARNATAKA

No. FEE 6 ENG 2017

To:

Karnataka Government Secretariat, M.S. Building, Bangalore, Dated:03.08.2017.

NOTIFICATION

Research findings reveal that burning of solid waste including plastic in the open places especially in the urban areas releases harmful chemicals such as Sulpher Dioxide (SO₂) Carbon Dioxide (CO₂), Carbon Monoxide (CO), Dioxins and Furans in addition to lot of Particulate Matter which get into the environment and create serious health hazard on all living creatures including human beings.

The Karnataka State Pollution Control Board have submitted a proposal recommending for issue of a notification banning burning of solid waste including twigs, dry leaves and other wastes in open places of urban areas in accordance with section 19(5) of the Air (Prevention and Control of Pollution) Act, 1981 to prevent its ill-effect on the health of general public as concentration of the Particulate Matter is increasing in the urban areas because of burning of solid waste in open places.

Considering the recommendation made by the Karnataka State Pollution Control Board and in exercise of the powers conferred under section 19(5) of the Air (Prevention and Control of Pollution) Act, 1981, the State Government hereby impose a complete ban on burning of solid wastes of any kind including twigs and leaves of plants in open places within the jurisdiction of all urban local bodies including Bruhat Bengaluru Mahanagara Palike and in solid waste landfill sites throughout the State.

The competent authorities shall deal with violation of this notification if any, as violation of the provisions of the Air (Prevention and Control of Pollution) Act, 1981.

By Order & in the name of the Governor of Karnataka,

..2

(H.C. Rajendra Kumar) Under Secretary to Government (I/c), (Ecology and Environment) Forest, Ecology and Environment Department

The Compiler, Karnataka State Gazette – with a request to publish in

the next issue and arrange to furnish 200 copies to this Department.

Annexure XI: Action plan for control of stubble burning in Karnataka

ACTION PLAN FOR CONTROL OF STUBBLE BURNING IN KARNATAKA(2020-21)

(Response to direction number vi of the orders of the Hon'ble National Green Tribunal at Delhi in OA number 681/2018)

India, the second largest agro-based economy with year round crop cultivation, generates a large amount of agricultural waste, including crop residues. According to the Ministry of New and Renewable Energy (MNRE), India generates on an average 500 million tonnes of crop residue per year. The majority of this crop residue is in fact used as fodder, fuel for other domestic and industrial purposes. However, there is still a surplus of 140 million tonnes, of which 92 million tonnes is reportedly burnt each year, causing excessive particulate matter emissions and air pollution.

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According to the Inter-Government Panel on Climate Change (IPCC), approximately 25% of the crop residues are burnt on farm. Crop residue burning is a major environmental problem causing health issues as well as contributing to global warming. The fraction of crop residue subjected to burning comprises mainly of Rice straw, wheat straw and Sugarcane.

Crop residues produced by Rice, Wheat and Sugarcane are Husk, bran; Bran, Straw and Sugarcane tops, bagasse, molasses respectively. Composting, bio-char production and mechanization are a few effective sustainable techniques that can help to curtail the issue while retaining the nutrients present in the crop residue in the soil.

In Karnataka, Paddy straw is rarely burnt. This is because the straw is extremely useful and precious to be used as dry fodder for cattle. After the straw has been collected, the remaining stubble is retained in the fields. In the forthcoming sowing season, the lands are ploughed. The pieces of stubble are sorted by size by land owners and the big pieces discarded. The small pieces are used as mulch and fertigation / organic manure.

In case of sugarcane, burning trash is practiced in few scattered pockets. Though stubble/trash burning has not been reported to cause air pollution or

Page 1 of 4

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smog of significant intensity, with a view to contain the burning of stubble/trash, both in paddy/wheat and Sugarcane, the Department of Agriculture, Government of Karnataka, has taken action to provide machinery and equipment for residue management for various crops under subsidy scheme to beneficiaries and throughCustom Hiring Centres (CHSC). Some of the residue management machines that are being provided under subsidy schemes are Tractor operated Trash Cutter/ Mulcher/ Shredder, Engine operated Rake, Baler, Ratoon Manager, Sugarcane harvester etc.

CONTROL OF PADDY/ WHEAT STUBBLE BURNING

A. By utilization of stubble:

As already mentioned above, stubble is not a waste. It has immense potential to be utilized as a product useful to the farmer. All it requires is providing appropriate technology to harvest and convert the stubble into useful product. Balers and Rakes are machines that do this and these are quite popular too. The cost being slightly high for the farmer, these are provided on rental basis through CHSCs and also on subsidy basis to individual farmers.

Area under Paddy and Wheat cultivation in Karnataka is approximately 12.83 lakh hectares and 1.75 lakh hectares (all cropping seasons included) respectively. Approximately, 3-4 tonnes paddy/ wheat straw is generated per hectare.Straw balers can be used to pick-up the straw from the harvested paddy field and densify into bales.

In Karnataka, 197 Balers are available as of date (121 in CHSCs and 76privately held). One Baler approximately tackles about 5 hectares of rice/wheat per day. Paddy/wheat harvesting lasts around 40 days during a season. Thus one baler will tackle about 200 hectares of rice/wheat area per season. Taking two seasons per year, each Baler will tackle 400 hectares in a year. The existing 197 Balers are thus already tackling stubble burning in 78800 hectares annually.

Similar is the case with Rakes.121 Rakes are available as of date with CHSCs. One Rake approximately tackles about 5 hectares of rice/wheat per day. Paddy/wheat harvesting lasts around 40 days during a season. Thusone Rake

Page 2 of 4

will tackle about 200 hectares of rice/wheat area per season. Taking two seasons per year, each Rake will tackle 400 hectares in a year. The existing 121 Rakes are thus already tackling stubble burning in 48400 hectares annually.

This year, 76 Balers are proposed to be given on subsidy to farmers. Since these will be used only in one season (Rabi), these 76 Balers would tackle stubble burning in 15200 hectares.

Summarily, there are Balers and Rakes tackling stubble burning in 127200 (78800 by Balers + 48400 by Rakes) hectares of paddy/wheat cultivation area annually. An additional 15200 hectares would be added to this in the current year taking the total Paddy/wheatcultivation area tackled against stubble burning to become 142400 hectares annually by utilization of stubble.

B. By retaining the stubble in Rice Fallows:

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An extent of 26600 hectares (inclusive of demonstration and distribution of inputs) of Paddy is covered under Targeting Rice Fallow Area (TRFA) scheme of the Government of India for 2020-21. Under this, pulses and oilseeds are sown in Paddy harvest areas without removing the stubble. Thus, 26600 hectares of paddy cultivation area will be tackled against stubble burning this year by retention of stubble.

The total area tackled against stubble burning in paddy/wheat cultivated areas in 2020-21 is thus 169000 (142400 + 26600) hectares.

CONTROL OF SUGARCANE THRASH BURNING

Area under Sugarcane cultivation in Karnataka is approximately 6.64 Lakh hectares. Approximately5-8 tonnes of trash are generated per hectare. In some places sugarcane trash is burnt which leads to loss of nutrients, affects environment and causes air pollution. Sugarcane trash cutter/ Mulcher/ Ratoon manager can be used to managing sugarcane trashin the fields.

In Karnataka, 3 Sugarcane Trash cutters (in CHSCs), 25 Sugarcane Mulchers (16 in CHSC and 9 are privately held), 7 Sugarcane Ratoon Managers (1 in CHSC and 6 privately held) and 200 Sugarcane harvesters (all privately held) are already available. In a day, one Trash Cutter/Mulcher/Ratoon Manager

Page 3 of 4

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can cover 5 hectares and each Sugarcane harvester nearly 10 hectares of sugarcane area. With the sugarcane harvest season spanning 70 days a year, the existing 35 Trash Cutters/Mulchers/Ratoon Managers tackle 12250 hectares of sugarcane area against trash burning. Similarly, the existing 200 Sugarcane harvesters tackle 140000 hectares of sugarcane area against trash burning. The existing machines and technology are thus tackling 152250 (140000+12250) hectares of sugarcane area against trash burning annually.

This year, 50 Trash Cutters/Mulchers/Ratoon Managers and 60 Sugarcane harvesters are proposed to be given on subsidy to farmers. Since these will be used only in only a part of the year, taking that these would be utilized for only half the harvest season i.e. 35 days, these 50 Trash Cutters/Mulchers/Ratoon Managers would tackle stubble burning in 8750 hectares and the60 Sugarcane harvesterswould tackle stubble burning in 21000 hectares. Thus totally 29750 (8750 + 21000) hectares of additional capacity would be added to the already existing annual capacity of 152250 hectares of sugarcane area against trash burning making the total to become 182000 hectares annually.

Summarily, 152250 hectares of sugarcane area is being tackled against trash burning in 2020-21 and an extent of 29750 hectares is being added to it this year.

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Commissioner for Agriculture Commissioner for Agriculture Sestatic Koad, Scareland Scalet,

Page 4 of 4

Annexure XII: Siting guidelines for Establishment of Industries

PR-399 **GOVERNMENT OF KARNATAKA** No: FEE 106 EPC 2021 (i) Karnataka Government Secretariat, M.S.Building, Bangalore, dated:10.12.2021. **NOTIFICATION** In exercise of the powers conferred by section 64 of the Water (Prevention and Control of Pollution) Act, 1974, (Central Act 6 of 1974), in consultation with the Karnataka State Pollution Control Board, the Government of Karnataka hereby makes the following rules further to amend the Karnataka State Board for the Prevention and Control of Water Pollution (Procedure for Transaction of Business) and the Water (Prevention and Control of Pollution) Rules 1976, namely: 1. Title and commencement: - (1) These rules may be called the Karnataka State Pollution Control Board for Prevention and Control of Water Pollution (Procedure for Transaction of Business) and the Water (Prevention and Control of Pollution) (Second Amendment) Rules, 2021. (2) They shall come into force from the date of their publication in the official Gazette. 2. Amendment to Rule 32 — In Rule 32 of the Karnataka State Board for the Prevention and Control of Water Pollution (Procedure for Transaction of Business) and the Water (Prevention and Control of Pollution) Rules 1976.-(1) after sub-rule (4), the following sub-rule shall be inserted, namely:-"(5) Siting guidelines for Consent for Establishment for different category of industries is specified in Schedule IV." (2) the siting guidelines to accompany the combined application form for Consent for Establishment for Orange and Green category industries, published vide Notification No.FEE 195 ENV 2002, dated 21st June, 2003, shall be omitted.



ಭಾಗ ೪ಎ	ಕರ್ನಾಟಕ ರಾಜ್ಯಪತ್ರ, ಸೋಮವಾರ, ೨೦, ಡಿಸೆಂಬರ್, ೨೦೨೧ ೩೫೩೫
4. Infra build static Busi Holi & Ca (E), o	structure Projects means residential township including commercial buildings, Office ling, School, College, University, Special Economic Zone, Metro Station, Railway on, Bus Depot, Airport, Seaport, Highway infrastructure, Fire Station, Warehouse ness Plaza, Malls & Multiplex, Nursing Homes, Resort, Hotel/Restaurant/Food Plaza day Home/Guest home/Hostels/ Banquet Hall/Marriage Gardens, IT Complex, Logistics argo, Clubs and Trade Centre as indicated in Annexure VI of Notification No. S.O. 3289 dated 24 th September 2020 issued by Ministry of Jal Shakti, Government of India.
	(Muralidhar S. Tallikeri)
	Under Secretary to Government,
	Forest, Ecology and Environment Department (Ecology and Environment)
PR-400	GOVERNMENT OF KARNATAKA
No: FEE 1	06 EPC 2021 (ii) Karnataka Government Secretariat,
	M.S.Building, Bangalore dated: 10.12.2021
	NOTIFICATION
Pollution) A Control Bo the Karnata 1. Title	Act, 1981 (Central Act 14 of 1981), in consultation with the Karnataka State Pollution ard, the Government of Karnataka hereby makes the following rules further to amend ka Air (Prevention and Control of Pollution) Rules, 1983, namely: and commencement: - (1) These rules may be called the Karnataka Air (Prevention Control of Pollution) (Second Amendment) Rules, 2021
(2)	Control of Pollution) (Second Amendment) Rules, 2021.
2. Am	endment of Rule 20:- In Rule 20 of the Karnataka Air (Prevention and Control of
Poll	ution) Rules, 1983
1.	after sub-rule (5), the following sub-rule shall be inserted, namely:-
	industries is specified in Schedule IV."
2.	the siting guidelines to accompany the combined application form for Consent for Establishment for Orange and Green category industries, published vide Notification No.FEE 195 ENV 2002, dated 21 st June, 2003, shall be omitted.
3. Inse Con Not	ertion of new Schedule: After Schedule III of the Karnataka Air (Prevention and atrol of Pollution Rules, 1983, the Schedule IV shall be inserted and appended to this ification.
	By order and in the name of Governor of Karnataka
	(Muralidhar S. Tallikeri)
	Under Secretary to Government,
	(Ecology and Environment)
	Forest Ecology and Environment Department





About EMPRI

Environmental Management & Policy Research Institute (EMPRI) is an autonomous institute established by Government of Karnataka under the Department of Forest, Ecology and Environment. It is registered under the Karnataka Societies Registration Act, 1960. The Institute undertakes applied and policy research and also endeavours to provide capacity building trainings on concurrent environmental issues relevant to the society. Research and assessments undertaken by the institute seek to encourage and enable government and other institutions, industry and civil society to safeguard and manage the natural resources effectively. Fresh capabilities on impact and carrying capacity assessment for sustainable development, and baseline data and modelling for air pollution and climate change are being augmented.



Environmental Management & Policy Research Institute Hasiru Bhavana, Doresanipalya Forest Campus Vinayakanagar Circle, J.P. Nagar 5th Phase Bangalore - 560078 https://empri.karnataka.gov.in

State Action Plan for Telangana to mitigate air pollution

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1. Background:

MoEF&CC, GoI has launched the National Clean Air Program (NCAP) on 10th January, 2019 as a time bound National level strategy for pan India implementation to tackle the air pollution problem across the country in a comprehensive manner.

The state constituted the following three committees as per the NCAP guidelines as detailed below:

- i) Steering Committee under the Chairmanship of the Chief Secretary through EFS&T G.O.Rt.No.84, dated.07-06-2019 for overall guidance for the program
- Air Quality Monitoring Committee(AQMC)under the Chairmanship of Principal Secretary, Environment of the State Government to monitor the programme closely through EFS&T G.O.Rt.No.182, dated.20-11-2018
- iii) Implementation committee at city level and would be headed either by the DM or the Commissioner of the Municipal Corporation through EFS&T G.O.Rt.No.33, dated.14-03-2019 for the non-attainment cities/areas

Central Pollution Control Board (CPCB) prepared a list of non-attainment cities/towns based on the Ambient Air Quality (AAQ) data with respect to Particulate Matter Concentration for the years 2011-2015. According to which Telangana state is having three non-attainment cities/towns (Hyderabad, Patancheru, Nalgonda and Sangareddy).

An action plan for 4 non-attainment cities (Hyderabad (incl Patancheruvu), sangareddy and Nalgonda) was prepared by the Air Quality Monitoring Committee (AQMC) and approved by theCPCB is under implementation in these cities.

According to the guidance document of NCAP, a State Action Plan (SAP) for addressing the air pollution have to be prepared. As per the NCAP document at Appendix-VI:NCAP agencies and timelines at S.No.1.13 mentions about the State Action Plan for Air Pollution detailed below:
S.No	Component/ Activities	Level for funding	Level for implementation	Agencies	Time lines
1.13.1	A preliminary state action plan for air pollution to be formulated for II the 23 states, which harbor 102 non- attainment cities	Center	State	SPCB, CPCB &MoEF&C C	2020
1.13.2	SAP for air pollution to be taken up for implementation by the state government and city administration	State	State	State Governme nt	2020
1.13.3	The guidelines for the preparation of the SAP to be formulated	Centre	Centre	CPCB &MoEF&C C	2020

The guidelines are to be formulated by the Centre (MoEF&CC and CPCB) as mentioned at 1.13.3. CPCB communicated the State Action Plan template through mail dated:15.11.2021.

The Template covers actions on the following headings:

Industrial Emissions, vehicular emissions, Construction and Demolition waste, Road Dust, Emissions from burning of Wastes, Emissions due to burning of agro residues and household emissions.

Further, the action plan template covers the status of the activity, timeline for completion, Target, Financial implications, Funds allocated and funds utilized as on date. The indicative template is placed at Annex-I.

2. Telangana state

Telangana is the 29thstate of India, formed on the 2ndof June 2014. The state has an area of 1,12,077 Sq. Km. and a population of 3,50,03,674. Major cities of the state include Hyderabad, Warangal, Nizamabad, Nalgonda, Khammam and Karimnagar. The states reorganized the districts for administrative convenience and better reach to the public and a total of 33 districts were carved out of the 10 districts.

Telangana has an area of 1,14,800 km² and it is drained by two major rivers Krishna and Godavari. The river Godavari flows on the north whereas Krishna flows in the south apart from these rivers there are other small rivers such as Bhima, Dindi, Manjira, Manair, Musi, etc which also flow through Telangana. Telangana has a vast coal deposit and rich in mineral sources.



Climate of Telangana and temperature: Telangana has a predominantly hot and dry climate. The areas covered by the Deccan plateau are characterised by hot summers with relatively mild winters the mean maximum temperature varies between 40°C and 43°C and the mean temperature is 13 to 17°C in December and January.

Telangana receives rainfall mostly from south-west and north-east monsoon. It receives rainfall mostly through SW monsoons and the average annual rainfall in the state is about 90.6 cm.

3. Ambient Air Quality Monitoring Program:

Telangana State Pollution Control Board is monitoring the Ambient Air Quality (AAQ) at 42 locations in the state. The monitoring of AAQ is carried out through Continuous or Manually under two programs called as National Air Monitoring Program (NAMP) and State Air Monitoring Program (SAMP).

Details	NAMP	SAMP	CAAQMS	Total Stations
Stations Number	22	16	6 (2 under NAMP)	42
	RSPM(PM10),	RSPM(PM10),	RSPM(PM10),	
Parameters	FPM(PM2.5), SO ₂ ,	SO₂& NOx,	FPM(PM2.5), SO ₂ , NOx,	
monitored	NOx, NH₃, Pb, Ni		NH ₃ , CO, Ozone, Benzene,	
	& As		Toluene and Xylene	

Monitoring Network:



Map showing the AAQ stations in Telangana State

S.	District	Locations	CAAQMS /				
1		Zaanank					
1.			CAAQMS-2				
2.		Sanathnagar					
3.		Balanagar , CITD office	_				
4.		Charminar, TSRTC bus station					
5.		Jeedimetla, Industrial Association building	NAMP - 5				
6.		Jubilee Hills, Police station	_				
7.	Livelanahad	Paradise, HMWS &SB Pump house					
8.	Нудегарад	Abids, Police station					
9.		Buddha Purnima Project office					
10.		Chikkadapally, Lepakshi Emporium					
11.		KBRN Park, DFO office	SAMP- 8				
12.		Langar House, Police Station					
13.		MGBS, Bus stand					
14.		Nacharam, Police station					
15.		Sainikpuri, MRO office					
16.		HCU	CAAQMS-1				
17.	Ranga Reddy	Madhapur, ShilpaKalavedika					
18	nungu neudy	Rajendranagar, NG Rang Agricultural	SAMP-2				
10.	University		<u> </u>				
19.		Kukatpally, JNTU	SAMP-2				
20.	Medchal-Maljakgiri	Shameerpet, MRO office	5/11/1 2				
21.		Uppal, Modern Food Industry, IDA	NAMP-1				
22.	BhadradriKothagudem	CER Club, Kothagudem	NAMP-1				
23.	Khammam	Jalasouda	NAMP-1				
24.	Karimnagar	DIC building, Karimnagar	NAMP-1				
25.	Mahaboobnagar	Kothur	NAMP-1				
26.	Mancherial	Adilabad/ Mandamarri	NAMP-1				
27.		Bollaram, CAAQMS	CAAOMS-3				
28.		ICRISAT					
29.		Pashamylaram					
30.	Medak	Gaddapotharam	NAMP-2				
31.		R.C.Puram					
32.		Bollaram,	SANAD-2				
33.		PETL	57.IVIT - 2				
34.	YadadriBhuvanagiri	Choutuppal, Nalgonda	NAMP-1				
35.	Nalgonda	Nalgonda RO, Building	NAMP-1				
36.	Nizamabad	Subhasnagar/ Nizamabad	NAMP-1				
37.	Peddapalli	Godavarikhani	NAMP-1				
38.	Sanga Reddy	Sangareddy	NAMP-1				
39.		KUDA	NAMP-2				
40.	Warangal Urban	Mee-Seva, Warangal					
41.	vvaraligai Urbali	Balasamudram SAMP-					
42.		Nakkalagutta					
	Total No. of Stations in 15 districts of Telangana State = 42 (6-CAAQMS+36AAQM)						

The details of AAQ Monitoring stations

Air Quality Index:

The ambient air quality in Telangana ranges from good to moderate. The details of which are as follows:

S.No	Districts	Location	2014	2015	2016	2017	2018	2019	2020	2021	2022 (Jan)
1		Balanagar , CITD office	123	103	125	141	123	132	105	121	139
2		Uppal, Modern food Industry, IDA	99	88	96	112	110	108	93	98	118
3		Jubilee Hills, Police station	80	85	103	122	115	108	82	88	98
4		Paradise, HMWS &SB Pump house	113	109	119	115	107	107	85	90	110
5		Charminar, TSRTC bus station	108	109	109	130	113	102	91	94	110
6	Hyderabad	Jeedimetla, Industrial Association Building	105	115	113	133	124	121	104	104	128
7		Abids	103	92	100	99	102	96	72	72	103
8		KBRN Park	58	54	58	69	76	57	51	50	76
9		Langar House	91	151	84	96	100	98	74	78	100
10		Madhapur	66	50	74	83	92	91	74	80	112
11		MGBS	69	67	75	95	94	91	81	79	114
12		Chikkadapally	84	81	80	82	92	83	67	73	98
13		Kukatpally	109	115	86	102	114	101	83	80	110
14		Nacharam	94	*	87	97	102	87	76	76	108
15		Rajendranagar	33	41	67	64	65	59	47	55	80

