



STATE POLLUTION CONTROL BOARD, ODISHA

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Introduction

The issue of air pollution in urban areas has gained prominence in recent times, both nationally and internationally, because of its impact on human health. Air pollution was chosen as the theme of the 2019 World Environment Day, underlining the urgency and importance of the need to reduce air pollution.

In India, in order to counter growing air pollution, a National Clean Action Plan (NCAP) was made operational in 2018. Under the Plan, all Indian cities have to meet National Ambient Air Quality Standards (NAAQS). Cities that do not meet these Standards are termed non-attainment cities.

In all, Central Pollution Control Board (CPCB) identified 102 non-attainment cities in the country. Six of these cities are in Odisha Bhubaneswar, Cuttack, Angul, Talcher, Balasore and Rourkela. In these cities, the ambient air quality does not meet NAAQS with respect to PM₁₀ and PM_{2.5}.

In October 2018, Hon'ble National Green Tribunal directed state governments to prepare city-wise action plans for combating air pollution in non-attainment cities. Following this, action plans were prepared for six non-attainment cities of Odisha by the state Forest and Environment Department, in association with the state Pollution Control Board (SPCB) and Centre for Science and Environment (CSE), New Delhi.

The action-plans list a number of 'action-points' that need to be implemented for combating air pollution. These actions require the involvement of multiple government departments, urban local bodies, SPCB, Odisha Space Application Centre (ORSAC) and other research institutes.

Subsequently, the Forest and Environment Department and SPCB organized a stakeholder workshop on 4 June 2019 in collaboration with CSE to deliberate on the roadmap for implementing the 'Comprehensive Action Plan for Clean Air in Non-Attainment Cities in Odisha'. The workshop was attended by government department officials; district-level officers; representatives of industries and mines; academicians from educational institutions like Indian Institute of Technology (IIT), Bhubaneswar; representatives from research laboratories like Institute of Minerals and Material Technology (IMMT), Bhubaneswar; members of non-governmental organizations; and other field-level experts.

During the deliberations, it was recommended that the actions plans may be oriented towards the implementing line departments for better understanding and focused implementation. In pursuance of these recommendations, the current abridged report has been prepared.

In this report, the major action points have been divided into sub-action points, arranged department-wise. It must be noted that this report only enumerates the minimum action departments need to take; they can (and are encouraged to) build upon it. The report also lists the supporting agencies whose association may be necessary in implementing a particular action point. It also provides a list of the cities where implementation has to take place and the corresponding timeline.

Forest and Environment Department

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
(1) Improve training and capacity	1	Training and skill development of public officials and other public functionaries for planning, and the management and execution of the plan	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Planning and convergence (P&C) department and district and local administration	Ongoing
(2) Public awareness and cooperation	2	Organizing deeper public engagement and creating forums for public consultation for understanding of the nature of solutions needed to address the complex problem of sustainable industrial development, urban mobility and waste management	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	P&C department and district and local administration	Ongoing
(3) Urban green and forests	3	Avenue plantation and urban planning to integrate urban greens (parks, district forests, vegetative barriers, green paving of streets etc.) and urban forests in the Master Plans of the cities, including infrastructure development and urban redevelopment projects. Undertaking greening of open areas, gardens, community places, schools, and housing societies. Green walling with plantations around dust generators and mining areas. Implementing the integration of dust barriers with urban forestry and forest policy. Ensuring appropriate species are planted	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		12
(4) Air Quality Management Areas (AQMA)	4	Conducting research studies including on emission inventories, source apportionment, health impact, exposure impact and pollution hotspot assessment	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	SPCB	24
(5) Cooking fuel and open eateries	5	Prohibiting use of coal in hotels, open eateries and restaurants	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Energy department	24

