Draft Environmental Assessment Review Framework

January 2017

India: Odisha Skill Development Project

Prepared by the Skill Development and Technical Education Department, Government of Odisha for the Asian Development Bank.

CURRENCY EQUIVALENTS
(as of 24 January 2017)

Currency unit	–	Indian rupee/s (Re/Rs)
Re1.00	=	$0.014694
$1.00	=	Rs68.0520

ABBREVIATIONS

ADB	–	Asian Development Bank
ASTI	–	advanced skills training institution
CPCB	–	Central Pollution Control Board
CTE	–	Consent to Establish
CRZ	–	Coastal Regulation Zone
DTET	–	Directorate of Technical Education and Training
EARF	–	environmental assessment review framework
EIA	–	Environmental Impact Assessment
EHS	–	environment, health, and safety
EMP	–	environmental management plan
ESMC	–	environment and social management cell
EMR	–	environmental management report
ESZ	–	eco-sensitive zone
GOO	–	Government of Odisha
GRC	–	Grievance redressal committee
GRM	–	grievance redressal mechanism
IEE	–	initial environmental examination
IT	–	Information technology
ITI	–	industrial training institute
MOEFCC	–	Ministry of Forest, Environment and Climate Change
OSDA	–	Odisha Skill Development Authority
OSDP	–	Odisha Skill Development Project
OSEM	–	Odisha State Employment Mission
PMC	–	project management consultant
PMU	–	project management unit
SDTED	–	Skill Development and Technical Education Department
SPCB	–	State Pollution Control Board
SPS	–	Safeguard Policy Statement

NOTE
In this report, "$" refers to US dollars.

CONTENTS

A. Introduction

1. With a total population of 42 million, Odisha's economy is shifting from agriculture to industry and services. However, Odisha's economic transformation has not generated equitable income growth for the state's population. More than half of the working population continues to be engaged in agriculture, while only 24% are employed in industry and another 25% in services. A mere 15% of households in Odisha report to have a regular salary earner. The core problem in Odisha is the low employability of its young workforce in the formal sector due to low education and skill levels. Nearly 34% of Odisha's population is in the ages of 15–34, yet, 33% of this 15–34 age group have education just up to grade 8 and another 25% up to grade 10. Only about 7% have diploma or above certificate and a very small proportion of the youth in Odisha have any formal vocational training (1.1% compared to 2.8% for India).

2. The Government of India is emphasizing skilling the youth for quality jobs and higher wages in manufacturing and services sectors. However, states like Odisha, comprising a large tribal and disadvantaged population and a large young workforce with inadequate vocational training, face significant challenges in moving its workforce to more productive formal sectors from less productive agriculture and informal sectors. According to the 2012 skill-gap study commissioned by the National Skill Development Corporation for the State of Odisha, demand for semi-skilled and skilled workers will be increasingly high. It is estimated that the incremental demand-supply gap in its workforce for 2011–2026 will be around 4 million, mainly in health care, hospitality/tourism, information technology (IT) and IT-enabled services, construction, transport/logistics, and food processing. Since Odisha is also a net exporter of workers to other parts of India and abroad, demand for skilled workers is likely to be even greater.

3. While Odisha aims to train 1 million people by the end of Twelfth Five-Year Plan i.e., 2017, the existing training capacity and quality falls far short of meeting this target. The state has only been able to train about 330,000 in the last 2 years and now aims to train 800,000 by 2019.The current skills development system of Odisha faces many constraints: (i) the system is fragmented with weak institutional coordination; (ii) access to training institutions is not geographically even and their capacity is insufficient to meet the 12th plan target; (iii) quality and relevance of training is weak due to outdated curriculum, inadequate equipment, and lack of industry experienced trainers, especially in industrial training institutes (ITIs); (iv) training programs are not closely linked to employers or labor market demand; (v) there is a lack of reliable labor market information system; (vi) a robust quality assurance system is lacking to benchmark training institutions to international standards; (vii) lack of mentor institutions makes it difficult for exiting ITIs to transform into more effective institutions; and (viii) lack of viable training models for higher-cost capital intensive manufacturing hampers the development of more advanced training programs.

4. The Government of Odisha (GOO) has taken several initiatives to improve its skills development system and address skills shortages. It had set up a high-level Odisha State Employment Mission (OSEM) in 2005−2006 to specifically address the problems of youth unemployment and underemployment. It has established the Skill Development and Technical Education Department (SDTED)[1] to bring together the Directorate of Technical Education and Training (DTET), OSEM, employment generation services, and labor regulation under one department. While the establishment of SDTED improved coordination among different agencies, it has not necessarily enhanced the operational efficiency of its sub-units. DTET is

[1] In 2012, Odisha established the Employment, Technical Education and Training Department, which was renamed as SDTED in 2015.

unable to meet industry demands due to poor infrastructure and outdated standards, assessment, and certification processes.

5. Recognizing weak institutional capacity for market-relevant training, the GOO has also established an autonomous implementation institution, the Odisha Skill Development Society in 2015, to implement market-responsive skills programs. This institutional arrangement aims to train 1 million people and provide greater access to quality training in tribal interior areas of Odisha. In May 2016, the GOO also established the Odisha Skill Development Authority (OSDA) headed by an eminent industry leader with the aim of bringing OSEM and the Odisha Skill Development Society under one umbrella to ensure effective formulation, implementation, and monitoring of skill development programs in Odisha.

6. The proposed Odisha Skill Development Project (OSDP) will support the GOO to improve the employability, productivity, and income of its working-age population by enhancing the capacity to supply high-quality, market-responsive skills training in line with the state's development strategies in priority sectors, such as manufacturing, construction, and services. While SDTED will be the executing agency, the OSDA and DTET will be the two implementing agencies for the OSDP. The project design incorporates: (i) establishing close linkages between training programs and employers; (ii) engaging the private sector to develop a sustainable training model for the manufacturing sector; and (iii) investing in quality assurance systems through knowledge partnerships with national and international knowledge partners. The OSDP includes the following three features:

(i) **Hub-and-spoke model.** The OSDP will establish a network of eight advanced skills training institutions (ASTIs) as hubs which will mentor 30 government ITIs (one in each district of Odisha), as spokes to train around 195,000 people in pedagogy, technology use, industry linkages, employment assistance, training of trainers, recognition of prior learning, apprenticeships, etc. The hub-and-spoke model will leverage project resources to optimize and complement other government training programs to meet their training targets. Each hub-and-spoke would focus on priority sector and trades aligned with labor market demands in Odisha, other parts of India, and overseas. The strategic spread of the hubs in eight different locations of Odisha will also provide more equitable access to quality training. Two models of ASTIs will be supported. For six ASTIs, the OSDA will provide land, new buildings and equipment, and engage public and/or private training providers for operations and maintenance of the ASTIs. For the other two ASTIs, the OSDA will provide equipment, while the public and/or private training providers will provide land and buildings to optimize the use of existing facilities. The construction of new buildings and lab equipment for six ASTIs is proposed through Asian Development Bank (ADB) funds. The upgradation of ITIs through the construction of hostels, workshops, and lab equipment for 30 ITIs will be done by using GOO funds.

(ii) **Private sector engagement.** OSDA will engage experienced private training institutions to operate and maintain the new ASTIs in partnership with international partners. This arrangement will support the "Make in India" and "Skill India" campaign, which requires establishing viable training models by incentivizing private operators to scale up skills training for job opportunities in manufacturing and services within Odisha, other parts of India, and overseas. OSDA will also establish an industrial advisory group for each priority sector to facilitate on-the-job training, up-skilling of existing workers, linkages with

employers, and mobilize resources from corporate social responsibility to ensure sustainability.

(iii) **Convergence with national policies and priorities.** The OSDP is aligned with the National Policy for Skill Development and Entrepreneurship 2015, which was approved by the Ministry of Skill Development and Entrepreneurship in July 2015. This alignment ensures that training courses comply with the requirements of the National Skill Qualification Framework. It also ensures that a robust quality assurance system is in place by applying emerging standards set by the sector skills councils and National Skill Development Agency, enhancing the capacity to train the trainers and assessors, benchmarking ASTIs and ITIs, and institutionalizing a credible assessment and certification system.

7. The ASTI and the nearby ITIs will operate under the “hub-and-spoke model” wherein, each ASTI would act as a 'hub' while the nearby ITIs would be linked as 'spokes'. OSDP would upgrade the spoke ITIs to enable them to play their role as spokes in the hub-and-spoke model. OSDP will set up eight new ASTIs at Bhubaneshwar, Rourkela, Jharsugada, Behrampur, Bolangir, and Jeypore (under Model A); and at two locations in Odisha (under Model B – yet to be decided) by constructing buildings to house classrooms, laboratories, libraries, hostels, and other associated utilities. The ASTIs proposed under Model A will be established on government land and most of these will be within the premises of existing educational and training institutes. The sites for all six ASTIs under Model A have been identified. Further, an existing Cuttack-based institute, Center for Finishing Skills and Entrepreneurship, has also been identified as an extension center of Bhubaneshwar ASTI. At present, all 30 ITIs are in operation. While the cost of civil works (for hostel and strengthening of existing structures as required), and the equipment for these 30 ITIs will be borne by the GOO, ADB will develop necessary training and skill enhancement programs for these ITIs. The details of eight ASTIs, with their spoke ITIs forming eight ASTI clusters, are given in **Table 1**.

Table 1: List of ASTIs and ITIs

S. No.	Hub (ASTIs)	Spokes (ITIs) (30 districts and 1 ITI per district)
1.	ASTI, Bhubaneshwar (location of site is known)	1. ITI Cuttack (Existing ITI) 2. ITI Bhubaneshwar (Existing ITI) 3. ITI Puri (Existing ITI) 4. ITI(SIPT) Patamundi (Existing ITI) 5. ITI Nayagarh (Existing ITI) 6. ITI Jagatisinghpur (at Paradeep being started during 2016-17)
2.	ASTI, Berhampur (location of site is known)	7. ITI Berhampur (Existing ITI) 8. ITI Phulbani (Existing ITI) 9. ITI Chandragiri (Existing ITI)
3.	ASTI, Rourkela (location of site is known)	10. ITI Rourkela (Existing ITI) 11. ITI Barkote (Existing ITI)
4.	ASTI, Jharsuguda (location of site is known)	12. ITI Hirakud (Existing ITI) 13. ITI Bargarh (Existing ITI) 14. ITI, Jharsuguda (Existing ITI)
5.	ASTI, Bolangir (location of site is known, at Titilagarh – approx. 80 km from Bolangir)	15. ITI Sonpur (Existing ITI) 16. ITI Khariar Road, Naupada (Existing ITI) 17. ITI Balangir 1 (Existing ITI)

S. No.	Hub (ASTIs)	Spokes (ITIs) (30 districts and 1 ITI per district)
6.	ASTI, Jeypore (location of site is known)	18. ITI Bhawanipatna (Existing ITI) 19. ITI Raygada (Existing ITI) 20. ITI Malkangiri (Existing ITI) 21. ITI Umarkot (Existing ITI) 22. GITI Ambaguda (Existing ITI)
7.	ASTI (location of site is yet to be finalized)	23. ITI Balasore (Existing ITI) 24. ITI Takhatpur (Existing ITI) 25. ITI Bhadrak (Bhadrak DHQ being started during 2016-17) 26. ITI Jajpur (Existing ITI)
8.	ASTI (location of site is yet to be finalized)	27. ITI Talcher (Existing ITI) 28. ITI Dhenkanal (Existing ITI) 29. ITI Barbil (Existing ITI) 30. ITI Boudh (Existing ITI)

ASTI = advanced skills training institution, ITI = industrial training institute.
Source: Asian Development Bank.

8. Since, it would take nearly 24–36 months for the construction of new ASTIs, it has been proposed that the operations of ASTIs would be initiated at temporary locations by utilizing the existing training institutes and colleges in those respective towns. In consultation with the officials of DTET and ITI principals, the temporary locations at all six towns have been identified to initiate temporary operations of ASTIs. Once the new infrastructure is ready, the temporary operations will be discontinued. An environmental assessment report has been prepared to include both—permanent and temporary—locations for six ASTIs and 30 ITI locations.

9. The sites for permanent operations of two ASTIs under Model B are yet to be finalized. As per the concept of Model B, the OSDA will provide equipment, but the public or private operators to be engaged for operations and maintenance of these two ASTIs would have to provide land and building. As of now, the private operators have not been selected by the OSDA, hence the land has also been not identified. Therefore, the environmental assessment for these two unknown ASTIs will be carried out later. An environmental assessment review framework (EARF) has been prepared separately in accordance with ADB's *Safeguard Policy Statement* (SPS) (2009) for these subprojects.

10. This EARF aims at (i) providing guidelines for selecting subprojects based on environmental eligibility criteria; (ii) identifying relevant environmental clearance procedures that would apply to the subprojects; (iii) determining the anticipated environmental impacts from undertaking the OSDP; (iv) defining the environmental assessment review procedures for subprojects proposed under OSDP for identifying corresponding environmental mitigation measures and developing environmental management plans (EMPs) required to avoid, minimize, or address anticipated negative environmental impacts; (v) defining procedures to be adopted during implementation to ensure that environmental aspects of the OSDP are dealt with in a comprehensive manner; and (vi) ensuring the adequacy of corresponding staffing, reporting, and budget requirements of undertaking the above. This EARF will be disclosed in ADB's website, and will be translated in local language and disclosed in the GOO website.

B. Assessment of India's Environmental Framework and Institutional Capacity

11. The legal framework and legislative requirements[2] are covered in this section. The Ministry of Environment, Forest and Climate Change (MOEFCC), Government of India has the

[2] SPS (2009) mandates all ADB-financed activities to be compliant with the host country environmental regulations.

overall responsibility to set policy and standards for environment and forests including flora and fauna. This includes setting of air, noise, and water quality standards, and the requirements for environment clearance, forest clearance and other environmental permissions for projects as applicable. The Central Pollution Control Board (CPCB) provides the advisory and technical support to MOEFCC to formulate policies, and determine appropriate emission standards. The implementation of OSDP will be governed by the relevant acts, rules, regulations, and standards stipulated by the Government of India. A full compliance with statutory environmental requirements at the national, state, municipal, and local levels by the facility owners and the contractors in all stages of the project implementation including design, construction, operation, and maintenance will be ensured. Some of the major laws and acts that will be applicable during implementation of OSDP are detailed below:

1. Environment (Protection) Act, 1986 and the Environmental Impact Assessment Notification, 2006 and amendments thereof

12. The Environment (Protection) Act was enacted for the nationwide protection and improvement of environment which includes water, air, and land, and their interaction with human beings and other ecosystems. The Government of India may make rules in respect of quality of air, water, or soil for various areas and purposes if it deems necessary. It can also specify maximum allowable limits of concentration of various environmental pollutants.

13. According to the Environmental Impact Assessment (EIA) Notification, 2006 and as amended thereof, developmental projects are classified as Category A and Category B (Category B is further subdivided into B1 and B2 categories) based on their size, nature, location, and potential environmental impacts. The Environmental Impact Assessment Authority will issue an environmental clearance based on the recommendations of the Expert Appraisal Committee constituted at the MOEFCC for Category A projects. All the projects included in Category B1 shall require prior environmental clearance from the State Environment Impact Assessment Authority, based on the recommendations of a State level Expert Advisory Committee. The list of projects or activities requiring environmental clearance and their categorization is given in schedule of this notification. According to this notification, all building construction projects and townships are classified as Category B irrespective of their size, nature, location, and possible environmental impacts.

14. As per MOEFCC notification no. S.O. 3999 (E) dated 9 December 2016 (given in **Appendix 1**), schools, colleges, hostels for educational institutions shall not require any environmental clearance subject to implementation of environmental conditions as per the Appendix XIV of the notification.

15. The salient provisions under the Environment (Protection) Act, 1986 include but not limited to the following:

(i) Restrict or prohibit industries, operations or processes in specified areas;
(ii) Undertake environmental impact assessment for certain categories of industries to inform the decision making in approval of new or expansion projects;
(iii) Restrict or prohibit handling of hazardous substances in specified areas;
(iv) Protect and improve the quality of the environment and prevention, control and abatement of environmental pollution;
(v) Lay down standards for the quality of the environment, emissions or discharges of environmental pollutants from various sources;

(vi) Lay down procedures and safeguards for the prevention of accidents, which may cause environmental pollution;
(vii) Bar on filling of any suit or legal proceedings against the Government or officials empowered by it for action taken in good faith, in pursuance of the Act; and
(viii) Bar of jurisdiction to Civil Court to entertain any suit or proceedings in respect of anything done, action taken or directions issued by the Central Government or any other authority empowered by it, in pursuance of the Act.

2. Water (Prevention and Control of Pollution) Act, 1974 and amendments thereof

16. The Water (Prevention and Control of Pollution) Act, 1974 resulted in the establishment of the Central and State level Pollution Control Boards (SPCB) whose responsibilities include managing water quality and effluent standards (given in **Appendix 2**),[3] as well as monitoring water quality, prosecuting offenders, and issuing licenses for construction and operation of developmental projects requiring water as a resource. Under the Water Act, Consent to Establish (CTE) or No Objection Certificate is required for setting up a new project or for expansion of the existing facility prior to starting the project activity. Consent to Operate is required before commencing the project.

3. Water (Prevention and Control of Pollution) Cess Act, 1977 and amendments thereof

17. This Act provides for levy and collection of Cess on water consumed and water pollution caused. It also covers specifications on furnishing of returns, assessment of Cess, interest payable for delay in payment of Cess and penalties for non-payment of Cess within the specified time.

4. Air (Prevention and Control of Pollution) Act, 1981 and amendments thereof

18. Under the Air Act, CTE or No Objection Certificate is required for setting up a new project or for expansion of the existing facility prior to starting the project activity. The CTE and Consent to Operate is required before commencing the construction and operations of the proposed project respectively. The Air (Prevention and Control of Pollution) Act, 1981 empowers the SPCBs to enforce ambient air quality standards set by the CPCB enclosed as **Appendix 3**.[4]

5. Noise Pollution (Regulation and Control) Rules, 2000 and amendments thereof

19. Under the new regulation, different areas and zones are to be identified as industrial, commercial, residential, and silence areas and anyone exceeding the specified noise level (given as **Appendix 4**)[5] would be liable for action.

6. Municipal Solid Wastes (Management and Handling) Rules, 2016 and amendments thereof

3 www.envfor.nic.in/ www.ospcboard.org.
4 www.envfor.nic.in/www.ospcboard.org.
5 www.envfor.nic.in/ www.ospcboard.org.

20. These rules were implemented to ensure proper collection, reception, treatment, storage, and disposal of municipal solid wastes generated at the site.

7. Batteries (Management and Handling) Rule, 2001 and amendments thereof[6]

21. These rules apply to every manufacturer, importer, re-conditioner, assembler, dealer, recycler, auctioneer, consumer, and bulk consumer involved in manufacture, processing, sale, purchase, and use of batteries or components thereof. It lays down the responsibilities of a consumer or bulk consumer in terms of disposing off the used batteries and filing a half-yearly return to the state board.

8. Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

22. The rule states the requirement for handling and managing wastes categories as hazardous under the schedule. It lays down requirement for:

(i) Authorization for collection, reception, storage, transportation, and disposal of hazardous wastes;
(ii) Filing of annual return under the rules;
(iii) Authorization by SPCBs/CPCB to vendors accepting waste/used oil; and
(iv) Liability of the occupier, transporter, and operator of a facility. The occupier, transporter, and operator of a facility shall be liable for damages caused to the environment resulting due to improper handling and disposal of hazardous waste listed in schedules to the Rules.

9. E-Waste (Management and Handling) Rule, 2016 and amendments thereof

23. These rules apply to every producer, consumer, or bulk consumer involved in manufacture, sale, and purchase and processing of electrical and electronic equipment or components as specified under these rules. The consumer or bulk consumers of such equipment will have to ensure that e-waste generated is disposed through authorized channels. They also have to maintain the record of e-waste generated in the prescribed format.

10. Plastic (Management and Handling) Rule, 2016 and amendments thereof

24. These rules apply for restricting the manufacture and use of plastic carry bags and for setting up of plastic waste management system by the municipal authorities.

11. Forests (Conservation) Act, 1980 and Rules, 1981 and amendments thereof

25. The act and rules regulate the diversion of forest land for non-forest purposes. According to Section 2 of the Act, prior approval of the Central Government is required for diversion of forestland to use for any non-forest purpose; assign any forest land to any private person or entity not controlled by the government; clear any forest land of naturally grown trees for the purpose of using it for reforestation etc.

6 Rules are under revision.

12. Wildlife (Protection) Act, 1972 and amendments thereof

26. The Act provides for protection to listed species of flora and fauna and establishes a network of ecologically important protected areas.

(i) It empowers the Central and State Governments to declare any area to be a Wildlife Sanctuary, National Park or a closed area.
(ii) There is a blanket ban on carrying out any industrial process or activity inside any of these protected areas.
(iii) In case forestland within the protected areas network is to be diverted for any non-wildlife use, a no objection has to be obtained from the Indian Board of Wildlife and the State Legislature, before the final consideration by MOEFCC.
(iv) The schedules categorize animals, birds, and plants. Schedule I lists endangered species of mammals, reptiles, amphibians, birds, crustaceans and insects. Any possession, transportation etc. of these species without prior permission is offence under the Act.