S.No	Districts	Location	2014	2015	2016	2017	2018	2019	2020	2021	2022 (Jan)
16		Sainikpuri	92	108	80	87	77	69	61	59	75
17		врра	68	64	63	68	74	73	63	64	92
18		Shameerpet	79	70	73	73	68	66	67	84	68
19		University of Hyd	71	*	87	95	92	87	75	79	128
20		Sanathnagar				111	104	99	77	93	141
21		Zoopark	73	105	131	130	118	119	101	116	192
22		Pashamylaram	89	83	96	105	113	104	96	119	194
23		Bollaram, CAAQMS	*	*	*	122	109	108	89	101	146
24		ICRISAT	*	*	*	101	98	93	81	90	141
25		KUDA	52	56	65	66	87	88	62	60	58
26	Warangal	Mee-Seva, Warangal	51	61	68	68	84	87	70	68	73
	0	Balasamudram	53	51	65	68	85	87	54	59	76
		Nakkalagutta	49	55	69	69	90	89	73	79	67
27	Adilabad	M/s. SCCL, Mandamarri club - Adilabad	67	70	63	65	69	77	72	69	-
28	Karimnagar	DIC building – Karimnagar	61	64	54	74	98	103	95	76	82
29	Kothagudem	CER Club – Kothagudem	58	61	58	58	83	94	77	86	93
30	Khammam	Jalasoudha - Khammam	66	58	48	55	79	86	70	76	80
31	Ramangundam	Municipal Complex - Godavari Khani, Ramangundam	57	65	68	76	102	104	83	94	94
34	Medak	Gaddapotharam - Grampanchayat office, Medak	119	73	72	72	82	88	77	82	89

S.No	Districts	Location	2014	2015	2016	2017	2018	2019	2020	2021	2022 (Jan)
35		R.C.Puram – TSPCB, Zonal office building, Medak	101	85	77	74	79	83	76	78	86
36		Sangareddy – TSPCB, Regional Office - Medak	70	65	66	65	68	71	63	66	67
37		PETL	109	88	83	82	89	87	83	87	85
38		Bollaram	157	178	133	115	129	99	109	92	87
37	Mahaboobnagar	MRO office Kothur – Mahaboobnagar	*	105	78	79	103	107	98	99	93
38	Nalgonda	M/s. Srini Pharmaceuticals Ltd., Choutuppal - Nalgonda	103	82	64	62	62	62	55	83	85
39		Nalgonda – TSPCB, Regional Office	89	73	59	64	63	59	50	61	51
40	Nizamabad	Subhash Nagar, Nizamabad	62	63	60	62	61	65	60	58	56

AQI	Remark	Color Code	Possible Health Impacts				
0-50	Good		Minimal impact				
51-100	Satisfactory		Minor breathing discomfort to sensitive people				
101-200	Moderate		Breathing discomfort to the people with lungs, asthma and heart diseases				
201-300	Poor		Breathing discomfort to most people on prolonged exposure				
301-400	Very Poor		Respiratory illness on prolonged exposure				
401-500	Severe		Affects healthy people and seriously impacts those with existing diseases				

4. Proposals for improving the monitoring network:

The monitoring network is proposed to be increased for more representativeness of the ambient air quality and effective implementation of the mitigation strategies. 8 new CAAQMS stations are proposed to be installed in Hyderabad, Patancheru and Sangareddy in the year 2022 under the National Clean Air Program. Further, Manual Monitoring stations are also being increased in the non-attainment cities of Telangana at Nalgonda and Patancheru.

Proposals have been submitted to the Central Pollution Control Board (CPCB) for sanction of additional monitoring locations under the National Ambient Air Quality Monitoring Program covering different locations in the state. These stations will be commenced on approval from the CPCB.

5. State Action Plan:

The State Action Plan is to provide a guidance and mandatory activitiesbeimplementedby different stakeholder departments, civil societies and others concerned towards reducing the emissions and improving the ambient air quality. The increasing evidence on the health effects of air pollution from the studies across the globe shall be an alarm for sensitising the public, stakeholder departments and civil societies towards concerted actions for reducing the air pollution and thus providing a better and healthier society for the future generations.

The Ambient air quality data of the TSPCB and that of the CPCB indicates that 2 out of the 12 notified parameters in ambient air under the National Ambient Air Quality Standards(NAAQS) are exceeding the standards. The Particulate matter of size less than 10 microns called as Respirable Particulate Matter(PM10) and Fine Particulate Matter(PM2.5) are exceeding the standards in some of the places in the State. The major sources of air pollution in Telangana are Industrial Emissions, vehicular emissions, Construction and Demolition waste, Road Dust, Emissions from burning of Wastes, Emissions due to burning of agro residues and household emissions.

The Health impacts of PM10 are known to cause nasal and upper respiratory tract health problems. Fine particles (PM2.5) penetrate deeper into the lungs and cause heart attacks, strokes, asthma, and bronchitis, as well as premature death from heart ailments, lung disease and cancer. Further studies of a UK based firm along with CII indicates loses of upto Rs.7.0 Lakh Crores annually i.e., about 3% of the GDP due to Premature mortality, loss of productivity and loss of consumer footfall. The Global Burden of Disease(GBD) – 2019 report also indicate 1.67 million deaths attributable to air pollution in India.

A separate action plan for improving the air quality by reducing the Particulate Matter emissions are under implementation in Hyderabad, Patancheruvu, Sangareddy and Nalgonda. The action plan is prepared in line with the existing action plan under implementation in the non-attainment cities and taking into account of the CPCB format communicated for preparation of the action plan.

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The action plan provides the actions under Implementation and proposed

- 1. Industrial Emissions:
- 2. Vehicular emissions:
- 3. Construction and Demolition waste and Road Dust,
- 4. Emissions from burning of Wastes and agro residues
- 5. Household emissions.

The action plan proposed for the above activities and others are tentative. The regulatory actions are continuous and any amendments in terms of the regulatory activities will be continued as they are in force. Those actions that require the budget will be taken as per the availability and approval of the financial allocations.

I. Industrial Emissions:

Telangana is having a total of 10655 industries of these, 3198 are Red category, 3870 are Orange category, 895 are Green category and 2692 are White category industries. These industries are monitored periodically by the Telangana State Pollution Control Board and action is initiated against non-complying industries. The district wise details of the industries are placed as **Annex-II.**

A. Policy for permitting new industries in Critically Polluted Areas(CPAs):

Central Pollution Control Board during the year 2009-10 has carried out comprehensive environmental assessment of 88 industrial clusters across the country and rated them on the concept of Comprehensive Environment Pollution Index (hereinafter referred to as CEPI). Out of 88 Industrial clusters, 43 industrial clusters in 16 States having CEPI score of 70 and above were identified as Critically Polluted Areas (CPAs). Further 32 industrial clusters with CEPI scores between 60 & 70 were categorized as severely polluted areas (hereinafter referred to as SPAs). It was suggested that areas having CEPI score between 60 to 70 i.e., severely polluted industrial cluster shall be kept under surveillance and pollution control measures should be effectively implemented. Whereas the Critically Polluted Industrial Areas need further detailed investigations in terms of extent of damage and formulation of appropriate remedial action plan. Three industrial clusters were monitored in the Telangana State and the CEPI scores were assessed as below:

S.No	Name of the industrial cluster	CEPI Score
1	Patancheru-Bollaram	75.42 (Critically Polluted Area)
2	Kattedan	60.17
3	Kukatpally	66.46

EFS&T Department, Government of Telangana constituted the Committee for preparation of Action Plan for restoration of environmental qualities in respect of identified three Polluted Industrial Clusters (PIA) viz. (Patancheru-Bollaram, Kukatpally and Kattedan) taking into account the critical parameters pertaining to these areas and submitted final Action Plans to the CPCB on 11.03.2019. The main action points and the status of implementation is placed as **Annex-III.** Further, the Government of Telangana is not permitting certain new industries under red and orange category since year 2013. The copies of the GO Ms.No.20 dated:01-03-2013 and GO.Ms.No.4 dated:20.01.2018 are placed as **Annex-IV.**

B. Laying of City Gas Distribution networks and shifting of industries to gaseous fuels:

The following four suppliers have been given exclusive territorial distribution in the Telangana state.

- 1. Bhagyanagar Gas Limited
- 2. Indian Oil Corporation Limited
- 3. Megha Engineering India Limited
- 4. Torrent Energy Pvt. Ltd.

The total investments of ~Rs 2200 Crores has already been made till date in Telangana for creating CGD infrastructure and the likely investment planned for next 3 years is ~Rs. 6000 crores. Presently, CNG dispensing stations in Telangana are 110 and it is proposed to expand to 1500 dispensing stations in the next one decade. The details of the network laid, proposed and the investments made are as follows:

CGD agencies	Network laid till now	Network proposed by agencies
BGL	MDPE- 4094KM	MDPE- 2500 KM
	Steel- 70 KM	Steel- 250 KM
	CNG - 85 stations	CNG-10-12 stations
IOCL	MDPE- 4KM	Steel network-10KM
	Steel - 7 KM	MDPE-6 KM
MEIL	MDPE- 3000KM	
	Steel - 600KM	
	CNG dispensing -10	
Torrent	MDPE-90 KM	MDPE-100 KM
	Steel-103 KM	Steel-103 KM
	CNG -14 stations	CNG -40 stations by 2027

The State Government is in the process of preparation of the policy for uptake of Natural Gas in transportation, industries and commercial /household kitchens to reduce the impact of the air pollution.

The industries in the non-attainment cities are being pursued for taking up the Piped natural Gas instead of the conventional fuels. At present 48 industries shifted to CNG and 35 industries to LPG fuel.

C. Continuous Power Supply & Non-operation of DG sets: Telangana is a state with continuous power supply and meeting the power supply demands. The demand and supply in the last one year shows nil deficit. As an another major feather in the cap of laurels to the State of Telangana, the High Level Eminent Jury under the aegis of Skoch Group of India has selected Telangana State Transmission Corporation (TSTRANSCO) for the "SKOCH AWARD 2019" for Outstanding Contribution in Transmission Sector by adopting the advanced technologies in relieving the transmission congestion by reconducting of existing ACSR Zebra conductor with High Capacity HTLS Conductor in 8No.s of 220KV Lines in Hyderabad city covering a total of 136 circuit kilometers.

The Energy requirement is 72666.979 Million Units in the last one year from 1st December, 2020 to 30th November, 2021 and the energy requirement is met. There is a continuous power supply to all the sectors, thus rendering the usage of the DG sets to a minimum period in the state.

D. Monitoring of the Industries:

- a. All the 17 categories industries 119 numbers have installed the Continuous Emission Monitoring Systems (CEMS) for the point source emissions and a link of the same is connected to the TSPCB and CPCB website.
- b. These industries have also provided the Continuous Ambient Air Quality Monitoring Systems (CAAQMS) and are connected to the CPCB and TSPCB websites.

- c. The Fugitive Emission Standards are prescribed for the industries wherever required and regular monitoring of the same is being carried out. The industries were instructed for operation with enclosures, suction hoods with APC and sprinklers.
- d. Interlocking system of the Air Pollution Control(APC) equipment with the process plant is also made mandatory in all the industries to ensure the functioning of the APC.
- e. Separate Energy meters for the APC is also made mandatory for certain category industries to ensure the operation of the APC
- f. Siting guidelines for certain air polluting industries like sponge iron industries, stone crushers, hot mix plants are notified (Annex-V) and the same are under implementation
- g. Green belt of 5 mtrs is being insisted in the industries with air pollution sources to mitigate the air pollution.
- Most of the industries are opting for heat recovery systems for better utilisation of the heat and to cut the utilisation of the fossil fuels thereby emissions.
- i. The industries are regularly being monitored for compliance verification and actions are being initiated in case of non-compliance by way of issuing directions, conditional bank guarantees and closure of the industry.
- E. Policy to set up E-Waste recycling unit in Industrial areas: State government has notified the E-waste policy in the year 2017. A copy of the policy is placed as Annex-VI. The total e-waste generated in the state is 37857 Tons/year. There are 12 dismantling and 3 recycling units. The waste that is processed during 2019-2020 is 37857 tons/year by authorized dismantlers and recyclers. CPCB has issued Extended Producer responsibility (EPR) authorization to 28 numbers of producers in the state. The filing of the returns are mandated by all the e-waste handling producers, dismantlers and recyclers.

- F. LPG Coverage in Telangana: As per the report of Petroleum planning and analysis cell under the Ministry of Petroleum & Natural Gas dated 01.01.2020, the LPG penetration in the state is 116.6%.
- G. PNG Coverage: The new townships are encouraged to opt for PNG coverage wherever feasible. The PNG connections are being issued in Hyderabad and as of now 1.54 lakh house holds having PNG connections. Sales volume for 2020-21 for domestic PNG is 8759110 SCM
- H. **Co-processing of Hazardous Waste in Cement Kilns**: The incinerable waste generated in the state is being used for co-processing in the cement industries as a result of which the fuel used for incineration and the operation of the APC are saved leading to lesser air pollution and is managed in an environmentally sound methods. The amount of material co-processed in cement plants during the year 2020-21 is 1,27,103 Tons.

Common guidelines /Action points for implementation in industrial estates and areas to reduce the air pollution:

- Extensive Plantation be taken up within the industries and also in the industrial areas by the concerned industries, industrial associations, TSIIC and others.
- The roads in the industrial estates / areas are to be maintained regularly without potholes, end to end pavementand sweeping to remove the silt-TSIIC, IALA and ULB
- The loading and unloading operations are to be taken up in covered areas to prevent any lofting of dust-TSPCB & Industries Department.
- Industries shall be mandated with suitable air pollution control equipment to meet the environmental standards-TSPCB
- All in-charges of industrial estates and areas to monitor the construction works, loading and unloading activities. Also to have a dedicated public redressal system to address the grievances-TSIIC & IALA.
- The monitoring of all the industrial estates and areas to be carried out at regular intervals for compliance verification and to take corrective measures required if any.-TSPCB

- All the air polluting industries with boilers, furnaces and any other should be monitored for compliance verification at regular intervals. The online Continuous Emission Monitoring and Ambient Air Quality Systems shall be made mandatory based on the category of the industry-TSPCB.
- All concerted efforts are to be made for switching over to cleaner fuels like CNG, LPG and wherever new industries are coming up they should be mandated to use cleaner fuels wherever available- TSIIC, TSPCB & industries dept
- The Pollution Under Control(PUC) for the vehicles plying in the estates shall be mandatory-Industry representative and IALA.
- All measures to be taken to prevent any sort of open burning and all such incidents shall be stopped and punitive action to be initiated.-TSIIC & IALA.
- All fire accidents within the industrial estate / area are to be mitigated at the earliest and the environmental damage need to be fixed as per the procedures.--TSIIC,TSPCB, Industries & IALA.
- Hot spots for air pollution need to be identified within 30 days of approval of the state action plan by TSIIC, TSPCB and Industries Department. A micro action plan has to be prepared for mitigation of the air pollution at such hot spots and placed before the competent authority (District Collector) for approval and implementation.
- A half yearly report has to be prepared by TSPCB, TSIIC and Industries Department on the compliance status of air pollution with respect to PM₁₀ and PM _{2.5} along with the actions initiated as per the state action plan and approved micro action plan. The recommendations if any are to be made.

2. Vehicular emissions:

Telangana has been recording a sustained growth in the number of vehicles over the years. The development of good infrastructure, besides the state emerging as a major IT hub has enabled the accelerated growth of vehicles. The following table provides the details of the vehicles in the state:

	Details of total vehicles in the State with break-up in Vehicular Emissions							
	As Per	Bharath S	tage Norms	Vehicle Stren	gth as On 17/1	12/2021		
SL. NO	CATEGORY	BOV	BSII	BSIII	BSIV	BSVI	Grand Total	
1	Autorickshaw	100	12,358	170,548	107,369	15,535	305,910	
2	Contract Carriage	NIL	1,072	1,316	1,471	60	3,919	
3	Educational Institute Buses	NIL	1,848	4,186	5,914	39	11,987	
4	e-Rickshaw/e-Cart	1	NIL	NIL	NIL	NIL	1	
5	Goods Carriages	783	38,906	104,336	160,477	43,003	347,505	
6	Maxi Cab	2	1,426	1,531	10,632	372	13,963	
7	Motor Cab	308	2,340	12,183	59,779	3,167	77,777	
8	Motor Car	1,327	1,757	177,292	890,277	253,529	1,324,182	
9	Motor Cycle	8,696	477,287	4,226,375	2,430,674	971,595	8,114,627	
10	Other Vehicles	NIL	1,930	37,318	4,045	1,045	44,338	
11	Private Service Vehicles	NIL	113	281	237	53	684	
12	Stage Carriages	NIL	973	4,372	3601	4	8,950	
13	Tractor and Trailers	0	459	309,520	1198	64	311,241	
	Grand Total	11,217	540,469	5,049,258	3,675,674	1,288,466	10,565,084	

The total number of vehicles using CNG in Telangana is autorikshaws-12395, four wheelers-12593, RTC Buses-167and the battery vehicles are 10682.

Details of the Fuel Dispensing Retail Outlets are as follows:

Details	IOC	BPC	HPC	ESSAR	RIL	SHELL	TOTAL
Retail outlets	1361	988	1088	276	38	2	3753
SKO-LDO	109	31	76	0	0	0	216
ALDS	24	10	20	0	0	0	54
CNG	32	21	40	0	0	0	93

Additionally new CNG stations proposed in 2021-22 are 24 (HPC-6, IOC-10, BPC-8)

Fuel Consumption Details in Telangana:

2020-21	MS(Petrol)	HSD
Quantity in KL	1540973	2881325

A. Notification of Phasing out old vehicles(Commercial:10 years and private:15 years):

The Govt. issued G.O. Ms.No.124, dated: 07.10.1999 prescribing that no four wheel and above vehicles of more than 15 years old are allowed to Ply unless scientifically tested and certified by competent authority and renewed of fitness certificate in the HUDA. 3 wheeler vehicles which have covered 15 years shall not ply within the HUDA. The details of the vehicles category wise, 15 years old vehicles as on 17/12/2021.

Cate	Category Wise, 15 Years Old Vehicles As On 17/12/2021						
S.No	Category	Count					
1	Autorickshaw	71784					
2	Contract Carriage	3794					
3	Educational Institute Buses	5017					
4	Goods Carriages	133512					
5	Maxi Cab	4039					
6	Motor Cab	16682					
7	Motor Car	357074					
8	Motor Cycle	2190391					
9	Other Vehicles	22926					
10	Private Service Vehicles	1465					
11	Stage Carriages	7493					
12	Tractor and Trailers	91147					
	Total 2905324						

B. Policy of Scrapping the old vehicles: Ministry of Road Transport and Highways have issued draft notification E.S.R.190(E) dated 15th March, 2021 on Motor Vehicles (registration and Functions of vehicle scrapping facility) Rules,2021 as per the section 59(4) of the Motor Vehicles Act, 1988(59 of 1988). The Rules once finalized the state will implement the same as Motor Vehicles Act is governed by the Central Government.

Telangana State Road Transport Corporation (TSRTC): Vehicles which have covered life of 15 years or 13.0 lakh kms whichever is earlier are condemned for scrap. The policy for scrapping of buses is 12.0 lakh Kms for all types of buses (will be covered with in 10-12years) and for city type of buses it is 15years or 13lakh kms whichever is earlier is the scrapping criteria.

C. Public Transport:

i) Mass Rapid Transit System: Mass Rapid Transit is under implementation only in the Million Plus city in Telangana. Hyderabad is the only Million Plus City in Telangana. Hyderabad Metro Rail (HMR) is the world's largest Public-Private Partnership (PPP) project in the Metro rail sector. Hyderabad Metro Rail (HMR) Project is an integrated urban transport development project with inter-modal connectivity and convenient sky walks and last mile connectivity.

The Hyderabad Metro Rail Network will cover a total distance of around 69.2 Km across three corridors:

- Corridor I : Miyapur to LB Nagar
- Corridor II : JBS to MGBS
- Corridor III : Nagole to Raidurgam

Further, Government is planning for Light Rail Transit System (LRTS) from KPHB to Narsingi having the corridor length of 25.40 km is in pipe line and the feasibility reports are under preparation.

MMTS: South Central Railway is operating the Multi Modal Transit System(MMTS) in Hyderabad to surrounding suburban places

TSRTC: City buses are under operation in the Hyderabad and Warangal which has a population of Million plus and over 5 lakhs respectively.

D. Policy for Augment of E-vehicles: The 'Telangana Electric Vehicle & Energy Storage Policy 2020-2030' builds upon FAME II scheme being implemented since April 2019 by Department of Heavy Industries, Govt. of India, where it also suggested States to offer fiscal and non-fiscal incentives to further improve the use case for adoption of EVs. The following are the important incentives provided by the Government to encourage the e-mobility.

a. Incentives for Electric Two Wheelers

- i. 100% exemption of road tax & registration fee for the first 2,00,000
 Electric 2 Wheelers purchased & registered within Telangana.
- b. Incentives for Three-Seater Auto-Rickshaws

- i. 100% exemption of road tax & registration fee for first 20,000 Electric 3
 Wheelers purchased & registered within Telangana
- Retro-fitment incentive at 15% of the retro-fitment cost capped at Rs.
 15,000 per vehicle for first 5,000 retrofit 3 seater auto rickshaws in Telangana
- iii. Financing Institutions shall be encouraged to provide a hire-purchase scheme at discounted interest rates.
- c. Incentives for Electric 4-Wheeler commercial passenger Vehicles such as Taxi, Tourist Cabs, etc.
 - i. 100% exemption of road tax & registration fee for the first 5,000
 Electric 4-Wheeler commercial passenger Vehicles such as Taxi, Tourist
 Cabs, etc. purchased & registered within Telangana.

d. Incentives for Light Goods Carriers - including Three Wheelers (goods)

- i. 100% exemption of road tax & registration fee for first 10,000
- ii. Electric three-wheeler (goods), e-carriers as well as electric Light Goods carriers purchased & registered within Telangana.

e. Incentives for Private Cars

 i. 100% exemption of road tax & registration fee for the first 5,000
 Electric 4-Wheeler private vehicles purchased & registered within Telangana

f. Incentives for Buses

- i. 100% exemption of road tax & registration fee for the first 500 Electric buses purchased & registered within Telangana.
- ii. State Transport Units shall also be encouraged to purchase Electric buses.

g. Incentives for Tractors

 100% exemption of road tax & registration fee shall be applicable for electric tractors purchased and registered in the state of Telangana as per the existing rules/guidelines applicable for tractors by Transport Department, Govt. of Telangana.