Energy Department

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
(1) Cooking fuel and open eateries	1	Total coverage of households by distribution of liquefied petroleum gas (LPG) or piped natural gas (PNG) in all non-compliant cities. Leveraging programme like Ujjwala and state government policies and programmes and schemes. Adopting strategies to ensure continuous use of LPG through regular refills	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Forest and Environment (F&E) department	24
	2	Promoting and giving access to LPG and electricity to low-income neighbourhoods, as well as roadside eateries, dhabas, restaurants, etc.	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	F & E department and local administration	24
	3	Assessing the feasibility of natural gas pipelines for residential and commercial use. Implementing as per the plan to be prepared	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	F&E department and civil supplies department	24
(2) Renewable energy	4	Implementing a solar rooftop policy and urban solar power generation linked with transition from diesel gensets to solar power. Implementing solar power generation and adequate storage plans for grid support. Implementing appropriate infrastructure to support zero emission targets and electric public transport programs	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Odisha Renewable Energy Development Agency (OREDA) and district and local administration	24
(3) Vehicular pollution	5	Running buses in cities through generation of biogas from waste and sewage	Angul, Bhubaneswar, Rourkela and Talcher		12
	6	Creating appropriate ecosystem for growth of electric vehicles in cities in terms of supporting development of appropriate and up-to-date charging infrastructure, supportive regulatory electric vehicle policy, performance-based incentive program, a roadmap for involvement of the private sector, and alignment of energy policy with goals of electric mobility	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Transport department and local authority	12

State Pollution Control Board

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
(1) Air quality monitoring and assessment	1	Setting up adequate number of real-time automatic monitoring stations	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	CPCB	6
	2	Using satellite-based air quality assessment at a regional scale to complement ground-level air quality monitoring	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Indian Meteorological Department (IMD) and ORSAC	6
	3	Developing capacity for daily pollution forecasting	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	IMD and ORSAC	12
	4	Setting up daily air quality public information dissemination system based on National Air Quality Index along with providing health advisory as indicated by the Ministry of Environment, Forest and Climate Change (MoEF&CC)	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		12
	5	Assessing application of low-cost sensor-based monitors in areas that are not being monitored to create baseline information	Angul, Balasore, Cuttack, Rourkela and Talcher	CPCB	12
	6	Carrying out a source apportionment and emission inventory study	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		24
	7	Setting up rural and peri-urban air quality monitoring to assess the airshed and influence area. Carry out pollution hot-spot monitoring	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	CPCB	24
(2) Industries	8	Implementing SO _x and NO _x standards notified by MOEF&CC on 29 January 2018 for 16 categories of industries (which will expand to more categories as and when MOEF&CC notifies in the future).	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6
	9	Strengthening the star-rating programme to include full compliance to standards	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6
	10	Not allowing new air polluting industry inside the city	Bhubaneswar		6
	11	Preparing multi-sector clean fuel policy	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
	12	Implementing Continuous Emission Monitoring System (CEMS) across all targeted and applicable polluting industry and ensure calibration. Ensuring quality control and quality assurance of CEMS data and ensuring that the data is available online and the reported data is compared with applicable prescribed limits and not the older standards. Compliance checking to be enforced routinely to prevent tampering with the CEMS	Angul, Balasore, Cuttack, Rourkela and Talcher		6
	13	Identifying the cumulative impact of industrial emissions and prescribing more stringent pollution control action for industries. Big industrial units need plant wise-plan for mitigation	Angul, Balasore, Cuttack, Rourkela and Talcher		6
	14	Identifying and implementing fugitive emission control measures in ancillary units, material transfer and handling, and emissions during industrial processes	Angul, Balasore, Rourkela and Talcher		6
	15	Enforcing restrictions on operations of intensively polluting industries within urban airshed zones during high pollution periods	Angul, Balasore, Rourkela and Talcher		6
	16	Using CEMS data for enforcement and legal compliance monitoring	Angul, Balasore, Cuttack, Rourkela and Talcher		12
	17	Preparing and implementing local area action plan for pollution hot-spots	Angul, Balasore, Rourkela and Talcher		12
	18	Strengthening the current siting policy for industries	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Department of Industries	12
(3) Power plants	19	Implementing new thermal power plant standards in all power plants by the outer date of 2022.	Angul, Talcher and Rourkela	MoEF&CC and energy department	24
	20	Implementing plans for full utilization of fly ash and effective management of fly ash ponds for reduction of fugitive emissions	Angul, Talcher and Rourkela		24
	21	Progressively closing older and more polluting thermal power plants, and moving to cleaner natural gas	Angul, Talcher and Rourkela	Energy department and F&E department	24
	22	Charting a roadmap for cleaner plants and incentivizing their operation by giving them priority over other polluting plants. Each plant needs a plan for full adoption of new standards by 2022	Angul, Talcher and Rourkela	Energy department and F&E department	24
(4) Brick kilns	23	Restricting operation of brick kilns within urban airshed zones during high pollution periods	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
(4) Brick kilns	24	Prescribing design specifications and converting all brick kilns to zigzag technology (from natural draft kilns to induced draft kilns)	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	F&E department and revenue department	12
	25	Removing stone crushers that are close to the city	Bhubaneswar	F&E department and revenue department	12
(5) Generator sets	26	Ensuring that only diesel generator (DG) sets that meet the standards in terms of emission or design of chimneys or exhaust pipe and acoustic enclosures are operational	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	6
	27	Curtail use of DG sets at social events by providing temporary electric connection from the grid	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	6
(6) Common biomedical waste treatment and disposal (CBMWTF)	28	Implementing emission norms for incinerators	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority and CBMWTF operator	6
	29	Implementing CEMS for incinerators	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	6
	30	Develop a siting policy for biomedical incinerators	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	6
(7) Road dust	31	Enforcing air pollution control in concrete batching plants	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	National Highway Authority of India (NHAI), public works department (PWD) and local authority	24
(8) Episodic events	32	Using satellite-based monitoring and on-ground enforcement to control forest fires, and biomass crop residue burning episodes	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	ORSAC, agriculture department and Science and Technology (S&T) department	Ongoing
(9) Mining areas	33	Implementing measures for effective dust suppression during mining and allied activities such as crushing, loading, unloading, transportation, blasting, etc. Methods such as installation of dust suppression and extraction systems, electronic surveillance of water sprinkling, etc. should be followed	Talcher		6
	34	All relevant provision of the SPCB action plan for critically polluted area should be implemented	Talcher	District administration and local authority	6
(10) Vehicular pollution	35	Preparing an action plan to check fuel adulteration and random monitoring of fuel quality data	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Oil marketing companies	6