13. Wetlands (Conservation and Management) Rules, 2010 and amendments thereof

27. These rules apply for defining the wetlands to be protected and restriction on activities to be performed within wetlands with or without permission of Central and State Wetland Authority.

14. Coastal Regulation Zone (CRZ) Notification, 2011 and amendments thereof

28. This notification notifies the coastal stretches as a CRZ and imposing restriction on industries, operations or processes and manufacture or handling or storage or disposal of hazardous substances in the CRZ with or without permission of Central and State Coastal Management Authority.

15. Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 & Rules, 2007 and amendments thereof

29. The Act stipulates conditions for diversion of forest land for activities such as skill upgradation, vocational training center.

16. Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 & Rules 1998 and amendments thereof

30. These apply to every establishment which employs or had employed on any day of the preceding 12 months, 10 or more building workers in any building or other construction work. These take care of issues related to building workers such as hours of work, welfare measures and other, safety and health, etc.

17. Child Labour (Prohibition and Regulation) Act, 1986 and amendments thereof

31. A child is defined as a person who has not completed 14 years of age. The Act prohibits employment of children in certain occupation and processes (part II, Section 3). The Act also specifies conditions of work for children, if permitted to work. These include a working day of maximum of 6 hours a day (including rest), no work period exceeding 3 hours at a stretch, and

no overtime (Section 7). The Act requires maintenance of a register for employed children (Section 11). The Constitution of India (Part III, Article 24 - Fundamental Rights) describes that no child below the age of fourteen years shall be employed to work in any factory or engaged in any other hazardous employment.

18. Bonded Labor (Abolition) Act, 1976 and amendments thereof

32. The act states that all forms of bonded labor stands abolished and every bonded laborer stands freed and discharged from any obligations to render any bonded labor.

19. Trade Union Act, 1926 and amendments thereof

33. Provides procedures for formation and registration of Trade Unions and lists their rights and liabilities. It encompasses any combination, permanent or temporary, that gets formed to regulate relationship between workmen and their employers.

20. Minimum Wages Act, 1948 and amendments thereof

34. Minimum Wages Act, 1948 requires the government to fix minimum rates of wages and reviews this at an interval of not more than 5 years. As per The Payment of Wages Act, 1936, amended in 2005, every employer shall be responsible for the payment to persons employed by him of all wages required to be paid under this Act. As per the Equal Remuneration Act, 1976, it is the duty of an employer to pay equal remuneration to men and women workers for same work or work of a similar nature.

21. Workmen's Compensation Act, 1923 and amendments thereof

35. The Act requires that, if personal injury is caused to a workman by accident arising out of and in the course of his employment, his employer shall be liable to pay compensation in accordance with the provisions of this Act.

22. Maternity Benefit Act, 1961 and amendments thereof

36. The act states that no employer shall knowingly employ a woman in any establishment during the 6 weeks immediately following the day of her delivery or her miscarriage. No pregnant woman shall, on a request being made by her in this behalf, be required by her employer to do during the period any work which is of an arduous nature or which involves long hours of standing, or which in any way is likely to interfere with her pregnancy or the normal development of the foetus, or is likely to cause her miscarriage or otherwise to adversely affect her health.

a. Applicability of legal framework

37. The legal framework with respect to environmental issues, relevant legislation, its applicability, enforcement agency, and responsibility have been listed in **Table 2**.

Table 2: Legal Framework

Issues	Relevant Legislation	Applicability	Enforcement Agency	Responsibility
Environmental Clearance	EIA notification, 14 September 2006 and amendments thereof	• Not applicable subject to compliance of following conditions: 1. As per MOEFCC notification S.O. 3999 (E) dated 9 December 2016, (**Appendix 1**) school, college, hostel for educational institution have been exempted from obtaining prior environmental clearance under the provisions of the EIA Notification, 2006 subject to compliance with environmental conditions mentioned in Appendix XIV of the notification. 2. The compliance with MOEFCC above notification will be ensured by the OSPCB before giving 'Consent-to-Operate' and by the local urban bodies and the development authorities while issuing the Occupancy Certificate to the buildings and constructions. These certificates will be submitted by the above authorities to the Regional Office of MOEFCC which shall assess/ evaluate/ monitor the compliance of conditions enumerated in the guidelines through verification by regional offices or deputed organizations / person. 3. Information pertaining to compliance on points will be filed at six monthly intervals to the OSPCB and the Regional Office of the MOEFCC.	OSPCB/ local urban bodies and the development authorities/ MOEFCC	Contractor and Implementing agency as applicable
Water	Water (Prevention and Control of Pollution) Act, 1974 and amendments thereof	• Applicable • Consent to establish and consent to operate before commencing construction and operation respectively. • Annual return on water usages. • DG sets and fuel burning machinery's stack height and emission limit as per the norms notified under this act and	OSPCB	Contractor and Implementing agency as applicable
	Water (Prevention and Control of Pollution) Cess Act, 1977 and amendments thereof			
Ambient Air	Air (Prevention and Control of Pollution) Act, 1981 and amendments thereof			

Issues	Relevant Legislation	Applicability	Enforcement Agency	Responsibility
		CPCB guidelines.		
Noise	Environment (Protection) Second Amendment Rules, 2002 (Noise Limits for New Generator Sets) The Noise Pollution (Regulation and Control) Rules, 2000 and amendments thereof	• Applicable • Noise limit standards for DG sets and ambient noise level as prescribed under these act and rules.		Contractor and Implementing agency as applicable
Hazardous Substances & Wastes	Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016	• Applicable • Authorization for hazardous waste handling from the OSPCB; • Disposal of hazardous waste via authorized vendors by OSPCB	OSPCB	Contractor and Implementing agency as applicable
Batteries waste	Batteries (Management and Handling) Rule, 2001 and amendments thereof	• Applicable • Disposal of battery waste via authorized vendors by OSPCB	OSPCB	Contractor and Implementing agency as applicable
e-waste	E-waste (Management and Handling) Rule, 2016 and amendments thereof	• Applicable • Disposal of e-waste via authorized vendors by OSPCB	OSPCB	Contractor and Implementing agency as applicable
Groundwater withdrawal	Guidelines for ground water extraction prescribed by the CGWA, 2012	• Applicable • Permission from the State Water Resource Department for extracting ground water in accordance with the conditions stipulated in the CGWA guidelines. • Similarly, permission will be required, if the source of water is going to be municipal or river, from the municipality or irrigation department respectively	Odisha State Water Resource Department	Contractor and Implementing agency as applicable
Labor	• Building and Other Construction Workers Act, 1996 and amendments thereof; • Child Labor (Prohibition and Regulation) Act, 1986 and amendments thereof; • Minimum Wages Act, 1948 and amendments thereof; • Workmen's Compensation	• Applicable • Obtain "certificate of registration" in case 10 or more building workers or other construction worker will be employed and ensure issues related to building workers such as hours of work, welfare measures and other, safety and health etc. • Ensure that no child labor is engaged at site for construction or operation	District Labor Commissioner	Contractor and Implementing agency as applicable

Issues	Relevant Legislation	Applicability	Enforcement Agency	Responsibility
	Act, 1923 and amendments thereof; The other labor related legislations applicable for the project include the following: • Equal Remuneration Act, 1976 and amendments thereof • Employees State Insurance Act, 1948 • E.P.F. and Miscellaneous Provisions act, 1952 and amendments thereof • Payment of Bonus Act, 1965 and amendments thereof • Payment of Gratuity Act, 1972 and amendments thereof • Public Provident Fund Act, 1968 and amendments thereof • Maternity Benefit Act, 1961 and amendments thereof • Personal Injuries (compensation insurance) Act, 1963 and amendments thereof • Personal Injuries (emergency) Provisions Act, 1962 and amendments thereof • ESI Act , 1948 and amendments thereof • Contract Labor (Regulation & Abolition) Act, 1970 and Rules and amendments thereof • Inter-state Migrant Workmen (Regulation of employment and conditions of service) Act, 1979 and amendments thereof • Employer's Liability Act, 1938 and amendments thereof • Bonded Labor (Abolition) Act,	works either directly or by the subcontractors • Ensure payment of minimum wages as fixed by the government • In case of any personal injury caused to workman during construction or operational phase, ensure the payment of compensation in accordance with the provisions of act • Ensure appropriate insurance cover is taken to cover un-skilled, semi-skilled and skilled laborers. • Ensure implementation of all labor related acts/rules.		

Issues	Relevant Legislation	Applicability	Enforcement Agency	Responsibility
	1976 and amendments thereof			
Layout design, Occupancy certificate	• National Building Code - 2005 and amendments thereof; • Relevant district/city development authority and municipal corporation regulations	• Wherever applicable • This code and its various provisions including, but not limited to, landscaping, fire safety plan, structural design etc. will be followed during design and planning. • Development authority (ies) has delegated the power for approval of layout plan and issuing occupancy certificate to the municipal corporation in case the land is coming under the municipal corporation, otherwise approval shall be granted by respective development authority • Approval of lay-out plan before commencing construction and occupancy certificate before occupying constructed building will be required from respective municipal corporation/local development authority (as applicable). • Fire approval will be obtained at the time of issuing of occupancy certificate. • The height restrictions with respect to approach funnels and transitional area of airport as detailed in **Appendix 5** will be adhered to; project will comply with all the prescribed standards as per development authority's rules and regulation.	• Respective development authority; • Respective municipal corporation; • Respective Chief Fire Officer; • Civil Aviation Authority;	Contractor and Implementing agency as applicable
Usages of designated forest land	• Forest Act 1980 and Rules 1981 and amendments thereof • Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 & Rules, 2007 and amendments thereof	Not applicable	MOEFCC, and State Forest Department	Contractor and Implementing agency as applicable

Issues	Relevant Legislation	Applicability	Enforcement Agency	Responsibility
Presence of wild life sanctuary within an area of 10 km radius around the project site	Wild life (protection) Act, 1972 and amendments thereof	Applicability to be ascertained[7]	National Wild Life Board	Contractor and Implementing agency as applicable
Presence of wetlands	Wetlands (Conservation and Management) Rules, 2010 and amendments thereof	Not applicable[8]	State Wetland Authority	Contractor and Implementing agency as applicable
Clearance for CRZ	CRZ Notification, 2011 and amendments thereof	Not applicable[9]	State Coastal Management Authority	Contractor and Implementing agency as applicable
Removal of trees	Relevant district/city development authority and municipal corporation regulations	• Applicable • Permission for removing tree(s) will be taken from the DFO of the City Forest Division, as regulatory agency • As a mandatory requirement, plantation will be carried out as stipulated in approval/ NOC for removal of tree(s) • As per OM, dated 9 June 2015 by MOEFCC, ratio of plantation defined is 1:3 of trees removed. • The ratio of plantation may be more stringent as defined by local DFO.	City Forest Division	Contractor and Implementing agency as applicable
Natural Disaster	• National Disaster Management Act, 2005, and amendments thereof; • Odisha State Disaster Management Policy; • Odisha State Disaster Management Plan	• Applicable measures, as outlined in the State Disaster Management Plan, will be adopted for prevention and mitigation of disasters	Odisha State Disaster Management Authority	Contractor and Implementing agency as applicable
Vehicular Movement	Motor Vehicles Act, 1988 and Rules, 1989 and amendments thereof	• Applicable • Project will follow up Central Motor Vehicle rules for transportation of diesel or any other hazardous substance	Local Transportation Authority	Contractor and Implementing agency as applicable

[7] A notification related to declaration of ESZ is under processing. To be reconfirmed prior to commencing with works.
[8] To be reconfirmed once site layouts finalized.
[9] To be reconfirmed once site layouts finalized.

37. The environment category of the proposed OSDP is "B". While selecting the sites for the two ASTI sites (under Model B), the following will be ensured:[10]

(i) land is not a designated forest land;
(ii) land is not falling within core, buffer and eco-sensitive zones (ESZ) of national park, wild life sanctuary, bio-sphere, tiger, or elephant reserves;
(iii) there are no monuments protected by Archeological Survey of India within 100 m radius of the site;
(iv) land is not falling under the protected wetland category; and
(v) land is not falling in an area protected under CRZ notification.

C. Anticipated Environmental Impacts

38. Generally, the environmental risks/impacts can be categorized as either primary or secondary. Primary impacts are those, which are attributed directly by the project and secondary impacts are those, which are indirectly induced and typically include the associated investment and changed patterns of social and economic activities by the proposed actions. Processes that may create risk to the site specific environment parameter are considered and are analyzed in terms of key potential environmental impacts based on the location specific actual and foreseeable events, including operational and typical events of the proposed program.

39. In case of ASTIs for which sites are yet to be identified, the impacts are anticipated based on the activities that will be carried out. Site specific impacts will be assessed during the preparation of the environmental assessment report once the land is identified.

40. The environmental risks/impacts may include all those that are beneficial or adverse, short or long-term (acute or chronic), temporary (reversible) or permanent (irreversible), direct or indirect, cumulative and induced, and local or regional. The adverse impacts may include all those leading to harm to living resources, damage to human health, hindrance to other activities, impairment of quality for use, reduction of amenities, damage to cultural and heritage resources, damage to physical structures, etc. While the beneficial impacts may include socioeconomic development on regional basis due to development of super specialty skills leading to enormous opportunity of direct and indirect employment and business. For each identified potential environmental and social impact, the associated environmental and social risk is assessed based on its likelihood and significance. For the proposed proposal, the impacts assessment is being performed in three steps:

(i) Step 1: Identification of interactions between activities and receptors
(ii) Step 2: Identification of potentially significant environmental and social risks/impacts
(iii) Step 3: Evaluation of all significant environmental and social risks/impacts

41. In Step 1, based on the description of activity proposed to be undertaken and environmental baseline description, a detailed matrix of activities and receptors is prepared. Then based on the legal framework and baseline environment and social data, it is determined whether an interaction exists between an activity and a receptor.

[10] In the future, if any of unidentified sub-projects falls under "environment category A" project, it will attract the re-categorization of the whole project.

42. In Step 2, based on the interactions identified in Step 1, potentially significant impacts due to the proposed changes are identified. The impacts may be beneficial/adverse, direct/indirect, reversible/irreversible and short-term/long-term as per criteria given in **Table 3**.

Table 3: Risk/Impact Rating Assessment Matrix

Impact		**Criteria**
Nature of impact	Beneficial	Positive
	Adverse	Negative
	Direct	Impacts are directly contributed by project activities
	Indirect	Impacts are induced by project activities
Duration of impact	Short-term	Impacts shall be confined to a stipulated time
	Long-term	Impacts shall be continued till the end of life of proposal
Impacted Area	Localized	Impacts shall be confined within an area of 10 km radius around the project location
	Regional	Impacts shall be continued beyond an area of 10 km radius around the project location.

43. In Step 3, all the potentially significant impacts are evaluated and a qualitative evaluation is made. An impact level is rated as “low”, “medium” or “high”. The impact rating is based on two parameters i.e. the “severity of impact” and the “likelihood of occurrence of impact”.

(i) Severity of impact: The severity of an impact is a function of a range of considerations including impact magnitude, impact duration, impact extent, compliance of prescribed legal framework, and the characteristics of the receptors/ resources; and

(ii) Likelihood of occurrence: How likely is the impact (this is particularly important consideration in the evaluation of unplanned/ accidental events)

44. The significance of each impact is determined by assessing the impact severity against the likelihood of the impact occurring as summarized in the impact significance assessment matrix provided below in **Table 4** and its explanation is given in **Table 5**.

Table 4: Severity & Likelihood of Impacts

Impact Severity	**Impact Likelihood**			
	Unlikely (e.g. may not expected to occur during project lifetime)	Low Likelihood (e.g. occur once or twice during project lifetime)	Medium Likelihood (e.g. occur every few year)	High Likelihood (e.g. Routine, happens several times a year)
Slight	Negligible Impact	Negligible Impact	Negligible Impact	Negligible Impact
Low	Negligible Impact	Negligible Impact	Negligible to Minor Impact	Minor Impact
Medium	Negligible Impact	Minor Impact	Minor–Moderate Impact	Moderate Impact
High	Minor Impact	Moderate Impact	Major Impact	Major Impact

Table 5: Explanation of Impacts

Negligible Impact	:	Defined as magnitude of change comparable to natural variation
Minor Impact	:	Defined as detectable but not significant
Moderate Impact	:	Defined as insignificant; amenable to mitigation; should be mitigated where practicable
Major Impact	:	Defined as significant; amenable to mitigation; must be mitigated

45. As described above, the proposed OSDP has two components i.e., (i) creation of infrastructure needed; and (ii) operation of facility to meet the objectives of the proposed OSDP. The details of risks/impacts on various environmental aspects during creation of infrastructure and operation phase with mitigation measures, are mentioned as a part of the EMP.

46. Risks/Impacts during construction phase: The anticipated risks/impacts during pre-construction and construction phase are given in **Table 6**.

47. Risks/Impacts during operation phase: The anticipated risks/impacts during operation phase are given in **Table 7**.

Table 6: Anticipated Risks/Impacts during Pre-Construction and Construction Phase

Aspects	Activity	Risk/Impacts					Remarks
		Significance and Nature	Duration	Area	Likelihood of occurrence	Severity	
Clearance from environment regulatory authority	• Environment clearance under EIA rules, • Clearance under CRZ and Wetlands rule (if required) • Consent to Establish and Operate under Water and Air Act • Forest clearance (if required) • Clearance from National Wild life board (if required)	Moderate & adverse	Short term	local	low	High	• The Notification dated 9 December, 2016 of MOEFCC has exempted proposed facility from the requirement of prior Environment Clearance (EC) under EIA Notification, 2006 and, stipulated that such buildings shall ensure sustainable environmental management, solid and liquid waste management, rain water harvesting and may use recycled materials such as fly ash bricks. • The compliance of the stipulated conditions as per MOEFCC notification will be ensured by the respective State Pollution Control Board before giving 'Consent-to-Operate' and by the Local Urban Bodies and the Development Authorities while giving the 'Occupancy Certificate' to the buildings and constructions. These Certificates should be submitted by the above authorities to the Regional Office of MOEFCC. MOEFCC can assess/evaluate/monitor the compliance of conditions enumerated in the Guidelines through verification by Regional Offices or deputed organizations / person. • Construction work will not be initiated without having clearances from environment regulatory bodies as applicable. • The site specific EMP will be prepared later as and when the design and drawing are finalized by the Contractor and the environmental assessment report shall be updated accordingly. Subsequently, the updated environmental assessment report will be submitted to ADB for review and approval before commencement of civil works.
Land	• Possession of land • Clearing of land • Removal of trees • Removal of electrical lines	Moderate & adverse	Short term	local	low	High	• If unavoidable, for any tree removal, permission will be obtained from local DFO and recommended compensatory plantation will be carried out as per stipulated condition. • As per MOEFCC, plantation would be carried out in 1 to 3 ratio in case of removal of trees.

Aspects	Activity	Risk/Impacts					Remarks
		Significance and Nature	Duration	Area	Likelihood of occurrence	Severity	
Terrestrial ecology	• Mobilization and demobilization of machinery/ equipment; • Clearing and leveling of site; • Storage of construction materials, fuels and chemicals; • Civil and mechanical work including operation of diesel driven machinery, equipment and electricity generators; etc.	Moderate & adverse	Short term	local	low	High	• 40% of total allotted area will be earmarked for plantation/ landscaping. • Activity will be confined to earmarked area only.
Topography and Drainage pattern	• Clearing and leveling of the site • Civil and mechanical works	Negligible & adverse	Short term	local	low	low	• Activity will be confined to earmarked area only.
Water Resources	• Water requirement for construction and domestic activities	Moderate & adverse	Short term	Local	High	Medium	• Permission of withdrawal of ground water will be obtained from State Water Resource Department.
Ambient air quality	Generation of dust and gaseous pollutants such as SO_2, NOx, CO etc. due to: • Mobilization and demobilization of machinery/ equipment • Clearing and leveling of the site • Operation of heavy machinery/ equipment • Storage of construction	Moderate & adverse	Short term	Local	High	Medium	• Ambient air quality monitoring will be carried out by the Contractor before commencing construction activities at each ASTI site. • Activity will be confined to earmarked area only. • The National Ambient Air Quality Standards (NAAQS) 2009 for industrial, residential, rural and other areas will be guiding standards

Aspects	Activity	Risk/Impacts					Remarks
		Significance and Nature	Duration	Area	Likelihood of occurrence	Severity	
	materials • Civil and mechanical works • Operation of DG sets and other fuel driven machinery to be used for civil and mechanical works • Movement of traffic • Approach roads, if any						
Noise level	• Mobilization and demobilization of machinery/equipment • Clearing of the site • Operation of heavy machinery/equipment • Civil and mechanical works • Operation of DG sets and other fuel driven machinery to be used for civil and mechanical works • Movement of traffic	Moderate & adverse	Short term	local	High	Medium	• Noise level monitoring will be carried out before commencing construction activities at each ASTI site. • Ambient noise level standard 2000 for silence zone will be the guiding standard. • Activity will be confined to earmarked area only.
Waste water discharge	• Mobilization and demobilization of machinery/equipment • Clearing and leveling of the site • Operation of heavy machinery/equipment • Civil and mechanical works • Movement of traffic • Camp site	Moderate & adverse	Short term	local	High	Medium	• Appropriate surface run-off drainage systems (e.g. silt traps); • Proper drainage system or collection pits for transportation/collection of waste water; • Isolation and disposal of all the debris resulting from the site from the waste water; • Domestic waste water, if any will be drained to existing sewage disposal system. • Activity will be confined to earmarked area only.
Soil & Solid wastes	• Mobilization and demobilization of machinery/	Moderate & adverse	Short term	local	High	Medium	• Removal and disposal of trees will be done through vendors associated with forest department. • Soil and other debris generated during dismantling

Aspects	Activity	Risk/Impacts					Remarks
		Significance and Nature	Duration	Area	Likelihood of occurrence	Severity	
	equipment • Clearing and leveling of the site • Operation of heavy machinery/ equipment • Civil and mechanical works • Movement of traffic • Camp site						of buildings and foundation work shall be used for levelling and if it is excess then same shall be disposed of through vendors for levelling of land only. • Scrap materials to be generated during dismantling of buildings will be sold to local vendors for reuse/recycle. • Municipal solid waste will be segregated and recycle materials such as paper, plastic, glass, empty bags & containers etc will be sold to vendors while kitchen waste shall be sent to disposal site of municipal corporation; • All hazardous waste including e-waste, batteries, plastic waste will be disposed of via vendors authorized by OSPCB. • Activity will be confined to earmarked area only.
Occupational Health & Safety	Dust, gas cutting, welding, bruises, cuts, and abrasions because of manual handling, accidents due to common reasons like fall from height and entrapment of limbs in machinery due to: • Mobilization and demobilization of machinery/ equipment • Clearing and leveling of the site • Operation of heavy machinery/equipme nt • Civil and mechanical works • Movement of traffic	Moderate & adverse	Short term	local	High	Medium	• Activity will be confined to earmarked area only.