II. Electric Vehicle Charging Stations

Oil Co	No. of Stations	Proposed for 2021-22	Total
IOC	27	180	207
BPC	24	15	39
НРС	20	157	177
Total	71	352	423

The following infrastructure is proposed under FAME-I & FAME-II by TSREDCO

- Total EV Charging Station by FY 2025-26: 196 No's (171 EVCS & 25 Battery Swapping).
- Upfront Electrical Infrastructure Cost for 3 No. of EVCS under Fame-I & 118 No's of EVCS under FAME-II in GHMC Limits
- Installation of 50 No's of EVCS & 25 No's of Charging cum Battery Swapping Stations along with retorfitment of 250 No.s 3-Wheelers autos in GHMC Limits by TSREDCO
- E. Notification and enforcement of PUC norms: In the state, there are a total of 235 PUCs and out of which 208 are active and 27 are expired. The integration of the issue of certificates is maintained through online and with calibration.

F. Green Tax is imposed on the vehicle as follows:

SI. No.	Class of Vehicles	Amount of Tax
1	Transport Vehicles that have completed 7 years of age from the date of their registration	Rs.200/- (Per annum)
2	Non-Transport Vehicles that have completed 15 years of age from the date of their registraton.	
	(a) Motor Cycles (b) Other than motor Cycles	Rs.250/- (for 5 years) Rs.500/- (for Five Years)

* There shall not be any levy of Green Tax if the vehicle is operated by LPG, CNG, Battery or Solar Power.

G. Refilling stations retrofitted with vapor recovery system: The three oil companies together in the state have installed the VRS at 41 locations the details of which are enclosed in Annex-VII.

- **F. Traffic Management:** In million plus cities of Telangana, Traffic Integrated Management System (HTRIMS) is installed, the features of which are as follows:
 - 1. Automated and centrally controlled signal junctions,
 - 2. Vehicle Actuated Technology (VAC)
 - 3. ATC (Area Traffic Control) with Synchronized signal and corridor management.
 - 4. Cameras to monitor the traffic congestions, density on each road.
 - 5. Fall back Connectivity, Full backup power management, **Green energy initiative** (Solar power backup).
 - 6. Variable Message Sign boards (VMS) to increase awareness
 - 7. Synchronization of corridors.
 - 8. Signalling services around the clock, traffic command centres, traffic information online in the portal are special features.

In all other cities and major towns the traffic management is carried out

G. **Developing of parking facilities:** Augmenting the parking facilities in all the cities and towns: Government has issued order for providing free parking at all commercial establishments.Designated parking sites are earmarked for the para-transit vehicles and cabs. Bus shelters and bay areas were developed off the carriageway to avoid obstruction of the free flow of the traffic. Parking facilities were improved at all the

major towns facilitating the free flow of traffic and impounding of the vehicles with penalties for parking at carriage way including towing facilities were provided at all major towns.

- H. Common guidelines /Action points for implementation to reduce the traffic congestion and road dust:
 - All commercial goods vehicles may not be allowed to enter and ply within the city and major towns from 8.00am to 9.00pm. This will reduce the traffic congestion and also the disturbances caused due to loading and unloading activities.-ULB and Traffic Police.
 - To manage the traffic in a better way, medians may be developed with greenery on all the main arterial and radial roads duly encouraging lane discipline- ULB and Traffic Police
 - Separate bus bays and designated parking for para-transit modes is to be allocated to prevent traffic congestion and facilitate commuters **ULB and Traffic Police**.
 - To increase the average speed, the number of intercepts are to be reduced and U turns to be provided to facilitate smooth flow of traffic-**ULB and Traffic Police**.
 - End to end pavement to be taken up in all the identified traffic corridors and junctions.ULB.
 - Regular cleaning of the roads and removal of silt from roads after every monsoon and before summer. Monitoring by point person from ULB ULB.
 - Online linking of PUC for the vehiclesand verification-RTA and Traffic police.
 - Enforcing lane discipline at major traffic junctions through linking of IP cameras to command control centre and levying penalties-**Traffic Police**.
 - Identification for provision of plantation to have green cover wherever possible-ULB, R & B.
 - Development of vertical gardens where the green cover is not possible-ULB.
 - Right turn to be regulated for free flow of traffic at traffic junctions by way of providing U turns. **ULB and Traffic Police**
 - Construction of water fountains at major traffic junctions wherever feasible-ULB
 - Earth works on the main traffic corridors to be restricted with containment of loose soil and providing enclosures-**ULB and other stake holders**.

- Parking restrictions-ULB and Traffic Police
- The Ambient Air Quality monitoring of all the major towns are to be carried out at regular intervals for compliance verification and to take corrective measures required if any.-TSPCB
- The AAQ data of the town need to be disseminated through the ULB/ District Portal.
- Hot spots for air pollution need to be identified within 30 days of approval of the state action plan. A micro action plan has to be prepared for mitigation of the air pollution at such hot spots and placed before the competent authority (District Collector) for approval and implementation. (District Collector, ULB and Traffic Police Department)
- A half yearly report has to be prepared on the compliance status of air pollution with respect to PM₁₀ and PM _{2.5} along with the actions initiated as per the state action plan and approved micro action plan. The recommendations if any are to be made.
 (TSPCB, ULB and Traffic Police Department).

3. Construction & Demolition waste and road dust management:

3a. C&D waste management:

Government of Telangana is following the Construction and Demolition (C&D) Waste Management Rules, 2016. A total of 142 ULBs are in Telangana. The total C&D Waste generation is 2255 TPD (GHMC – 1763TPD & other ULBs – 492 TPD). Two C&D recycling plants with 500 TPD capacities each at Jeedimetla and Fathullaguda is under operation. Closed containers for transporting C&D waste are in place for GHMC area and surroundings.

The penalties proposed for offences under C&D waste management in GHMC are proposed and sent to Government for approval for the following activities.

- a. For illegal transportation and dumping of C&D waste at unauthorized/ objectionable places/ points like nalas, lakes, public utility open places etc.
- b. For illegal disposing of C&D waste generated through any activity at place (like roadside, open plots, streets, dumper bins) other than notified by GHMC.

The following conditions are prescribed for controlling and preventing the Air Pollution while granting the building construction permission:

As per Clause 3(e) of G.O.Ms.No.168 MA, dated: 07.04.2012, it is mandatory to obtain the Environmental Clearance from State Environmental Impact Assessment Authority (SEIAA), MoEF&CC, Govt. of India for the building with 20,000 sq. mts. and above built-up area. G.O.no 168 enclosed **as Annex-VIII.**

All the Construction activities requiring the Environmental Clearance are mandated with an environmental management plan and the compliance of which are being monitored.

The following actions are in progress with regards to the implementation of the C&D rules in the remaining ULBs

- Proposal for two more C&D waste processing facilities are in pipeline in GHMC
- 65 ULBs with significant C&D waste generation are grouped into 6 clusters. RFP for C&D waste management on PPP basis in 6 clusters. CDMA invited tenders, but no bidder participated.

- Balance 77 ULBs, with smaller quantities of C&D waste shall process C&D waste independently.Action Plan has been prepared by the ULBs for C&D waste management.
- For establishment of construction and Demolition processing plants CDMA had invited tenders for selection of agency/concessionaire on PPP mode – DBFOT basis covering 65 ULBs grouped in 6 Clusters, but no bidder participated. Retendering under process.
- > ULBs are empowered to levy penalty on instances of illegal debris dumping.
- Separate site for storing C&D waste is earmarked by all 139 ULBs (excluding Kothur&Nakrekal).
- The process of identifying suitable sites to establish the C&D Waste Processing Facilities in the ULBs on standalone basis wherever it is feasible is under progress.

3b: Road Dust Management:

Maintenance of the Road is being practiced by all the ULBs and R & B. Report on Data Entry Status for Roads enclosed as **Annex-IX.**The maintenance work fall in three categories of maintenance as under:

(i) Routine Maintenance: These are routine activities to be performed on a regular basis throughout the year. It consists of both off-carriageway and on-carriageway activities.

Most common routine maintenance activities are as under:

- Filling potholes, patching surface and repair edges of pavement
- Repair shoulders and side slopes
- Clear drains, allowing free passage of water
- Remove debris from roadway and drains
- Maintain road signages and pavement markings
- (ii) **Periodic Maintenance**: Periodic maintenance covers renewal of road surface depending upon the initial construction standards and quality, traffic and weathering effect.

(iii) **Others:** During emergencies on account of natural phenomenon or any other situations like accidents.

All the ULBs are maintaining the roads optimally. The plantation activity is being taken up regularly on the kerbside and also in the medians under State Programme of Haritha Haram. In GHMC Total Serviceable Length (km): 2530km Road length under mechanized sweeping (Transport:1820km+CRMP:710km). The total number of mechanical sweepers deployed are 42 at 43 road stretches. HMDA have procured 4 MRS and deployed for the maintenance of the Outer Ring road and other radial roads.

Further, Commissioner and Director Municipal Administration called for tenders for regular sweeping of the roads through mechanical road sweepers in those ULBs where the MRS are not deployed.

Common guidelines /Action points for implementation to reduce the emissions from C&D and Road dust:

- All the work /construction sites to be covered/enclosed to prevent the lofting of the dust - occupier
- The demolition waste works if any approved, have to be taken up with a tie up for lifting the waste to the processing /secured placed-UKB/PRRD
- The C&D waste carrying vehicles shall be covered or wherever possible closed containers to be used.-ULB
- All such vehicles operation shall be taken up from 9.00pm to 6AM. This will reduce the traffic congestion and also the disturbances caused due to loading and unloading activities.-ULB and Traffic Police.
- End to end pavement to be taken up in all the identified traffic corridors and junctions-ULB.
- Regular cleaning of the roads and removal of silt from roads after every monsoon and before summer. Monitoring by point person from ULB ULB.
- Identification for provision of plantation to have green cover wherever possible-ULB, R & B.
- Development of vertical gardens where the green cover is not possible-ULB.
- Earth works on the main traffic corridors to be restricted with containment of loose soil and providing enclosures-**ULB and other stake holders**.

- The Ambient Air Quality monitoring of all the major towns are to be carried out at regular intervals for compliance verification and to take corrective measures required if any.-TSPCB
- The AAQ data of the town need to be disseminated through the ULB/ District Portal.
- Hot spots for air pollution need to be identified within 30 days of approval of the state action plan. A micro action plan has to be prepared for mitigation of the air pollution at such hot spots and placed before the competent authority (District Collector) for approval and implementation. (District Collector, ULB and Traffic Police Department)
- A half yearly report has to be prepared on the compliance status of air pollution with respect to PM₁₀ and PM _{2.5} along with the actions initiated as per the state action plan and approved micro action plan. The recommendations if any are to be made. (TSPCB, ULB and Traffic Police Department).

4. Emissions from burning of the waste:

The EFS&T Department vide G.O.Ms.No. 27 dt. 10.07.2017(Annex-X) issued Notification prohibiting open burning of waste and utilization of RDF as fuel in power generation and cement plants. The same is under implementation.

- a. Total number of ULBs and their population: 142 (including GHMC) & population of 2.06 crores.
- b. **Current Municipal Solid Waste Generation in ULBs:** 10,409 TPD (GHMC- 6098 TPD and remaining 4311 TPD by the 141 ULBs)).
- c. Municipal Solid Waste Management in the rural bodies of PRS is placed as Annex-V
- d. Number, installed capacity and utilization of existing MSW processing facilities in TPD (bifurcated by type of processing eg- Waste to Energy (Tonnage and Power Output), Compost Plants (Windrow, Vermi, decentralized pit composting), bio-methanation, MRF etc:

Details of the facilities existing in the ULBs.

e. The **Greater Hyderabad Municipal Corporation (GHMC)** has an Integrated MSW facility with a capacity of 7000 TPD capacity in operation at Sy.No.173, Jawahar Nagar, Medchal-Malkajigiri. The capacities of different facilities are as follows:

Facility	Number of Facilities	Capacity	Present Processing
Material Recovery	1	7000TPD	6794TPD
Plastic Recycling	1	50TPD	50TPD
Composting	4	4000 TPD	3805 TPD
Bio methanation	1	5 TPD	5 TPD
RDF	2	3000 TPD	2989 TPD
Waste To Energy Plant	1	19.8 MW	RDF of 1400 TPD
Secured Land fill Capacity	1	1309870 MT	1289870 MT
and utilisation details			

f. The details of facilities of the 141 ULBs is placed at **Annex-V the summary of which is** as follows:

Total Solid Waste Generation in the State is 10, 409 TPD (GHMC-6098 TPD and other than GHMC 4311 TPD)

• GHMC area Integrated MSW capacity of 7000TPD exists.

- In the remaining ULBs, the composting and DRCC are available in all the 141 ULBs and 1861 TPD of the waste is processed. The gap in the treatment is 2450 TPD and the actions proposed are detailed below..
- A total of 856TPD is generated from 32 ULBs located within PRS(GHMC is in Musi stretch)and the waste processed is 343.05TPD.

Door to Door Collection	Source Segregatio n	Composting / Vermin- composting	Dry Resource Collection Centres	Biogas
100 %	53%	141 ULBs	141ULBs	Greater Warangal Municipal Corporation - 2 Bio-methanation 1 TPD to operate a power plant of capacity 24KW each per day Siddipet – 1 TPD (not in operation)

g. Waste – to – Energy Plants: (Number/names of towns/capacity)

SI.	Plant Location	Plant	Status of Operation
No.		Capacity	
1	19.8 MW Capacity at	19.8MW	WtE was commissioned in August
	Jawaharnagar		2020 and in operation to its full
	(Expansion to 48MW is under		capacity
	consideration)		Obtained EC for the expansion
2	11 MW Waste to Energy	11.0MW	Construction of plant was
	Capacity by M/s RDF Power		completed in 2018 but the
	Projects, Bibi Nagar		promoter IL&FS fell into financial
			crisis. Recently the IL&FS was taken
			over by M/s Ever Enviro Resource
			Management Pvt. Ltd. and planning
			to revamp the plant.
3	12 MW Waste to Energy	12.0MW	Land was acquired by the
	Capacity Yacharam,		concessionaire M/s SVGPPL.
	Ibrahimpatnam		Presently, It is under financial
			closure to commence the plant
1	14.5 MW Capacity at Dundigal	1/1 51/1/1/	Construction of plant is under
+	14.5 WW Capacity at Dunuigan	14.310100	progress and expected to
			commission it's operations by the
			end of 2022.

Action plan to bridge gap between Installed Capacity and Current Utilization of processing facilities (if Gap > 20%)

- i. Initiated on-site composting across the state of Telangana for Bulk Waste generators and Individual Households.
- ii. C&DMA vide Cir.Roc.No.178853/2021-H2, Dt.12.10.2021 have issued instructions along with action plan and timelines for 100% Source Segregation of waste in Phase wise manner i.e., 1st Phase-Source segregation in Commercial, Institutional and other bulk waste generators (22nd Oct to 30th Nov, 2021), 2nd Phase-Source Segregation in Organized Residential Colonies, RWAs and apartments (1st Nov to 30th Nov, 2021) and 3rd Phase-Source Segregation in Slums, unplanned colonies and other areas (18th Nov to 30th Dec, 2021)
- iii. Enhancing capacities of DRCC to meet 100% Dry Waste handling within 6 months.
- iv. 2 agencies M/s Cube Bio-Energy and M/s Sagar Motors have been shortlisted and are proposed to provide MSW processing facilities in 52 ULBs made into 04 clusters.
- v. Balance 78 ULBs are grouped into 5 clusters and tenders were floated for processing of fresh waste on 30.9.21 and 9 bids were received. The Committee headed by the Principal Secretary to the Government, MA&UD Department met on 09.08.2021 and decided to call the tenders and call for fresh tenders. As such fresh tenders were called on 12.10.2021 and last date for receipt of the bids is on 01/11/2021.
- vi. Fresh Tender shall also be floated within a week for undertaking Biomining of legacy waste in balance 78 ULBs grouped into 5 clusters.
- vii. Further, timeline for completion of 100% MSW processing facilities in 52 ULBs(for which bidders are already selected) is 9 Months and 78 ULBs (For which Bids are under evaluation) is one year
 - Legacy dumpsites: No. and area (in acres) of uncontrolled garbage dumpsites.
 - i. No. of Dumpsites: 160
 - i. Total Area in Acres: 965.31

Initiated Bio-remediation in the 5 ULBs and quantity of legacy waste processed is 99,177 MTs

Common guidelines /Action points for implementation to stop the burning of the waste:

- Public Awareness to be increased on the segregation and on open burning-ULB
- Awareness to the ULB staff for stopping the open burning practice -ULB
- Implementation of the penalties on open burning- ULB and TSPCB.
- Public Grievance redressal portal to be strengthened with open burning related tracking of complaints and recurrence areas to be kept under surveillance through IP cameras – ULB and TSPCB
- Segregation of the waste to be promoted ULB
- Emphasis of the zig zag technology in the brick kilns with air pollution Control Equipment to be made mandatory –Revenue department

5. Emissions due to burning of agro residues:

The stubble burning is not a practice in the state of Telangana and agriculture department is monitoring the issue of stubble burning regularly. The parks operated by the ULBs and other agencies have compost pits for handling the foliage and also to have sustainability for the parks to use them as manure

After, the harvest of the paddy crop, the straw is used as fodder and the stubble are incorporated into the soil before land preparation of the second crop and cotton crop after the drying the plant residues will be incorporated into the soil.

Agriculture, horticulture and forest departments to take up the following actions:

- Agriculture and Horticulture department to establish mechanisms for preventing open fires and burning of agro residues.
- Awareness campaigns are to be conducted to the farmers on the air pollution issues related to the stubble burning.
- Develop use of biomass / crop residue based pellets mass blending with coal and its co-firing in thermal power plants with blending ratio which needs no modification in boilers.
- A Policy for supply chain mechanism for in-situ and ex-situ management of stubble burning to be made and awareness on the same to be created
- Collaboration with ISRO and preparation of Satellite based maps for monitoring of fire incidence Forest and agriculture department

6. Household emissions:

Pradhan Mantri UjjwalaYojana was launched by Prime Minister of India Narendra Modi on 1 May 2016 to distribute 50 million LPG connections to women of Below Poverty Line families. Pradhan Mantri UjjwalaYojana 2.0 to offer 1 crore more LPG connections. The same is under implementation. The penetration of the LPG in the Telangana state is 124.36% as on February, 2022.

Annex-I Indicative template for State Action Plan

1. Industrial Emissions

S. No.	Activities	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
1	Policy for permitting new industries in Critically Polluted Areas (CPAs)	Red and orange category not permitted	Completed	100%	Nil	-	-
2	Guidelines for laying city gas distribution network	Policy and guidelines for laying city gas distribution is being prepared	December, 2022	5 years to cover GHMC area	Under the scope of the territorial distributors	-	-
3	Policyforreplacementofheavyoil(eg.,furnaceoil,dieseletc.)basedindustriestoalternateenergysources(CNG/ PNG/Electricity)	Policy on usage of CNG/ LPG in non- attainment cities is under consideration	December, 2022	Non- attainment cities by 2025	Complete details on the financial implication will be available on issue of policy	-	_
4	Rules and Regulations on uninterrupted power supply in State/ UT	uninterrupted power supply is ensured in the state	Completed and ongoing	100% coverage	Nil	-	-
5	Policy for use of DG sets	Uninterrupted power supply and hence DG	Completed and ongoing	100% coverage	Nil		

S. No	. Activities	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		sets are of minimal use					
6	Policy regarding installation of CAAQMS based on the emission potential or capacity of air polluting industries.	17 category industries have installed the CAAQMS & CEMS	Completed & Ongoing	100%	Nil	10 lakhs/ Annum- TSPCB	10 lakhs/ annum
7	Mechanism to be devised for expansion of OCEMS to air polluting industries are not covered currently (such as emission from utility stacks in 17 categories, etc.)	Other air polluting industries under red category have installed CAAQMS & CEMS to be implemented for the industries equipped with boilers of capacity 3TPH and more in non- attainment cities and CEPI areas.	December, 2022	100%	Nil	-	-
8	Mechanisms to control fugitive emissions sources.	Stipulated at the time of issue of Consent for Operation to reduce the fugitive emissions	Completed & Ongoing	100%	Nil Regulatory activity	-	-

5. N	o. Activities	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		by installing appropriate APC to meet the prescribed standards					
9	Regulations for conversion of brick kilns to clean technologies	Zig zag technology implementation with APC	Two years	50% per year to be completed by December2024	Nil Regulatory	Nil	Nil
10	Policy to set up e- waste recycling unit in industrial areas in compliance with e- waste management rules	State E-Waste Policy is in place	Completed	100%	Nil Regulatory	-	-
11	Any other Policy / Rules/ Standards/ Guidelines pertaining to industrial emissions	Siting Guidelines for establishment of certain air polluting industries	Completed	100%	Nil Regulatory	-	-
12.	Number of industries in the state complying emission standards	Industries are regularly monitored through Automated and manual systems	Completed and ongoing	100%	Nil Regulatory	-	-
13.	Shifting of industries/ commercial units to	Policy is under preparation and so far 48 industries have	Ongoing	Five years initially with 5% targeted	Subsidies are being proposed and	-	-
5. No.	Activities	Status of activity (Completed/ Ongoing/ To be Started)	, Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
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	gaseous fuels (CNG/PNG/ CBG)	shifted to CNG/LPG and network expansion is under progress		conversion/ne w permissions with CNG based on availability	will be clear on issue of policy		
14.	Number of households shifted to PNG/ LPG	LPG penetration in the state is 116.6%	Completed & ongoing	100%	Nil	-	-
15	Ban on Polluting Industries	No polluting industry is being permitted G.O.MS.No.111 dated 8th March, 1996 prohibits polluting industries. Ban is under implementation since 1998	Completed. Already under implementation and continuing	-	Nil	-	-
16	Source Apportionment and Emission inventory studies	Non-attainment cities (Hyderabad, Patancheru, Nalgonda and Sangareddy)	Hyderabad &Patancheru to be completed by June,2022 Nalgonda &Sangareddy by April, 2023	4 non- attainment areas	yes	2.0 crores	30 lakhs