Transport Department and transport- related agencies like Capital Region Urban Transport (CRUT)

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
(1) Vehicular pollution	1	Implementing a diversion plan for entry of non-destined trucks into the city. Fixing entry and exit timings of trucks and a management plan for warehousing, loading and unloading.	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Traffic police, local and district authorities	6
	2	Creating management systems for loading and unloading of goods in city areas	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6
	3	Developing a safe-to-load programme to ensure fitness and road worthiness of trucks and compliance with set standards. Important for industrial cities	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6
	4	Implementing a state-level electric vehicle policy and programme for two-wheelers, three-wheelers or para-transit, buses and large delivery fleet. This should be according to the zero emissions mandate. It needs appropriate incentive schemes and charging infrastructure	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	12
	5	Providing adequate number of PUC centres for emissions testing of on-road vehicles. Linking PUC certificates with annual vehicle insurance to ensure 100 per cent compliance	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		12
	6	Implementing pilot remote sensing monitoring of vehicles to upgrade inspection of on-road vehicles	Bhubaneswar		12
	7	Integrating on-board diagnostic (OBD) systems fitted in new vehicles with vehicle inspection	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		12
	8	Enforcing the law against visibly polluting vehicles; to remove them from the roads, impose penalties, and launch extensive awareness drive against polluting vehicles	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Traffic police	12
	9	Setting up modern centralized vehicle inspection centres for upgraded emissions, fitness and road worthiness tests for commercial vehicles (and all diesel vehicles)	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Ministry of Road Transport and Highways (MoRTH)	12
	10	Phasing out old vehicles and adopting a vehicle scrappage policy. Implementing infrastructure for scrapping of end-of-life vehicles	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	MoRTH and CPCB	12
	11	Enforcing vehicle labelling or sticker programme based on fuel and date of manufacture. Refer to AIS-159-Automotive Vehicles High-Security Registration Plate (HSRP) Specifications and Requirements, Automotive Industry Standard–Finalized draft.	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	MoRTH and traffic police	12