Aspects	Activity	Risk/Impacts					Remarks
		Significance and Nature	Duration	Area	Likelihood of occurrence	Severity	
Employment & Socio economic	• Direct and indirect employment • Utilization of local available resources	Minor & beneficial	Short term	local	High	Low	• Preference will be given local labor and vendors.
Disturbance to community resources & safety	• Mobilization and demobilization of machinery/equipment • Clearing and leveling of the site • Operation of heavy machinery/ equipment • Civil and mechanical works • Movement of traffic	Moderate & adverse	Short term	local	High	Medium	• Activity will be confined to earmarked area only.
Natural disaster	• Design of infrastructure • Civil and mechanical works	Moderate & adverse	Short term	local	High	Medium	• All measures as per NBC-2005 will be inbuilt at design stage • All operational measures as per Disaster Management plan for Odisha by Panchayati Raj Department, Odisha will be implemented.
Culture and heritage	• Migration of labour	Negligible & adverse	Short term	local	low	Slight	• Preference shall be given to local labor and vendors.

Table 7: Anticipated Risks/Impacts during Operation Phase:

Aspects	Activity	Risk/Impacts					Remarks
		Significance and Nature	Duration	Area	Likelihood of occurrence	Severity	
Management of clearance/ NOC from regulatory authorities	Compliance of conditions stipulated: 1. As per MoEFCC notification dated 22.12.2014 and OM dated 9 June 2015; 2. By OSPCB as a part of Consent to establishment and	Moderate & adverse	long term	local	low	High	• As per MOEFCC, information pertaining to compliance on relevant points will be submitted at six monthly intervals to the OSPCB and the Regional Office of the MOEFCC. • Details pertaining to compliance of stipulated conditions as a part of consent to establishment and to operate will also be submitted to

Aspects	Activity	Risk/Impacts					Remarks
		Significance and Nature	Duration	Area	Likelihood of occurrence	Severity	
	operate						OSPCB.
Terrestrial ecology	Plantation/landscaping	Negligible & beneficial	Long term	local	High	Slight	• 40% of total allotted area will be earmarked for plantation /landscaping; • In lieu of removal of trees (if unavoidable), additional plantation will be carried out to comply with the condition of regulatory agency i.e. local DFO or in 1:3 ratio as defined by MOEFCC whichever is more stringent.
Ambient air quality	Generation of dust, gaseous pollutants such as SO_2, NOx, CO, VOC etc due to: • DG sets; • Movement of Traffic; • Operation of paint shops, welding machines etc • Fuel burning for any other purposes in workshops; etc	Negligible & adverse	Long term	local	High	Slight	• DG sets for power back up • Stacks with adequate height (as per norms) to DG sets • Adequate hoods and ventilation via exhausts as per NBC-2005 will be provided in workshops. • Plantation will be carried out in 40% of total allotted land. • NAAQS 2009 for industrial, residential, rural and other areas will be guiding standards.
Noise Level	Generation of noise level due to: • Machines/ equipment in workshops • DG sets; • Movement of Traffic; etc	Negligible & adverse	Long term	local	High	Slight	• Adequate precautions will be taken at design stage to keep noise level 75 dB (A) at 1 m from source. • Blowing horn will be discouraged within premises. • Plantation/ landscaping will be carried out in 40% of total allotted land. • Ambient noise level standard 2000 for silence zone will be guiding standard.
Water Resources	• Water requirement for domestic and other purposes	Moderate & adverse	Long term	local	High	Medium	• Source will be ground water and the permission will be obtained from Central Ground Water Board.
Waste Water discharge	• Waste water generation from domestic activity	Moderate & adverse	Long term	local	High	Medium	• STP of adequate capacity will be provided and treated waste water

Aspects	Activity	Risk/Impacts					Remarks
		Significance and Nature	Duration	Area	Likelihood of occurrence	Severity	
	and laboratory, workshops, if any						(as per enclosed discharge standards) will be used for flushing in toilets and for irrigation purposes within premises. • Waste water from laboratory and workshop will be treated before sending to STP • Storm water drainage system will be commissioned
Solid Waste	• Municipal solid waste • Solid waste from office work; • E-waste; • Lead battery; • Bio-medical waste; etc	Moderate & adverse	Long term	local	High	Medium	• Municipal solid waste will be segregated and recycled materials such as paper, plastic, glass, empty bags & containers etc shall be sold to vendors while kitchen waste will be sent to disposal site of municipal corporation; • Sludge from STP will be used as manure with the premises after getting confirmation of its nature as non-hazardous. Otherwise, it will be disposed of via authorized vendors by OSPCB. • All hazardous waste including e-waste, batteries, plastic, bio-medical from in-house dispensary etc will be disposed of via authorized vendors by OSPCB.
Natural disaster	• Operation of ASTI and ITI	Moderate & adverse	Short term	local	High	Medium	• All operational measures as per Disaster Management plan for Odisha will be implemented.
Fire & Toxic Hazards	Fire in office, store room, laboratory etc	Moderate & adverse	Long term	local	High	Medium	• Fire plan approval will be obtained from Chief Fire Officer before occupying the buildings; • Occupancy certificate from Municipal Corporation/ development authority will be obtained before occupying the building. • Firefighting system will be in place as per NBC-2005.

Aspects	Activity	Risk/Impacts					Remarks
		Significance and Nature	Duration	Area	Likelihood of occurrence	Severity	
Employment and Economic Growth	Generation of more employment due to availability of more super specialty skilled workers	Major and beneficial	Long term	Regional	High	High	• Direct and indirect employment opportunities to locals for serving and supplying the operation of facility • Increase in per capita income.
Disturbance to community resources & safety	• Movement of traffic • Visit and stay of students and faculties for training • Visit and stay of trainers	Moderate & adverse	Short term	local	High	Medium	• Students and others to be trained are mainly from adjacent areas • Hostel facility will be there
Culture & heritage		Negligible & adverse	Long term	local	High	Slight	• Students and others to be trained are mainly from adjacent areas

D. Environmental Assessment

1. Environmental Criteria for Subproject Selection

48. The proposed works include construction of new buildings (mostly having ground plus three floors) for upgrading the existing training facilities. The likely environmental impacts are less adverse, and site specific in nature, and will be managed with EMPs. The subprojects located within (i) core and buffer zones of national parks, sanctuaries, tiger, elephant and bio-sphere reserves; and (ii) 100 m from the boundary of protected monuments of archeological importance will not be considered for financing. In case any of the sites of the ASTIs and the ITIs are falling within 10 km radius from the boundary of the buffer zone, and if the ESZs for such protected areas are yet to be declared, then a detailed analysis of environmental implications will be carried out to ascertain that the proposed works will not cause any adverse significant impacts on the protected areas. If any of the sub-project sites (either for ASTIs or for ITIs) falls under "environment category A" then OSDP will be re-categorized.

2. ADB Safeguard Policies and Category of the Project

49. ADB has defined its safeguard requirements and framework[11] under its SPS (2009). The SPS (2009) requires environmental assessment, mitigation, and commitment towards environmental protection. The prime objectives of these safeguard policies are to (i) avoid adverse impacts of projects on the environment and affected people, where possible; and (ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible. ADB as per SPS (2009) classifies a project into environment category[12] A, B or C depending on potential adverse environmental impacts.

3. Environmental Guidelines for Specific Components

50. Based on the environmental impacts anticipated for subprojects, the tables below describe the plan for (i) project clearances to be obtained; (ii) selection criteria for land that will be followed; and (iii) activities that will be included as a part of preparation of the EMP during pre-construction, construction, and operation phase. The environmental assessment for pre-construction and construction phase is given in **Table 8** and the environmental assessment for operation phase is given in **Table 9**.

4. Updation of Draft Environmental Assessment Report

51. The detailed building design will cover a separate collection, treatment, and disposal of domestic and laboratories waste generated from ASTIs for permanent sites. The site specific EMP will be prepared later as and when the design and drawings are finalized by the

[11] SPS (2009) mandates all ADB-financed activities to be compliant with the host country environmental regulatory framework /regulations.

[12] **Category A**. A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment is required.
Category B. A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required.
Category C. A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.

contractors and the environmental assessment report shall be updated accordingly. The bio-medical, electronic, and hazardous waste generated at these training facilities will be treated and/or disposed in accordance with the prevailing environmental regulations of the Government of India. The site specific EMPs shall cover the collection, treatment, and disposal of such waste generated.

52. Subsequently, the updated environmental assessment report will be submitted to ADB for review and approval before commencement of civil works.

Table 8: Environmental Assessment for Pre-Construction and Construction Phase

SL No.	Impact On	Main Source of Impact	Plan for carrying out environmental assessment	Primary Responsibility
1	Compliance to legal framework	• Environment clearance under EIA rules, • Clearance under CRZ and Wetlands rule (if required) • Consent to Establish and Operate under Water and Air Act • Forest clearance (if required) • Clearance from National Wild life board (if required)	• All clearance(s)/ NOC(s)/ permission(s)/ approval(s) as applicable for environment clearance, water withdrawal, power supply, layout plan of premises, removal of plantation, labor related issues etc. as applicable will be obtained before start of construction; • Land will be chosen in such a way that it is not a designated forest land, not a wetland, does not fall under CRZ notification, there is no wildlife sanctuary, national park, tiger/elephant reserves and minimum 100 meters from the boundary of protected monuments of archeological importance; • DPR for the facility will be prepared in line with National Building Code - 2005.	Contractor and Implementing agency as applicable
2	Land Use	• Current land use • Possession of land • Clearing of land	• All necessary protocols will be followed and legal requirements will be implemented with respect to local regulation pertaining to use of land for commercial activities and removal of plantation; • Site boundaries will be marked out to ensure that land taken is restricted to pre-agreed area; • There will be minimum utilization of land and clearing of site • Removal of existing plantation on site for construction will be avoided, if unavoidable it will be minimized • 40% of the total area allotted will be kept as open area for landscaping and development of plantation; etc	Contractor and Implementing agency as applicable
3	Terrestrial ecology	• Mobilization and demobilization of machinery/equipment; • Clearing and leveling of site; • Storage of construction materials, fuels and chemicals; • Civil and mechanical work	• Site boundaries will be marked out. • The disturbance of vegetation present in and around, if any will be minimized. • Plantation will be carried out as per condition stipulated by local DFO as a part of clearance for removal of existing plantation on site or in the ratio of 1:3 as prescribed; • For cleared areas, top soil in stockpile will be retained where possible on perimeter of site for subsequent re-spreading onsite during restoration;	Contractor and Implementing agency as applicable

SL No.	Impact On	Main Source of Impact	Plan for carrying out environmental assessment	Primary Responsibility
		including operation of diesel driven machinery, equipment and electricity generators; etc	• Vegetation on edge of site will be retained to serve as seed bank for future site re-vegetation during restoration; etc • All bulldozer operators involved in site preparation will be trained to observe the defined site boundaries; • Attempt will be made to develop landscaping/plantation in the area earmarked for the same (40% of total allotted area); • Kerosene oil/LPG will be used for domestic purpose; etc	
4	Topography and Drainage pattern	• Clearing and leveling of the site. • Civil and mechanical works	• Area and extent of site clearance will be minimized, by staying within defined boundaries; • Stockpile of topsoil will be retained wherever possible at the edge of site; • Adequate diversion for storm water will be provided within the project premises; etc	Contractor and Implementing agency as applicable
5	Water Resources	• Water requirement for construction and domestic activities	• Permission for ground water withdrawal from water resource department will be obtained. • Adequate water supply arrangement will be made at construction site; • Continuous attempt will be made to avoid wastage and leakage of water; • Continuous attempt will be made to optimize/ reduce the use of water; • Foundation work will not be carried out during monsoon season; and • Toilets and bathrooms on temporary basis will be provided at site.	Contractor and Implementing agency as applicable
6	Ambient air quality	Generation of dust and gaseous pollutants such as SO2, NOx, CO etc due to: • Mobilization and demobilization of machinery/equipment • Clearing and leveling of the site • Operation of heavy machinery/equipment • Storage of construction materials • Civil and mechanical works • Operation of DG sets and other fuel driven machinery to be used for civil and mechanical works • Movement of traffic	• It will be ensured that emission from DG sets and other machinery will conform to the standards as prescribed for combustion sources; • Stack height for each point source where fuel combustion takes place will be as per $14Q^{0.3}$, where Q is the SO_2 generation in Kg/hr; • For DG sets ranging from 19 to 800 KW capacity, emission will be such as PM <0.3 kg/kw-hr, NOx <9.2 kg/kw-hr, CO < 3.5 kg/kw-hr, HC < 1.3 kg/kw-hr; • Welding booths, hoods, torch fume extractors, flexible ducts, and portable ducts will be provided; • Any dry, dusty materials (chemicals, construction materials etc) will be stored in sealed containers or properly fenced storage yard; • Curtails/ screens will be placed to confined the dust generation especially for boy's hostel and workshop within allotted site; • Arrangement of water spray on the road and in storage yard on regular basis will be made; • Preventive maintenance of vehicles and machinery will be carried out.	Contractor and Implementing agency as applicable

SL No.	Impact On	Main Source of Impact	Plan for carrying out environmental assessment	Primary Responsibility
			• Regular testing of the combustion efficiency of the vehicles/machinery will be carried out. • Ambient air quality as per enclosed monitoring plan and stipulated by environment regulatory agencies will be carried out during pre-construction and construction phase to conform NAAQS 2009 for industrial, residential and rural; etc	
7	Noise and Vibration	• Mobilization and demobilization of machinery/equipment • Clearing of the site • Operation of heavy machinery/equipment • Civil and mechanical works • Operation of DG sets and other fuel driven machinery to be used for civil and mechanical works • Movement of traffic	• Low noise generating machinery/equipment will be selected. • Engineering specifications will be stipulated during tendering as a condition to maintain noise level equal to or less than 75 dB(A) at 1 m from each source; • Provision will be there for rubber padding/noise isolators/silencers to modulate the noise generated by machinery/equipment, wherever possible; • The high noise zones at site will be demarcated especially for boy's hostel and workshop present within site and enclosures & barriers, if required will be provided; • Provision of protective devices like ear muff/ plugs to the workers will be ensured. • Preventive maintenance of machinery/ equipment and vehicles will be ensured. • Information on noise, the risks of exposure to noise and the appropriate control measures will be disseminated in a manner appropriate to the workplace; • All employees will receive appropriate training and education as and when required; • In no case, workers and students will be exposed more than 85 dB (A) at 1m from source; and • Regular monitoring of ambient noise level as per enclosed monitoring plan and stipulated by environment regulatory agencies will be carried out during pre-construction and construction phase to conform noise level standard 2000 for silence zone; etc.	Contractor and Implementing agency as applicable
8	Waste water management	• Mobilization and demobilization of machinery/equipment • Clearing and leveling of the site • Operation of heavy machinery/equipment • Civil and	• Proper drainage system or collection pits will be provided for transportation/collection of waste water; • All the debris resulting from the site will be isolated from the waste water and disposed off separately; • Effective bunds capable of containing 110% of the volume of the largest container within and enclosing all potentially contaminating materials to be used for fuel lubricants and chemicals storage area;	Contractor and Implementing agency as applicable

SL No.	Impact On	Main Source of Impact	Plan for carrying out environmental assessment	Primary Responsibility
		mechanical works • Movement of traffic • Camp site	• Non-contaminated and potentially contaminated run-off will be kept separately. Non-contaminated run-off will be routed to off-site areas via silt traps. Potentially contaminated surface run-off will be routed through oil traps; • The storage areas will be inspected and cleaned at regular intervals; • Oil drip pans will be used wherever there is significant potential for leakage including, but not limited to; o Electric generator engine, DG sets, earth moving machinery/equipment etc o Compressors, pumps or other motors o Maintenance areas o Fuel transfer areas • All spills/leaks will be contained, reported and cleaned up immediately; • Oil absorbent /spill containment will be deployed to contain spills; • Adequate sanitary facilities will be provided; • Suspended solids loads to watercourses will be minimized by installing appropriate surface run-off drainage systems (e.g. silt traps); • No untreated discharge will be made to water course/land; and • Regular monitoring of the waste water as stipulated by environment regulatory agencies will be carried out during construction phase to conform standard for general waste water discharge; etc.	
9	Soil & solid wastes	• Mobilization and demobilization of machinery/equipment • Clearing and leveling of the site • Operation of heavy machinery/equipment • Civil and mechanical works • Movement of traffic • Camp site	<u>Soil Erosion</u> • Area and extent of site clearance, will be minimized by staying within defined boundaries; • Stockpile of topsoil will be retained wherever possible at the edge of site; • Effective run-off controls, including siltation ponds, traps and diffusion methods will be installed and maintained so as to minimize erosion; and • Removing undergrowth will be avoided where possible so as to retain land stability. <u>Solid waste</u> • Recyclable non-hazardous materials such as empty container, bags & canes, paper, plastic etc will be sold to vendors and uprooted vegetation, food & kitchen waste will be sent to municipal site for disposal; • Waste such as waste lubricating oil, spent oil, empty containers of paints and chemicals, oily cotton, waste/discarded welding electrodes, e-waste, discarded waste etc will be collected separately and will be handed over to vendors authorized	Contractor and Implementing agency as applicable

SL No.	Impact On	Main Source of Impact	Plan for carrying out environmental assessment	Primary Responsibility
			by OSPCB for disposal; • All fuels, lubricants, surface treatment materials, welding rods/ gases, chemicals etc will be placed in controlled storage i.e. properly fenced area and in clearly marked vessels and containers; • Storage and liquid impoundment areas for fuels, construction materials, solvents, chemicals and waste will be designed with secondary containment (e.g., dikes and berms) to prevent spills and the contamination of soil, groundwater, and surface waters; • Impervious liners will be in place for fuel, lubricants and chemicals storage area; Effective bunds capable of containing 110% of the volume of the largest container within and enclosing all potentially contaminating materials will be used for fuel lubricants and chemicals storage area; etc.	
10	Disturbance to community resources & safety	• Mobilization and demobilization of machinery/equipment • Dismantling of quarters in case of ASTI - Berhampur • Clearing and leveling of the site • Operation of heavy machinery/ equipment • Civil and mechanical works • Movement of traffic	• Preference will be given to have local construction labor. Accommodation(s), in case required for construction workers or contractor will be kept minimum and provided within premises of polytechnic institute; • Adequate barricading will be provided to ensure safety from pollution and accidents; • Proper activity wise planning and communication with administrative authorities of existing premise and traffic police; • Advance notice to administrative authorities of existing premise and local administration about the activities; • Diversion of traffic within premises and on approaching roads, if required; • Placing the warning board on the vehicles during transportation of machinery and materials; • Proper training to drivers about public safety; • Periodic third party assessment will be carried out; • Notice boards will be put up with details about complaint handling officer and contact details.	Contractor and Implementing agency as applicable
11	Employment & Socio economic	• Direct and indirect employment • Utilization of local available resources	• Close monitoring on the type of loss to local habitats, if any. In case of any loss to locals, adequate compensation will be provided as per the law or on mutually agreed terms; • Preference will be given to locals for temporary direct and indirect employment; • Local suppliers for machineries and construction materials will be given	Contractor and Implementing agency as applicable