2. Vehicular Emissions

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
1	Notificationforphasingoutoldvehicles(Commercial:10years;Private:15years)(Commercial:15	Notification issued	On going	100%	No	-	_
2	Policy for scrapping old vehicles	To be implemented as per the Gol rules	As per the rules issued	-	-	-	-
З	Policy / Scheme for Eco- Friendly Mass Rapid Transport Systems	MRTS under implementation in Hyderabad Proposals for extension under consideration.	Completed	100%	Public-Private Partnership (PPP) (90% L&T and 10% govt)	-	-
4	Policy for augment e-vehicles	TSRTC: Under Fame-1 scheme, corporation introduced 40 electric vehicles in Hyderabad city for the first time in the country in GCC model. TSRTC has subscribed to the grand challenge for introducing of300	2022-23-150 nos. 2023-24-150 nos.	10%	OPEX basis		

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		buses in GCM model. Under Fame-India Scheme-II, M/s Energy Efficiency Services Limited (EESL) through its wholly owned subsidiary M/s Convergence Energy Services Limited (CESL) will undertake aggregation of demand and implement on OPEX basis through grand challenge.					
5	Notification & enforcement of PUC norms	Notified &Enforced by Traffic Police and RTA department	Ongoing regulatory activity	100%	Covered under respective Departmental budget	-	-
6	Online monitoring of PUC implementation	M/s.Smart Chip Pvt. Ltd., has been identified as the service provider for design,development, network, commission & Maintenance of	completed	100%	Covered under respective Departmental budget		-

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		online issuing & monitoring of pollution under control(PUC) certificate for a period of (5) years by theTransport Department.					
7	Mechanism for centralized record maintenance of PUC checks, certification and cross check by the concerned transport authorities to be incorporated	Online integration completed TSRTC: Six no's of pollution under check (PUC) testing machines were installed by M/s AVL India Ltd at nodal depots of GHZ viz., FM,KCG,HYR-1,RNG- 1KG and KP depots. Instructions were issued to all the depots to get their vehicles checked for pollution levels at the respective nodal depots.	December, 2022	100%	Nil		

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
8	Construction of bypass / ring roads	All the major towns were provided with by-pass roads to divert the traffic	Completed	100%	-	-	-
9	Re-filling Stations retrofitted with Vapor Recovery System	VRS has been installed and operation in Petrol re-fuelling stations Next phase below 500KL outlets are planned by oil companies	Dispensing stations with 500KL and more are taken up – completed Less than 500 KL-2024-25	100%	Oil companies	_	-
10	Incentive of setting up R&D facilities related to EVs	Telangana Electric Vehicle & Energy Storage Policy 2020- 2030' released by Telangana Government	Ten years	100%	Subsidy is provided	-	-
11	Prepare action plan to check fuel adulteration and random monitoring of fuel quality data.	Number of inspections conducted for assessing fuel quality in FY 2021-22: 85 Nos	Continue as a Regular activity	Regular activity	Nil Regulatory activity	-	-
12	Alternative clean fuel policy for vehicle	Alternate clean fuel policy yet to be notified	2022-2023	CNG policy to be approved and details will	-	-	-

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		No. of fuel stations with CNG: 93 Nos. % of public transport vehicles running on CNG and electric with respect to total public transport: 6%		be available after the issue of the policy			
13	Development of Multi-layer parking	 The work for MLP at Nampally is in progress. Tenders for construction of the MLP at Khilawath under DBFOT has been called. Proposal for construction of (20) nos. of MLPs is submitted to Govt for approval. 	2 years	No. of multilevel parking proposed to be constructed: 23 Nos.at Hyderabad	DBFOT Basis	-	-
14	Penalize parking of vehicles in non- designated areas	Penalty charges for fixed and are under implementation	Completed	Regulatory activity	Nil as a part of department activity		

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
15	Assess and introduce a city bus system of appropriate fleet size of small buses and desirable bus type replete with GPS tracking, ETVMs for fare collection and Passenger Information Systems.	Small Buses Introduced 08 Minibuses were introduced from Gachibowli to Tondupalli. No. of Employees deployed in the year 2021-2022:-21 GPS Tracking High End vehicles	Regular activity	Regular activity	Yes	13.06	0.09
17	Steps for promoting battery operated vehicles (like e- rickshaw, e- cart etc.)	 Framed guidelines in 2017 for registration of E- rickshaw / e-Cart. As per G.O.MS.49, Tr.R&B (Tr.I) Dpt., Dt.07-07-2017, e- rickshaws and e- carts are restricted to ply on National 	Regular Activity.	10 years period	Subsidies provided	-	-

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		Highways and GHMC limits. No. of battery- operated vehicles (under various category) registered in FY 2021-22: 1231 Nos.					
18	Conducting audit of1. Traffic intersections and install functional traffic signal at all major intersections	Implementation of Adaptive Traffic Si gnal Control (ATSC) & Perfect Stop Signs	2024	40 ATSC and 1 PSS to be completed this year	Yes	12	-
19	Synchronizing traffic movements / introduce intelligent2. traffic systems for lane driving. 3.	 (PSS) for new identified junction O&M of existing Hyderabad traffic integrated management system (HTRIMS) signal system. Foundation work 	Regular activity	-	Yes	0.106	-

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		 completed for 40 nos. of ATSC junction and 01 no. of PSS. 4. Traffic policemen at signal and bottleneck spots co-ordinate with the help of VHF man pack to synchronize traffic movements. 					
20	Prepare plan for construction of diversion ways/ bypasses to avoid congestion due to non-destined vehicles.	Nehru Outer Ring Road of 168 km, 8 Lane expressways encircling the city is constructed to bypass the non- destined vehicles	Completed	Regular maintenance with MRS	Yes	HMDA budgeted activity	_

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
21	Launch Public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicle, lane discipline, etc.	1.Awarenesscampaignsareconducted at TrafficTraining Institute2.AwarenessinMobile vans and thestaffvisitsstaffvisitseducationalinstitutionsi.e.Schools,Colleges,Auto and Cab centresand conducts trafficawarenessprogrammes.3.Traffic Police is alsocreatingawarenessamongthecommutersthroughoursocialplatformsviz.,Twitter media	Regular activity	Regular activity	Yes-	Concerned line departments	

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
22	Launch extensive drive against polluting vehicles for ensuring strict compliance	Penalty charges for fixed and are under implementation	Completed & continue as a regular activity	Regulatory activity	Yes	Concerned line departments	-
23	Initiate steps for retrofitting of particulate filters in diesel vehicles, when BS-VI fuels are available.	The retrofitting models are yet to be evaluated by the Gol for implementation in the state. The implementation will by commenced with the approval of the technologies for retorfitment	-	Regulatory activity	Yes	Concerned line departments	-
24	To increase fine on vehicle owners (not drivers) where the visible smoke is emitted and noticed.	Penalty charges for fixed and are under implementation	Completed & continue as a regular activity	Regulatory activity	Yes	Concerned line departments	-

3. Construction & Demolition Waste and Road Dust Management

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
1.	Policy for development of projects/ plants for C&D waste management	GHMC- To be started C&D recycling plants were established at Jeedimetla and Fathullaguda with 500 TPD capacity using Wet Treatment Process. status	Regular activity	GHMC jurisdiction area	Yes	12.0/annum	_
		CDMA-RFP for selection of agency for collection, transportation, processing & disposal of C&D waste for ULB clusters in Telangana State is under conclusion process stage	Project to be initiated& timelines 2022-23	-	_	_	_
2.	Policy for use of C&D	GHMC-private	2022-23	20% coverage	No	-	-

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
	waste in laying and construction of State highways.	suppliers are using for cement bricks manufacturing National Highways construction in the state have stipulated the condition		-	_	-	-
3	Demand creation for C& D waste and alternative use of C&D waste material	GHMC-Ongoing Awareness and understanding on recycling aggregates in roads among respective stakeholders will carried out on their re-use and quality aspects.	1 year	GHMC jurisdictional area	No	Nil	Nil
		CDMA-RFP under conclusion, In the RFP under Processing & Disposal Facility a condition was incorporated stating	2022-23	-	-	-	-

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		that					
		concessionaire shall					
		identify and					
		develop end-					
		markets for					
		recycled material					
		and products					
		made from C&D					
		waste,					
		independently. The					
		concessionaire will					
		provide facilities for					
		crushing, screening					
		and separation of					
		wastes in various					
		grades and sizes for					
		sale to respective					
		and for process for					
		nroduction of					
		various precast					
		structure. paver					
		tiles, road-side curb					
		bricks etc.					
		2. The					
		concessionaire					
		should maximize					
		the recycling,					
		reusing as well as					

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		reducing the waste at the end of the treatment cycle.					
4	Schemes for development of green belt/ open spaces and street sides greening on State highways	Ongoing i.TelanganakuHarith aharam ii.Pattanapragathi	It is a regular activity taken up in every planting season.	Target- 2.62cr Coverage- 2.64cr Percentage- 100.79%	Yes, 10% of green budget	283.73cr	111.37cr
5	Penalty provisions for non-compliance of C&D waste management rules at construction sites	Completed GHMC:Levy penalty on unauthorized dumping as per recent Go Rt.No: 854 MA&UD(GHMC.II) dated 27.11.21: Rs. 5000/- on citizen and Rs. 25000/- on builders/ work contractors.	Regular activity	GHMC Jurisdictional area	No	NA	NA
		CDMA:As per the G.O No 168, Govt issued certain guidelines	It is a continuous activity.	All ULBs	No	-	_

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		stipulating certain condition for obtaining building permissions.					
6	Monitoring of road dust especially in and around hotspot areas and in the vicinity of State highways	GHMC: To control road dust 49no. of sweeping machines procured/hired and running at high density traffic zone & main road stretches. Road length swept for corresponding no. of routes 2580 (in kms)	Regular activity	GHMC Jurisdictional area	Yes	As part of dept activity	
7	Mechanism for development and maintenance of road infrastructures for industrial states and clusters	TSPCB procured 2no of Mechanical road sweepers Under NCAP and placed jeedimetla and patancheru industrial areas and practicing as a Regular activity of maintenance of	Regular activity	-	-	-	-

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		road infrastructures for industrial states and clusters proper					
8	Any other Policy / Rules/ Standards/ Guidelines pertaining to C&D waste and Road dust management	CDMA:Issued notification of C&D waste management rules, Established Non-bulk C&D waste collection centres in ward levels. GHMC: Treatment and Processing of C&D waste from the above plants which are useful for non-structural purpose such as footpaths, road sub-base etc	Jan 31 st 2022	100% Wards	Yes	After finalizations of tenders.	After finalizations of tenders.

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverag Percenta	t ge/ age)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
9	C&D waste processing plants	Two C&D plants established at Hyderabad Jeedimetla plant: 11.33 Lakh MT (i.e 792 TPD) Fathullaguda plant: 7.12 Lakh MT (i.e. 498 TPD). One more proposal for C&D plant is under process.	2022-23	100%		Yes	Concerned line departments	_
10	Greening of open spaces/ parks developed	GHMC: Ongoing i)19 Major Parks each having more than 5 Acres in extent. ii)17 Theme Parks having various themes like Dog Park, Panchatantra Park, Palmetum, Ficus, Bougainvilleas, Herbal, Bamboos etc., have also been	More than 100%	Entire state	Yes	20(only for GHMC area)	State govt budget under harithaharam program	0.26(only for GHMC area)

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Targ (Cover Percen	et age/ tage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		developed so far. iii)919 Colonyparks. iv)327 Nos. of Tree parks. v)18 Panchatatva Parks.						
		CDMA:On-going	5498	4806.76 acres	283.73 cr	31-03-2022	4032	111.37cr
11	Any other activity/ project pertaining to C&D waste and Road dust management	Issued notification of C&D waste management rules, Established Non- bulk C&D waste collection centres in ward levels.	Jan 31 st 2022	100% Wards	Yes	After finalizations of tenders.	After finalizations of tenders.	After finalizations of tenders.
12	Control measures for fugitive emissions from material handling, conveying and screening operations through water sprinkling, curtains, barriers and dust suppression units.	Both the C&D processing facilities are equipped with the control equipments at locations to mitigate the fugitive emission sources.	Completed & continue as a regular activity	100	%	-	-	-
13	Strict enforcement of CPCB guidelines for	Condition is incorporated in the	Completed & continue as a	Regula activ	itory ity	-	-	-

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
	construction (use of green	Building Permit	regular				
	screens, side covering of	Order for	activity				
	digging sites, etc.)	strictcompliance of the conditions as specified in the NOC issued by the SEIAA Viz., enforcement of CPCB guidelines (Use of green Screens, side covering of digging					
		sites., etc.,), covering of construction sites.					

S. No.	Activities/ Act	ion plan	Status o (Comp Ongoing Star	f activity leted/ g/ To be ted)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
15	Greening of op	en areas,	No. of	vertical	Continue as a	-	Yes	89.43	6.06
	gardens, c	ommunity	gardens	in	regular activity				
	places, schoo	ols and	Hyderabad	: 12					
	housing societie	s.	Nos. Unde	er TKHH					
			Plantation						
			programm	e					
			around 1.	0 crore					
			plantations	s have					
			been take	n under					
			different						
			componen	ts, Open					
			Spaces, La	ke, Nala,					
			Colony,	Yadadri					
			Forest Mod	del etc.					

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
16	Prepare plan for widening of road and improvement of infrastructure for decongestion of road.	SRDP Project is taken up for development of Infrastructure such as Flyovers/Underpass es/ROBs and RUBs for decongestion of roads. Out of 8 works, 1 work completed and 7 works	2 years from date of grounding of work	-	Yes	708.92	59.09
14	Introduce water fountains at major traffic intersection, wherever feasible	No. of fountains constructed at major traffic intersection: 55 nos.	2022 -2023	5 no. of water fountains at traffic junctions	Yes	0.75	-
15	Blacktopping of metalled roads, including pavement of road shoulders.	Length of unpaved road black topped: 1327 km Length of unpaved	Regular activity	Length of unpaved road to be black topped 528km	Yes	335	-

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		road to be black topped: 2117.54 km					
16	Maintain pot holes free roads for free-flow of traffic	Number of potholes repaired by using Dept. premix BT in GHMC except CRMP roads: 56,893 nos. No. of potholes machines to be deployed on hiring basis (except CRMP roads): 06 nos.	Completed & continue as a Regular activity	100	Yes	14	-

4. Emissions from burning of waste

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/	Timeline for completion	Target (Coverage/ Percentage)	Financial implications	Funds Allocated	Funds Utilized as
		To be Started)			(Yes/ No)	(Rs crore)	on date (Rs
1.	Notification and Enforcement of municipal solid waste (MSW) management rules	Already MSW Rules and BWG Rules Notification issued.	It is a continuous activity.	Target: 141 ULB's / Percentage: 100%	Yes	_	-
2.	Policy for MSW management	GOVT vide G.O. Rt No. 808, MA&UD dated 24-09-2018 has notified MSW policy.	It is a continuous activity.	Target: 141 ULB's / Percentage: 100%	-	-	-
3.	Policy for legacy waste management at dumpsites	 52 ULB's formed as 4 clusters and tenders already completed. 90 ULB's formed as 5 clusters and due date of tenders is on 27th of December 2021. 	March 2023 as fixed by Central GOVT	Target: 141 ULB's / Percentage: 100%	Yes, Total project cost- 448.32cr (Project period 10 month)	Nil	Nil
4.	Policy for implementation of ban on single use plastics	Notification Bylaws issued for Ban of 75 microns plastic.	End of Dec 2021	Target: 141 ULB's / Percentage: 100%	yes	-	-
5.	Policy for development and Construction of Waste to Energy Plants	WTE plant established at Hyderabad and Karimnagar as per the potential	completed	-	-	-	-
	(a) non-recyclable / combustible dry waste	-	-	-	-	-	-
	(b) Bio- methanation / Bio CNG	1.Warangal 2 plants(1.5&1TPD)/	Already Functional	-	-	-	-

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
		2.GHMC-5TPD. 2. Siddipet 1 plant/10TPD. 4.Sirisilla-1TPD					
	(c) Composting plant etc.	141 plants are operational. 3.Kompally/100kg/day	Already Functional	-	-	-	-
6.	Any other Policy / Rules/ Standards/ Guidelines pertaining to MSW Management	 Circular along with action plan and definite timelines to all ULBs is issued on waste management in commercial, institutional, bulk and residential areas in a phase manner on dt 12.10.2021. This has the following features: Separate collection of BWG's. Separate collection of CWG's. Separate collection of RDF's in wet waste. 	It is a Continuous activity.	-	-	-	-

S.	Activities/ Action plan	Status of activity	Target Number	Total Canacity	Funds Allocated	Timeline for	Target	Funds Utilized
1.0.		ongoing/ To be	(No.)/ (%)	(TPD) /	(Rs. crore)	completion	on date	as on
		Started)		Coverage				date (Rs
				(Acres)				crore)
1.	Waste collection status in the city (%)	GHMC: 100%	100%	-	-	-	-	-
		CDMA:100% Door	Target: 141			It is a		
		to door	ULB's /		-	continuous	-	-
			Percentage:	4511 11 0		activity		
			100%					
2.	Waste segregation	GHMC: 15%	100%	-	-	-	-	-
	status in the city (%)	CDM: 39% of	Target: 141					
		waste is	ULB's /	1870 TPD	_	_	_	_
		segregated in city.	Percentage:	10/0110				
			100%					
3.	Material Recovery Facility	GHMC: Completed	100%	7000		NA	NA	
		CDMA:206 DRCC	Target: 141					
			ULB's /	745 TPD	-	-	_	-
			Percentage:					
	···· · · - · · ·		100%					
4.	Waste to Energy plants	CDMA:	-	4 9 5 700				
		1. Warangal 2	Target: 2	1. 2.5 TPD	-	-	_	-
		plants	ULB'S	10 10D				
		2. Sloupet 1 plant						
		GHIVIC: 1110.	Л		Nil	Nil	NA	NII
		(lawabarpagar)	4	19.8 10100	INII		NA	INII
		(Jawananiagar)						

S. No.	Activities/ Action plan	Status of activity (Competed/	Target Number	Total Capacity	Funds Allocated	Timeline for completion	Target Completed as	Funds Utilized
		ongoing/ To be Started)	(No.)/ (%)	(TPD) / Coverage (Acres)	(Rs. crore)		on date	as on date (Rs crore)
		1no. Ongoing (Dundigal)		14.5 MW	Nil	Nil	Sep'22	Nil
		1no. Ongoing (RDFPPL)		11 MW	Nil	Nil	-	Nil
		1no. to be started (SVGPPL)		12 MW	Nil	Nil	-	Nil
5.	Waste to compost plants	GHMC: 1 no completed	1	2250 TPD	-	-	-	-
		CDMA:141 Plants	Target: 141 ULB's / Percentage: 100%	1120 TPD	-	-	-	-
6.	Remediation of dumpsites in the city	Letter of intent has been issued to the successful bidders for four clusters. Approval is awaiting on signing of contact from Govt. For remaining 5 clusters, bid evaluation under progress	December, 2022	-	-	_	_	-

S. No.	Activities/ Action plan	Status of activity (Competed/ ongoing/ To be Started)	Target Number (No.)/ (%)	Total Capacity (TPD) / Coverage (Acres)	Funds Allocated (Rs. crore)	Timeline for completion	Target Completed as on date	Funds Utilized as on date (Rs crore)
		GHMC:1no. Completed (Jawaharnagar)		125 acres foot print	136.81			
		1no. Completed (Fathullaguda)	5	40 acres				
		1no. to be started (Autonagar)		40 acres	-			
		1no. to be started (Gandhamguda)		22 acres	1.66			Nil
7.	Control open burning of MSW	GHMC: Ongoing	0	NA	Nil	Continues	NA	NA
		CDMA:100% controlled ULBs notified circulars as part of MSW rules implementation on imposing penalties for illegal dumping and burning of solid waste.	Target: 141 ULB's / Percentage: 100%	NA	Nil	Continues	NA	NA
8.	Any other activity/ project pertaining to MSW Management	Already mentioned in the above session	Already mentioned in the above	NA	Nil	Continues	NA	NA

S. No.	Activities/ Action plan	Status of activity (Competed/	Target Number	Total Capacity	Funds Allocated	Timeline for completion	Target Completed as	Funds Utilized
		ongoing/ To be	(No.)/ (%)	(TPD) /	(Rs. crore)		on date	as on
		Started)		Coverage				date (Rs
				(Acres)				crore)
	La sub a la sub a site a		session					
9.	Launch extensive drive	All the garbage and	& continue					
	against open burning of	leaves from	as a regular					
	biomass, crop residue,	horticulture waste	activity					
	garbage, leaves, etc.	is collected						
		regularly and						
		transported to						
		various transfer						
		stations for further						
		transportation to						
		treat and disposal						
		facility. Though		NA	Nil	Continues	NA	NA
		100% happens in						
		city in very few						
		instances of waste						
		burning is observed						
		out of negligence of						
		citizen and even by						
		sanitation workers.						
		prevention of air						
		pollution from solid						
		waste and						

S.	Activities/ Action plan	Status of activity	Target	Total	Funds	Timeline for	Target	Funds
No.		(Competed/	Number	Capacity	Allocated	completion	Completed as	Utilized
		ongoing/ To be	(No.)/ (%)	(TPD) /	(Rs. crore)		on date	as on
		Started)		Coverage				
		spreading of		(Acres)				ciorej
		communicable						
		diseases in the						
		PattanaPragathipro						
		gramme for a						
		period of 10 days,						
		once in three						
		months. However						
		penalties are						
		imposed on						
		violators.						
10	Proper collection of	No. of composting	163	-	Yes	2023-24	0.20	-
	Horticulture waste and its	cum gardening sites						
	disposal following	developed: 482						
	composting-cum	Nos.						
	gardening approach	Number of						
		composting cum						
		gardening sites to						
		be developed:163						
		Nos.						