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
	12	Installing radio frequency identification (RFID) tag-based toll or entry tax collection from commercial vehicles. This will enable lesser congestion on toll gates. This technology will also make vehicle identification by vintage, emission norm compliance, etc., easier.	Bhubaneswar		12
	13	Developing urban freight consolidation centres in relation to location of warehouses relative to suburban areas	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		12
	14	Ensuring on-schedule implementation of BS-VI fuel and emission standards on 1 April 2020. Implementing the checklist for BS-VI vehicle inspection of emission control devices as part of vehicle inspection and maintenance programme	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		24
	15	Expanding gaseous fuel programmes like the expansion of compressed natural gas (CNG) refuelling infrastructure for delivery and use, targeting public transport and autos in cities. Speeding up implementation of gas pipelines and setting up of mother stations	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Energy department	24
	16	Implementing pilot hydrogen H-CNG (CNG with 18 per cent hydrogen blended in) to further reduce emissions	Bhubaneswar	Ministry of Petroleum and Natural Gas (MoPNG)	24
	17	Preparing and implementing interstate and intrastate freight transport plans to improve rail-based freight traffic to reduce dependence on trucks	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Railways	36
	18	Installing vapour recovery systems in fuel refuelling outlets to reduce benzene and volatile organic compounds (VOC) emissions in cities.	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Energy department and state oil coordinator	
	19	Defining routes, permits, fares, vehicle design and safety standards and vehicle technology standards for para-transit vehicles. Strengthening para-transit driver training and licensing procedures	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		24
	20	Recording traffic violations with IT-based systems to ensure that repeat violations lead to increased penalties including fines, increased insurance, and cancellation of licences	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		24
	(2) Public transport system	21	Banning and phasing out diesel auto-rickshaws. Introducing CNG and electric auto-rickshaws	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	
23		Creating a dedicated and ring-fenced urban transport fund for meeting urban transport needs	Bhubaneswar	Local development authority	36

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
	24	Encouraging involvement of the private sector in activities such as operation and maintenance of road infrastructure, parking facilities, vehicle testing and certification facilities, repair facilities, construction and management of terminal facilities, among others	Bhubaneswar	Local development authority	36
	25	Creating and maintaining a data base on the urban commute	Bhubaneswar	Local development authority and local municipal authority	36
	26	Modernizing fleet and crew scheduling processes of buses by installing GPS units on them and adopting automated scheduling software	Bhubaneswar	CRUT	36
	27	Creating a traffic control cell for monitoring bus movement	Bhubaneswar	Police department	36
	28	Implementing at scale passenger information systems inside buses and at bus stops to improve reliability of the system	Bhubaneswar	Municipal corporation	36
	29	Adopting a fare policy to ensure that the city bus system is affordable and remains competitive vis-a-vis the operational cost of personal vehicles	Bhubaneswar	Local development authority	36
	30	Augmenting bus numbers and improving availability of buses by rationalizing routes and services of buses	Bhubaneswar	Local development authority	36
	31	Implementing an electric bus programme through targeted fleet renewal process and by implementing bus charging system network and route electrification	Bhubaneswar	CRUT	36
	32	Integrating all modes—bus, intermediate public transport (IPT), non-motorized transport (NMT) and inter-city modes along with regional transport such as inter-city buses and railway stations—so that all stations, terminals, pick-up and drop-off points of different modes have a unified design	Bhubaneswar	Local development authority	36
	33	Integrating fares of different formal systems and adopting a common ticketing approach for seamless transfers	Bhubaneswar	CRUT	36
	34	Encouraging building of transport hubs through financial measures to provide seamless inter-change between inter-city regional and suburban services, and the public transport system of the city	Bhubaneswar	Local development authority	36

Public Works Department

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
(1) Vehicular pollution	1	Providing truck rest areas and parks along national and state highways to prevent entry of trucks into cities during peak hours	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	NHAI	6