SL No.	Impact On	Main Source of Impact	Plan for carrying out environmental assessment	Primary Responsibility
			preference; • Local transporters will be preferred for transportation of machinery/materials; etc	
12	Occupational Health & Safety	Dust, gas cutting, welding, bruises, cuts, and abrasions because of manual handling, accidents due to common reasons like fall from height and entrapment of limbs in machinery due to: • Mobilization and demobilization of machinery/equipment • Clearing and leveling of the site • Operation of heavy machinery/equipment • Civil and mechanical works • Movement of traffic	• Preference will be given to local construction labor. Accommodation(s), in case required for construction workers or contractor will be kept minimum and provided within premises of polytechnic institute; • Adequate barricading will be provided to ensure safety from pollution and accidents; • Proper activity wise planning and communication will be ensured with administrative authorities of existing premise and traffic police; • Advance notice will be given to administrative authorities of existing premise and local administration about the activities; • Proper cordon off the site with sign boards will be there. • There will be diversion of traffic within premises and on approaching roads, if required; • There will be warning board on the vehicles during transportation of machinery and materials; • Proper training will be imparted drivers about public safety; • Periodic third party assessment will be carried out; • Notice boards will be put up with details about complaint handling officer and contact details.	Contractor and Implementing agency as applicable
13	Natural disaster	• Design of infrastructure • Civil and mechanical works	• Design of facilities as per NBC-2005; • Placing of all equipment above Highest Flood Level (HFL) • Storage of chemical products and flammable products in closed cupboards with latches at the bottom shelves • Provisions of shelters • Development of an Emergency Plan (what to do, where to hide, what not to do) • Provision of Emergency Survival Kits • Emergency telephone numbers (doctor, hospital, police, etc.) • Establishment of response team to guide residents of premises and to coordinate with local Natural Disaster Management response team; • Imparting training on various hazards and responses including first-aid to everyone; • Organizing mock drill internally on regular basis; • Procurement of insurance policy for damage cover.	Contractor and Implementing agency as applicable

Table 9: Environmental Assessment for Operation Phase

SL No.	Impact on	Main Source of Impact	Mitigation Measures	Primary Responsibility
1	Legal compliance	• Compliance of conditions stipulated : • As per MOEFCC notification dated 09.12.2016; • By OSPCB as a part of consent to operate	• Occupancy certificate, approval of firefighting plan, permission of water withdrawal, approval of firefighting plan, consent to operate under water and air act will be obtained before occupying the facility (as per OSPCB, educational institutes will be exempted from management of consent soon); • All conditions stipulated by regulatory agencies as part of clearance(s) /NOC(s) /permission(s) /approval(s) will be complied especially pertaining to environment clearance, removal of plantation/ permission of water withdrawal, approval of firefighting plan etc	Implementing agency /Operator
2	Terrestrial ecology	Plantation/landscaping	• Plantation will be carried out as per condition stipulated by local DFO as a part of clearance for removal of existing plantation; • Landscaping/plantation in the area earmarked for the same (40% of total allotted area) will be developed and maintained; • Local species will be given preference and CPCB guidelines for green belt development will be considered; etc	Implementing agency /Operator
3	Ambient air quality	Generation of dust, gaseous pollutants such as SO_2, NOx, CO etc due to: • DG sets; • Movement of Traffic; • Fuel burning for any other purposes in workshops; etc	• It will be ensured that emission from DG sets and other machinery /shops will conform to the standards as prescribed for combustion sources; • Stack height for each point source where fuel combustion takes place will be as per $14Q^{0.3}$, where Q is the SO_2 generation in Kg/hr; • For DG sets ranging from 19 to 800 KW capacity, emission will be such as PM < 0.3 kg/kw-hr, NOx < 9.2 kg/kw-hr, CO < 3.5 kg/kw-hr, HC < 1.3 kg/kw-hr; • Welding booths, hoods, torch fume extractors, flexible ducts, and portable ducts specially for paint shop, automotive shop etc will be provided; • Regular monitoring of each point source will be carried out as per monitoring plan; • Attempt will be made to use low sulphur fuel to the possible extent; • Regular maintenance will be carried out; • All vehicles and their exhausts would be well maintained and regularly tested for emission concentration; • Use of roads at any particular time by planning vehicles movements will be minimized; • Ambient air quality as per enclosed	Implementing agency /Operator

SL No.	Impact on	Main Source of Impact	Mitigation Measures	Primary Responsibility
			monitoring plan and stipulated by environment regulatory agencies will be carried out to conform NAAQS 2009 for industrial, residential and rural areas etc	
4	Noise Level	Generation of noise level due to: • Machines/equipment in workshops • DG sets; • Movement of Traffic; etc	• Enclosure to DG set and other noise generating source(s) will be provided to ensure noise level well below prescribed standard of 75 dB(A); • The high noise zones at site will be demarcated and enclosures & barriers, if required will be provided; • Preventive maintenance of machinery/ equipment and vehicles will be carried out; • There will be provision of green belt /plantation in and around the premises; • There will be regular in-house monitoring of noise level at 1 m from noise generating source(s); • Noise level monitoring will be carried out as stipulated by environment regulatory agencies will be carried out to conform ambient noise level standard, 2000 for silence zone; etc	Implementing agency /Operator
5	Water Resources	Water requirement for domestic and other purposes	• Permission of withdrawal of ground water for operation phase will be in place; • Continuous attempt will be made to optimize/reduce the use of water; • Continuous attempt will be made to avoid wastage and leakage of water; • Attempt will be made to use 100% treated waste water in toilet flushing, irrigation for area under landscaping/plantation; • Regular record of water consumption on daily basis will be maintained; • Toilets and bathrooms will be provided within premises; • Roof top water harvesting will be implemented; etc	Implementing agency /Operator
6	Waste Water Management	Waste water generation from domestic activity and workshops, if any	• No waste water will be discharged from the premises; • Adequate pre-treatment will be provided to the waste water to be generated from laboratories and workshops, if any before sending to STP for treatment; • STP will be provided for treatment of domestic waste water to the stipulated standards; • Attempt will be made to use 100% treated waste water in toilet flushing, irrigation for area under landscaping/plantation; • Attempt will be made to use excess treated waste water, if any for irrigation for area under landscaping/plantation;	Implementing agency /Operator

SL No.	Impact on	Main Source of Impact	Mitigation Measures	Primary Responsibility
			• Regular monitoring of treated wastewater quality will be carried out on regular basis for the relevant parameter as per enclosed monitoring plan and stipulated by environment regulatory agencies to conform standard for general discharge of waste water on land for irrigation; etc	
7	Solid Waste	• Municipal solid waste • Solid waste from office work; • E-waste; • Biomedical waste • Lead battery, etc	• container, bags & canes, paper, plastic etc will be sold to vendors and food & kitchen waste will be sent to municipal site for disposal; • Hazardous waste such as waste lubricating oil, spent oil, empty containers of paints and chemicals, oily cotton, waste/discarded welding electrodes, e-waste, discarded waste, bio-medical waste from training laboratories and dispensary etc. will be collected separately and will be handed over to vendors authorized by OSPCB for disposal; • Adequate record of waste generation and disposal especially hazardous and e-waste, discarded batteries, bio-medical waste etc will be maintained; • Effective bunds capable of containing 110% of the volume of the largest container within and enclosing all potentially contaminating materials to be used for fuel lubricants and chemicals storage area; • At storage area of domestic waste, pesticides will be used; etc	Implementing agency /Operator
8	Fire & Toxic Hazards	Fire in office, store room, laboratory etc	• Detailed off site and on site emergency plan defining role and responsibility for individuals will be prepared and implemented which will be in line with the hazards identified; • Material Safety Data Sheet (MSDS) of all chemicals to be used in workshops will be readily available and Standard Operating Procedure (SOP)s will be in place based on identified hazards; • Adequate firefighting facilities will be installed in line with the National Building Code 2005 and advise of Chief Fire Officer as a part of approval of firefighting plan; • Adequate training will be imparted to workers at all levels ; • Adequate ventilation will be provided in workshops; and • Safety audit will be carried out by third party on regular basis.	Implementing agency /Operator
9	Natural Disaster	• Operation of ASTI and ITI	• Storage of chemical products and flammable products in closed cupboards with latches at the bottom	Implementing agency /Operator

SL No.	Impact on	Main Source of Impact	Mitigation Measures	Primary Responsibility
			shelves • Placing all equipment above HFL • Construction of shelters • Development of an Emergency Plan (what to do, where to hide, what not to do) • Preparation of an Emergency Survival Kit • Emergency telephone numbers (doctor, hospital, police, etc.) • Establishment of response team to guide residents of premises and to coordinate with local Natural Disaster Management response team; • Imparting training on various hazards and responses including first-aid to everyone; • Organizing mock drill internally on regular basis; • Procurement of insurance policy for damage cover	
10	Employment and Economic Growth	Generation of more employment due to availability of more super specialty skilled workers	• Local population will be preferred for semi-skilled and unskilled job opportunities; • Local vendors will be preferred for supply of resources (vegetables, food grains, office stationary, chemicals and other items for workshops); • Design of courses will be based on need assessment of the region and state; • Regular interaction will be maintained with various industries; • Regular training cum exposure will be provided to students; • Banks may be encouraged to grant loans to pass out students for starting their own business; • Attempts will be made to provide placement via campus interviews; • Visiting faculty (having industrial experience) will be encouraged; etc	Implementing agency /Operator

5. Environment Monitoring

53. The recommended frequency and parameter of environment monitoring for each ASTI site is given below, which needs to be conducted by the contractor before commencing the construction (pre-construction) and during construction and operation phase respectively. Monitoring plan, if any stipulated by the Odisha State Pollution Control Board (OSPCB) will be in addition to proposed monitoring plan given in following tables. The EMP during pre-construction phase, construction for each ASTI, and operation for each ASTI is given in **Table 10**, **Table 11,** and **Table 12** respectively.

Table 10: Environment Monitoring Plan during Pre-Construction phase (to establish baseline data)

S.N.	Component	Parameter	Locations	Frequency	Number of Samples
1	Ambient Air	PM_{10}, $PM_{2.5}$, SO2, NOx, CO, HC (methane & non-methane)	One location near/on the allotted land	Once-12 hourly samples, twice in a week for one week (results should also be reported on 24 hourly basis)	2
2	Noise Level	Hourly Leq	One location near/on the allotted land	Once-Continuously on hourly basis for 24 hours twice in a week for one week	2
3	Water quality	As per IS:10500:2012 with additional parameter such as BOD, COD etc	2 samples (one from well/tube well of allotted site and second from well/tube well from nearby area (within 100 m radius)	Once	2
4	Soil quality	Physical and chemical parameter including heavy metals	One surface soil samples (up to 0.5 m depth) from allotted land	Once	1

Table 11: Environment Monitoring Plan during Construction for each ASTI

S.N.	Component	Parameter	Locations	Frequency	Number of samples
1	Ambient Air	PM_{10}, $PM_{2.5}$, SO_2, NOx, CO, HC (methane & non-methane)	2 locations within the boundary of allotted land	12 hourly samples, (results should also be reported on 24 hourly basis) – once in three month except monsoon	18 (assuming construction period of 36 months)
2	Waste Water	pH, TDS, SS, BOD_5, COD, Oil & Grease and Heavy metals	1 location at existing waste water treatment system	Once in three month except monsoon	9 (assuming construction period of 36 months)
3	Noise Level	Hourly Leq	3 locations within and at the boundary of allotted premises	Continuously on hourly basis for 24 hours, once in three month except monsoon	27 (assuming construction period of 36 months)

Table 12: Environment Monitoring Plan during Operation for each ASTI

S.N.	Component	Parameter	Locations	Frequency	Number of samples per year
1	Ambient Air	PM_{10}, $PM_{2.5}$, SO2, NOx, CO, HC (methane & non-methane)	2 locations within and at the boundary of allotted land	24 hourly samples, twice in a week, once in three months except monsoon (for 12 months period)	6
2	Stack	SPM, SO_2, NOx, CO. HC	1 location of stacks of DG sets	Once in a year	1
3	Noise Level	Hourly Leq	3 locations at the boundary of the premises	Continuously on hourly basis for 24 hours hour, once in three months except monsoon (for 12 months period)	9
4	Water quality	As per	One sample from	Once in six month	2

S.N.	Component	Parameter	Locations	Frequency	Number of samples per year
		IS:10500:2012 with additional parameter such as BOD, COD etc	source of supply	(for 12 months period)	
5	Waste water	As per GSR 422 (E) for inland surface water	One sample at outlet of STP	Once in three months except monsoon (for 12 months period)	3

54. The external agency will be engaged for the proposed monitoring and testing which will be carried out as per the methods recommended by CPCB/OSPCB. The details of estimated capital and recurring cost of the proposed EMP is given in **Table 13**.

Table 13: Estimated Capital and Recurring Cost of the Proposed Monitoring Plan

S.N.	Particulars	Unit Rate in Rs.	Cost (Rs. in lacs) for each ASTI		
			Pre-construction Phase (Total)	Construction Phase (Total)	Operation Phase (per annum)
1	Ambient Air Quality	10000 per sample	0.2	1.8	0.6
2	Stack Monitoring	5000 per stack	0.0	0.0	0.05
3	Water and Waste water Quality	10000 per sample	0.2	0.9	0.5
4	Noise level	10000 per day	0.2	2.7	0.9
5	Soil quality	10000 per sample	0.1	-	-
Total			**0.7**	**5.4**	**2.05**

6. Environmental Performance Indicators

55. The performance indicators of implementation of the EMP has been provided in **Table 14**.

Table 14: Performance Indicators of EMP

S. No	Performance Indicators	Target	Achievement in Semi-annually and Annually
1	Budget	Environmental Budget (EMP Budget)	Expenditure till date
	Performance Indicators of Monitoring Plan		
2	Ambient Air Quality	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
3	Noise Level	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
4	Water Quality	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
5	Safety of Workers	List of PPE as per the number labors	List of PPEs actually provided in the project
Performance Indicators of Environmental Management Plan			
6	Permissions,/ NoCs/Consents requirement	Target timeline to obtain the permit/NoC/ consents and its validity	List of Permissions and NoCs / consents obtained till date and status of its validity.
7	Public Consultation	Total Number of planned Public	Number of public

S. No	Performance Indicators	Target	Achievement in Semi-annually and Annually
		Consultation with timeline and coverage of people.	consultation conducted till date and actual coverage of the people.
8	Grievance redressal	Total number of complaints received, its timeline to response and resolution	Actual number of complaints resolved in percentage, response time.
9	Issues raised in public consultation	Target to attend the issues raised in the Public Consultation	Status of compliance to the issues of Public consultation
10	Information disclosure	List of information and locations where information to be disclosed	Actual locations where information has been disclosed.
11	Education of site staff on Environmental training	Total Number of staffs to be trained	No of staff actually
12	Capacity Building	Total number of sessions to be covered Total number of contractors, and project staff to be covered	Number of sessions completed and Number of contractors, and project staff covered.
13	Implementation of EMP mitigation Measures	All items of Environmental Management Plan with timeline and its respective regulatory standards like for Ambient air Quality – NAAQS, 2009 standards, Drinking water – IS:10500 and Ambient Noise levels	Implementation status of EMP items till date
14	Reporting	List and number of Report to be submitted	List and number of reports submitted

E. Consultation, Information Disclosure, and Grievance Redress Mechanism

1. Stakeholder Consultation

56. The ADB SPS (2009) requires the project to undertake consultation with concerned stakeholders and facilitate their informed participation in the project/program. The primary objective of the consultation process is to understand stakeholder's concerns, apprehensions, overall opinion, and solicit recommendations to improve project design.

57. The stakeholders for OSDP can be broadly classified into three different groups who will be consulted and will carry out specific roles during the course of the project.

(i) Government players: Central and State Government departments and agencies directly or indirectly involved in the project. These include: (a) SDTED; (b) DTET; (c) OSDA; (d) National Council of Vocational Training; (e) government ITIs; (f) government polytechnic and engineering colleges; and (g) regulatory agencies such as MOEFCC, OSPCB, CRZMA, NBWL, Labor commissioner, Forest and Wildlife Department, Water Resource Department, etc.

(ii) Private Players: These are the private agencies involved directly or indirectly in the project. These include: (a) SSCs, (b) industry, and (c) private polytechnics and engineering colleges.

(iii) Others: These cannot be categorized as either the government or the private players. These include: (a) nongovernment organizations, (b) contractors, (c) consultants, (d) local residents, (e) existing students and faculty of ITIs, and (f) trainees.

55. Each environmental assessment will detail the consultation requirements and focused group discussion shall be done during pre-construction and construction stage of the project.

56. The detailed stakeholder analysis depicting the involvement, influence, and the key roles and responsibilities of the stakeholder for the project is given in **Table 15**.

Table 15: List of Stakeholders Need to be Consulted

S. No.	Stakeholder	Influence	Involvement	Roles
• **Government**				
1.	SDTED	High	High	• Executing agency • Overseeing the implementation of the project • Policy level support for the project
2.	DTET	High	High	• Implementing agency • Operation support for execution
3.	OSDA	High	High	• Implementing agency • Operating the ASTI • Capacity building of 'Spoke' ITIs • Creating skilled manpower • Audit and other consultancy services to the private institutes
4.	NCVT	High	Low	• Affiliation and accreditation • Assessment and certification of the trainees
5.	Govt. ITIs	Low	High	• Support from ASTI in terms of capacity building and ToTs
6.	Govt. Polytechnics & Engineering colleges	Low	Low	• Support from ASTI in terms of capacity building and Training of Trainers
7	Regulatory agencies such as MOEFCC, OSPCB, CRZMA, NBWL, Labor commissioner, DFO and Wild Life officer, Water Resource Department	High	High	• Granting permission/licenses/approvals for construction and operation phase.
• **Private**				
8.	Industry	High	Low	• Course curriculum realignment support as per the demand
9.	SSCs	High	Low	• Assessment and certification of the trainees through Assessment Agencies
10.	Private ITIs, Polytechnics & Engineering College	Low	Low	• Enhancing the capacity by getting the trainers trained • Getting audits done and ratings from the ASTI • Creating skilled and talented manpower
• **Others**				
11.	Trainees	Low	High	• Getting skill development and upgradation training

S. No.	Stakeholder	Influence	Involvement	Roles
				• Placement
12.	Contractors,	Low	Low	• Designing the training program; • Commissioning and operation of training program

2. Grievance Redressal

57. ADB's SPS (2009) requires the executing and implementing agencies to establish a mechanism in order to receive and facilitate resolution of people's concerns, complaints, and grievances about the project's environmental performance. The mechanism shall use an understandable and transparent process that addresses the affected people's concerns and complaints promptly.

58. In order to establish a documented and structured approach towards understanding community expectations and manage their concerns, the Grievance Redressal Mechanism (GRM) for the community will be constituted. The GRM outlines the process and steps to be taken and the time limit within which the issue would need to be resolved to the satisfaction of the complainant. The project will endeavor to get all complaints recorded and addressed in a uniform and consistent manner. The GRM will be managed by the Environment and Social Management Cell (ESMC) through the social field officer with the site manager being the overall in-charge. This grievance mechanism will respond to the concerns and grievances of local communities, nongovernment organizations, Panchayats, and any other aggrieved party or stakeholder(s). The purpose of the cell will be to record the grievances of the community and other stakeholders and find mutually acceptable solutions for problems like employment, disputes with project activities, community development needs, socioeconomic development of villages, etc. The project will share information about these mechanisms to the stakeholders through locally appropriate communication tools.

59. The cell will comprise of a Grievance Redressal Committee (GRC) which will convene meetings on a monthly basis and take steps to redress the grievance. The cell will have two levels of redressal system functional at site and corporate office of executing and implementing agencies.

a. Levels of Grievance Redressal

60. Level 1: Site Grievance Redressal

(i) The site level grievance cell will comprise of the Site Manager of ASTIs and/or Principal of ITI and others including environment, health, and safety (EHS) officer of contractor. These persons will be available at the project office at site. A member from the local administration, industrial association and Panchayats might also be included in the Cell.

(ii) Any individual/group with concerns related to onsite work such as pollution, transportation, traffic, occupational health, etc. may directly register their concerns either verbally or in writing to the above nominated person at site.

(iii) Concerns related to job opportunities, compensation, small contracts, etc. may also be directly received verbally or in writing.

(iv) The issues registered at this level will be appropriately acted upon within two weeks of the date of receipt of complaint based on the assessment of cell.

61. Level 2: Corporate Grievance Redressal

(i) The Level 2 of grievance redressal will be led by the Head - executing and implementing agencies, along with Head of ESMC, senior representative of Contractor, a member from the respective Representative of local administration, industrial association and Panchayats.
(ii) Issues unresolved from the previous levels or issues with greater reputational risks will be undertaken at this level.
(iii) The issues registered at this level will be resolved within 4 weeks from the date of registration.

b. Grievance Registration Method

62. Any person/group of persons having grievance with the project can register their concerns at Level 1 by suitable means of registering i.e. verbal or written. Drop boxes and registers will be provided at all Panchayat offices for the ease of stakeholders. In case the issue is not resolved at Level 1, a written complaint or verbal communication needs to be made to Level 2.