5. Emissions due to burning of agro residues- Not practiced in the state.

S. No.	Activities/ Action plan	Status of activity	Timeline for	Target	Financial	Funds	Funds Utilized
		(Completed/	completion	(Coverage/	implications	Allocated (Rs	as on date (Rs
		Ongoing/ To be		Percentage)	(Yes/ No)	crore)	crore)
		Started)					
1	In-situ treatment of biom	ass residues for mar	nagement of stub	ble burning			
	Schemes for	Under Sub Mission					
	procurement of	on Agriculture					
	agriculture machinery	Mechanization, an					Yet to approve
2)		action plan for the	2021-22	allocated among	Voc	Rs.27941	(info. As per
α)		year 2021-22 was	2021 22	the districts.	105	Lakhs	agriculture
		submitted.					action plan)
		Approval from GOI					
		is awaited.					
	Assistance for	Nil	-	-	-	-	-
ы	establishment of farm						
5)	machinery banks/	,					
	custom hiring centres						
	Use of decomposer for	Nil	-	-	-	-	-
c)	in-situ Crop residue						
	management.						
	Ex-situ treatment of biom	ass residues for mar	nagement of stul	ble burning			
	Schemes for balers/	-	-	-	-	-	-
a)	pellet/ briquette						
	machines, etc.						
	Biomass projects with	No Hot spots	-	-	-	-	-
3.	respect to the hotspots						
	of crop residue burning						
1	Use of biomass / crop	The practice of	-	-	-	-	-
4.	residue based pellets	stubble burning is					

S. No.	Activities/ Action plan	Status of activity	Timeline for	Target	Financial	Funds	Funds Utilized
		(Completed/	completion	(Coverage/	implications	Allocated (Rs	as on date (Rs
		Ongoing/ To be Started)		Percentage)	(Yes/ No)	crore)	crore)
	mass blending with coal and its co-firing in thermal power plants with blending ratio which needs no modification in	not recorded in the state					
5.	boilers Policy for supply chain mechanism for in-situ and ex-situ management of stubble	Nil	-	-	-	-	-
6.	Supply chain for crop residues to cow shelters	Nil	-	-	-	-	-
7.	Development of effective protocol for monitoring of fire incidents including crop area consideration and crop fire area data	Burning of the agriculture waste is not a common practice in the state.	-	-	-	-	-
8.	Collaboration with ISRO and preparation of Satellite based maps for monitoring of fire incidence	Nil	-	-	-	-	-
9.	Any other scheme/ program that may help in reducing air pollution	Burning of the agriculture waste is not a common practice in the state. After, the	Regular activity	-	-	-	-

S. No.	Activities/ Action plan	Status of activity	Timeline for	Target	Financial	Funds	Funds Utilized
		(Completed/	completion	(Coverage/	implications	Allocated (Rs	as on date (Rs
		Ungoing/ To be		Percentage)	(Yes/ NO)	crore)	crore)
		Started)					
		harvest of the	2				
		paddy crop, the	2				
		straw is used as	5				
		fodder and the	2				
		stubble are	2				
		incorporated into	þ				
		the soil before land	I				
		preparation of the	2				
		second crop and	ł				
		cotton crop after	~				
		the drying the	2				
		plant residues wil	I				
		be incorporated	1				
		into the soil.					

6. Household emissions

S. No.	Activities/ Action plan	Status of activity	Timeline for	Target	Financial	Funds	Funds
		(Completed/	Completion	(Coverage/	implications	Allocated	Utilized as
		Ongoing/ To be		Percentage)	(Yes/ NO)	(Rs crore)	on date
		Started)					(RS crore)
1.	Schemes for use of LPG/	 Pradhanmantriujw 	Implemented	-	-	-	-
	PNG for cooking fuels	alawasyojana.					
	Engage with concerned	Completed	 Completed 	100%	Yes	Respective	-
	authorities for continual	 LPG penetration in 	and continue			line depts	
	basis for maximising	GHMC in FY 2021-	as a regular				
	coverage of LPG / PNG	22:173%	activity				
	for domestic and						
3.	commercial cooking with	 No. of domestic 					
	target of 100% coverage	LPG Connection to					
		low income strata					
		in FY 2021-22: 01					
		Nos. Deepam					
		connection					
	Hotels, restaurants and	Completed.	 Completed 	100%	Yes	Respective	-
	dhabas to use cleaner	Continuously LPG	and continue			line depts	
	fuels	Non-Domestic	as a regular				
		Connections	activity				
4.		released to					
		Commercial					
		establishments					
		with 100%					
		coverage.					

Indicative template for State Action Plan

1. Industrial Emissions

S. No.	Activities	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
1.	Policy for permitting new industries in Critically Polluted Areas (CPAs)						
2.	Guidelines for laying city gas distribution network						
3.	Policy for replacement of heavy oil (eg., furnace oil, diesel etc.) based industries to alternate energy sources (CNG/ PNG/ Electricity)						
4.	Policy for restriction on usage of Pet coke for industrial use.						
5.	Rules and Regulations on uninterrupted power supply in State/ UT						
6.	Policy for use of DG sets						

7.	Policy regarding installation of CAAQMS based on the emission potential or capacity of air polluting industries.						
8.	Mechanism to be devised for expansion of OCEMS to air polluting industries are not covered currently (such as emission from utility stacks in 17 categories, etc.)						
9.	Mechanisms to control fugitive emissions sources.						
10	Regulations for conversion of brick kilns to clean technologies						
11	Regulations for Emission Trading Scheme (ETS)						
12	Policy to set up e-waste recycling unit in industrial areas in compliance with e- waste management rules						
13	Any other Policy / Rules/ Standards/ Guidelines pertaining to industrial emissions						
S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for completion	Target (Coverage/ Percentage)	Target Completed as on date (no.)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
--------	--	---	-------------------------	-------------------------------------	---	-------------------------------	--
14	Number of industries in the state complying emission standards						
15	Inventory of fuel consumed in the industries (type and quantity)						
16	Shifting of industries/ commercial units to gaseous fuels (CNG/ PNG/ CBG						
17	Number of households shifted to PNG/ LPG						
18	Any other activity/ project pertaining to industrial emissions						

2. Vehicular Emissions

S. No.	Activities/ Action plan	Status of	Timeline for	Target	Financial	Funds	Funds
		activity	completion	(Coverage/	implications	Allocated (Rs	Utilized as on
		(Completed/		Percentage)	(Yes/ No)	crore)	date (Rs
		Ongoing/ To					crore)
		be Started)					
1.	Notification for phasing out old						
	vehicles (Commercial: 10 years;						
	Private: 15 years)						
2.	Policy for scrapping old vehicles						

3.	Policy/ Plan for Li-battery waste management from scrapped vehicles			
4.	Policy / Scheme for Eco- Friendly Mass Rapid Transport Systems			
5.	Policy for augment e-vehicles			
6.	Notification and enforcement of PUC norms			
7.	Online monitoring of PUC implementation			
8.	Mechanism for centralized record maintenance of PUC checks, certification and cross check by the concerned transport authorities to be incorporated			
9.	Construction of bypass / ring roads			
10	Re-filling Stations retrofitted with Vapor Recovery System			
11	Incentive of setting up R&D facilities related to EVs			
12	Any other Policy / Rules/ Standards/ Guidelines pertaining to vehicular emissions			

S. No.	Activities/ Action plan	Status of	Timeline for	Target	Financial	Funds	Funds Utilized
		activity	completion	(Coverage/	implications	Allocated	as on date (Rs
		(Completed/		Percentage)	(res/ NO)	(RS crore)	crore)
		Ungoing/ 10					
1	Deliau fer development of	be Started)					
1.	Policy for development of						
	projects/ plants for C&D						
	waste management						
2.	Policy for use of C&D waste						
	in laying and construction of						
	State highways.						
3.	Demand creation for C& D						
	waste and alternative use of						
	C& D waste material						
4.	Schemes for development of						
	green belt/ open spaces and						
	street sides greening on State						
	highways						
5.	Penalty provisions for non-						
	compliance of C&D waste						
	management rules at						
	construction sites						
6.	Maintenance, repair and						
	paving of State highways						
7.	Monitoring of road dust						
	especially in and around						
	hotspot areas and in the						
	vicinity of State highways						

3. Construction & Demolition Waste and Road Dust Management

8. 9.	Mechanism for development and maintenance of road infrastructures for industrial states and clusters Any other Policy / Rules/ Standards/ Guidelines pertaining to C&D waste and Road dust management							
S. No.	Activities/ Action plan	Status of activity (Competed/ ongoing/ To be Started)	Target Number (No.)/ (%)	Total Capacity (TPD) / Coverage (Acres)	Funds Allocated (Rs. crore)	Timeline for completion	Target Completed as on date	Funds s Utilized as on date (Rs crore)
10	C&D waste processing plants							
11	Greening of open spaces/ parks developed							
12	Any other activity/ project pertaining to C&D waste and Road dust management							

4. Emissions from burning of waste

S.	Activities/ Action plan	Status of activity	Timeline	Target	Financial	Funds	Funds Utilized
No.		(Completed/	for	(Coverage/	implications	Allocated	as on date (Rs
		Ongoing/ To be	completio	Percentage)	(Yes/ No)	(Rs crore)	crore)
		Started)	n				
2.	Notification and						
	Enforcement of municipal						
	solid waste (MSW)						
	management rules						

3.	Policy for MSW management								
4.	Policy for legacy waste management at dumpsites								
5.	Policy for implementation of ban on single use plastics								
6.	Policy for development and Construction of Waste to Energy Plants								
	(a) non-recyclable / combustible dry waste								
	(b) Bio- methanation / Bio CNG								
	(c) Composting plant etc.								
7.	Any other Policy / Rules/ Standards/ Guidelines								
	pertaining to MSW								
	Management								
S. No.	Activities/ Action plan	Status of	Target	Tota	I	Funds	Timeline for	Target	Funds Utilized
		activity	Number	Capac	ity	Allocated	completion	Completed	as on date (Rs
		(Competed/	(No.)/ (%) (TPD)	/	(Rs. crore)		as on date	crore)
		ongoing/ To		Covera	ige				
1		be Started)		(Acre	s)				
1.	the city (%)								
2.	Waste segregation status in the city (%)								
3.	Material Recovery Facility								
4.	Waste to Energy plants								

5.	Waste to compost plants				
6.	Remediation of dumpsites				
	In the city				
7.	Control open burning of				
	MSW				
8.	Any other activity/ project				
	pertaining to MSW				
	Management				

5. Emissions due to burning of agro residues

S. No.	Activities/ Action plan	Status of	Timeline for	Target (Coverage/	Financial	Funds	Funds Utilized as
		(Completed/	completion	Percentage)	(Yes/No)	crore)	on date (Rs
		Ongoing/ To			(100)		
		be Started)					
1.	In-situ treatment of biomass	residues for ma	anagement of s	stubble burning			
				1	1	r	r
a)	Schemes for procurement of						
	agriculture machinery						
b)	Assistance for establishment						
	of farm machinery banks/						
	custom hiring centres						
c)	Use of decomposer for in-						
	situ Crop residue						
	management.						
2.	Ex-situ treatment of biomass	residues for m	anagement of a	stubble burning			
a)	Schemes for balers/ pellet/						
	briquette machines, etc.						

3.	Biomass projects with respect to the hotspots of crop residue burning			
4.	Use of biomass / crop residue based pellets mass blending with coal and its co-firing in thermal power plants with blending ratio which needs no modification in boilers			
5.	Policy for supply chain mechanism for in-situ and ex-situ management of stubble			
6.	Supply chain for crop residues to cow shelters			
7.	Development of effective protocol for monitoring of fire incidents including crop area consideration and crop fire area data			
8.	Collaboration with ISRO and preparation of Satellite based maps for monitoring of fire incidence			
9.	Any other scheme/ program that may help in reducing air pollution			

6. Household emissions

S. No.	Activities/ Action plan	Status of activity (Completed/ Ongoing/ To be Started)	Timeline for Completion	Target (Coverage/ Percentage)	Financial implications (Yes/ No)	Funds Allocated (Rs crore)	Funds Utilized as on date (Rs crore)
2.	Schemes for use of LPG/ PNG for cooking fuels						
5.	Amendments to the building by-laws for " Indoor air quality management"						
3.	Any other Policy / Rules/ Standards/ Guidelines pertaining to Household emissions						

Additional Instructions:

- Air quality is affected by both regional and background contributions hence actions at state and regional levels which also consider the airshed approach are required.
- Identification of prominent air polluting sources: Inventory of air pollution sources in State/UT including hotspots or areas of concern pertaining to air pollution should be carried out.
- Hotspots of air pollution: Hotspots with respect to air pollution (such as stubble burning, illegal waste burning, un-authorised operations, cluster activities, forest fires etc.) should be identified and localised action plan for mitigation of the same should be prepared.
- Categorization of industrial zones into red, orange, and green sectors has already been implemented so states may choose to permit or ban an industry depending on the state of the environment in their state or zones, for example- in TTZ some industries are banned. A similar strategy could be adopted by other states.

- Ambient air quality data: Plan to get access to available air quality monitoring stations in the State/UT operated by both public and private agencies. Quantification of improvement in existing air quality.
- Awareness on Air Quality: To develop Mobile App / Online portal for dissemination of air quality as well as to take complaints on local air pollution.
- State Action plan may dwell upon other relevant action points as per need and requirement of that state which are not mentioned in above template.

Annex-II

District wise details of the industries

The District wise Red, Orange, Green& White category industries:

S.No	Name of the RO	Name of the District	Red	Orange	Green	White	Grand total
ZO Hyderabad							
1.	Rangareddy-I	Medchal-Malkajgiri (only 3 mandals)	133	169	100	1244	2629
		Vikarabad	174	82	2	3	
		Rangareddy (Except 6 mandals)	264	307	95	56	
		Total:	571	558	197	1303	
2.	Rangareddy-II	Medchal-Malkajgiri (Except 3 mandals)	631	689	357	953	2630
		Total:	631	689	357	953	
3.	Hyderabad	Rangareddy (6mds)	95	130	29	48	694
		Hyderabad	15	17	0	34	
		Jogulamba-Gadwal	14	26	2	1	
		Mahaboobnagar	57	103	5	13	
		Nagarkurnool	21	26	0	1	
		Narayanpeta	9	15	0	0	
		Wanaparthy	17	15	1	0	
		Total:	228	332	37	97	
4.	Warangal	Jangaon	38	32	2	0	612
		JayashankarBhoopalpally	19	8	0	0	
		Mahabubabad	100	29	0	0	
		Mulugu	70	5	0	0	
		Warangal Urban	87	80	7	0	
		Warangal Rural	57	77	0	1	
		Total:	371	231	9	1	
5.	Kothagudem	Bhadradri-Kothagudem	41	36	47	3	378
		Khammam	141	97	7	6	
		Total:	182	133	54	9	
6.	Ramagundam	Jagityal	38	77	0	0	913
		Karimnagar	303	171	4	0	
		Peddapally	71	185	2	0	
		Rajanna-Siricilla	21	40	1	0	
Total			433	473	7	0	
ZO R	C Puram						
7.	Medak-I	Sangareddy (Except 2 mandals)	213	251	94	146	704
		Total:	213	251	94	146	

8.	Medak-II	Medak	60	156	33	78	897
	NR	Siddipet	23	116	10	0	
		Sangareddy (2 mdls)	131	150	45	95]
		Total:	214	422	88	173	
9.	Nalgonda	Nalgonda	49	176	14	2	698
		Suryapet	51	122	10	2	
		Yadadri-Bhuvanagiri	100	156	16	0]
		Total:	200	454	40	4	
10.	Nizamabad	Adilabad	15	32	0	0	500
		Kummram-Bheem (Asifabad)	14	17	3	0	
		Kamareddy	29	57	3	0	
		Mancherial	42	56	1	0	
		Nirmal	7	24	1	0	
		Nizamabad	48	141	4	6]
		Total:	155	327	12	6	
		Grand Total	3198	3870	895	2692	10655

2.2 Details of 17 Category of Industries:

There are342number of 17 categories of highly polluting industries.Out of these, 299units have installed Continuous Online Monitoring System for monitoring for liquid effluents, air emissions as per CPCB guide lines and connected to TSPCB online monitoring centre. Remaining units are under closure / sick.

S.No.	Sector	No. of industries
1.	Cement	24
2.	Distillery	10
3.	Dye &Dye Intermediates	3
4.	Iron & Steel	2
5.	Pesticide	1
6.	Pharmaceuticals	257
7.	Thermal Power Plants	13
8.	Pulp & Paper	3
9.	Sugar	9
10.	Tannery	20
	Total:	342

Action points and the status of implementation in CEPI area

As per theComprehensive Environment Pollution Index (CEPI), three industrial clusters were monitored in the Telangana State and the CEPI scores were assessed as below:

S.No.	Name of the industrial cluster	CEPI Score
1	Patancheru-Bollaram	75.42 (Critically Polluted Area)
2	Kattedan	60.17
3	Kukatpally	66.46

Accordingly, the Board is monitoring the industries in the said areas and initiated action against non-complying units. The compliance of action points are as follows:

Action Points	Action taken till date			
Monitoring of industries for compliance of emission standards and up-gradation of Air Pollution Control equipments.	All Industries have upgraded the control equipments and are regularly monitored for compliance of emission standards. The 17 category industries have installed online emission monitoring equipment and connected to TSPCB server.			
Ensure installation of multi stage scrubbers with online pH meters to control process emissions / vent condensers to solvent storage tanks.	All Industries using scrubbers upgraded single stage scrubbers to multi stage scrubbers with online pH meters.			
Prepare plan for improvement of	IDA Bollaram:			
infrastructure of roads.	 The status of improving infrastructure facilities in IDA Bollram was reviewed and internal roads are concretized to reduce air pollution. No solid waste dump has happened in the area. 			

Action Points	Action taken till date
	IDA Patancheru:
	All roads in the Patancheru Industrial Park are BT/CC roads and are in good condition.
	IDA Kukatpally:
	All roads in the IDA are BT/CC roads and are in good condition.
	IDA Kattedan:
	All roads in the IDA are BT/CC roads and are in good condition.
	The Board has procured 2 mechanical sweeping machines and handed over to TSIIC for deployment in IDA Patancheru and Jeedimelta.
Maintain pot holes free roads for free- flow of traffic	Repair and maintenance of pot holes works done.
Regular check and control of burning of municipal solid wastes.	The Government has issued GO Ms.No.27 prohibiting open burning of municipal waste. No incident of open burning noticed during this quarter.
Regular operation of ZLD systems / ETPs or ensuring sending effluents to CETP regularly.	There are 5 industries (3- Bollaram& 2- Patancheru) having ZLD systems. M/s Dr Reddy Laboratories is having common ZLD system for 3 units and 45 units (33 –Bollaram& 12 - Patancheru) are members of CETP.
	The members of CETP are transporting the effluents to CETP using tankers fitted with GPS and online vehicle tracking and manifest system. The ZLD systems have installed camera and flow meter and connected to TSPCB and CPCB server.
	Regular monitoring of above industries are carried out.
Regular monitoring of CETP and ensuring compliance of standards.	The CETP is monitored on daily basis for ensuring compliance of standards. The CETP

Action Points	Action taken till date
	installed OCEMS and the same is connected to TSPCB and CPCB server. The CETP is meeting the standards.
Regular monitoring of the Industrial area to identify the unauthorized dumpings.	TSPCB has constituted night patrolling teams to monitor IDAs regularly to identify any unauthorized dumpings. Monitoring of the ambient air and stack are being carriedout regularly.
Concretizing of storm water drains in the industrial area and connect to STP.	Bollaram Municipality is maintaining existing storm water drains regularly and proposal for concrete storm water drains is under consideration. TSIIC-IALA Patancheru, Kattedan and Kukatpally are maintaining storm ware drains regularly.

Annex-IV

GOVERNMENT OF TELANGANA ABSTRACT

Shifting of industries from within Outer Ring Road (ORR) to Outside Outer Ring Road - Permitting certain industries located within ORR - Amendment Orders -Issued.

INDUSTRIES & COMMERCE (IP & INF) DEPARMENT

G.O.Ms.No. 4

Dated: 20.01.2018 Read the following:-

- 1. G.O. Ms. No.20, Industries and Commerce (IP&INF) Dept., dt.01.03.2013.
- 2. TSPCB letter no.97/TSPCB/Gen/Go Ms No 20/2016-741, dt.14.06.2016.
- Circular No: 97/TSPCB/Gen/GO Ms.20/2016-1533, dt.20.09.2016 issued by TSPCB.
- TSPCB letter no.1/TS-iPASS/CFO/Lantech/2016-24, dt.01.04.2017.
- Memo No. 1725/IP & INF/A1/2017 Industries and Commerce (IP&INF) Dept., dt.28.07.2017.
- Minutes of the meeting held on 16.11.2017 in the Chambers of Principal Secretary to Govt., EFS&T Dept.

ORDER:

In the reference 1st read above, Industries & Commerce department has issued Government Order, to shift polluting industries (compulsory) and non-polluting industries (optional) from within the Outer ring road (ORR) to outside Outer ring road.

2. In the reference 2nd read above, the Telangana State Pollution Control Board (TSPCB) has requested the Industries & Commerce department, Government of Telangana to issue necessary clarifications for processing of CFE/CFO applications filed for establishment and operation of new polluting and non-polluting industries and expansion of existing polluting and non-polluting industries with in ORR.

3. Further, the Member Secretary, Telangana State Pollution Control Board has informed that in its 4th Board Meeting held on 18.01.2017, vide Resolution No.76 has constituted a Sub-Committee headed by the Secretary, MA&UD and comprising of the Cemmissioner of Industries or his nominee, the Member Secretary PCB, representative of Telangana Industrialist Federation along with the Commissioner HMDA as special invitee to review case by case all the pending cases, falling under G.O.Ms.No.20, dt.01.03.2013.

4. In the reference 4th read above, the recommendations of the Committee, the Board has requested the industries Department to take necessary action to amend G.O.Ms.No.20, dt.01.03.2013 permitting the following Red & Orange category of industries based on their service potential and pollution load, within Outer Ring Road with condition that the industries shall adopt best available technologies for control of pollution. They shall provide facilities to attain Zero Liquid Discharge (ZLD) / 100% Recycle of treated waste water, usage of cleaner fuels, provide Scrubbers / Bag filters / ESPs for control of air pollution and take measure to control the odour.