Police Department

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
(1) Vehicular pollution	1	Using weigh-in-motion bridge machines (WIM) and weigh bridges at entry points to the city to check the payload of commercial vehicles for checking overloading	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	6
(2) Public transport system	2	Synchronizing traffic movement and introducing intelligent traffic systems for lane-driving	Bhubaneswar		6
	3	Creating IT and camera-based electronic monitoring of traffic violations	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6
	4	Conducting audit of traffic intersections and installing functional traffic signals at all major intersections	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6
	5	Conducting review of traffic signalling system at all intersections	Bhubaneswar		6
	6	Enforcing lane driving through heavy fining	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6
	7	Preparing traffic management plans for the city and continuously updating it and monitoring its performance	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	36
	8	Introducing early alarm systems during traffic congestion for the benefit of commuters on major routes, to facilitate route diversion	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	36
	9	Considering introduction of a plan for flexible or staggered timings to minimize peak movement of vehicles on roads	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	36
	10	Formulating an action plan for assisting in decongestion of fuel stations, including through an increase in the number of dispensing machines	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	36
	11	Examining the existing framework for removing broken down buses and trucks from roads and creating a system for speedy removal and ensuring minimal disruption to traffic from such buses or trucks	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local authority	36
	(3) Episodic events	12	Regulating and controlling the use of firecrackers, including through restrictions on timing as per the Supreme Court and CPCB and Petroleum and Explosives Safety Organization (PESO) guidelines	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	SPCB, resident welfare associations (RWAs), controller of explosives and PESO

Local Municipal Authority

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
(1) Open burning (solid and agricultural waste)	1	Adopting a strong siting policy to keep waste-to-energy plants away from habitation, including from neighbourhoods of low-income groups. Strict implementation of emissions norms; use of segregated waste and state-of-the-art technology and providing real-time emissions data to the SPCB. Waste-to-energy plants should be the last option. Segregation, recycling and re-use of waste should be given the priority	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Regional development authority, RWAs and SPCB	Ongoing
	2	Enforcing a complete ban on garbage burning in the entire region. Taking stringent action against open burning of biomass, leaves, tyres, etc. to control such activities	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Regional development authority, RWAs and SPCB	6
	3	Ensuring proper collection of horticulture waste (biomass) and promoting composting-cum-gardening. Ensure market uptake of compost	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Regional development authority, RWAs and SPCB	6
	4	Implementing decentralized waste management for hotels, apartments and institutions as per Solid Waste Management Rules, 2016. Introducing household-level segregation, collection and transport of waste	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Regional development authority, RWAs and SPCB	6
	5	Using satellite-based monitoring as well as mobile spot check squads for enforcement	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Regional development authority, RWAs and SPCB	6
	6	Properly managing landfill sites to prevent spontaneous fires	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Regional development authority, RWAs and SPCB	6
	7	Adopting a roadmap for zero landfill policy to promote decentralized waste segregation, reuse and recycling	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Regional development authority, RWAs and SPCB	6

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
(2) Road dust	8	Sprinkling of recycled water (without compromising other uses) on road surface for dust suppression	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	District ministration, PWD and NHAI	6
	9	Using mechanical, vacuum-based street sweeping wherever feasible; introducing wet or mechanized vacuum sweeping of roads	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	District ministration, PWD and NHAI	6
	10	Maintaining pothole-free roads for free flow of traffic to reduce emissions and dust	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	District ministration, PWD and NHAI	24
	11	Adopting street design guidelines for paving of roads and footpaths (hard and soft paving) with vegetative barriers	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	District ministration, PWD and NHAI	24
(3) Construction dust	12	Adopting and implementing dust control measures for all types of constructions—buildings and infrastructure	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6
	13	Undertaking control measures for control of fugitive emissions from material handling, conveying and screening operations	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		6
	14	Enforcing restrictions on construction activities within urban airshed zones during high pollution periods	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	SPCB	6
	15	Segregating construction and demolition (C&D) waste. Providing a network of C&D waste segregation and collection sites across the city	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		24
	16	Making it obligatory for developers to provide evidence on-site recycling or disposal at designated sites of debris	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher		24
	17	Setting up facilities to recycle C&D waste. Implementing provision of Central C&D Waste Management Rules, 2016.	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	District dministration	24