(i) Complainant is free to approach any court of law without going through this GRM;
(ii) Complainant can also lodge their grievances, directly in the Grievance Register kept at the site and/or corporate office or through post or submit by hand.
(iii) Any grievance communicated verbally, will be written in Grievance Register with allotment of a serial number, by the nominated person who has received the verbal grievance.
(iv) The project authority will issue an acknowledgement of the complaint immediately (in case of hand delivery) or by post to the complainant through registered post within next 2 days.
(v) The complaint boxes will be cleared twice a week and gist of the complaints will be noted down along with date and name of the complainant with an allotment of serial number to the complaint in the —Grievance Register.

c. Processing of Complaint

63. Different problems will be addressed in different ways depending on the type of grievance; however the generic approach to resolution of all grievances will include the following steps:

(i) The complaint received will be reviewed and screened for the factual details and will be considered for resolution at local level. The grievance will be assessed to determine if the issues raised in the complaint fall within the mandate of the grievance mechanism and the complainants have standing.
(ii) If the complainant requires intervention then it will be considered for resolution otherwise it will be rejected and the same will be communicated to the concerned complainant.
(iii) The grievance will be evaluated to clarify the issues and concerns raised in the complaint, to gather information on how others see the situation, and to identify whether and how the issues might be resolved.
(iv) All options for solving problems will be explored, with or without the assistance of independent and third-parties:

(a) Internal decision-making processes, whereby issues are handled by designated ASTIs officials, using stated standards and criteria, to develop and propose a company response to the grievance and to allow for an appeals process.
(b) Joint problem solving, in which ASTIs officials and the complainant engage in direct dialogue.
(c) Third-party decision making to offer a solution when a voluntary agreement is not possible.

(v) Grievance tracking, monitoring, and reporting to the community will be undertaken as soon as a mutual consent is arrived at.

d. Communication of Mechanism to Stakeholders

64. Formal information of GRC or GRM will be communicated to the respective stakeholders and nominated members of the committee. This communication can be made through personal letters, letter to Gram Panchayat, pamphlets, posters, public announcement at strategic locations such as during respective Gram Sabha Meetings. The stakeholders will be encouraged to approach this committee with their concerns and suggestions. Name of Site Manager of ASTI and Head of executing and implementing agencies at corporate office with contact details will be mentioned in every notice, correspondence with stake holders and also displayed on notice board at appropriate place at the boundary of allotted site (should be visible).

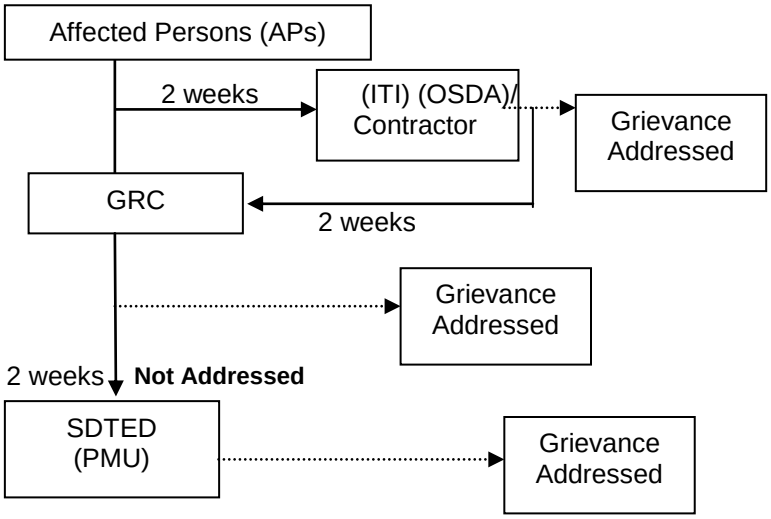
e. Meeting of GRC

65. The site committee will meet at least once every fortnight in the first 6 months of implementation, and thereafter once, every month. At every GRC meeting, the issues raised in the last meeting and report on action taken will be summarized. Issues that cannot be resolved at the GRC would be referred/directed to next designated levels. The Corporate Committee will convene their meetings as and when required.

f. Closing of Grievance

66. The complaints lodged in the GRC Register will be resolved amicably by the above mechanism and closed by informing to the complainant directly with closing signatures on the GRC Register or by sending registered post to the complainant, in case he is not approachable. The resolution will be informed to respective Gram Panchayat also in writing for display at a common place for information to interested parties. Grievance Redress process is shown in following figure.

Figure 1: Grievance Redress Process



g. Information Disclosure

67. The reviewed and approved draft initial environmental examination (IEE) report of six ASTIs (Bhubaneshwar & extension center at Cuttack, Jharsuguda Rourkela, Bolangir, Jeypore and Berhampur) will be disclosed on ADB site.

68. The EARF and IEE report will also be translated in local language and disclosed at OSDP web site, local municipal offices and project sites.

69. The site specific EMP will be prepared later as and when the design and drawing are finalized by the Contractor and the draft IEE report shall be updated accordingly. Subsequently, the updated IEE report will be submitted to ADB for review and approval before commencement of civil works.

70. The implementing agency (OSDA) will also submit bi-annual environmental monitoring reports (EMRs) to ADB on the progress of implementation of the EMP. The ADB will review, and disclose the EMR on ADB web site.

F. Institutional Arrangement and Responsibilities

71. The executing agency for the project will be the GOO acting through the SDTED. A Project Management Unit (PMU) will be established in SDTED mainly to release funds to the OSDA. The GOO through the SDTED has established the OSDA with financial and administrative autonomy to lead project implementation.

72. The project will be implemented through the PMU (SDTED) and two project implementing agencies. The implementing agencies will be organized and responsible for the following:

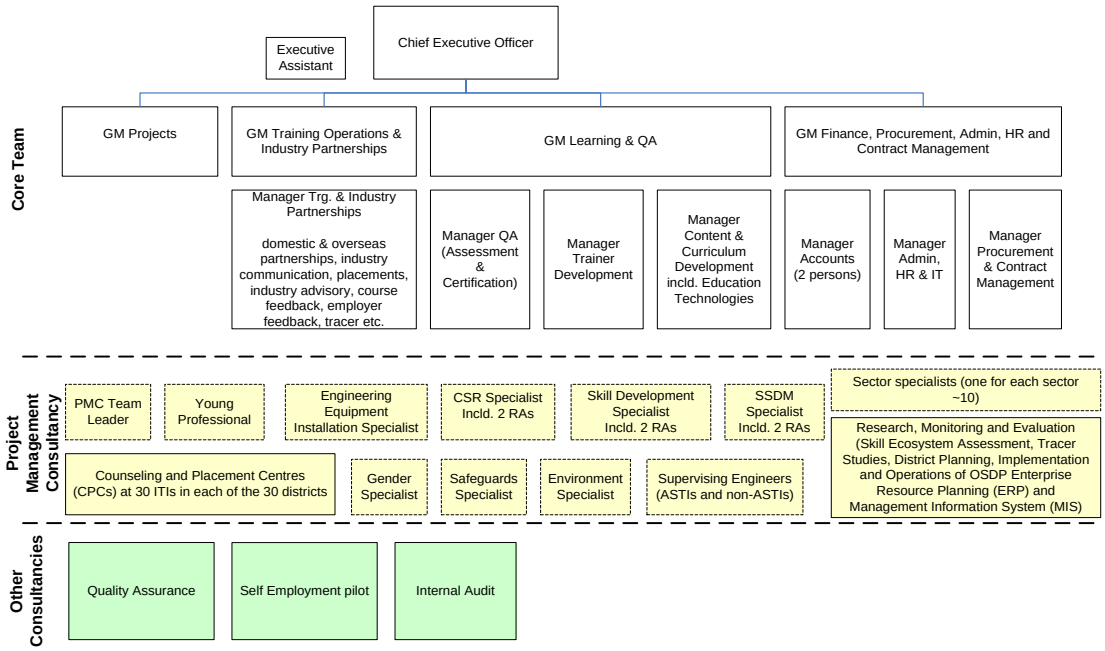
(i) **IA 1 – OSDA**. The OSDA will be the main implementing agency responsible for (a) establishing and operating the ASTIs; (b) managing project funds including but not limited to payments, accounting, auditing, etc.; (c) contracting all civil works, consultants, service providers, and other contracts; and (d) coordinating

with all implementing agencies and PMU for smooth implementation of the project and submission of withdrawal claims and all project reports to ADB as delegated by the SDTED. The PMU, OSDA, and DTET will be supported by a team of project management consultants (PMCs) who would be engaged by OSDA. OSDA will have qualified and experienced full-time individual consultants through the PMC to ensure compliance to accounts, finance, gender, social and environmental safeguards requirements under the project until the closure of the project. These individual consultants will coordinate with all the PMU and implementing agencies to ensure necessary compliance.

(ii) **IA 2 – DTET.** The DTET will be responsible for leading and monitoring of project activities at the 30 spoke ITIs in close collaboration with OSDA.

73. The OSDA management team organization structure is shown in the figure below.

Figure 2: Organization Structure



74. There will be a ESMC at PMU headed by a EHS professional having more than 10 years' experience with qualification as Master of Engineering (Environment) or PhD. He/ She will be assisted by three associates having EHS experience more than 2 years with qualification as Master of Engineering/PhD/MSc in environment who will be placed at different locations. The head, EMC will be responsible for (i) ensuring that all clearances are obtained before carrying out IEE, (ii) carrying out IEE and preparation of EMP, and (iii) hire services of external agency(ies)/expert(s) as required for carrying out IEE and preparation of EMP.

75. **Project management consultant.** The role of the PMC in OSDP is of critical importance in not only providing technical and knowledge services through a dedicated cadre of professionals in different domains of the project but also assist the core team of OSDA in strengthening the eco-system of skills development in the state of Odisha and develop a

pioneering example of support and capacity building services in skills development. Within PMC, full time environmental and social experts are envisaged until closure of the OSDP.

76. The environmental expert within PMC would (i) be responsible for risk mitigation and grievance redressal for any environmental impact due to activities of ASTI at temporary and permanent site; (ii) ensure compliance with respect to EMPs and EARF; and (iii) contribute to the project in ensuring that the civil works comply with the norms pertaining to environmental and safety aspects, green buildings, disaster management, etc. The social expert would (i) conduct due diligence to ensure that none of the proposed components and subprojects would cause physical and/or economic displacement, including permanent or temporary impacts on non-titled land users or any kind involuntary resettlement; and (ii) be rresponsible for the implementation of the Indigenous Peoples Plan.

77. Once the IEE is conducted and EMP is in place, the civil works contractor at each site will also have one designated EHS officer having experience of 5 years. He/she will be responsible for implementing the proposed EMP and report to Site Manager-contractor. In case of non-mobilization of EHS officer by contractor, a penalty of Rs1,000 per day will be imposed.

G. Monitoring and Reporting

78. Environmental assessment will include EMPs identifying environmental monitoring activities to ensure that negative environmental impacts are being addressed effectively through implementation of EMPs. An EMP will be prepared for each ASTI. It will identify environmental parameters to be monitored, describe sampling stations, frequency of monitoring, applicable standards, agencies and institutions responsible for monitoring, and provide indicative monitoring costs. The terms of reference (technical) for the Environment Due Diligence and Reporting checklist of Environmental, Health and Safety are given in **Appendix 6** and **Appendix 7** respectively.

79. The extent of monitoring activities, including their scope and periodicity, will be commensurate with the project's risks and impacts. The parameters to be monitored, frequency, and duration of monitoring as well as the locations to be monitored will be as per the monitoring plan prepared as part of the EMP. Implementation of the EMP during construction will be done by the contractor and supervised by the head of ESMC. The budget for environmental monitoring shall be included as part of civil works. This plan will require environmental monitoring mechanisms to be used to indicate the effectiveness of the EMP in mitigating negative impacts identified in the IEE report.

80. The executing agency has the overall responsibility of fulfilling environmental requirements of the GOO, and monitoring the implementation of the EMPs for all ASTIs.

81. During the design and preconstruction stage, monitoring will be the responsibility of the implementing agencies supported by the executing agency. This is mainly in the form of review and verification of designs and incorporation of mitigation measures into design and contract documents. Mitigation measures to be taken during the construction stage will be mostly implemented by the main contractor.

82. During the operation stage, monitoring will be the responsibility of the facility owner or the operator, such as the ASTI operator to be hired by the implementing agency. The OSPCB may carry out third-party monitoring in line with the regulatory requirements of India. Although sufficient care and appropriate mitigation will be incorporated into the design of these facilities,

performance monitoring during operation will be essential to making the investments environmentally suitable and socially acceptable. Therefore, environmental parameters to be monitored during the ASTI lifecycle will be identified and during environmental assessment and recorded in the IEE reports prepared for the ASTIs.

83. Reports on the implementation of environmental management and EMPs need to be documented systematically. The executing agency and the implementing agencies shall ensure that ADB is given access to undertake environmental review of any subproject, as and when required. When unexpected environmental impacts are encountered during implementation, the executing agency and the implementing agencies will inform ADB immediately, and in close consultation with ADB, shall undertake remedial measures to mitigate those impacts at the earliest opportunity. These environmental mitigation measures shall be implemented by the respective implementing agencies and thoroughly monitored by the executing agency. The actions and the results shall be recorded in writing and included in the EMR. The implementing agencies will prepare quarterly reports for the ASTIs that will capture the status of implementation of mitigation measures and monitoring carried out thereof and submit to the executing agency.

84. The OSDA and PMC will be responsible for environmental monitoring. PMC will submit monthly, quarterly, and semiannual EMRs to the OSDA. The OSDA will consolidate the semiannual reports and will submit to ADB. ADB will review and disclose the EMRs on its website.

85. During review missions, ADB will assess environmental compliance with all environmental requirements. ADB will monitor projects on an ongoing basis until a project completion report is issued. ADB will carry out the following monitoring actions to supervise project implementation:

(i) conduct periodic site visits for projects with adverse environmental impacts;
(ii) conduct supervision missions with detailed review by ADB‟s safeguard specialists/officers for sub-projects with significant adverse environmental impacts;
(iii) review the semi-annual and annual monitoring reports submitted by the executing agency to ensure that adverse impacts and risks are mitigated as planned and as agreed with ADB;
(iv) work with the executing agency and respective implementing agencies to rectify to the extent possible any failures to comply with their safeguard commitments, as covenanted in the legal agreements, and exercise remedies to reestablish compliance as appropriate;
(v) prepare project completion reports that assess whether the objective and desired outcomes of the EMPs have been achieved, taking into account the baseline conditions and the results of monitoring.

86. This EARF has been formulated for the use of the executing agency and the implementing agencies to ensure that the ASTIs will be designed and implemented in accordance with the statutory environmental regulations at the national, state and local levels, and ADB SPS (2009), as amended from time to time.

87. A sample copy of environmental monitoring and reporting template is given in **Appendix 8**.

MOEFCC Notification S.O. 3999 (E) dated 9 December 2016 regarding the Requirement of Environmental Clearance for Educational Institutions

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
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अधिसूचना

नई दिल्ली, 9 दिसम्बर, 2016

का.आ. 3999(अ).—केन्द्रीय सरकार ने भारत सरकार के तत्कालीन पर्यावरण और वन मंत्रालय द्वारा पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उपनियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) नियम, 1986 की धारा 3 की उपधारा (1) और उपधारा (2) के खंड (v) के अधीन जारी की गई अधिसूचना संख्यांक का.आ. 1533(अ), तारीख 14 सितंबर, 2006 द्वारा यह निदेश दिया था कि इस अधिसूचना के प्रकाशन की तारीख से ही नवीन परियोजनाओं या क्रियाकलापों के अपेक्षित संनिर्माण या उक्त अधिसूचना की अनुसूची में सूचीबद्ध विद्यमान परियोजनाओं या क्रियाकलापों के विस्तारण या आधुनिकीकरण के कार्य को, जिसमें प्रक्रिया या तकनीक और/या उत्पाद मिश्रण में परिवर्तन सहित क्षमता में वृद्धि किया जाना सम्मिलित है, भारत के किसी भाग में केवल, यथास्थिति, केन्द्रीय सरकार या केन्द्रीय सरकार द्वारा उक्त अधिनियम की धारा 3 की उपधारा (3) के अधीन सम्यक् रूप से गठित राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण से, उसमें विनिर्दिष्ट प्रक्रिया के अनुसार, पूर्व पर्यावरणीय अनापत्ति लेने के पश्चात् ही आरंभ किया जाएगा ;

केन्द्रीय सरकार उत्तरदायी कारबार करने की सुगमता सुनिश्चित करने के लिए कार्य कर रही है और भवन तथा संनिर्माण सेक्टर, जो आवास की व्यवस्था करने के लिए महत्वपूर्ण है, के लिए अनुज्ञाओं को सरल बना रही है तथा इस प्रयोजन के लिए शहरी क्षेत्र में कमजोर वर्ग सस्ता आवास उपलब्ध कराने के लक्ष्य के साथ वर्ष 2022 तक सभी के लिए आवास की स्कीम में महत्वाकांक्षी लक्ष्य रखा गया है ;

और उक्त पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उपनियम (3) के खंड (क) में यह उपबंधित है कि जब कभी केन्द्रीय सरकार यह विचार करती है कि किसी उद्योग पर प्रतिषेध या निर्बन्धन अधिरोपित किए जाने चाहिए, तो वह अपने ऐसा करने के आशय की सूचना देगी ;

और पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उपनियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) नियम, 1986 की धारा 3 की उपधारा (1) और उपधारा (2) के खंड (च) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए पर्यावरण समाघात निर्धारण अधिसूचना, 2006 में संशोधन करने के लिए एक प्रारूप अधिसूचना का.आ.1595(अ) तारीख 29 अप्रैल, 2016 द्वारा प्रकाशित की गई थी, में संशोधन करने के लिए प्रारूप अधिसूचना पर आक्षेप और सुझाव ऐसे सभी व्यक्तियों से जिनके उससे प्रभावित होने की संभावना है, से उक्त अधिसूचना के भारत के राजपत्र में प्रकाशन की तारीख से साठ दिन में आमंत्रित किए जाते है ;

और केन्द्रीय सरकार द्वारा उपरोक्त निर्दिष्ट प्रारूप अधिसूचना के संबंध में प्राप्त सभी आक्षेपों और सुझावों पर सम्यक् रूप से विचार किया जाएगा ;

अतः, अब, केन्द्रीय सरकार, उक्त पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उपनियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) नियम, 1986 (1986 का 29) की धारा 3 की उपधारा (1) और उपधारा (2) में खंड (च) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए पर्यावरण समाघात निर्धारण अधिसूचना, 2006 में निम्नलिखित और संशोधन करती है, अर्थात् :--(I) उक्त अधिसूचना में,--

(1) पैरा 13 के पश्चात्, निम्नलिखित पैरा अंतःस्थापित किया जाएगा, अर्थात् :-

"14. निर्माण उप नियमों में पर्यावरणीय शर्तों का समाकलन :-

(1) स्थानीय प्राधिकारियों द्वारा निर्माण अनुमति सहित समाकलित पर्यावरणीय दशा प्रदान की जाएगी और आकार के अनुसार इमारतों का निर्माण परिशिष्ट XIV में दिए गए लक्ष्य और निगरानी योग्य पर्यावरणीय दशाओं के अनुसार किया जाएगा।

(2) राज्य जो अपनी भवन उपविधियों तथा सुसंगत राज्य विधियों में उप पैरा (1) में निर्दिष्ट इन लक्ष्यों तथा निगरानी योग्य पर्यावरणीय शर्तों को अपना रहे हैं और भवन संनिर्माण के लिए दिए गए अनुमोदनों से उन शर्तों को समाविष्ट कर रहे हैं जिससे इसे विधिक रूप से प्रवर्तनीय बनाया जा सके, व्यष्टिक इमारतों के लिए पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय से अनापत्ति की अपेक्षा नहीं होगी।

(3) राज्य पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय को अपनी उपविधियों और नियमों में ऐसे प्रस्तावित परिवर्तन भेजेंगे जो प्रारूप की समीक्षा करेगा और सहमति देगा।

(4) जब राज्य सरकारों, वन और जलवायु परिवर्तन मंत्रालय द्वारा सहमति दिए गए उपविधियों और नियमों को अधिसूचित कर देती हैं तो केन्द्रीय सरकार यह आदेश जारी करेगी कि उन राज्य या स्थानीय प्राधिकारी क्षेत्रों में कोई पृथक् पर्यावरणीय अनापत्ति अपेक्षित नहीं है।

(5) स्थानीय प्राधिकारियों जैसे विकास प्राधिकरण, नगरपालिकाएं स्थानीय निकायों में गठित पर्यावरण प्रकोष्ठ की सिफारिशों पर किन्ही भवनों के लिए नियत अपेक्षाओं के अनुसार यथा लागू किए गए समापन प्रमाणपत्र के जारी किए जाने से पूर्व इन पर्यावरणीय शर्तों का अनुपालन प्रमाणित करेंगे।

(6) राज्य सरकारें जहां उपविधि या नियम विरचित नहीं है, इस अधिसूचना में अधिकथित उपबंधों के अनुसार, व्यष्टिक परियोजनाओं के मूल्यांकन की विद्यमान प्रक्रिया तथा इमारतों और संनिर्माणों के लिए पर्यावरण अनापत्ति की मंजूरी का पालन करते रहेंगे।"

(7) भवनों में पर्यावरण के समावेशन के संबंध में प्रमाणीकरण के प्रयोजन के लिए पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय सक्षम अभिकरण के माध्यम से अर्हित निर्माण पर्यावरणीय संपरीक्षक से इस अधिसूचना की अपेक्षाओं के माध्यम से निर्माण परियोजना का मूल्यांकन और प्रमाणित करेगी तथा अर्हित निर्माण पर्यावरणीय संपरीक्षक का प्रत्यानन के लिए प्रक्रिया और उनकी भूमिका परिशिष्ट XV पर दी गई है।