Red Category:

- Isolated storage of hazardous chemicals (LPG storage only).
- Automobile manufacturing units (Engineering units).
- Airports and Commercial air Strips, having discharge more than 100 KLD
- Health-care Facilities (as defined in BMW Rules) having total wastewater generation more than 100 KLD / having incinerator
- v. Hotels having overall wastewater generation @ 100 KLD and more.
- Railway locomotive work shop / integrated road transport workshop / authorized service centers.
- vii. Jetties and dredging operations
- viii. Slaughter house (existing only)

- Building and construction project more than 20,000 Sq.m built up area having discharge more than 100 KLD.
- R&D (Bulk Drug and Bulk Drug Intermediates, not for commercial purpose), capacity not exceeding 1Kg/day for all the products.

Orange Category:

- Bakery and confectionery unit with production capacity > 1 TPD (with Ovens / furnaces)
- Chanachur and ladoo from puffed and beaten rice (muri and shira) using husk fired oven.
- Compact disc computer floppy and cassette manufacturing / Reel manufacturing.
- iv. Food and food processing including fruits and vegetable processing
- v. Silk screen printing, sari printing by wooden blocks.
- vi. Almirah, Grill manufacturing (Dry Mechanical process)
- vii. Automobile servicing, repairing and painting (excluding only fuel dispensing).
- viii. Ayurvedic and homeopathic medicine
- ix. Building and construction project more than 20,000 Sq.m builtp area having discharge less than 100 KLD.
- Dairy and dairy products (small scale capacity not exceeding 1000 Ltrs/day).
- xi. DG set of capacity >1 MVA but < 5MVA.
- xii. Manufacture of Beer (Micro breweries).
- xiii. Gravure printing, digital printing on flex, vinyl.
- xiv. Hotels (<3 star) or hotels having >20 rooms and less than 100 rooms xv. Ice Cream.
- xvi. Mechanized laundry using oil fired boiler.
- Mechanized laundry using oil fired boild xvii. New highway construction project.
- New highway construction
 Printing Press.
- xviii. Printing Press. xix. Tyre retreading only.
- xx. Dry cell battery (excluding manufacturing of electrodes) and assembling and charging of acid lead batteries on micro scale.
- xxi. Pharmaceutical Formulation and for R&D purpose (for sustained release/ extended release of drugs only and not for commercial purpose). Capacity not exceeding 1 Kg/day for all the products.
- xxii. Airports and Commercial air Strips, having discharge less than 100 KLD

5. In the reference 5th read above, keeping in view of the Board's Committee report and in consultation of Law Dept., the Government (Industries and Commerce (IP&INF) Dept.,) has issued Memo dated 28.07.2017 which states that:

- a. Existing industries which comply with the requirement of G.O.Ms.No.64, EFS & T Dept, dated 25.07.2013 can be permitted to be continued till the new industrial Area outside ORR are developed and business conditions and other business advantages that they enjoy at the present locations are suitably created in the new locations.
- b. A Committee with Senior Officers of Industries Department, Pollution Control Board and representatives of industry Associations will be constituted to monitor the above provision.

6. Further, in the meeting held in the Chambers of Principal Secretary to Govt., EFS&T Dept., on 16.11.2017 the Member Secretary, TSPCB has informed that the Government Memo issued vide reference 5th read above, does not clearly specify permitting establishment of new industries or expansion of the existing industries including Pharma units as permitted under G.O.Ms.No.64, dt.25.07.2013 and also explained that the Board has been receiving several applications /representations from the industries for new and expansion within outer ring road. However, these application are not being considered as the memo has not clearly mentioned on permitting new or expansion of industries within ORR.

7. In the reference 6th read above, the meeting was held on 16.11.2017 in the chambers of the Principal Secretary to Government, Environment, Forest, Science & Technology Department with the Principal Secretary to Govt & CIP, Industries & Commerce Department & Member Secretary, TSPCB, the matter was discussed in detailed and recommended for amendment to G.O.Ms.No.20, Ind & Com (IP) Dept, Dated: 01.03.2013 on the following:

- a. The existing Bulk Drug & Intermediate industries located within ORR and intend to go for expansion may be permitted with ZLD system in compliance with G.O.Ms.64, EFS&T Dept, dt.25.07.2013 and continue to operate duly obtaining valid Consents of TSPCB till the new industrial area outside ORR are developed and business conditions and other business advantages that they enjoy at the present locations are suitably created in the new locations.
- b. The Red category (except SLNo. viii) and Orange Category of industries which are listed above may be permitted to establish, expand and continue duly obtaining valid Consents of TSPCB within ORR till the new industrial area outside ORR are developed and business conditions and other business advantages that they enjoy at the present locations are suitably created in the new locations.
- c. Existing Red Category (Sl.No. viii) industries i.e., Slaughter houses may be permitted to continue duly obtaining valid Consents of TSPCB within ORR.

 The Government after Careful examination in the matter hereby decide to exempt following industries under G.O.Ms.No.20, Industries and Commerce (IP & INF) Dept, dated 01.03.2013 to enable operation and expansion of existing industries within ORR.

- a. The existing Bulk Drug & Intermediate industries located within Outer Ring Road (ORR) and intend to go for expansion may-be permitted with ZLD system in compliance with G.O.Ms.64, EFS&T Dept, dt.25.07.2013 and continue to operate duly obtaining valid Consents of TSPCB till the new industrial area outside ORR are developed and business conditions and other business advantages that they enjoy at the present locations are suitably created in the new locations.
- b. The Red category (except Sl.No. viii) and Orange Category of industries which are listed above may be permitted to establish, expand and continue duly obtaining valid Consents of TSPCB within Outer Ring Road (ORR) till the new industrial area outside Outer Ring Road (ORR) are developed and business conditions and other business advantages that they enjoy at the present locations are suitably created in the new locations.
- c. Existing Red Category (Sl.No. viii) industries i.e., Slaughter houses may be permitted to continue duly obtaining valid Consents of Telangana State Pollution Control Board (TSPCB), within Outer Ring Road (ORR).

9. Accordingly, the Principal Secretary to Government, Environment, Forest, Science & Technology Department and the Member Secretary, Telangana State Pollution Control Board (TSPCB), Hyderabad shall take further necessary action in the matter.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

JAYESH RANJAN PRINCIPAL SECRETARY TO GOVERNMENT AND COMMISSIONER FOR INDUSTRIAL PROMOTION (FAC)

То

The Principal Secretary to Government, Environment, Forest, Science & Technology Department.

Annex-V

SITING CRITERIA OF INDUSTRIES

The TSPCB follows the guidelines for establishment of the industries as mentioned below:

- 1. Cement Grinding units
- 2. Stone Crushing units
- 3. Dairy units
- 4. LPG Bottling
- 5. Cashew Processing units
- 6. Pulverizing units
- 7. Para boiled Rice mill
- 8. Pesticide formulation units
- 9. Sponge Iron Units (CPCB)
- 10. R & D Units
- 11. Tyre Pyrolysis units
- 12. Transportation/Communication system

1. CEMENT GRINDING UNITS (UP TO 50 TPD)

- ightarrow The distance between the boundary of the site and boundary of the
 - i) National Highway shall be -100 m
 - ii) State High way shall be 50 m
 - iii) M.D.R./Village roads shall be 25 m

 \rightarrow The minimum distance between the boundary of the site and human habitation (boundary of Town, Village etc.) shall be 500 m as the pollution is anticipated from fugitive emissions only.

 \rightarrow Green belt of 20 m width shall be developed along the boundary.

- ightarrow Total area of land acquired Ac. 1.5
- \rightarrow Minimum capacity of the unit shall be 20 TPD.

 \rightarrow Bag filter for grinding as well as cement silo either combindly or separately to be provided for units with capacity more than 50 TPD.

2. STONE CRUSHING UNITS

ightarrow The distance between the boundary of the site and boundary of the

- i) National Highway shall be -500 m
- ii) State High way, MDR and other roads shall be -100 m

 \rightarrow The distance between the boundary of the site and human habitation (boundary of Town, Village etc.) shall not be less than 800 m .

 \rightarrow Preferably located near the quarries.

 \rightarrow There shall be a 5 m width of green belt along the boundary of the site in the 50 m width buffer zone of the stone crushing unit. This green belt shall be developed on outer side of the buffer zone so as to act as a barrier.

 \rightarrow Total area of land acquired – Ac. 3 to 5.5 depending up on surroundings

3. DAIRY UNITS

ightarrow The distance between the boundary of the site and boundary of the

i) National Highway shall be -100 m

ii) State High way shall be - 50 m

iii) M.D.R./Village roads shall be - 25 m

 \rightarrow The distance between the boundary of the site and human habitation (boundary of Town, Village etc.) shall be at least 500 m .

 \rightarrow Total area of land acquired – Ac. 3.0

ightarrow Minimum capacity of the plant shall not be less than 5 KLD

4. LPG BOTTLING (UP TO 100 TONNES STORAGE)

 \rightarrow The distance between the boundary of the site and boundary of any road shall be at least 100 m

 \rightarrow The minimum distance between the boundary of the site and human habitation (boundary of Town, Village etc.) shall be 1 km

 \rightarrow Total area of land acquired – Ac. 5.0

 \rightarrow On site emergency plan to be prepared before the activity is commenced i.e. before the trial production.

5. CASHEW PROCESSING UNITS

Drum Process:-

- a) To be located 1 km away from habitation
- b) No new units to be allowed in Palasa, Kasibugga&Mogilipadu.
- c) Distance between 2 units shall be 500 m.

d) A distance of 500 m shall be maintained between the boundary of site and the Edge of National & State Highway.

e) A distance of 100 m shall be maintained from boundary of site and Edge of B.T. Roads in the Districts.

Boiling Process:-

a. To be located 300 m away from habitation.

b. No new units to be allowed in Palasa, Kasibugga, Mogilipadu in the districts of Srikakulam &Vizianagaram and Vetapalem in the District of Prakasham.

6. PULVERIZING UNITS (UP TO 50 TPD)

 \rightarrow The distance between the boundary of the site and boundary of the

- i) National Highway shall be -100 m
- ii) State High way shall be 50 m
- iii) M.D.R./Village roads shall be 25 m

 \rightarrow The minimum distance between the boundary of the site and human habitation (boundary of Town, Village etc.) shall be 500 m.

- \rightarrow Green belt of 20 m width shall be developed along the boundary.
- \rightarrow Total area of land acquired Ac. 1.5
- \rightarrow Bag filter has to be provided for the pulverizer.

7. PARA BOILED RICE MILL

- \rightarrow Category-I: Plat form (Solar) drying system
- → Category-II: Elevator type (forced drying)system
- ightarrow Boiling will be done in one shift in case of Cat-I and two shifts in case of Cat-II.
- \rightarrow Husk is to be stored in a closed shed only.

 \rightarrow The air pollution control equipment shall be installed to meet the standards prescribed (SPM-115.mg/Nm3)

 \rightarrow The wastewater shall be treated to meet the standards prescribed by the MoE&F, GOI to dispose on land within the premises of the industry.

 \rightarrow Boiler ash shall be stored in a separate closed shed in one of the corners of the site away from habitation and roads until its final disposal to brick manufacturers.

 \rightarrow ETP Sludge disposed into secured landfill.

Area of Land:

i. Plant : Ac. 0.5 and ETP : Ac. 0.5

ii. To utilize 10 KLD of wastewater Ac. 1.0 of land is required

iii. 10 m wide green belt shall be developed along the boundary.

iv. The total area of land required to set up the plant is as follows:-

Capacity TPD	Effluent discharge m3/day	Area of land required for land application in acres.	Total area. acres
20	25	2.50	3.50
25	30	3.0	4.0

Note: For the units who have adopted forced drying system Ac. 0.5 land may be deducted from the total area of land mentioned above.

General:-

 \rightarrow The new units shall be located at least 0.5 km away from human habitation I.e. boundary of the village/town etc.

 \rightarrow The new units shall not be located in the catchment area of drinking water source.

8. PESTICIDE FORMULATION UNITS

 \rightarrow No clusters of pesticide formulation units shall be permitted.

 \rightarrow The quality of product (after mixing) shall be ensured and certified by agricultural department before going into commercial production. The certificate shall be produced before the APPCB while applying for CFO or when the unit goes for expansion.

 \rightarrow The proponent has to substantiate the break-up the capital cost so that a proportionate amount is justified for pollution control measures for odour or dust causing products /processes.

 \rightarrow The solid, liquid and gaseous formulation units shall have extraction and scrubbing systems for mitigation of smell or to avoid any accidental leakages of poisonous gases.

 \rightarrow Bag filters shall be installed to trap particulate matter at all dust emission points in the process.

 \rightarrow Dry mopping vacuum cleaning of floor shall be adopted instead of wet floor washing and vessel cleaning as it prevents water contamination.

 \rightarrow Solid waste/drums shall be detoxified and they only disposed off by incineration or to the scrap dealers.

 \rightarrow The unit shall be located at least a raidal distance of 1 km away from any human habitation excluding APIIC IEs/IDAs.

 \rightarrow All odour causing chemicals in the formulation units shall be stored in a separate place within the premises.

 \rightarrow The units shall have at least 50-80% open area other than the factory built up area.

9) GUIDELINES / CODE OF PRACTICE FOR POLLUTION PREVENTION FOR SPONGE IRON PLANTS (CPCB)

1. Air Pollution

Stack Emission from Kiln

i. Adequately designed ESP or any other adequate air pollution control system/combination of system should be installed to achieve the prescribed stack emission standards.

As installation and operation of Pollution Control Equipment for plants with less than 100 TPD capacity is not economically viable, therefore, it is recommended that plants with less than 100 TPD shall not be permitted in future.

Program for phasing out old plants having capacity less than 100 TPD shall be worked out by the State Pollution Control Board.

ii. All Pollution control equipment should be provided with separate electricity meter and totaliser for continuous recording of power consumption. The amperage of the ID fan should also be recorded continuously. Non-functioning of Pollution control equipment should be recorded in the same logbook along with reasons for not running the Pollution Control Equipment.

iii. The safety cap/emergency stack of rotary kiln type plant, which is generally installed above the After Burner Chamber (ABC) of feed end column should not be used for discharging untreated emission, bypassing the air pollution control device.

iv. In order to prevent bypassing of emissions through safety cap and non-operation of ESP or any other pollution control device, software controlled interlocking facility should be provided on the basis of real time data from the plant control system, to ensure stoppage of feed conveyor, so that, feed to the kiln would stop automatically, if safety cap of the rotary kiln is opened or ESP is not in operation. The system should be able to take care of multiple operating parameters and their inter relations to prevent any possibility of defeating the basic objective of the interlock. The system should be foolproof to prevent any kind of tempering. The software based interlocking system, proposed to be installed by industry should be get approved by the concerned State Pollution Control Board, for its adequacy, before installation by the industry.

v. Mechanical operated system for timely collection and removal of the flue dust generated in ESP or any other pollution control device shall be installed. /span>

Stack Emission from de-dusting units

All de-dusting units should be connected to a stack having a minimum stack height of 30 m. Sampling porthole and platform etc. shall be provided as per CPCB emission regulation to facilitate stack monitoring. De-dusting units can also be connected to ABC Chamber and finally emitted through common stack with kiln off-gas emissions.

Fugitive Emission

The measurement may be done, preferably on 8-hour basis with high volume sampler. However, depending upon the prevalent conditions at the site, the period of measurement can be reduced.

2. Effluent Discharge

- i. All efforts should be made to reuse and re-circulate the water and to maintain zero effluent discharge.
- ii. Storm water / garland drain should be provided in the plant.

3. Noise Control

The industry should take measures to control the Noise Pollution so that the noise level standards already notified for Industrial area are complied.

4. Solid Waste Management

Char

Char should be mixed with coal or coal washery rejects and used as fuel in Fluidized Bed Combustion Boilers (FBC) for generation of power. The plants having capacity 200 TPD and above should install Fluidized Bed Combustion Boilers (FBC) for generation of power. Also the smaller capacity individual Sponge Iron Plants (Capacity upto 100 TPD) and operating in cluster can collectively install common Fluidized Bed Combustion Boilers (FBC) for power generation. The Sponge Iron Plant are free to explore other options / possibilities to use char for generation of power. Char can be sold to local entrepreneurs for making coal briquettes. It can also be mixed with coal fines, converted to briquettes and used in brick kilns.

Under no circumstances char should be disposed off in agricultural fields/other areas. Logbook for daily record, of Char production and usage must be maintained by the industry and the record shall be made available to officials of CPCB/SPCB/PCC during inspection.

Kiln Accretions

The kiln accretions are heavy solid lumps and can be used as sub- base material for road construction or landfill, after ascertaining the composition for its suitability and ensuring that it should not have any adverse environmental impact.

Gas Cleaning Plant (GCP)/Scrubber Sludge

The sludge should be compacted and suitably disposed off after ascertaining the composition for its suitability and ensuring that it should not have any adverse environmental impact.

Flue Dust / Fly ash

Flue dust is generated from air pollution control system i.e. ESP or any other air pollution control system installed with kiln. Secondary flue dust is also generated from Bag Filters or any other air pollution control equipment installed with Raw Material Handling, Coal Crusher, Cooler Discharge and Product house unit. The reuse/ recycling of the flue dust generated / collected may be explored and suitably implemented.

Fly ash brick manufacturing plant should be install for fly ash utilization. Fly ash can be utilized in cement making by Cement industry also.

Bottom Ash

Bottom ash may have objectionable metallic compounds, therefore should be stored in properly designed landfills as per CPCB guidelines to prevent leaching to the sub-soil and underground aquifer.

General

- a. Solid waste management program should be prepared with thrust on reuse and recycling. Solid waste disposal site should be earmarked within the plant premises. The storage site of solid waste should be scientifically designed keeping in view that the storage of solid waste should not have any adverse impact on the air quality or water regime, in any way.
- b. The various types of solid wastes generated should be stored separately as per CPCB guidelines so that it should not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water.

5. Raw Material handling and Preparation

- a. Unloading of coal by trucks or wagons should be carried out with proper care avoiding dropping of the materials from height. It is advisable to moist the material by sprinkling water while unloading.
- b. Crushing and screening operation should be carried out in enclosed area. Centralized de- dusting facility (collection hood and suction arrangements followed by de-dusting unit like bag filter or ESP or equally effective method or wet scrubber and finally discharge of emission through a stack) should be provided to control Fugitive Particulate Matter Emissions. The stack should confirm to the emission standards notified for de-dusting units. Water sprinkling arrangement should be provided at raw material heaps and on land around the crushing and screening units.
- c. Work area including the roads surrounding the plant shall be asphalted or concreted.
- d. Enclosure should be provided for belt conveyors and transfer points of belt conveyors.

The above enclosures shall be rigid and permanent (and not of flexible/ cloth type enclosures) and fitted with self- closing doors and close fitting entrances and exits, where conveyors pass through the enclosures. Flexible covers shall be installed at entry and exit of the conveyor to the enclosures, minimizing the gaps around the conveyors.

In the wet system, water sprays/ sprinklers shall be provided at the following strategic locations for dust suppression during raw material transfer:

- Belt conveyor discharge/ transfer point
- Crusher/screen discharge locations

6. Waste Heat Recovery Boiler (WHRB)

Sponge Iron Plants of capacity more than 100 TPD kilns shall use Waste Heat Recovery Boiler (WHRB) for generation of power.

7. Cooler Discharge and Product Separation Unit

Permanent and rigid enclosures shall be provided for belt conveyors and transfer points of belt conveyors. Dust extraction cum control system preferably bag filters or ESP to arrest product loss in cooler discharge and product separation area shall be installed.

8. Char based Power Plant

For plant having capacity of 200 TPD of cumulative kiln capacity, the power production through FBC boiler using char as a part of fuel, is a viable option. Power generation through FBC boiler using char as a part of fuel be implemented in a phased manner within 4 years of commissioning and targeting for 100% utilization of char.

Individual Sponge Iron Plants of capacity upto 100 TPD and located in cluster can install a common char based power plant collectively.

New Sponge Iron Plants

- i. No New Sponge Iron Plant will be commissioned without installation of Pollution control systems as stipulated in the Standards. The concerned State Pollution Control Board will accord consent to operate only after Physical verification of the adequacy of the Installed pollution control systems for meeting the standards and stipulated conditions in the consent to establish.
- ii. All new kilns shall have the independent stack with the kiln or multi-flue stacks in case two or more kilns are joining the same stack for better dispersion of pollutants.
- iii. Any entrepreneur having more than 2x100 TPD kiln may install WHRB for power generation, as it's a techno-economic viable option. For plants having capacity of 200 TPD or more, power generation using char in FBC Boiler as part of fuel is techno-economic viable option, therefore, new plants must install FBC boiler for power generation at the time of installation of the industry.
- iv. Any new sponge iron plant being installed along with the other downstream facilities of converting the sponge iron into steel with/without further processing the steel should meet the target of 100% utilization of sensible heat of DR (Direct Reduction) Gas and Char for power generation. Wet scrubbing system for kiln off-gas treatment for such plants should not be opted.

10. General Guidelines

a. Extensive plantation/Green belt shall be developed along the roads and boundary line of the industry. A minimum 15 m width Green Belt along the boundary shall be maintained. However,

the green belt may be designed scientifically depending upon the requirement and local and mix species of plants may be selected for the green belt.

- b. Monitoring of stack emissions, fugitive emissions, trade effluent and noise level shall be done as per CPCB regulations.
- c. Pollution control systems shall be operated as an integral part of production to ensure minimum emissions. Pollution Control System shall start before conveyor operation/operation of plant. Similarly pollution control system shall be stopped only after completion of conveyor operation/operation of plant so that possibility of dust settlement in ducts can be eliminated. Continuous evacuation of dust (from Dust catchers, ESPs, Bag filter hopper etc.) shall be organized.

Siting Guideline for Sponge Iron Plants

Siting of new sponge iron plants shall be as per respective State Pollution Control Board guidelines. However the following aspects shall also be considered:

- a. Residential habitation (residential localities/ village) and ecologically and/or otherwise sensitive areas: A minimum distance of at least 1000 m (1.0 km) to be maintained.
- b. The location of Sponge Iron Plant should be at least 500 m away from National Highway and State Highway .
- c. Radial distance between two Sponge Iron Plants should be 5 km for plants having capacity 1000 TPD or more.
- d. Sponge Iron Plants can be established in designated industrial areas / Estates as notified by State Govt.