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
(4) Public transport system	18	Enforcing use of bus lanes and keeping them free from obstruction and encroachment. Creating dedicated public transport (i.e., bus rapid transit) lanes	Bhubaneswar	Local development authority	6
	19	Implementing parking area management plans (PAMPs), demarcating legal parking spaces on-street and off-street and emergency vehicle routes on all public roads within a neighbourhood. Promoting sharing of public parking facilities and institutional facilities between residential and commercial use during night and day to optimize use of available facilities. Ensuring no parks and green areas are converted to parking	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	6
	20	Where shared multilevel parking facilities are provided, demarcating ingress-egress plans and ensuring that no major disruption occurs on the main traffic thoroughfare. Also, indicating pedestrian circulation plans. Multilevel parking facilities should be planned along with parking area management plans and not in isolation	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	6
	21	Eliminating free parking and introducing effective variable parking charges based on duration of parking and 'user pay' principle as per the National Urban Transport Policy. Not allowing annual or monthly lump sum payment for parking in commercial areas. Annual passes allow unlimited use and do not reduce demand	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	6
	22	Making bus parking integral to urban planning	Bhubaneswar	Local development authority	36
	23	Developing and implementing urban street design guidelines that prioritize design for public transport access, walking and cycling infrastructure, safe and universal access, and other such positive practices	Angul, Balasore, Bhubaneswar, Rourkela and Talcher	Local development authority	36
	24	Preparing and implementing zonal plans for developing an NMT network.	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	25	Improving and ensuring safe accessibility of stations and stops as well as the last mile connectivity as a vital feature of public transport planning	Bhubaneswar	Local development authority	36
	26	Adopting compact urban form code to create high density, mixed-use, mixed-income development and high density accessible streets to reduce travel distances and emissions	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	27	In low-density areas as well as new developments and urban sprawls, maximizing densities with good transport connectivity in order to facilitate maximum number of people walking or cycling, or make use of NMT or feeder services to easily access public transport	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	28	Enabling a balanced mix of jobs and housing along bus corridors coupled with caps on parking supply, higher housing affordability through design and technology options, and improved efficiency and equity in the resulting developments. Designing these spaces with adequate green spaces and high density street networks	Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36

Action points	S no.	Department-wise sub-action points	Cities	Supporting agencies	Timeline (in months)
	29	Physically demarcating legal parking areas. Equipping them with metering systems, proper signage, and IT for information on parking availability to reduce cruising time and on-street management	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	30	Levying penalties for illegal or wrong parking; parking within emergency lanes and non-designated areas to be strictly prohibited	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	31	Earmarking a part of the parking revenue for local area improvements that include footpaths, public amenities and parking facilities within a PAMP area	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	32	Introducing residential parking permits for regular parkers for use of public parking space (and these may be monitored)	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	33	In order to optimize utilization of land, ensuring that in all new projects (e.g., commercial, institutional, housing, etc.), at least 50 per cent of the available parking spaces is made available for shared parking facilities for commercial and residential use. Providing charging facilities for electric vehicles in such parking areas	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	34	Ensuing in the parking contractual agreements that the revenue sharing model is dynamic and flexible, allowing for flexibility in charging and varied usage and rates of parking spaces	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	35	Planning and implementing parking provision for buses, commercial vehicles and IPT-NMT modes, and for the differently-abled	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	36	Parking charges should be optimal and ensure that at least 85 per cent of the available parking spaces are occupied during peak time	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	37	Introducing and further upgrading variable time-based pricing, as per market demand. Coordinated off-street and on-street or surface pricing in commercial and residential areas, and parking permits in residential areas	Angul, Balasore, Bhubaneswar, Cuttack, Rourkela and Talcher	Local development authority	36
	38	Permitting new developments based on the impact of traffic on the surrounding transport infrastructure and neighborhoods	Bhubaneswar	Local development authority	36
	39	Making necessary infrastructure augmentations based on traffic impact assessments and levying costs to the developer, if needed and possible	Bhubaneswar	Local development authority	36
	(13) Mining areas	40	Covering trucks even for internal transport of coal in coalfields of Mahanadi Coal Limited (MCL)	Talcher	Steel and Mines Department and SPCB
41		Constant electronic surveillance to enforce water sprinkling	Talcher	Steel and Mines Department and SPCB	6



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