(8) निर्माण उपविधि में पर्यावरण शर्तों के समामेलन के अनुपालन में राज्य सरकार या स्थानीय प्राधिकारी पर्यावरण प्रकोष्ठ (जिसे इसमें इसके पश्चात् प्रकोष्ठ कहा गया है), गठन करेगी तथा अपने क्षेत्राधिकार में पर्यावरण योजना को सुनिश्चित करेगा।

(9) प्रकोष्ठ इमारतों के निर्माण के लिए पर्यावरण शर्तों के समाकलित करने के लिए बनाए गई उपविधि और नियमों के अनुपालन की निगरानी करेगा और प्रकोष्ठ किसी असावधानी, यदि कोई है, के लिए तृतीय पक्षकार संपरीक्षा प्रक्रिया की भी अनुमति देगा।

(10) प्रकोष्ठ स्थानीय प्राधिकरणों के प्रशासनिक नियंत्रण के अधीन कार्य करेगा।

(11) प्रकोष्ठ का गठन और कृत्य परिशिष्ट xvi में दिया हुआ है।

(12) स्थानीय प्राधिकारी निर्माण उपविधि में पर्यावरण के संबंध में समाकलन करते समय परियोजना में उनकी सरकार के अनुसार नीचे दी गई प्रक्रिया का पालन करेगी :-

भवन प्रवर्ग '1' (5000 से < 20,000 वर्ग मीटर)

पर्यावरणीय शर्तों (परिशिष्ट xiv) के अनुपालन के लिए स्व घोषणा प्ररूप और अर्हित भवन पर्यावरण संपरीक्षक द्वारा प्रमाणन प्रारूप 1क के साथ परियोजना प्रस्तावक द्वारा स्थीय प्राधिकारी से निर्माण के लिए अनुमति हेतु आवेदन के अलावा पृथक् खाते में विनिर्दिष्ट फीस सहित आनलाइन प्रस्तुत करेगा। उसके पश्चात् स्थानीय प्राधिकारी इसमें पर्यावरणीय शर्तों के

समावेशन के लिए निर्माण अनुमति जारी करेगा तथा आवेदन के साथ स्व घोषणा और प्रमाणन के आधार पर परियोजना आरंभ करने के लिए अनुमति देगा । भवन के निर्माण के समापन के पश्चात् परियोजना प्रस्तावक अर्हित भवन पर्यावरण संपरीक्षक द्वारा की गई संपरीक्षा के आधार पर आनलाइन आधारित प्ररूप 1क को अद्यतन करेगा तथा पुनरीक्षित अनुपालन परिवचन स्थानीय प्राधिकारी को देगा । 20,000 वर्ग मीटर से कम के भवनों के अननुपालन संबंधी कोई मुद्दा विद्यमान यांत्रिकी के दौरान स्थानीय प्राधिकारी और राज्य स्तर पर विचार किया जाएगा ।

अन्य भवन प्रवर्ग (>20,000 वर्ग मीटर)

परियोजना प्रस्तावक पर्यावरण मूल्यांकन के लिए विनिर्दिष्ट फीस सहित प्ररूप 1क में आनलाइन आवेदन तथा निर्माण अनुमति के लिए अतिरिक्त फीस प्रस्तुत करेगा । पर्यावरण मूल्यांकन के लिए फीस पृथक् खाते में जमा की जाएगी । पर्यावरण प्रकोष्ठ आवेदन पर कार्यवाही करेगा और उस स्थानीय प्राधिकारी में निर्माण अनुमति देने के लिए सक्षम प्राधिकारी के नेतृत्व वाली बैठक में प्रस्तुत करेगा । समिति परियोजना का मूल्यांकन करेगी और पर्यावरण शर्तों को निर्माण अनुमति में समावेशन के लिए शर्त रखेगा । समिति की सिफारिशों के पश्चात निर्माण अनुमति और पर्यावरण अनापत्ति स्थानीय प्राधिकारी द्वारा समेकित आरूप में जारी करेगा ।

परियोजना प्रस्तावक अर्हित निर्माण पर्यावरण संपरीक्षक से संनिर्माण के समापन के पश्चात् लागू पर्यावरणीय शर्तें मानकों के लिए परियोजना में सतत् अनुपालन के प्रमाणपत्र और अनुपालन आंकड़ें प्रत्येक पांच वर्ष में पर्यावरण प्रकोष्ठ को निम्नलिखित मानकों पर विशेष केन्द्रित करते हुए प्रस्तुत करेगा :-

(क) ऊर्जा प्रयोग (सभी ऊर्जा स्रोतों सहित)

(ख) साइट पर पुर्नप्रयोग ऊर्जा स्रोतों से साइट पर उत्तपन की ऊर्जा

(ग) साइट जल प्रयोग और अपशिष्ट जल उत्पन्न, उपचारित और पुर्नप्रयुक्त

(घ) साइट पर पृथकीकृत और उपचारित अपशिष्ट

(ङ) पौधारोपण और रखरखाव ।

परयोजना के पूर्ण होने पर, प्रकोष्ठ पांच वर्षीय संपरीक्षा रिपोर्ट सहित परियोजना अनुपालन प्रास्थिति की अचावक जांच करेगा । राज्य सरकारें पर्यावरणीय शर्तों और मानकों के अननुपालन के लिए शास्तियां लगाने के लिए समुचित विधि अधिनियमित करेगी । प्रकोष्ठ स्थानीय प्राधिकारी शर्तें या मानकों के अननुपालन के लिए सुसंगत राज्य विधि के अधीन यथा लागू वित्तीय शास्तियों की सिफारिश करेगा । प्रकोष्ठ की सिफारिशों के आधार पर स्थानीय प्राधिकारी सुसंगत राज्य विधि के अधीन शास्तियां अधिरोपित करेगा । असत्य घोषणा या प्रकाशन की दशा में प्रत्यानन निकाय को रिपोर्ट करेगा और स्थानीय निकाय अर्हित भवन पर्यावरण संपरीक्षकों को काली सूची में डाल देगा तथा मालिक और अर्हित निर्माण पर्यावरण संपरीक्षक पर वित्तीय शास्ति लगाएगा ।

जल (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1974 और वायु (प्रदूषण निवारक तथा नियंत्रण) अधिनियम, 1981 के अधीन स्थापन तथा प्रचालन की सहमति राज्य प्रदूषण नियंत्रण बोर्ड से सहमति 1,50,000 वर्ग मीटर के लिए रिहायशी निर्माण हेतु अपेक्षित नहीं होगी,";

(II) अनुसूची में मद 8 और उससे संबंधित प्रविष्टियों के लिए निम्नलिखित मद और प्रविष्टियां रखी जाएंगी, अर्थात्:--

(1)	(2)	(3)	(4)	(5)
"8.		भवन/योजना संनिर्माण/विकास योजना और नगरीय		
8(क)	भवन निर्माण और संनिर्माण परियोजना		निर्मित क्षेत्र का ≥ 20,000 वर्ग मीटर और ≤ 1,50,000 वर्ग मीटर	इस अधिसूचना के प्रयोजन के लिए "निर्मित क्षेत्र" पद, सभी तलों को एक साथ मिलाकर निर्मित या आच्छादित क्षेत्र जिसके अंतर्गत उसका बेसमेंट भी है, जो भवन निर्माण तथा संनिर्माण परियोजनाओं में प्रस्तावित है । **टिप्पण 1-** परियोजनाओं या क्रियाकलापों के अंतर्गत औद्योगिक शेड, विश्वविद्यालयों,

				महाविद्यालयों, शैक्षणिक संस्थाओं के लिए छात्रावास, किंतु ऐसे भवन पोषणीय पर्यावरणीय प्रबंधन, ठोस और तरल तथा परिशिष्ट 14 में दी गई शर्तों को सुनिश्चित करेंगी । **टिप्पण 2:** साधारण शर्तें लागू नहीं होंगी । **टिप्पण 3:** टिप्पण 1 में प्रदत्त छूट स्थानीय प्राधिकारी के स्तर पर भवन अनुमति सहित पर्यावरणीय मानकों के समाकलन के पश्चात् औद्योगिक क्षेत्र के लिए ही उपलब्ध होगी ।
8(ख)	नगरी और क्षेत्र विकास योजनाएं	निर्मित क्षेत्र का ≥ 3,00000 वर्ग मीटर या आच्छादित क्षेत्र का ≥ 150 हेक्टेयर	निर्मित क्षेत्र का ≥1,50000 वर्ग मीटर और < 3,00000 वर्ग मीटर या आच्छादित क्षेत्र का ≥ 50 हेक्टेयर और <150 हेक्टेयर	**टिप्पण:** साधारण शर्तें लागू नहीं होंगी

[फा. सं. जे-19-2/2013-आईए-III(भाग)]

मनोज कुमार सिंह, संयुक्त सचिव

टिप्पण: मूल अधिनियम भारत के राजपत्र, असाधारण, भाग II, खंड 3, उपखंड (ii) में का.आ. 1533(अ), तारीख 14 सितंबर, 2006 को प्रकाशित किए गए थे और पश्चात्वर्ती संशोधन का.आ. 1737 (अ) तारीख 11 अक्तूबर, 2007, का.आ. 3067 (अ), तारीख 1 दिसंबर, 2009, का.आ. 695 (अ) तारीख 4 अप्रैल, 2011, का.आ. 2896 (अ) तारीख 10 दिसंबर, 2012, का.आ. 574 (अ) तारीख 13 मार्च, 2011, का.आ. 2896 (अ) तारीख 13 दिसंबर, 2012, का.आ. 674 (अ) तारीख 13 मार्च, 2013, का.आ. 2559 (अ) तारीख 22 अगस्त, 2013, का.आ. 2731 (अ) तारीख 9 सितंबर, 2013, का.आ. 562 (अ) तारीख 26 फरवरी, 2014, का.आ. 637 (अ) तारीख 28 फरवरी, 2014, का.आ. 1599 (अ) तारीख 25 जून, 2014, का.आ. 2600 (अ) तारीख 9 अक्तूबर, 2014, का.आ. 3252 (अ) तारीख 22 दिसंबर, 2014, का.आ. 382 (अ) तारीख 3 फरवरी, 2015 और का.आ. 811 (अ) तारीख 23 मार्च, 2015, का.आ. 996 (अ) तारीख 10 अप्रैल, 2015, का.आ. 1142 (अ) तारीख 17 अप्रैल, 2015, का.आ. 1141 (अ) तारीख 29 अप्रैल, 2015, का.आ. 1834 (अ) तारीख 6 जुलाई, 2015 और का.आ. 2572 (अ) तारीख 14 सितंबर, 2015, का.आ. 141 (अ) तारीख 15 जनवरी, 2016, का.आ. 190 (अ) तारीख 20 जनवरी, 2016, का.आ. 648 (अ) तारीख 3 मार्च, 2016 और का.आ. 2269 (अ) तारीख 1 जुलाई, 2016 द्वारा किए गए ।

परिशिष्ट – XIV

भवनों तथा निर्माण के लिए पर्यावरणीय शर्तें

(श्रेणी-'1': 5,000 से लेकर 20,000 वर्ग मीटर से कम)

माध्यम	क्र.सं.	पर्यावरणीय शर्तें
स्थलाकृति तथा प्राकृतिक ड्रेनेज	1	जल के अबाधित प्रवाह को सुनिश्चित करने के लिए प्राकृतिक ड्रेन प्रणाली का रखरखाव किया जाना चाहिए । किसी भी निर्माण कार्य को स्थल से होकर गुजरने वाले प्राकृतिक ड्रेनेज में बाधा डालने की अनुमति नहीं दी जाएगी । नम भूमि तथा जल निकायों पर निर्माण की अनुमति नहीं दी जाएगी ड्रेनेज पद्धति का रखरखाव करने तथा वर्षा जल संचयन के लिए चेक डैम, वायो-स्वेल, लैंडस्केप और अन्य बहुलीय शहरी ड्रेनेज प्रणालियों की अनुमति है ।
जल संरक्षण, वर्षा जल संचयन और भू-जल स्तर में वृद्धि	2	जल-सक्षम उपस्करों के प्रयोग को बढ़ावा दिया जाएगा । वर्षा जल संचयन संबंधी स्थानीय उपनियम के उपबंधों का अनुपालन किया जाएगा । यदि स्थानीय उपनियम के उपबंध उपलब्ध न हों, तो शहरी विकास मंत्रालय के मॉडल भवन उपनियम, 2016 के अनुसार भण्डारण तथा रिचार्ज के लिए उचित उपबंध का अनुपालन किया जाएगा ।

		वर्षा जल संचयन की एक योजना बनाए जाने की आवश्यकता है जिसमें रिचार्ज शॉर (प्रत्येक 5,000 वर्ग मीटर निर्मित क्षेत्र पर न्यूनतम एक रिचार्ज) की सिफारिश की जाती है। संचित वर्षा जल के भण्डारण तथा पुन:प्रयोग को बढ़ावा दिया जाना चाहिए। ऐसे क्षेत्रों में जहां भू-जल स्तर को बढ़ाना व्यवहार्य न हो, वर्षा जल का भण्डारण और पुन:प्रयोग किया जाना चाहिए। सक्षम प्राधिकारी की अनुमति के बिना भू-जल नहीं निकाला जाएगा। सभी रिचार्ज को उथले जलभृत तक सीमित रखा जाना चाहिए।
	2 (क)	स्थानीय भवन उपनियमों में यथा अपेक्षित कम से कम 20% खुला स्थान प्रभावनीय होगा। कम से कम 50% ओपनिंग के साथ पेवर, पेवर ब्लॉकों, लैंडस्केप इत्यादि को प्रभावनीय तल समझा जाएगा।
अपशिष्ट प्रबंधन	3	ठोस अपशिष्ट: अपशिष्ट के पृथक्करण को सुविधाजनक बनाने के लिए प्रत्येक इकाई में तथा भू-तल पर अलग-अलग नम और शुष्क बिनों की व्यवस्था की जानी चाहिए। सीवेज: ऐसे क्षेत्रों में जहां नगरीय सीवेज नेटवर्क नहीं है, वहां ऑनसाइट शोधन प्रणालियां संस्थापित की जानी चाहिए। लैंडस्केप से एकीकृत होने वाली प्राकृतिक शोधन प्रणालियों को बढ़ावा दिया जाएगा। जहां तक संभव हो शोधित बहि:स्राव का पुन:प्रयोग किया जाना चाहिए। अतिरिक्त शोधित बहि:स्राव को सीपीसीबी प्रतिमानों के अनुपालन में निस्तारित किया जाएगा। सेप्टिक टैंकों सहित ऑनसाइट सीवेज शोधन से निकले गाद को शहरी विकास मंत्रालय, केन्द्रीय लोक स्वास्थ्य और पर्यावरण अभियांत्रिकी संगठन (सीपीएचईईओ) के सीवरेज तथा सीवेज शोधन प्रणाली मैनुअल, 2013 के अनुसार एकत्रित, भेजना और निस्तारित किया जाएगा। ठोस अपशिष्ट (प्रबंधन) नियम, 2016 तथा ई-अपशिष्ट (प्रबंधन) नियम, 2016 और प्लास्टिक अपशिष्ट (प्रबंधन) नियम, 2016 का अनुपालन किया जाएगा।
ऊर्जा	4	ऊर्जा दक्षता ब्यूरो के ऊर्जा संरक्षण भवन कोड (ईसीबीसी) का अनुपालन सुनिश्चित किया जाएगा। राज्यों में ऐसे भवन जिनमें उनके अपने ईसीबीसी अधिसूचित हैं, उनमें राज्य ईसीबीसी का अनुपालन किया जाएगा। आउटडोर तथा साझा क्षेत्र की प्रकाश व्यवस्था में लाईट एमिटिंग डायोड (एलईडी) का प्रयोग होगा। डिमाड लोड के 1% समतुल्य अथवा राज्य स्तरीय/स्थानीय भवन उपनियमों की अपेक्षा अनुसार बिजली उत्पादन की पूर्ति करने हेतु सौर, पवन अथवा नवीकरणीय ऊर्जा, जो भी अधिक हो, की संस्थापना की जाएगी। वाणिज्यिक तथा संस्थागत भवनों की गर्म जल की मांग को पूरा करने के लिए अथवा स्थानीय भवन उपनियमों की आवश्यकतानुसार, जो भी अधिक हो, सोलर वाटर हीटिंग की व्यवस्था की जाएगी। आवासीय भवनों के लिए भी यथासंभव अपनी गर्म जल मांग की पूर्ति हेतु सोलर वाटर हीटरों की सिफारिश की जाती है। भवन डिजायनों में पैसिव सोलर डिजायन की संकल्पना शामिल की जाएगी जिसमें डिजायन के तत्वों जैसे भवन अभिमुखीकरण, लैंडस्केपिंग, दक्ष भवन एन्वेलप, समुचित खिड़कियों की व्यवस्था, दिन में अधिक प्रकाश करने की व्यवस्था में सुधार और थर्मल मास इत्यादि का प्रयोग करके भवनों में ऊर्जा खपत को न्यूनतम किया जाता है। दीवारें, खिड़कियां और छत के यू-वॉल्ब ईसीबीसी विशिष्टियों के अनुसार होंगे।
वायु गुणवत्ता तथा शोर	5	भवन और साथ ही स्थल के लिए धूल, धुंआ एवं अन्य वायु प्रदूषण निवारण के उपाय किए जाएंगे। इन उपायों में निर्माणाधीन भवन, स्थल के चारों ओर धूल/धूल रोकने वाली दीवारों का निर्माण (कम से कम 3 मीटर की ऊंचाई तक) के लिए आवरण में शामिल हो सकेंगे। प्लास्टिक/तारपोलिन स्थल से कचरा उठाने के साथ-साथ बालू, सीमेंट, मुर्रम में चलती हुई गाड़ियां तथा अन्य निर्माण सामग्रियां धूल प्रदूषण का कारण हो सकती है। साइट पर बालू, मुर्रम, बिखरी मिट्टी, सीमेंट भंडार को उचित तरीके से ढक कर रखा जाएगा जिससे कि धूल प्रदूषण को रोका जा सके। पिसाई तथा पत्थर कटाई के लिए वेट जेट का प्रबंध किया जाएगा। धूल को दबाने के लिए

		बिना पटरी बिछा हुआ धरातल तथा बिखरी मिट्टी पर उचित तरीके से पानी का छिड़काव किया जाएगा। निर्माण तथा विध्वंस सारे मलबे को उचित तरीके से निपटान से पहले साइट के पास इकट्ठा किया जाएगा (तथा सड़के के किनारे ढेर या बाहर खुली जगह में इकट्ठा नहीं) सभी विध्वंस तथा निर्माण अपशिष्ट को निर्माण तथा विध्वंस अपशिष्ट नियम, 2016 के उपबंधों के अनुसार प्रबंधित होगा। निर्माण स्थल पर कार्य करने वाले सभी कामगारों तथा निर्माण सामग्री की लोडिंग अनलोडिंग में शामिल, निर्माण सामग्री की ढुलाई तथा निर्माण के कचरे या धूल प्रदूषण के किसी भी क्षेत्र में कार्य कर रहे व्यक्ति को डस्ट मास्क उपलब्ध कराया जाएगा। आंतरिक वायु गुणवत्ता के लिए भारत के राष्ट्रीय भवन कोड के अनुसार वातायन के प्रावधान तैयार किए जाएंगे।
	5(क)	डीजी सेट का स्थान निर्धारण तथा निकास पाइप की ऊंचाई सीपीसीबी मानदंडों के प्रावधानों के अनुसार होगा।
हरित क्षेत्र	6	प्रति80 वर्ग मीटर की भूमि के लिए कम से कम एक पेड़ लगाकर उसकी देखभाल की जानी चाहिए। इस उद्देश्य के लिए विद्यमान पेड़ों की गिनती की जाएगी। देशीय जाति के पौधों को प्राथमिकता दी जानी चाहिए।
	6(क)	जहां पेड़ों की कटाई आवश्यक हो, 1:3 के अनुपात में प्रतिपूरक वृक्षारोपण अर्थात प्रत्येक एक पेड़ की कटाई के लिए 3 पौधों को लगाना तथा उनका रख-रखाव करना होगा।

(श्रेणी '2' : 20,000 वर्ग मीटर से लेकर 50,000 से कम)