10. Guidelines for R & D Units

- a) The R & D units shall not be located in the residential and commercial areas.
- b) The R&D units shall be located at least 0.50 km away from boundary of nearest human habitation.

c) If the R& D unit proposes for up-scaling the process/technology validation, developed on laboratory scale, boiler(s) of maximum total capacity 0.5 T/hr shall be allowed.

d) The R & D units shall not go for commercial production.

11. Guidelines to establish the Tyre Pyrolysis units

- a. Pyrolysis units may be located atleast 500 m away from habitations.
- b. Burners shall be installed to flare up excess non condensable gases with safety arrangements.

c. Air pollution control equipment shall be provided to control the flue gas emissions generated during the heating of the pyrolysis reactor.

d. No further distillation of oil shall be carried out.

e. The by products, carbon black shall be collected properly and stored in closed shed without causing any spillages before selling to outside parties.

12. SITING GUIDELINES FROM TRANSPORTATION / COMMUNICATION SYSTEM :

The following width of buffer zone shall be maintained from the Road Land Boundary*:

- 1. National Highways 50 Mts.
- 2. State Highways 40 Mts.
- 3. MDR / Village Road 20 Mts.

*Road Land Boundary means the boundary of the road upto which land is acquired for road purposes.

These guidelines will be applicable to industries other than 11 category of industries for which specific guidelines are formulated by the Board.

The buffer zone may be permitted to be utilized for the following:

- i) Paved Vehicle parking.
- ii) Administrative guiding and security office.
- iii) Green belt.
- iv) Electrical Substation / transformers.
- v) Fuel Station.
- vi) Water supply sumps.

These guidelines shall be applicable to individual industries & industrial estates, but not to the plots located within industrial estates.

Annex-VI

State government has notified the E-waste policy in the year 2017. A copy of the policy can be downloaded from the following link.

https://www.telangana.gov.in/PDFDocuments/Telangana-e-Waste-Management-Policy-2017.pdf

Annex-VII

Refilling stations retrofitted with vapor recovery system: The three oil companies together in the state have installed the VRS at 41 locations the details of which are enclosed in **Annex-VIII.**

	Completed VRS in Retail Outlets in HYD							
SI N o. as pe r lis t	Name of RO	City	Address	Avg Mo nthl y MS Sal es	Whe ther VRS is insta Iled(Y/N)	Op era tin g Sta tus (Y/ N)	Details of Facility	Remarks
1	NATH SERVICE CENTER	HYDERABAD	SURVEY NO 18 GACHIBIWLI HYDERABAD 500029	220	Y	Y	VRS Stage 1B and II	
2	VENKATAPU RI RUEL POINT	HYDERABAD	SY . NO. 124 VINYAK NAGAR GACHIBOWLI 500032	170	Y	Y	VRS Stage 1B and II	
3	MALLIKARJU NA SS	HYDERABAD	HPC DEALERS NO . 22- 87 RAMACHANDRAPURA M - 500032	313	Y	Y	VRS Stage 1B and II	
4	SAPPHIRE SERVICE STATION	HYDERABAD	D NO. 6-2 30 AC GARDS LAKIDEKA POOL HYD - 500004	285				Installati on under progress
5	TSSP 1ST BATTALION SS	HYDERABAD	SY NO. 123 YOUSFGUDA POLICELINES 500045	169	Y	Y	VRS Stage 1B and II	
6	TSSP 8TH BN SS	HYDERABAD	SERILINGAMAPALLY MANDAL KONDAUPUR BALANAGAR MANDAL HYD- 500084	218	Y	Y	VRS Stage 1B and II	
7	SRI BHARATHI PERROL FILLING STATION	HYDERABAD	SY 19 GANDHAMGUDA VILLAGE PEERANCHERUVU, RAJENDRANAGAR MANDAL AND MUNICIPALITY- 500008	411	Y	Y	VRS Stage 1B and II	
8	TOWLI CHOWKI SS	HYDERABAD	9-4-77/3/8 YOUSUF TE KRI TOWRICHWKI HYDERABAD 500008	236	Y	Y	VRS Stage 1B and II	

9	SRI ANJANEYA MOTOR FUELS	HYDERABAD	HPCL DEALER, SHAIKPET SHAIKPET NALA HYDERABAD	292	Y	Y	VRS Stage 1B and II
10	GANGA FUEL STATION	HYDERABAD	SY NO. 79,80,82 SERILINGAMPALLY VILLAGE & MANDAL HYDERABAD- 500071	135	Y	Y	VRS Stage 1B and II
11	VINAYAK FILLING STATION	HYDERABAD	SURVEY NO 111,112,113 KUKATPALLY VILLAGE BALANAGAR MANDAL HYDERABAD- 500071	246	Y	Y	VRS Stage 1B and II
12	KRISHNA SERVICE STATION	HYDERABAD	HPCL DEALER, SY NO. 20, 27 KANAMET VILLAGE , SERILINGAMPALLY	204	Y	Y	VRS Stage 1B and II
13	University FlgStn	HYDERABAD	TARNAKA JN SECUNDERABAD 500007	740	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold
14	KESHAV PETRO FIL	HYDERABAD	SY NO 178 OPP KPHB COLONY KUKATPULLI 500085	380	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold
15	INDUBAALA CARRIERS	HYDERABAD	PLOT E-102 & 103, SY NO.601 SINAKPURI 500094	333	Y	Y	VRS Vacuum Pumps(1 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold

16	HI-TECH FILLING STACTION	HYDERABAD	SY NO.89 HAFEEZPET, 500050	266	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold
17	VAMSHI FUEL POINT	HYDERABAD	SY NO. 243 GANDIPET MAIN ROAD LANGARHOUSE 500008	268	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold
18	K. BALAKRISHN AIAH & Co	HYDERABAD	BESIDE HUDA COMPLEX, SAROORNAGAR # HYDERABAD DISTT. RAANGREDDY-500035	300	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold
19	BHARATH SER.STN.	HYDERABAD	37045,LIBERTY JUNCTION # HYDERABAD DISTT. HYDERABAD - 500029 TELANGANA	272	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold
20	JUBILEE HILLS FILL STN		ROAD NO 1 JUBILEE HILLS 500034	327	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold

21	MOHSIN MOTOR NEEDS	HYDERABAD	6-3-655 IRRAM MANZIL, # HYDERABAD TELANGANA	265. 5	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold	
22	CHANDRIKA SERNIVAS FILLING STATION	HYDERABAD	PLOT NO. 88,89,116,117 PRAGATHYNAGAR ROAD,KUKATPALLY # HYDERABAD DISTT. MEDCHAL MALKAJGIRI - 500090, TELANGANA	299	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold	
23	SHIVA SHAKTI FUEL STATION	HYDERABAD	SY NO. 1011/10 MOOSAPET VILLAGE, KUKATPALLY MANDAL,# HYDERABAD, DISTT, MEDCHAL MALKJGIRI - 500018, TELANGANA	267			Site is in WIP due to upgradation	
24	CYBERABAD FILLING STATION	HYDERABAD	SY. NO. JNTU-HITECH CITY RD, KHANAMET, SERILINGAMPALLY (m). KHANAMPET V, HYDERABAD, 500081	455	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold	
25	BP- AMEERPET	HYDERABAD	H.NO. 8-3-217, SY. NO. 6/1, BLOCK A WARD-5 SRINIVASANAGAR (w) AMEERPET, HYDERABAD - 500038	390	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold	
26	HIPPOCAMP US SER, STN. MS 267, WIP	HYDERABAD	HYDERABAD - CITY	301. 5				Site is in WIP due to upgradat

								ion
27	LALITHA FUEL POINT, 171 WIP	HYDERABAD	HYDERABAD - CITY	202	Y	Y	VRS Vacuum Pumps(2 Nos),PV Valve for MS/Speed Tank Vent Pipes with Manifold	
28	BP- AMEERPET	HYDERABAD	HYDERABAD - CITY					
29	FULL MOON S/S SOMAJIGUD A	HYDERABAD	SOMAJIGUDA- HYDERABAD	210	Y	Y	AIR,WATER, TOILET, ETC	Work complet ed
30	SIVAM AUTO	HYDERABAD	BEGUMPET, HYDERABA - 500016	266. 833 333 3	Y	Y	AIR,WATER, TOILET, ETC	Work complet ed
31	SREE SAI VEERA S/S	HYDERABAD	MEHDIPATNAM, HYDERABAD- 500028	310. 666 666 7	Y	Y	AIR,WATER, TOILET, ETC	Work complet ed
32	PRODUTURI SERVICES	HYDERABAD	HUBSIGUDA HYDERABAD	230. 833 333 3	Y	Y	AIR,WATER, TOILET, ETC	Work complet ed
33	COCO. BEGUMPET	HYDERABAD	BEGUMPET, HYDERABA - 500016	385. 938 5	Y	Y	AIR,WATER, TOILET, ETC	Work complet ed
34	SUPERINTEN DENT OF JAILS (hyd)	HYDERABAD	SAIDABAD (V&M), HYDERABAD	602	Y	Y	AIR,WATER, TOILET, ETC	
35	SHIVAM HITECH	HYDERABAD	HYDERABAD	119. 166 666 7	Y	Y	AIR,WATER, TOILET, ETC	Work complet ed
36	INDRA PERTO PRODUCTS	HYDERABAD	HYDERABAD	319. 5	Y	Y	AIR,WATER, TOILET, ETC	Work complet ed
37	GANESH SERVICE STATION	HYDERABAD	HYDERABAD	282. 666 666 7	Y	Y	AIR,WATER, TOILET, ETC	Work complet ed
38	ASHOK	HYDERABAD	HYDERABAD	255	Y	Y	AIR,WATER,	Work

	SERVICE						TOILET, ETC	complet
	STATION							ed
39	KALINDI		VIDYA NAGAR	123	Y	Υ	AIR,WATER,	
	FILLING						TOILET, ETC	
	STACTION							
40	СОСО	HYDERABAD	DHITECH CITY-	368.	У	Ν	AIR,WATER,	Tempora
	HITECH		HYDERABAD	769			TOILET, ETC	rily
				5				disconne
								cted due
								to
								moderni
								zation
								works
								(WIP)
41	PMS FILLING	HYDERABAD	HYDERABAD	239.	Y	Y	AIR,WATER,	Work
	STATION			166			TOILET, ETC	complet
				666				ed
				7				
42	RAJENDAR	HYDERABAD	HYDERABAD	256	Y	Y	AIR,WATER,	Work
	PERTO						TOILET, ETC	complet
	PRODUCTS							ed

Annex-VIII

G.O.no 168

GOVERNMENT OF ANDHRA PRADESH A B S T R A C T

Municipal Administration and Urban Development Department – Andhra Pradesh Building Rules, 2012 – Orders – Issued.

MUNICIPAL ADMINISTRATION AND URBAN DEVELOPMENT (M) DEPARTMENT

G.O.Ms.No.168

Dated: 07.04.2012

Read the following:

1. G.O.Ms.No.483 M.A & U.D. Department, dated 24-08-1998 2. G.O.Ms.No.541 M.A & U.D. Department, dated 17-11-2000 3. G.O.Ms.No.33 M.A & U.D. Department, dated 03-03-2001 4. G.O.Ms.No.86 M.A & U.D. Department, dated 03-03-2006 5. G.O.Ms.No.171 M.A & U.D. Department, dated 19-04-2006 6. G.O.Ms.No.623 M.A & U.D. Department, dated 01-12-2006 7. G.O.Ms.No.17 M.A & U.D. Department, dated 10-01-2007 8. G.O.Ms.No.678 M.A & U.D. Department, dated 07-09-2007 9. G.O.Ms.No.736 M.A & U.D. Department, dated 03-10-2007 10.G.O.Ms.No.744 M.A & U.D. Department, dated 04-10-2007 11.G.O.Ms.No.279 M.A & U.D. Department, dated 01-04-2008 12.G.O.Ms.No.281 M.A & U.D. Department, dated 01-04-2008 13.G.O.Ms.No.302 M.A & U.D. Department, dated 15-04-2008 14.G.O.Ms.No.569 M.A & U.D. Department, dated 23-08-2008 15.G.O.Ms.No.249 M.A & U.D. Department, dated 16-03-2009 16.G.O.Ms.No.450 M.A & U.D. Department, dated 13-10-2010 17.G.O.Ms.No.34 M.A & U.D. Department, dated 22-01-2011 18.G.O.Ms.No.45 M.A & U.D. Department, dated 28-01-2011 19.G.O.Ms.No.82 M.A & U.D. Department, dated 21-02-2011 -- 000 --

ORDER:

- In the references read above, Government have issued Comprehensive Building Rules and other related rules which are applicable to Municipal Corporations, Municipalities, Nagar Panchayats and areas covered by Urban Development Authorities in the State. These Building Rules are regulating the building activities in above areas.
- Government consider that there is a need to bring comprehensive and uniform building stipulations in the State and therefore decided to issue Andhra Pradesh Buildings Rules.
- A copy of this Order is available on the Internet and can be accessed at the address <u>http://goir.ap.gov.in/</u>.
- The following notification shall be published in an Extraordinary issue of Andhra Pradesh Gazettee dated:09-04-2012.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

B. SAM BOB

PRINCIPAL SECRETARY TO GOVERNMENT

То

The Commissioner, Printing, Stationery & Stores Purchase Department, Hyderabad for Publication of the Notification in the Gazettee and furnish 1000 copies.

- The Director of Municipal Administration, Hyderabad A.P, Hyderabad,
- The Director of Town & Country Planning, A.P. Hyderabad,

The Commissioner, Greater Hyderabad Municipal Corporation, Hyderabad,

- The Metropolitan Commissioner,
- Hyderabad Metropolitan Development Authority, Hyderabad,
- All Vice Chairmen of Urban Development Authorities,

P.T.O.

5. PERMISSIBLE SETBACKS & HEIGHT STIPULATIONS FOR ALL TYPES OF NON-HIGH RISE BUILDINGS

(Buildings below 18m in height inclusive of Stilt / Parking Floor):

(a) The height of buildings permissible in a given site / plot shall be subject to restrictions given in Annexure - I to II.

(b) The minimum setbacks and permissible height as per Table - III and other conditions stipulated below shall be followed.

	TABLE - III										
				Build	Minimum						
	Plot Size		Height		setbacks						
sl.	(in Sq.	Parking	(in m)		on						
No	m)	provisio	Permissi	Up	Above	Above	Above		remaining		
•	Above -	n	ble	to	12m &	18m &	24m &	Above	sides		
	Up to		Up to	12	up to	up to	up to	30m	(in m)		
-	-	-		m –	18m	24 m	30m	0	10		
1	2	3	4	5	6	/	8	9	10		
1	Less than 50		7	1.5	1.5	3	3	3	-		
2	50-100	-	7	1.5	1.5	3	3	3	-		
			10	1.5	1.5	3	3	3	0.5		
3	100 - 200	-	10	1.5	1.5	3	3	3	1.0		
4	200 - 300	Stilt floor	7	2	3	3	4	5	1.0		
			10	2	3	3	5	6	1.5		
5	300 - 400	Stilt floor	7	3	4	5	6	7.5	1.5		
			12	3	4	5	6	7.5	2.0		
6	400 - 500	Stilt floor	7	3	4	5	6	7.5	2.0		
			12	3	4	5	6	7.5	2.5		
	* 500 - 750	Stilt floor	7	3	4	5	6	7.5	2.5		
7			12	3	4	5	6	7.5	3.0		
			15	3	4	5	6	7.5	3.5		
	750 - 1000	Stilt + One Cellar floor	7	3	4	5	6	7.5	3.0		
8			12	3	4	5	6	7.5	3.5		
			15	3	4	5	6	7.5	4.0		
	1000 - 1500	Stilt + 2 Cellar floors	7	3	4	5	6	7.5	3.5		
9			12	3	4	5	6	7.5	4.0		
			10**	3	4	5	6	7.5	5.0		
			7	3	4	5	6	7.5	6.0		
10	1500 - 2500	Stilt + 2 Cellar floors Stilt +	15	3	4	5	6	7.5	4.0		
			18**	3	4	5	6	7.5	5.0		
			7	3	4	5	6	7.5	5.0		
11	Above 2500	00 Cellar floors	15	3	4	5	6	7.5	5.0		
			10**	3	4	5	6	7.5	6.0		
			18	3	4	5	6	7.5	7.0		
13. PARKING REQUIREMENTS:

(a) In all Buildings provision shall be made for parking spaces as per the following requirements:

		Parking area to be provided as percentage of total built up area							
SI	Category of	All Municipal HMDA Area UDA Areas		unicipal ations & Areas	Municipalities/ N.Ps/ G.Ps. other than UDA Areas				
No	building/ activity	GHMC	Municipali ties/ N.Ps/ G.Ps. in HMDA Area	All Munici pal Corpor ations	Municipal ities/ N.Ps/ G.Ps. in UDA Areas	Selecti on & Special Grade Munici palities	Other Municipal ities/ N.Ps/ G.Ps.		
1	2	3	4	5	6	7	8		
1	Multiplexes	60	50	60	50	60	50		
2	Shopping Malls (above 4000 sq.m), Information Technology Enabling Services Complexes	60	50	50	40	40	30		
3	Hotels, Restaurants, Lodges, Cinema halls, Business buildings, Other Commercial buildings, Kalyana Mandapams, Offices, & High- Rise Buildings / Complexes of Non Residential Category	40	30	30	25	25	25		
4	Residential Apartment Complexes, Hospitals, Institutional buildings, Industrial buildings, Schools, Colleges, Other Educational Buildings & Godowns & Others	30	20	20	20	20	20		

TABLE - V

Annex-IX

Report on Data Entry Status for Roads									
S.No	District Name	ULB Name	Total No. of Wards	Total Length of CC Roads (KM)	Total Length of BT Roads (KM)	Total Length of Kutcha Roads (KM)	TOTAL		
1	2	3	4	5	6	7	8		
1	Adilabad	Adilabad	49	207.17	38.223	129.78	375.18		
2	BhadradriKoth agudem	Kothagude m	36	124.61	36.05	25.47	186.13		
3	BhadradriKoth agudem	Manuguru	20	69.20	4.75	12.92	86.87		
4	BhadradriKoth agudem	Palvancha	23	217.60	20.20	9.50	247.30		
5	BhadradriKoth agudem	Yellandu	24	83.79	3.81	4.55	92.15		
6	Jagityal	Dharmapuri	15	33.60	7.05	15.90	56.54		
7	Jagityal	Jagitial	48	100.52	40.92	30.35	171.79		
8	Jagityal	Korutla	33	100.70	17.07	66.28	184.04		
9	Jagityal	Metpally	26	44.35	5.84	30.97	81.16		
10	Jagityal	Raikal	12	43.29	8.20	14.91	66.40		
11	Jangaon	Jangaon	30	95.80	9.40	43.30	148.50		
12	Jayashankar	Bhupalpally	30	72.87	28.12	9.83	110.81		
13	JogulambaGad wal	Gadwal	37	93.99	26.38	60.11	180.49		
14	JogulambaGad	Alampur	10	0.00	0.00	0.00	0.00		

	wal						
15	JogulambaGad wal	Waddepally	10	10.72	1.20	4.35	16.27
16	JogulambaGad wal	leeja	20	35.40	3.16	24.63	63.19
17	Kamareddy	Kamareddy	49	107.93	48.07	26.22	182.21
18	Kamareddy	Yellareddy	12	27.71	11.44	14.65	53.80
19	Kamareddy	Banswada	19	54.55	2.96	9.42	66.93
20	Karimnagar	Huzurabad	30	39.55	0.15	26.38	66.08
21	Karimnagar	Jammikunta	30	27.88	12.86	40.39	81.13
22	Karimnagar	Karimnagar	60	331.70	59.43	128.06	519.18
23	Karimnagar	Choppadan di	14	15.85	0.00	14.75	30.60
24	Karimnagar	Kothapalli	12	33.24	7.20	10.73	51.17
25	Khammam	Khammam	50	34.74	0.02	0.00	34.76
26	Khammam	Wyra	20	23.72	6.70	19.48	49.89
27	Khammam	Sathupalli	23	78.77	0.00	0.00	78.77
28	Khammam	Madira	22	44.46	5.33	24.20	74.00
29	KomaramBhee m	Khagaznaga r	30	71.92	6.62	5.22	83.76
30	Mahaboobnag ar	Mahabubna gar	49	201.65	48.34	59.23	309.22
31	Mahaboobnag ar	Bhoothpur	10	14.98	0.20	0.41	15.59
32	Mahaboobnag ar	Jadcherla	27	41.27	13.67	24.43	79.37

33	Mahabubabad	Dornakal	15	167.50	1.00	6.50	175.00
34	Mahabubabad	Maripeda	15	5.00	0.00	2.60	7.60
35	Mahabubabad	Mahabooba bad	36	208.33	37.77	374.95	621.05
36	Mahabubabad	Thorrur	16	104.98	5.00	0.40	110.38
37	Mancherial	Kyathapally	22	62.90	17.00	26.10	106.00
38	Mancherial	Mandamarri	24	74.80	33.06	15.69	123.54
39	Mancherial	Bellampally	34	62.20	18.80	35.12	116.12
40	Mancherial	Chennur	18	37.46	6.21	21.64	65.31
41	Mancherial	Mancherial	36	34.06	8.18	2.25	44.49
42	Mancherial	Naspur	25	153.50	90.30	0.00	243.80
43	Mancherial	Luxettipet	15	0.02	0.03	0.03	0.07
44	Medak	Ramayampe t	12	20.06	1.90	13.79	35.75
45	Medak	Narsapur	15	14.81	1.50	6.23	22.54
46	Medak	Toopran	16	59.40	14.20	11.13	84.72
47	Medak	Medak	32	69.10	7.76	37.86	114.72
48	Medchal- Malkajgiri	Thumkunta	16	5.11	7.54	10.85	23.50
49	Medchal- Malkajgiri	Peerzadigud a	26	242.11	0.00	0.00	242.11
50	Medchal- Malkajgiri	Nagaram	20	100.53	12.68	78.18	191.40
51	Medchal- Malkajgiri	Kompally	18	43.15	34.04	3.95	81.14