माध्यम	क्रम.सं.	पर्यावरणीय शर्तें
स्थलाकृति तथा प्राकृतिक जल निकास	1	जल की अबाधित धारा सुनिश्चित करने के लिए प्राकृतिक जल निकास प्रणाली का प्रबंध होना चाहिए। साइट के माध्यम से प्राकृतिक जल निकास को अवरोध करने के लिए निर्माण की अनुमति नहीं होगी। नमभूमि और जल निकायों पर निर्माण की अनुमति नहीं होगी। जल निकास पैटर्न तथा वर्षा जल संचयन के लिए चेक डैम, बायो-स्वाल्स, लैंडस्केप तथा अन्य धारणीय शहरी जल निकास प्रणालियों (एसयूडीएस) की अनमुति होगी। जहां तक संभव हो सके, भवनों की डिजाइन में प्राकृतिक स्थलाकृति का पालन किया जाएगा। कम से कम कटाई तथा भराई होनी चाहिए।
जल संरक्षण, वर्षा जल सिंचाई तथा भूमि जल को रिचार्ज करना	2	जल संचयन, जल क्षमता और संरक्षण के लिए एक पूर्ण योजना तैयार की जाए। न्यून फिक्चर या सेंसरों वाले जल क्षमता वाले उपकरणों के उपयोग को बढ़ावा दिया जाना चाहिए। वर्षा संचयन के संबंध में स्थानीय उप नियम, उपबंधों का पालन किया जाएगा। अगर स्थानीय उप नियम उपलब्ध नहीं है तो शहरी विकास मंत्रालय का मॉडल भवन उप नियम, 2016 के अनुसार भंडारण तथा रिचार्ज के लिए पर्याप्त प्रावधानों का पालन किया जाना चाहिए। वर्षा जल संचयन योजना का डिजाइन बनाने की आवश्यकता है जहां 5000 वर्ग मीटर के निर्मित क्षेत्र में कम से कम एक रिचार्ज बोर हो तथा कम से कम कुल एक दिन के शुद्ध जल के प्रबंधन की भंडारण क्षमता की आवश्यकता होगी। उन क्षेत्रों, जहां भूमिगत जल को रिचार्ज करना संभव नहीं है, में वर्षा जल संचयन चाहिए तथा पुन: उपयोग के लिए भंडारण किया जाएगा। भूमिगत जल को सक्षम प्राधिकारी के अनुमोदन के बिना नहीं निकाला जाएगा। सभी रिचार्ज सीमित उथले जलभृत तक सीमित होनी चाहिए।
	2 (क)	स्थानीय भवन उप-नियमों द्वारा यथाअपेक्षित खुले स्थानों का कम से कम 20% भाग भेद्य होगा। न्यूनतम 50% खाली जगह, भूदृश्य आदि सहित हरित खंडजों, खंडज प्रखंड के उपयोग सहित यथा प्रवेश्य धरातल के रूप में विचार किया जाएगा।
अपशिष्ट प्रबंधन	3	ठोस अपशिष्ट: प्रत्येक इकाई में और भू तल पर पृथक-पृथक गीले और सूखे कचरे के डिब्बे, अपशिष्ट के पृथक्करण को सुविधाजनक बनाने के लिए प्रदान किए जाएंगे। मलजल: अपशिष्ट 100% अपशिष्ट जल के शोधन की स्थल पर मलजल शोधन क्षमता संस्थापित की

		जानी है। शोधित अपशिष्ट जल को स्थल पर भूदृश्य, फ्लशिंग, कूलिंग टावर और अन्य प्रयोजनार्थ पुन:प्रयोग किया जाएगा। अतिरिक्त शोधित जल को सीपीसीबी मानकों के अनुसार छोड़ा जाएगा। प्राकृतिक शोधन प्रणालियों को बढ़ावा दिया जाएगा। सेप्टिक टैंकों सहित स्थल पर (ऑन साईट) शोधन से अवमल का मल-निर्यास और मलजल शोधन प्रणाली, 2013 पर शहरी विकास मंत्रालय, केन्द्रीय लोक स्वास्थ्य और पर्यावरणीय इंजीनियरिंग संगठन (सीपीएचईईओ), के मैनुअल के अनुसार संग्रहण, ढुलाई और निपटान किया जाएगा। ठोस अपशिष्ट (प्रबंधन) नियम, 2016 और ई-अपशिष्ट (प्रबंधन) नियम 2016 और प्लास्टिक अपशिष्ट (प्रबंधन) नियम 2016 के प्रावधानों का अनुपालन किया जाएगा।
	3 (क)	सभी गैर-जैवक्षमणीय अपशिष्ट प्राधिकृत पुनचर्क्रणकर्ताओं को सौंपा जाएगा, जिसके लिए प्राधिकृत पुनचर्क्रणकर्ताओं के साथ लिखित में गठजोड़ किया जाना चाहिए।
	3 (ख)	जैविक अपशिष्ट कम्पोस्ट/0.3 कि./प्रति व्यक्ति/प्रतिदिन की न्यूनतम क्षमता वाला वर्मीकल्चर/पिट संस्थापित किया जाना चाहिए।
ऊर्जा	4	ऊर्जा दक्षता ब्यूरो के ऊर्जा संरक्षण भवन कोड (ईसीबीसी) का अनुपालन सुनिश्चित किया जाएगा। राज्यों में जिन भवनों ने अपने स्वयं ईसीबीसी अधिसूचित किए हैं, वे भवन राज्य ईसीबीसी का अनुपालन करेंगे। बाहरी क्षेत्र और साझा क्षेत्र में प्रकाश व्यवस्था एलईडी की होगी। पैसिव सौर डिजाइन की संकल्पना, जिसमें भवनोन्मुख, भू-दृश्य निर्माण, कौशलपूर्ण भवन आवरण, उचित गवाक्षीकरण, दिन में उन्नत प्रकाश व्यवस्था डिजाइन और ताप विद्युत मास आदि का उपयोग करके भवनों में ऊर्जा उपभोग न्यूनतम किया जाता है, भवन डिजाइन में समावेशित किया जाएगा। दीवार, खिड़की और रूफ-सू-वैल्यूज, ईसीबीसी विनिर्देशों अनुसार होनी चाहिए।
	4 (क)	भार की मांग के 1% के बराबर विद्युत उत्पादन अथवा राज्य स्तरीय/स्थानीय भवन उप-नियमों की अपेक्षानुसार जो भी अधिक हो, को पूरा करने के लिए सौर, पवन अथवा अन्य नवीकरणीय ऊर्जा संस्थापित की जाएगी।
	4 (ख)	वाणिज्यिक और संस्थागत भवनों की गर्म जल की 20% मांग अथवा स्थानीय भवन उप-नियमों के यथा अपेक्षा अनुसार, जो भी अधिक हो, को पूरा करने के लिए सौर जल तापक प्रदान किए जाएंगे। आवासीय भवनों को भी यथासंभव सौर जल हीटरों से अपनी गर्मपानी की मांग पूरा करने के लिए सुझाव दिया गया है।
	4 (ग)	निर्माण सामग्री की मात्रा के कम से कम 20% मात्रा हेतु ईंटों, प्रखंडों और अन्य निर्माण सामग्रियों में पर्यावरण अनुकूलन सामग्री का उपयोग करना अपेक्षित होगा। इनके फ्लाई ऐश ईंटे, खोखली (हौलो) ईंटें, एएसी, फ्लाई ऐश चूनापत्थर, जिप्साम प्रखंड, कम्प्रैस्ड मृदा प्रखंड और अन्य पर्यावरण अनुकूल सामग्रियां शामिल हैं। फ्लाई ऐश को समय-समय पर यथा संशोधित सितम्बर, 1999 की फ्लाई ऐश अधिसूचना के प्रावधानों के अनुसार निर्माण में भवन सामग्री के रूप में प्रयुक्त किया जाना चाहिए।
वायु गुणवत्ता और ध्वनि	5	भवन के साथ-साथ निर्माण स्थल के लिए धूल कण, धुंआ और अन्य वायु प्रदूषण उपशमन उपाय अपनाएं जाएंगे। इन उपायों में निर्माणाधीन भवनों के लिए स्क्रीन, निर्माण स्थल के चारों ओर सतत धूलकण/पवन को मंद करने के लिए दीवारों (कम से कम 3 मीटर ऊँची) का निर्माण शामिल हैं। निर्माण स्थल में बालू, सीमेंट, लोहबान और अन्य निर्माण सामग्रियां, जिनके कारण स्थल पर धूल प्रदूषण उत्पन्न होता है, लाने वाले और निर्माण स्थल से डेबरी ले जाने वाले वाहनों के लिए प्लास्टिक/तिरपाल की शीट कवर प्रदान किए जाने चाहिए। स्थल पर भण्डारण किए हुए बालू, लोहबान, खुली मृदा, सीमेंट को पर्याप्त रूप से ढ़का होना चाहिए ताकि धूलकण से प्रदूषण की रोकथाम की जा सके। निर्माण सामग्री की पिसाई और पत्थरों की कटाई के लिए बेटजेट प्रदान किए जाएं। निर्माण और विध्वंस का समस्त कचरा उचित ढंग से निपटान किए जाने से पूर्व स्थल पर ही रखा जाएगा (सड़क अथवा बाहर खुले स्थान पर ढेर नहीं लगाया जाएगा)। समस्त विध्वंस और निर्माण अपशिष्ट का प्रबंधन निर्माण और विध्वंस अपशिष्ट नियम 2016 के प्रावधानों के अनुसार किया जाएगा।

		निर्माण स्थल पर कार्यरत तथा निर्माण सामग्री और निर्माण कचरे को लादने, उतारने, ढुलाई अथवा धूल प्रदूषण वाले किसी क्षेत्र में कार्यरत सभी मजदूरों को डस्ट मास्क उपलब्ध कराए जाएं। भीतरी वायु गुणवत्ता के संबंध में भारत के राष्ट्रीय भवन कोड के अनुसार वायुसंचार प्रावधान किए जाएं।
	5(क)	डीजी सेट का स्थान और निकास नली की ऊँचाई सीपीसीबी मानदण्डों के प्रावधानों के अनुसार होगी।
हरित आवरण	6	प्रति 80 वर्गफुट भूमि के लिए कम से कम एक वृक्ष लगाया जाना चाहिए और उसकी देख-रेख की जानी चाहिए। इस उद्देश्य के लिए विद्यमान वृक्षों की गणना की जाएगी। स्थानिक प्रजातियों के रोपण को प्राथमिकता दी जानी चाहिए।
	6(क)	जहां वृक्षों को काटे जाने की आवश्यकता है, 1:3 (अर्थात् काटे गए प्रत्येक 1 वृक्ष के लिए 3 वृक्षों का रोपण) के अनुपात में प्रतिपूरक वनीकरण किया जाए और उसका रख-रखाव किया जाए।
ऊपरी मृदा का परिरक्षण और पुन: उपयोग	7	भवनों, सड़कों, गेवड क्षेत्रों और बाह्य सेवाओं हेतु प्रस्तावित क्षेत्रों से ऊपरी मृदा को 20 सेमी. की गहराई तक खोदा जाए। इसे निर्दिष्ट क्षेत्रों में उपयुक्त तरीके से संचित किया जाए तथा स्थल पर प्रस्तावित पेड़-पौधों के रोपण के दौरान पुन: उपयोग किया जाए।
परिवहन	8	एमओयूडी सर्वोत्तम पद्धतियां दिशा-निर्देश(यूआरडीपीएफआई) के अनुसार, एक व्यापक मोबिलिटी योजना बनाई जाए ताकि मोटर-सज्जित, गैर-मोटर-सज्जित, सार्वजनिक और निजी नेटवर्कों को शामिल किया जा सके। सड़क का डिजाइन पर्यावरण, और उपयोक्ताओं की सुरक्षा को पर्याप्त ध्यान में रखते हुए बनाया जाए। सड़क प्रणाली का डिजाइन इन मूलभूत मापदंडों के अनुसार बनाया जा सकता है। वाहनीय और पैदल यातायात के उचित पृथक्करण से सड़कों का अनुक्रम। यातायात शामक उपाय। प्रवेश और निकासी बिंदुओं का उचित डिजाइन। स्थानीय विनियम के अनुसार पार्किंग मानक।

(श्रेणी '3' : 50000 से 150000 वर्ग मीटर)

माध्यम	क्र.स.	पर्यावरणीय स्थिति
स्थलाकृति और प्राकृतिक निकासी	1	जल का अबाधित बहाव सुनिश्चित करने के लिए प्राकृतिक निकासी प्रणाली का रख-रखाव किया जना चाहिए। ऐसे किसी निर्माण की अनुमति न दी जाए जिससे कि स्थल के माध्यम से प्राकृतिक निकासी बाधित हो। आर्द्रभूमि और जल निकायों पर किसी निर्माण की अनुमति नहीं दी जाती है। निकासी पेटर्न को बनाए रखने तथा वर्षा जल संचयन के लिए चक बांध, बॉयो.स्वेलस, भू-दृश्य, और अन्य सतत शहरी निकासी प्रणालियां (एसयूडीएस) अनुमत हैं। भवनों का डिजाइन, जहां तक संभव हो, प्राकृतिक स्थलाकृति के अनुसार बनाया जाना चाहिए। पेड़ों को काटना और गिराना न्यूनतम होना चाहिए।
जल संरक्षण-वर्षा जल संचयन और भू जल रिचार्ज	2	वर्षा जल संचयन, जल के गुणवत्ता तथा संरक्षण के लिए एक पूर्ण योजना बनाई जाए। वर्षा जल संचयन के संबंध में स्थानीय उपविधि का पालन किया जाए। यदि स्थानीय उपविधि उपलब्ध न हों, तो शहरी विकास मंत्रालय के मॉडल भवन उपविधि, 2016 के अनुसार भंडारण और रिचार्ज संबंधी उपयुक्त प्रावधानों का पालन किया जाए। एक वर्षा जल संचयन योजना डिजाइन किए जाने की आवश्यकता है जहां निर्मित क्षेत्र के प्रति 5,000 वर्ग मीटर न्यूनतम एक रिचार्ज बोर और कुल ताजा जल आवश्यकता की न्यूनतम एक दिन की भंडारण क्षमता का रिचार्ज बोर प्रदान किया जाए। ऐसे क्षेत्र जहां भूजल रिचार्ज व्यवहार्य नहीं है, वहां वर्षा जल का संचयन और पुन:उपयोग हेतु भंडारण किया जाना चाहिए। सक्षम प्राधिकारी से अनुमोदन लिए बिना भूजल न निकाला जाए।

		सभी रिचार्ज ऊपरी जलभृत एक सीमित होने चाहिए।
	2 (क)	स्थानीय भवन उप-नियमों द्वारा का यथा अपेक्षित खुले स्थान कम से कम 20% प्रवेश्य होगा। कम से कम 50% खुले स्थान वाले ग्रास पेवर, पेवर ब्लॉक, भू-दृश्य इत्यादि को प्रवेश्य सतह माना जाएगा।
	2 (ख)	जल किफायती उपकरणों के प्रयोग को बढ़ावा दिया जाए। लो-फ्लो फिक्सरों अथवा सेंसरों का प्रयोग जल संरक्षण को बढ़ावा देने के लिए किया जाए।
	2 (ग)	दोहरी प्लंबिंग प्रणाली के प्रयोग द्वारा भूरे और काले पानी को पृथक किया जाए। सिंगल स्टेक प्रणाली के मामले में दोहरी प्लंबिंग प्रणाली द्वारा फ्लशिंग के लिए अलग पुनर्संचरण लाइनें बनाई जायेंगी।
ठोस अपशिष्ट प्रबंधन	3	ठोस अपशिष्ट: अपशिष्ट के अलग-अलग करने को आसान बनाने के लिए प्रत्येक इकाई और भूतल पर अलग-अलग गीले और सूखे कूड़े दान उपलब्ध कराए जाएं। ठोस अपशिष्ट (प्रबंधन) नियम, 2016 और ई-अपशिष्ट (प्रबंधन) नियम, 2016, और प्लास्टिक अपशिष्ट (प्रबंधन) नियम, 2016 के उपबंधों का अनुपालन किया जाएगा।
	3 (क)	सभी गैर जैव-अवक्रमणीय अपशिष्ट को प्राधिकृत पुनर्चक्रणकर्ताओं के हवाले कर दिया जाएगा जिसके लिए प्राधिकृत पुनर्चक्रणकर्ताओं के साथ लिखित समझौता किया जाएगा।
	3 (ख)	न्यूनतम 0.3 किग्रा/व्यक्ति/दिन की क्षमता वाले जैविक अपशिष्ट कम्पोस्टर/वर्मीकल्चर गड्ढे बनाए जायेंगे।
मल-जल शोधन संयंत्र	4	स्थल पर 100% अपशिष्ट जल शोधन क्षमता के मल-जल शोधन की अवस्थापना किया जाना। शोधित मल-जल का पुनर्प्रयोग स्थल पर लैंड-स्कैप, फ्लशिंग, कूलिंग टावर और अन्य अंतिम प्रयोक्ताओं के लिए किया जाए। अतिरिक्त शोधित जल को केंद्रीय प्रदूषण नियंत्रण बोर्ड के मानकों के अनुसार बहाया जाएगा। प्राकृतिक शोधन प्रणालियों को बढ़ावा दिया जाएगा। सेप्टिक टैंकों सहित साइट पर मल-जल शोधन से उत्पन्न तलछट को एकत्र किया जाएगा और उसे शहरी विकास मंत्रालय, केंद्रीय लोक स्वास्थ्य और मल-जल एवं मल-जल शोधन संयंत्र, 2013 संबंधी पर्यावरणीय अभियांत्रिकी संगठन (सीपीएचईईओ) मैनुअल के अनुसार ढोकर निपटान किया जाएगा।
ऊर्जा	5	ऊर्जा दक्षता ब्यरो के ऊर्जा संरक्षण भवन कोड (ईसीबीसी) का अनुपालन सुनिश्चित किया जाएगा। जिन राज्यों ने अपना स्वयं का ईसीबीसी अधिसूचित किया है, भवन अभिकल्पन में राज्य ईसीबीसी का अनुपालन करेंगे। प्रकाश व्यवस्था बाहरी और कॉमन एरिया में एलईडी की होगी। भवन अभिकल्पन में भवन अनुस्थापन, भू-दृश्यीकरण, प्रभावी भवन विकास, खिड़कियों की समुचित व्यवस्था, जिनमें प्रकाश बढ़ाने वाला अभिकल्पन और थर्मल मास इत्यादि जैसे अभिकल्पन तत्वों का प्रयोग करके भवन में न्यूनतम ऊर्जा खपत वाले पैसिव सोलर अभिकल्पन की संकल्पना को शामिल किया जाएगा। दीवार, खिड़की और छत यू-वेल्यूज़ ईसीबीसी विनिर्देशों के अनुसार होंगे।
	5 (क)	सौर, पवन या अन्य नवीकरणीय ऊर्जा की व्यवस्था ताकि मांग भार या राज्य स्तरीय/स्थानीय भवन उप-नियमों या जो भी अधिक हो, के अनुसार 1% के बराबर विद्युत उत्पादन पूरा किया जा सके।
	5 (ख)	व्यावसायिक और सांस्थानिक भवनों की 20% गर्म पानी की मांग को पूरा करने या स्थानीय भवन उप-नियमों की आवश्यकता, जो भी अधिक हो, के अनुसार सोलर वाटर हीटिंग उपलब्ध कराई जाएगी। आवासीय भवनों को भी, जहां तक संभव हो, अपनी गर्म पानी की मांग को सोलर वाटर से पूरा करने की सिफारिश की जाती है।
	5 (ग)	ईंटों, ब्लॉक्स और अन्य निर्माण सामग्री में कम से कम 20% पर्यावरण अनुकूल सामग्री के प्रयोग की आवश्यकता होगी। इसमें फ्लाई ऐश, ईंटें, हॉलो ईंटों, एएसी, फ्लाई ऐश लाइम जिप्सम ब्लॉक्स,

		कम्प्रेस्ड अर्थ ब्लॉक्स और अन्य पर्यावरण अनुकूल सामग्री शामिल होगी। समय-समय पर यथा संशोधित सितंबर, 1999 की फ्लाई ऐश अधिसूचना के अनुसार निर्माण में भवन सामग्री के रूप में फ्लाई ऐश का प्रयोग किया जाना चाहिए।
जल गुणवत्ता और ध्वनि	6	भवन और स्थान में धूल, धुंआं और अन्य वायु प्रदूषण निवारक उपाय किए जाए। इन उपायों में निर्माणाधीन भवन के लिए स्क्रीन, स्थल के चारों और सतत रूप से धूल/हवा रोकने वाली दीवारें कम से कम 3 मीटर ऊंचाई की) शामिल हैं। स्थल पर रेत, सीमेंट, लोहबान और अन्य निर्माण सामग्री, जो कि धूल प्रदूषण का प्रमुख कारण है, के साथ-साथ स्थल से मलबे को बाहर ले जाने वाले वाहनों के लिए प्लास्टिक/तिरपाल के शीट कवर उपलब्ध कराए जाएंगे। प्रयुक्त वाहनों के पहियों की धुलाई की जाएगी। स्थल पर भण्डारित रेत, लोहबान, खुली मृदा, सीमेंट को अच्छी प्रकार से ढका जाएगा ताकि धूल प्रदूषण को रोका जा सके। पिसाई और पत्थर कटाई के लिए वेट जेट उपलब्ध कराया जाएगा। धूल को दबाने के लिए कच्ची सतहों और खुली मृदा पर पर्याप्त जल छिड़काव किया जाएगा। सभी निर्माण और विध्वंस मलबे के समुचित निपटान (बाहर सड़कों या खुले स्थानों पर ढेर नहीं लगाया जाएगा) से पहले, स्थल पर उनका भण्डारण किया जाएगा। सभी विध्वंस और निर्माण अपशिष्ट का, निर्माण और विध्वंस अपशिष्ट नियम, 2016 के उपबंधों के अनुसार प्रबंधन किया जाएगा। निर्माण स्थल पर कार्यरत और निर्माण सामग्री और निर्माण मलबे की लदाई, उतराई और ढुलाई में शामिल अथवा धूल प्रदूषण से युक्त किसी भी क्षेत्र में कार्य कर रहे सभी कामगारों को धूल रोधी मास्क उपलब्ध कराए जाएंगे। भीतरी वायु गुणवत्ता के लिए राष्ट्रीय भारतीय भवन संहिता के अनुसार वातायान-व्यवस्था के प्रावधान।
	6(क)	डीजी सेट का स्थान और निकास पाइप की ऊंचाई, सीपीसीबी मापदंडों के उपबंधों के अनुसार होगी।
हरित आवरण	7	प्रत्येक 80 वर्ग मीटर भूमि के लिए न्यूनतम 1 पेड़ लगाया जाएगा और उसका रखरखाव किया जाएगा। इस प्रयोजन से मौजूदा पेड़ों की गिनती की जाएगी। स्थानिक प्रजातियों लगाने को प्राथमिकता दी जानी चाहिए।
	7(क)	जहां पर पेड़ों को काटे जाने की आवश्यकता है वहां पर 1:3 के अनुपात (अर्थात काटे गए प्रत्येक 1 पेड़ के लिए 3 पेड़ लगाना) में प्रतिपूरक वनीकरण किया जाएगा और रखरखाव किया जाएगा।
ऊपरी मृदा परिरक्षण और पुनउर्पयोग	8	भवनों, सड़कों, पक्के क्षेत्रों और बाहरी सेवाओं के लिए प्रस्तावित क्षेत्रों से 20 सेमी की गहराई तक ऊपरी मृदा को खोदा जाना चाहिए। इसका निर्धारित क्षेत्रों में समुचित ढंग से भण्डारण किया जाना चाहिए और स्थल पर प्रस्तावित वनस्पति के रोपण के दौरान इसका पुनउर्पयोग किया जाएगा।
परिवहन	9	शहरी विकास मंत्रालय की उत्तम प्रक्रियाओं संबंधी दिशा-निर्देशों (यूआरडीपीएफआई) के अनुसार मोटरयुक्त, गैर-मोटरयुक्त, सार्वजनिक और निजी तंत्रों को शामिल करने के लिए एक व्यापक गतिशीलता योजना तैयार की जाएगी। सड़कों को पर्यावरण और प्रयोक्ताओं की सुरक्षा पर अपेक्षित विचार करते हुए अभिकल्पित किया जाना चाहिए। सड़क प्रणाली को इन आधारभूत मानदण्डों के साथ अभिकल्पित किया जा सकता है। 1. वाहनीय और पैदल-पथ यातायात के उचित पृथक्करण के साथ सड़कों का वर्गीकरण 2. यातायात को सुचारू रखने के उपाय 3. प्रवेश और निकास बिंदुओं का उचित अभिकल्प 4. स्थानीय विनियमन के अनुसार पार्किंग मापदंड