52	Medchal- Malkajgiri	Jawaharnag ar	28	34.29	0.00	260.80	295.09
53	Medchal- Malkajgiri	Boduppal	28	95.54	7.20	58.60	161.34
54	Medchal- Malkajgiri	GHATKESAR	18	63.22	6.25	6.60	76.07
55	Medchal- Malkajgiri	Dammaigud a	18	138.28	15.90	81.65	235.83
56	Medchal- Malkajgiri	Pocharam	18	40.59	9.27	22.45	72.31
57	Medchal- Malkajgiri	Gundlapoch ampally	15	19.49	24.63	20.13	64.25
58	Medchal- Malkajgiri	Medchal	23	77.76	25.54	13.02	116.32
59	Medchal- Malkajgiri	Nizampet	33	112.16	33.56	21.39	167.12
60	Medchal- Malkajgiri	Dundigal	28	15.83	0.60	1.20	17.63
61	Nagarkurnool	Achampet	20	11.08	0.00	10.85	21.94
62	Nagarkurnool	Kollapur	20	49.15	0.50	9.70	59.35
63	Nagarkurnool	Nagarkurno ol	24	79.57	14.80	40.60	134.97
64	Nagarkurnool	Kalwakurthy	22	22.00	0.21	10.38	32.59
65	Nalgonda	Chandur	10	13.32	0.00	32.12	45.44
66	Nalgonda	Haliya	12	35.70	0.00	0.00	35.70
67	Nalgonda	Nandikonda	12	33.00	102.00	12.50	147.50
68	Nalgonda	Nalgonda	48	323.31	74.81	179.20	577.31

69	Nalgonda	Devarakond a	20	85.00	0.00	40.00	125.00
70	Nalgonda	Miryalguda	48	183.23	9.41	64.85	257.49
71	Nalgonda	Chityal	12	16.21	4.48	9.90	30.58
72	Narayanapet	Narayanpet	24	13.68	0.00	0.00	13.68
73	Narayanapet	Makthal	16	17.29	1.50	34.68	53.47
74	Narayanapet	Kosgi	16	25.01	3.17	30.20	58.38
75	Nirmal	Khanapur	12	23.68	1.23	2.11	27.02
76	Nirmal	Bhainsa	26	78.20	0.00	51.80	130.00
77	Nirmal	Nirmal	42	70.06	0.00	8.82	78.88
78	Nizamabad	Bodhan	38	99.38	47.70	41.90	188.98
79	Nizamabad	Bheemgal	12	59.30	2.50	8.95	70.75
80	Nizamabad	Armoor	36	71.59	12.92	63.23	147.74
81	Nizamabad	Nizamabad	60	175.84	170.12	186.94	532.90
82	Peddapalli	Peddapalli	36	130.05	1.20	38.94	170.20
83	Peddapalli	Manthani	13	41.50	2.32	18.50	62.32
84	Peddapalli	Sulthanabad	15	28.19	2.95	19.58	50.72
85	Peddapalli	Ramagunda m	50	440.00	201.36	69.52	710.88
86	RajannaSircilla	Vemulawad a	28	70.40	16.35	44.19	130.94
87	RajannaSircilla	Sircilla	39	159.89	18.12	68.72	246.73
88	Ranga Reddy	Turkayamjal	24	64.55	57.35	94.63	216.54
89	Ranga Reddy	Adibatla	15	42.51	21.70	2.04	66.26

90	Ranga Reddy	Shamshaba d	25	66.97	12.85	31.39	111.21
91	Ranga Reddy	Thukkuguda	15	24.48	2.14	5.84	32.46
92	Ranga Reddy	Narsingi	18	66.05	27.22	23.52	116.78
93	Ranga Reddy	Amangal	15	10.33	4.60	13.39	28.32
94	Ranga Reddy	Badangpet	32	119.79	101.28	251.96	473.03
95	Ranga Reddy	PeddaAmbe rpet	24	62.22	24.71	52.74	139.66
96	Ranga Reddy	Shankarpall Y	15	21.67	1.99	19.16	42.81
97	Ranga Reddy	Jalaplly	28	31.35	9.76	212.43	253.54
98	Ranga Reddy	Bandlaguda Jagir	22	58.25	12.59	64.99	135.83
99	Ranga Reddy	Meerpet	46	122.17	35.96	41.69	199.82
100	Ranga Reddy	Manikonda	20	79.15	18.56	14.29	112.00
101	Ranga Reddy	Ibrahimpatn am	24	29.79	1.21	9.49	40.49
102	Ranga Reddy	Shadnagar	28	66.26	7.21	67.99	141.46
103	Sangareddy	Bollaram	22	24.75	0.90	17.51	43.16
104	Sangareddy	Narayankhe d	15	24.14	2.10	17.20	43.44
105	Sangareddy	Ameenpur	24	30.52	13.32	16.47	60.31
106	Sangareddy	Sadasivpet	26	42.34	7.98	52.27	102.58
107	Sangareddy	Andole - Jogipet	20	32.79	1.85	0.63	35.26
108	Sangareddy	Sangareddy	38	90.05	8.20	145.53	243.78

109	Sangareddy	Zaheerabad	37	53.20	1.00	93.64	147.84
110	Sangareddy	Tellapur	17	42.06	12.19	7.51	61.75
111	Siddipet	Siddipet	34	63.63	8.93	13.16	85.71
112	Siddipet	Husnabad	20	34.68	6.08	18.44	59.19
113	Siddipet	Cherial	12	0.00	0.00	0.00	0.00
114	Siddipet	Dubbak	20	129.66	6.50	20.40	156.56
115	Siddipet	Gajwel - Pragnapur	20	58.75	15.02	47.20	120.98
116	Suryapet	Thirumalagi ri	15	22.36	2.60	40.57	65.53
117	Suryapet	Suryapet	48	214.52	37.65	197.27	449.43
118	Suryapet	Kodad	35	125.80	14.80	83.80	224.41
119	Suryapet	Huzurnagar	28	27.24	4.18	17.76	49.18
120	Suryapet	Nereducharl a	15	32.05	5.10	50.05	87.20
121	Vikarabad	Tandur	36	88.83	6.30	20.41	115.55
122	Vikarabad	Kodangal	12	9.81	0.00	10.93	20.73
123	Vikarabad	Vikarabad	34	76.60	53.88	45.28	175.76
124	Vikarabad	Parigi	15	29.55	6.70	13.77	50.02
125	Wanaparthy	Atmakur	10	3.80	0.00	0.00	3.80
126	Wanaparthy	Amarchinta	10	0.33	0.00	2.09	2.41
127	Wanaparthy	Pebbair	12	0.00	0.00	0.00	0.00
128	Wanaparthy	Kothakota	15	15.12	1.10	0.65	16.87
129	Wanaparthy	Wanaparthy	33	32.25	3.47	1.36	37.08

130	Warangal (Rural)	Wardhanna pet	12	27.70	6.50	14.98	49.18
131	Warangal (Rural)	Parkal	22	58.00	7.00	0.10	65.10
132	Warangal (Rural)	Narsampet	24	48.89	11.78	24.62	85.29
133	Warangal(U)	Warangal	58	717.52	626.40	171.65	1515.5 7
134	YadadriBhuvan agiri	Yadagirigutt a	12	25.10	1.45	7.68	34.23
135	YadadriBhuvan agiri	Mothkur	12	39.36	0.00	12.58	51.94
136	YadadriBhuvan agiri	Choutuppal	20	58.20	4.10	63.05	125.35
137	YadadriBhuvan agiri	Alair	12	15.55	8.52	7.92	32.00
138	YadadriBhuvan agiri	Bhongir	35	84.42	21.61	8.15	114.18
139	YadadriBhuvan agiri	Pochampall Y	13	37.41	16.44	30.88	84.73
	Total		3405	10183.81	2843.68	5298.71	18326. 20

Annex-X G.O.Ms.No. 27 dt. 10.07.2017

GOVERNMENT OF TELANGANA ABSTRACT

EFS&T Department - Prohibition of open burning of Waste and Utilization of Refused Derived Fuel (RDF) as a fuel in Power Generation and Cement Plants - Orders - Issued.

ENVIRONMEN, FORESTS, SCIENCE & TECHNOLOGY (For.III) DEPARTMENT

G.O.Ms.No. 27

Dated: 10-07-2017 Read the following:-

- Government of India, Ministry of Environment, Forest and Climate Change Notification No. S.O. 1357(E), dt. 08.04.2016 notifying the Solid Waste Management Rules, 2016.
- 2. G.O. Ms. 79, E.F.S. & T. (For.III), Dept., Dated 30.12.2016.
- Orders of Hon'ble NGT, New Delhi, dt. 22.12.2016 in OA No. 199/2014 filed by Mrs. Almitra H. Patel.
- From the MS, TSPCB, Hyderabad, letter No. TSPCB/MSW/U-IV/NGT-199/2016-3103,dt. 14.02.2017.

ORDER:

In exercise of the powers conferred by sections 3,6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), and in supersession of the Municipal Solid Waste (Management & Handling) Rules, 2000, the Central Government notified Solid Waste Management Rules, 2016, under Environment (Protection) Act, 1986.

The Hon'ble National Green Tribunal, Principal Bench, New Delhi vide order dt. 22.12.2016 in OA No. 199 of 2014 filed by Mrs. Almitra H. Patel Vs. UOI & Ors. directed that:

- " a. The State Government and the local authorities shall issue directives to all concerned, making it mandatory for the power generation and cement plants within its jurisdiction to buy and use RDF as fuel in their respective plants, wherever such plant is located within a 100 km radius of the facility.
 - b. The MoEF&CC, and the State Governments to consider and pass appropriate directions in relation to ban on short life PVC and chlorinated plastics as expeditiously as possible and, in any case, not later than six months from the date of pronouncement of this judgment.
 - c. We specifically direct that there shall be complete prohibition on open burning of waste on lands, including at landfill sites. For each such incident or default, violators including the project proponent, concessionaire, ULB, any person or body responsible for such burning, shall be liable to pay environmental compensation of Rs.5,000/- (Rs. Five Thousand only) in case of simple burning, while Rs. 25,000/- (Rs. Twenty Five Thousand only) in case of bulk waste burning. Environmental compensation shall be recovered as arrears of land revenue by the competent authority in accordance with law."

P.T.O

The Member Secretary, Telangana State Pollution Control Board has requested for orders accordingly, vide letter dated 14.2.2017 in the fourth read above.

Government, after careful consideration of the matter, and in exercise of the powers conferred under section 5 read with section 23 of the Environment (Protection) Act, 1986 read with sub Rule (3) of Rule 5 of the Environment (Protection) Rules, 1986 and in compliance of the judgment pronounced by the Hon'ble National Green Tribunal in Original application No.199 of 2014 hereby order that :

- A) The power generation plant and cement plants in Telangana State shall buy and use Refuse Derived Fuel (RDF) as fuel in their respective plants, wherever RDF plant is located within 100 km radius.
- B) There shall be complete prohibition on open burning of waste on lands, including at landfill sites for each such incident or default, violators including project proponent, concessionaire, Urban Local Bodies, any person or body responsible for such burning Environmental compensation shall be levied Rs.5,000/- (Rupees Five Thousand only) for simple burning and Rs.25,000/- (Rupees Twenty Five Thousand only) for bulk waste burning. The Environmental compensation will be recovered as arrears of land revenue by the competent authority.
 - the concerned Urban Local Body / Gram Panchayat is the competent authority for levy of environmental compensation for open waste burning done by public, concessionaire, project proponent (Private), communities etc.
 - II) the Telangana State Pollution Control Board is the competent authority for levying the environmental compensation for open waste burning done by Urban Local Bodies / Gram Panchayats.

The Environmental Compensation shall be utilized for creating awareness among general public on environmental issues and open burning of waste.

As per Rule 15 (v) (b), the Local Authorities and Village Panchayats of census towns and urban agglomeration shall establish waste to energy processes including Refused Derived Fuel (RDF) for combustible fraction of waste or supply as feed stock to solid waste based power plants to Thermal Power Plants & Cement Plants.

In case of Thermal Plants & Cement Plants are not existing within 100 km radius of local bodies / RDF plants, the concerned Urban Local Bodies /Refused Derived Fuel (RDF) plant shall bear the transport cost for transporting Refused Derived Fuel to the nearby Thermal Plants & Cement Plants. These orders shall come into force with immediate effect.

Copy of this order is available on Internet and can be accessed at <u>www.goir.telangana.gov.in</u>.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

Dr. RAJAT KUMAR PRINCIPAL SECRETARY TO GOVERNMENT

То

The Commissioner, Printing & Stationery, Chanchalguda.(for notification of the above G.O. in the Extraordinary issue of State Gazette.) All District Collectors. The Municipal Administration & Urban Development Department. The Commissioner, Greater Hyderabad Municipal Corporation, Hyderabad. The Panchayat Raj and Rural Development Department. The Commissioner, Panchayat Raj & Rural Develpment Department. The Industries & Commerce Department. The Revenue (Endowment) Department. The Food & Civil Supplies Department. The Animal Husbandry, Dairy Development & Fisheries Department. The Information & Technology Communication Department. The Commissioner, Endowment Department. The Director General of Police, Hyderabad. The Metropolitan Commissioner, Hyderabad Metropolitan Development Authority, Hyderabad. The Member Secretary, Telangana State Pollution Control Board, Hyderabad. Copy to: The Secretary to Chief Minister (SS) The P.S. to Minister (EFS&T). The P.S. to Chief Secreatary. The Law (c) Department, T.S. Secretariat, Hyderabad. S/F & S/C.

// FORWARDED :: BY ORDER//

SECTION OFFICER

Annexure **B**

Observations on Andhra Pradesh State Action Plan for Clean Air

MoEF&CC shared an indicative template for preparation of State Action Plan (SAP) with States/UTs addressing the activities that would help in improvement of air quality. It was informed that the template is indicative and States/UTs may include the activities w.r.t. requirements in their respective States/UTs and finalize the SAP.

CPCB has reviewed the State Action Plan of Andhra Pradesh and observations on thematic areas of template are as follows-

1.Industrial Emission:

i. The timelines for many activities are too long (varies between one to seven years) and may be reconsidered.

2. Vehicular Emission:

- Fund utilization data is not provided for Sr No. 7 of construction of 162.02 km length of bypass/ring road covering 14 ULBs against fund allocation of Rs 5334.89 Cr. (It is mentioned that work is fully completed).
- ii. The timelines for many activities are too long (varies between one to seven years) and may be reconsidered.

3.C&D Waste & Road Dust Management:

- Fund allocation not provided despite mentioning financial implication for Sr. No. 1b: Policy for the development of projects/plants for C&D waste management: Targeting the other 4 Municipal Corporations and 106 Municipalities.
- Target coverage (in acres) is not provided for Sr. No. 10: Greening of open spaces / parks development in 123 ULB
- Target completed as on date is not provided for Sr. No. 13: Greening of open areas, gardens, community places, schools and housing societies

4. Emissions from burning of waste:

- a. Though fund allocation is mentioned nil but the following activities may have financial implication and need fund allocation and utilization for carrying out the activity:
- Sr. No. 6 (Municipal Solid Waste Collection status in the state)
- Sr. No. 7 (MSW segregation status in the state)

Following additional information may be required as mentioned in OM of MoEFCC:

- 1. A review & monitoring mechanism for effective roll-out and functioning of State Action Plan need to be prepared and shared.
- 2. Hot spot of air pollution from mining activities and state plan to combat the pollution sources from mining activities.
- 3. Implementation of GRAP in non-attainment cities including million plus cities in case of air pollution emergencies.
- 4. Categorization of activities as short term, medium term and long term.
- 5. Regional airshed approach. List of activities which need to be discussed and implemented by neighbouring states in the same airshed need to be separately mentioned. Also, the coordination committee composition and meeting frequency for each neighbouring state need to be shared.
- 6. Co-ordination Committee composition for co-ordination and abatement of causes for air pollution, at intra and inter district / city or State level. Fund provision for implementation of the identified activities and share of each stakeholder (department/District authority/ULBs and neighboring States/Districts/ cities)
- Details of awareness plan on air quality management also need to be included in the state action plan.

Observations on State Action Plan for Air Pollution-Karnataka (SAPAP-K)

1. The information provided in the Indicative template of the State Action Plan needs a revision (a few examples):

Industrial Emission:

i. Sr. No. 1: Status of activity "Policy for permitting new industries in Critically Polluted Areas (CPAs)" doesn't mention any pre-requisite to be met w.r.t. air pollution for getting necessary permission.

ii. Exact timelines with financial implications can be made clearer for Sr. No. 16: "Shifting of industries/commercial units to gaseous fuels (CNG/NG/CBG)".

iii. Sr. No. 12: Timeline for policy measures such as a policy to set-up e-waste recycling unit in industrial areas in compliance with e-waste management rules is mentioned as 50% to be completed by Dec'24. It is not clear whether the timeline refers to the formulation and the issue of policy document or setting up of e-waste recycling units in industrial areas.

Vehicular Emission:

i. Sr. No. 1: Under vehicular emission Rs 15 & Rs 6 crores has been given in fund allocated and fund utilized column for green tax collection for renewal of fitness and registration certificates. But mentioned activities are regulatory activities and the purpose of fund is not clear.

ii. Fund allocation and fund utilization data missing despite mentioning financial implication for

a. Sr. No. 1: MORTH, New Delhi enhanced the fees of Renewal of Fitness certificate and registration certificate to discourage the use of older vehicles,

b. Sr. No. 2: Policy for scrapping old vehicles

iii. Sr. No. 10: The exact status of action plan of refilling stations retrofitted with a vapour recovery system based on CPCB guidelines is not shared.

C&D Waste & Road Dust Management:

i. Fund allocation and utilization status missing despite mentioning financial implication fora. Sr. No. 1: Policy for the development of projects/plants for C&D waste management.b. Sr. No. 10: C&D waste processing plants.

Emissions from burning of waste:

i. Exact timelines with financial implications can be made clearer for

a. Sr. No. 4: Waste to energy plants.

Emissions due to burning of Agro-residues:

i. Exact timelines with financial implications can be made clearer for Sr. No. 1a: Schemes for procurement of agriculture machinery.

ii. Sr. No. 1b: Fund utilization status missing for Assistance for establishment of farm machinery banks/custom hiring centres

iii. Sr. No: 9- Target, timelines and financial implication may be shared for organic and millet promotional schemes under which Rs 6000/- per hectare is provided as an incentive amount to the farmers

2. The state action plan needs to share a comprehensive plan with time bound target & financial implication to cover the entire state while trying to address various issues contributing to air pollution.

3. Environmental initiatives undertaken by smart cities are mentioned, but the information required on steps planned or undertaken by state to replicate those initiatives across the State needs to be detailed out.

4. Followings additional information needed:

a. List of Hotspots of air pollutions from various sources such as construction sites, mining industries, brick kiln, roads dust, etc., with action plan to combat these sources also need to be included in the state action plan.

b. Outcome of different pollution mitigation and abatement policies implemented by the states like vehicle scrap policy, retrofitting policy for DG sets of 125 KVA and above etc. should be included in the state action plan.

c. Details of awareness plan on air quality management also need to be included in the state action plan.

d. Emergency response action plan in case of severe air pollution (in case of bad AQI index) should be included in the state action plan.

e. Regional airshed approach.

f. Necessary policy changes, including prioritization and convergence of activities of various on-going and/or proposed schemes and programs

g. Categorization of activities as short term, medium term and long term.

h. Mechanism for smooth and seamless flow of information, tie funds and inter-departmental coordination.

i. List of activities which need to be discussed and implemented by neighbouring states in the same air shed need to be separately mentioned. Also, the coordination committee composition and meeting frequency for each neighbouring state need to be shared.

j. Co-ordination committee composition for co-ordination and abatement of causes for air pollution, at intra and inter district / city or State level. Fund provision for implementation of the identified activities and share of each stakeholder (department/District authority/ULBs and neighbouring States/Districts/ cities).

k. A review & monitoring mechanism for effective roll-out and functioning of State Action Plan need to be prepared and shared.

Observations on State Action Plan (SAP) of Telangana

- Partially filled indicative template has been shared as Telangana State Action Plan. Additional Instructions given at the end of the indicative template may be used to prepare a holistic State Action Plan.
- 2. Timeline, department, fund source and current status for each of the identified activities under State Action Plan need to be filled.
- 3. Following additional information needed:
 - a. Inventory of air pollution sources in the state including hotspots
 - b. Localised action plan for mitigation of hotspots w.r.t. to air pollution
 - c. Regional Air shed approach
 - d. Awareness plan on air quality
 - e. Necessary policy changes, including prioritization and convergence of activities of various on-going and/or proposed schemes and programs
 - f. Categorization of activities as short term, medium term and long term
 - g. Mechanism for smooth and seamless flow of information, tie funds and interdepartmental coordination
 - h. List of activities which need to be discussed and implemented by neighbouring states in the same air shed need to be separately mentioned. Also, coordination

committee composition and meeting frequency for each neighbouring state need to be shared

 Co-ordination committee composition for co-ordination and abatement of causes for air pollution, at intra and inter district / city or State level. Fund provision for implementation of the identified activities and share of each stakeholder (department/District authority/ULBs and neighbouring States/Districts/ cities)

j. Review & Monitoring mechanism for effective roll-out and functioning of State Action Plan need to be prepared and shared

- 4. Information provided in the State Action Plan needs a revision (few examples):
 - a. Fund utilization status missing for point 18 & 19 under Vehicular Emissions though Rs 12 crore & 0.106 crores has been allocated.
 - b. Fund utilization status missing for point 1 under C&D Waste & RD Management though Rs 12 crore/annum has been allocated. Similarly, it is missing for activities such as installation of water fountain, black topping of metalled road or maintaining of pot-free hole roads for free flow of traffic.
 - c. The fund allocation and utilization status are missing for point 1 & 4 of Emissions from burning of waste despite declaring that the activity has financial implications

BEFORE THE NATIONAL GREEN TRIBUNAL (SOUTHERN ZONE) CHENNAI

Original Application No. 159 OF 2021 (SZ)

IN THE MATTER OF:

Kankana Das

... Applicant

Versus

Union of India and others

... Respondents

STATUS REPORT FILED ON BEHALF RESPONDENT NO. 2, CENTRAL POLLUTION CONTROL BOARD (CPCB)

Advocate P. Jayalakshmi

COUNSEL FOR CPCB