पर्यावरण प्रबंधन योजना	10	उपरोक्त मद सं. 1 से 9 में विनिर्दिष्ट पर्यावरणीय शर्तों का अनुपालन सुनिश्चित करने के लिए एक पर्यावरणीय प्रबंधन योजना (ईएमपी) तैयार और क्रियान्वित की जाएगी। ईएमपी को क्रियान्वित करने के लिए परिभाषित क्रियाकलापों और उत्तरदायित्व के साथ एक समर्पित पर्यावरण निगरानी प्रकोष्ठ की स्थापना की जाएगी। यह पर्यावरणीय प्रकोष्ठ सुनिश्चित करेगा कि मलजल शोधन संयंत्र, भू-दृश्य निर्माण, वर्षा-जल संचयन, ऊर्जा दक्षता और संरक्षण, जल दक्षता और संरक्षण, ठोस अपशिष्ट प्रबंधन, नवीकरणीय ऊर्जा आदि जैसी पर्यावरण अवसंरचना प्रचालनारत है और अपेक्षित मानकों को पूरा करती है। पर्यावरणीय प्रकोष्ठ, पर्यावरण निगरानी और पर्यावरण अवसंरचना से संबंधित अभिलेखों का रखरखाव भी करेगा।

परिशिष्ट-XV

पर्यावरणीय लेखा परीक्षकों (योग्य भवन लेखा परीक्षक) की मान्यता

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी) योग्य अभिकरणों के माध्यम से योग्य भवन पर्यावरण लेखा परीक्षकों (क्यूबीईए) को मान्यता देगा । योग्य भवन पर्यावरण लेखा परीक्षक फर्म/संगठन अथवा वैयक्तिक विशेषज्ञ हो सकते हैं, जो अपेक्षाओं को पूरा करते हैं। मंत्रालय, भारतीय गुणवत्ता परिषद (क्यूसीआई), राष्ट्रीय उत्पादकता परिषद अथवा सरकार द्वारा मान्यता प्राप्त किसी अन्य संगठन के माध्यम से मान्यता की इस प्रक्रिया को क्रियान्वित करेगा। भारतीय हरित भवन परिषद, ऊर्जा दक्षता ब्यूरो इत्यादि जैसे संगठन भी मान्यता देने, प्रशिक्षण और नवीकरण की प्रक्रिया से जोड़े जा सकते हैं। भवन क्षेत्र के लिए क्यूसीआई द्वारा मान्यता प्राप्त पर्यावरणीय परामर्शी क्यूबीईए के रूप में योग्य होंगे। क्यूबीईए निम्नलिखित मानदंड पूरा करेंगे। मान्यता देने वाला प्राधिकरण इन मानदंडों का सुधार कर सकता है।

लेखा परीक्षक की योग्यताएं :

क. शिक्षा: वास्तुकार (डिग्री अथवा डिप्लोमा), नगर नियोजक (डिग्री), सिविल इंजीनियर/मैकनिकल इंजीनियर (डिग्री अथवा डिप्लोमा), पर्यावरणीय विज्ञान में स्नातकोत्तर अथवा मान्यता की स्कीम के अनुसार कोई अन्य योग्यता

प्रशिक्षण :

ख. प्रत्यायन निकाय अथवा उनके अनुमोदित प्रशिक्षण प्रदाताओं द्वारा अनिवार्य प्रशिक्षण दिया जाएगा। यह मान्यता की स्कीम के अनुसार होगा।

अनुभव :

ग. संबंधित क्षेत्र में 3 वर्ष का कार्य अनुभव अथवा क्यूसीआई द्वारा मान्यता प्राप्त भवन और पर्यावरण प्रभाव आकलन परामर्शदाता अथवा मान्यता की स्कीम के अनुसार किसी अन्य प्रकार का अनुभव मानदंड ।

अवसंरचना एवं उपकरण :

घ. मान्यता की स्कीम के अनुसार

नवीकरण:

ड. प्रत्यायन 5 वर्षों के लिए मान्य होगा और प्रत्यायन स्कीम के अंतर्गत विकसित प्रक्रिया के अनुसार नवीकृत किया जाएगा।

उत्तरदायित्व/शिकायत निवारण कार्यतंत्र: क्यूबीईएएस के कार्य की गुणवत्ता के संबंध में कोई भी शिकायत प्रत्यायन निकाय को की जाएगी। प्रत्यायन निकाय शिकायत पर विचार करेगा और काली सूची में डालने अथवा व्यापक सार्वजनिक सूचना के साथ प्रत्यायन को रद्द करने सहित उपयुक्त कार्यवाही करेगा। यह दण्ड देने और काली सूची में डालने के लिए स्थानीय प्राधिकरण के स्तर पर की जाने वाली कार्यवाही के अलावा होगा। विशिष्ट शिकायत अथवा फीडबैक के मामले में मंत्रालय भी इस प्रकार की कार्यवाही कर सकता है।

परिशिष्ट-XVI

स्थानीय प्राधिकरण के स्तर पर पर्यावणीय प्रकोष्ठ:

भवनों में पर्यावरणीय शर्तों के अनुपालन और मानीटरी को सहायता देने के लिए स्थानीय प्राधिकरण के स्तर पर पर्यावरणीय प्रकोष्ठ की स्थापना की जाएगी। यह प्रकोष्ठ अपने क्षेत्राधिकार के तहत पर्यावरणीय आयोजना और क्षमता निर्माण में सहायता भी प्रदान करेगा। इस प्रकोष्ठ के उत्तरदायित्व, इस अधिसूचना के कार्यान्वयन की मानीटरी करना और तीसरे-पक्षकार की लेखा-परीक्षा प्रक्रिया का अनुरक्षण करना है। यह प्रकोष्ठ स्थानीय प्राधिकरण के तहत संचालित होगा।

प्रकोष्ठ का संघटन :

इस प्रकोष्ठ में निम्नलिखित क्षेत्रों में कम से कम 3 समर्पित व्यक्ति शामिल होंगे:

क. अपशिष्ट प्रबंधन (ठोस और द्रव्य)

ख. जल संरक्षण और प्रबंधन

ग. निर्माण सामग्रियों सहित संसाधन की कार्यकुशलता

घ. ऊर्जा दक्षता और नवीकरणीय ऊर्जा

च. वायु गुणवत्ता प्रबंधन सहित पर्यावरणीय आयोजना

छ. परिवहन आयोजना और प्रबंधन

यह प्रकोष्ठ समर्पित विशेषज्ञों की आवश्यकता और पृष्ठभूमि के अनुसार कम से कम दो बाहरी विशेषज्ञों को शामिल करेगा। सथानीय प्राधिकरण के स्तर पर मौजूदा पर्यावरणीय प्रकोष्ठों को सह-योजित और इस प्रकोष्ठ के लिए प्रशिक्षित किया जा सकता है।

वित्तीय सहायता:

पर्यावरणीय शर्तों के समाकलन और इसकी मॉनीटरिंग के लिए निर्माण अनुमति हेतु कार्यवाही शुल्क के साथ अतिरिक्त शुल्क लिया जाएगा। स्थानीय प्राधिकरण समय-समय पर इस अतिरिक्त शुल्क को निर्धारित और संशोधित कर सकता है। इस शुल्क की धनराशि, एक पृथक बैंक खाते में जमा किया जाएगा और विशेषज्ञों के वेतन/पारिश्रमिक की आवश्यकता को पूरा करने और ऑनलाईन प्रार्थना पत्र की प्रणाली को जारी रखने, सत्यापन और पर्यावरणीय प्रकोष्ठ के लिये उपयोग में लाया जाएगा।

प्रकोष्ठ के कार्य

1. यह प्रकोष्ठ अपने क्षेत्राधिकार में उस क्षेत्र के पर्यावरण सरोकारों का मूल्यांकन और आकलन करने के लिए उत्तरदायी होगा जहां निर्माण कार्यकलाप करना प्रस्तावित है। यह प्रकोष्ठ अपेक्षाओं के अनुसार अतिरिक्त पर्यावरणीय शर्तें विकसित कर सकता है और शर्तों का प्रस्ताव रख सकता है। ये शर्तें क्षेत्र विशिष्ट हो सकती हैं तथा समय-समय पर पहले से अधिसूचित की जाएंगी। ये अतिरिक्त शर्तें परामर्श की यथा प्रक्रिया का अनुसरण करते हुए अनुमोदित की जाएंगी। ये पर्यावरणीय शर्तें अनुमोदन प्राधिकारी द्वारा निर्माण अनुमति में समेकित की जाएंगी।

2. आवेदन और शुल्क के भुगतान के लिए एक ऑन लाइन प्रणाली बनाना तथा उसकी देख-रेख करना। यह प्रकोष्ठ प्राप्त सभी आवेदनों, अनुमोदित परियोजनाओं, अनुपालन लेखापरीक्षण रिपोर्ट, किए गए औचक निरीक्षणों का एक आनलाइन डाटाबेस बनाएगा। यह प्रकोष्ठ परियोजना द्वारा पर्यावरणीय शर्तों के अनुपालन की लोगों द्वारा संवीक्षा के लिए अर्हता-प्राप्त निर्माण पर्यावरण लेखा-परीक्षकों द्वारा दर्ज लेखा-परीक्षा रिपोर्टों के स्व-प्रमाणीकरण और अनुपालन सहित परियोजना ब्यौरों का सार्वजनिक प्रकटन के लिए एक पोर्टल बनाएगा।

3. अर्हता-प्राप्त निर्माण लेखा-परीक्षकों द्वारा कराई गई पर्यावरणीय लेखा-परीक्षा प्रक्रिया के कार्य की निगरानी करेगा।

4. यह प्रकोष्ठ आवेदनों की समीक्षा करेगा; स्थानीय प्राधिकरणों को आवेदन प्रस्तुत करने के 30 दिन के अंदर अतिरिक्त पर्यावरणीय शर्तों, यदि अपेक्षित हो तो, को अंतिम रूप देगा।

5. यह प्रकोष्ठ क्यूबीए के प्रमाणीकरण, पर्यावरणीय शर्तों के अनुपालन और पंच वर्षीय लेखा रिपोर्ट के लिए स्थल पर जांच करने के लिए परियोजनाओं का जोखिम आधारित औचक चयन अंगीकृत करेगा।

6. यह प्रकोष्ठ परियोजना प्रस्तावक द्वारा पर्यावरणीय शर्तों के गैर-अनुपालन के लिए वित्तीय अर्थदंड के लिए स्थानीय प्राधिकरण को सिफारिश करेगा।

7. यह प्रकोष्ठ किसी भी अर्हता-प्राप्त निर्माण पर्यावरण लेखा-परीक्षकों के विरूद्ध, यदि उनके कार्य में कोई त्रुटि पाई जाती है तो, प्रत्यायोजन निकाय और स्थानीय प्राधिकरण को सिफारिश करेगा।

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 9th December, 2016

S.O. 3999(E).—Whereas, by notification of the Government of India in the erstwhile Ministry of Environment and Forests number S.O.1533 (E), dated the 14th September, 2006 issued under sub-section (1) read with clause (v) of sub-section (2) of section (3) of the Environment (Protection) Act, 1986 and clause (d) of the sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government directed that on and from the date of its publication, the required construction of new projects or activities or the expansion or modernisation of existing projects or activities listed in the Schedule to the said notification entailing the capacity addition with change in process or technology and or product mix shall be undertaken in any part of India only after prior environmental clearance from the Central Government or as the case may be, by the State Level Environment Impact Assessment Authority, duly constituted by the Central Government under sub-section (3) of section 3 of the said Act, in accordance with the procedure specified therein;

And whereas, the said Ministry has received suggestions for ensuring Ease of Doing Responsible Business; and streamlining the permissions for buildings and construction sector which is important for providing houses and for this purpose the scheme of Housing for all by 2022 with an objective of making available affordable housing to weaker sections in urban area has ambitious target;

And whereas clause (a) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986 provides that, whenever the Central Government considers that prohibition or restrictions of any industry or carrying on any processes or operation in any area should be imposed, it shall give notice of its intention to do so;

And whereas, a draft notification for making amendments in the Environment Impact Assessment Notification, 2006 issued in exercise of the powers conferred under sub-section (1) and clause (v) of sub-section (2) of section (3) of the Environment (Protection) Act, 1986 read with clause (d) of the sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986 was published, vide number S.O.1595 (E) dated the 29th April 2016, inviting objections and suggestions from all the persons likely to be affected thereby, within a period of sixty days from the date of publication of said notification in the Gazette of India;

And whereas, all objections and suggestions received in response to the above mentioned draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986), read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments in the Environment Impact Assessment Notification, 2006 namely:-

In the said Notification,-

(I) after paragraph 13, the following paragraph shall be inserted, namely:-

"14. Integration of environmental condition in building bye-laws.-

(1) The integrated environmental conditions with the building permission being granted by the local authorities and the construction of buildings as per the size shall adhere to the objectives and monitorable environmental conditions as given at Appendix-XIV.

(2) The States adopting the objectives and monitorable environmental conditions referred to in sub-paragraph (1), in the building bye-laws and relevant State laws and incorporating these conditions in the approvals given for building construction making it legally enforceable shall not require a separate environmental clearance from the Ministry of Environment, Forest and Climate Change for individual buildings.

(3) The States may forward the proposed changes in their bye-laws and rules to the Ministry of Environment, Forest and Climate Change, who in turn will examine the said draft bye-laws and rules and convey the concurrence to the State Governments.

(4) When the State Governments notifies the bye-laws and rules concurred by the Ministry of Environment, Forest and Climate Change, the Central Government may issue an order stating that no separate environmental clearance is required for buildings to be constructed in the States or local authority areas.

(5) The local authorities like Development Authorities, Municipal Corporations, may certify the compliance of the environmental conditions prior to issuance of Completion Certificate, as applicable as per the requirements stipulated for such buildings based on the recommendation of the Environmental Cell constituted in the local authority.

(6) The State Governments where bye-laws or rules are not framed may continue to follow the existing procedure of appraisal for individual projects and grant of Environmental Clearance for buildings and constructions as per the provisions laid down in this notification.

(7) For the purpose of certification regarding incorporation of environmental conditions in buildings, the Ministry of Environment, Forest and Climate Change may empanel through competent agencies, the Qualified Building Environment Auditors (QBEAs) to assess and certify the building projects, as per the requirements of this notification and the procedure for accreditation of Qualified Building Auditors and their role as given at Appendix-XV.

(8) In order to implement the integration of environmental condition in building bye-laws, the State Governments or Local Authorities may constitute the Environment Cell (herein after called as Cell), for compliance and monitoring and to ensure environmental planning within their jurisdiction.

(9) The Cell shall monitor the implementation of the bye-laws and rules framed for Integration of environmental conditions for construction of building and the Cell may also allow the third part auditing process for oversight, if any.

(10) The Cell shall function under the administrative control of the Local Authorities.

(11) The composition and functions of the Cell are given at Appendix-XVI.

(12) The Local Authorities while integrating the environmental concerns in the building bye-laws, as per their size of the project, shall follow the procedure, as given below:

BUILDINGS CATEGORY '1' (5,000 to < 20,000 Square meters)

A Self declaration Form to comply with the environmental conditions (Appendix XIV) along with Form 1A and certification by the Qualified Building Environment Auditor to be submitted online by the project proponent besides application for building permission to the local authority along with the specified fee in separate accounts. Thereafter, the local authority may issue the building permission incorporating the environmental conditions in it and allow the project to start based on the self declaration and certification along with the application. After completion of the construction of the building, the project proponent may update Form 1A online based on audit done by the Qualified Building Environment Auditor and shall furnish the revised compliance undertaking to the local authority. Any non-compliance issues in buildings less than 20,000 square meters shall be dealt at the level of local body and the State through existing mechanism.

OTHER BUILDINGS CATEGORIES (≥ 20,000 Square meters)

The project proponent may submit online application in Form 1 A alongwith specified fee for environmental appraisal and additional fee for building permission. The fee for environmental appraisal will be deposited in a separate account. The Environment Cell will process the application and present it in the meeting of the Committee headed by the authority competent to give building permission in that local authority. The Committee will appraise the project and stipulate the environmental conditions to be integrated in the building permission. After recommendations of the Committee, the building permission and environmental clearance will be issued in an integrated format by the local authority.

The project proponent shall submit Performance Data and Certificate of Continued Compliance of the project for the environmental conditions parameters applicable after completion of construction from Qualified Building Environment Auditors every five years to the Environment Cell with special focus on the following parameters:-

(a) Energy Use (including all energy sources).

(b) Energy generated on site from onsite Renewable energy sources.

(c) Water use and waste water generated, treated and reused on site.

(d) Waste Segregated and Treated on site.

(e) Tree plantation and maintenance.

After completion of the project, the Cell shall randomly check the projects compliance status including the five years audit report. The State Governments may enact the suitable law for imposing penalties for non-compliances of the

environmental conditions and parameters. The Cell shall recommend financial penalty, as applicable under relevant State laws for non-compliance of conditions or parameters to the local authority. On the basis of the recommendation of the Cell, the local authority may impose the penalty under relevant State laws. The cases of false declaration or certification shall be reported to the accreditation body and to the local body for blacklisting of Qualified Building Environment Auditors and financial penalty on the owner and Qualified Building Environment Auditors.

No Consent to Establish and Operate under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 will be required from the State Pollution Control Boards for residential buildings up to 1,50,000 square meters.";

(II) In the Schedule, for item 8 and the entries relating thereto, the following item and entries shall be substituted, namely:-

(1)	(2)	(3)	(4)	(5)
"8		Building / Construction projects / Area Development projects and Townships		
8 (a)	Building and Construction projects		≥ 20,000 sq. mtrs and < 1,50,000 sq. mtrs of built up area	The term "built up area" for the purpose of this notification is the built up or covered area on all floors put together including its basement and other service areas, which are proposed in the buildings and construction projects. Note 1. The projects or activities shall not include industrial shed, universities, college, hostel for educational institutions, but such buildings shall ensure sustainable environmental management, solid and liquid and implement environmental conditions given at Appendix-XIV. Note 2.-General Condition shall not apply. Note 3.-The exemptions granted at Note 1 will be available only for industrial shed after integration of environmental norms with building permissions at the level of local authority.
8 (b)	Townships and Area Development projects	≥ 3,00,000 sq. mtrs of built up area or Covering an area ≥ 150 ha	≥1,50,000 sq. mtrs and < 3,00,000 sq. mtrs built up area or covering an area ≥ 50 ha and < 150 ha	Note.- General Condition shall not apply".

[F. No. 19-2/2013-IA-III (Pt.)]

MANOJ KUMAR SINGH, Jt. Secy.

Note: The principal notification was published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section(ii) vide number S.O. 1533(E), dated the 14th September, 2006 and subsequently amended vide numbers S.O.1737(E) dated the 11th October, 2007, S.O. 3067(E), dated the 1st December, 2009, S.O.695(E), dated the 4th April, 2011, S.O.2896(E), dated the 13th December, 2012 , S.O.674(E), dated the 13th March, 2013, S.O.2559(E), dated the 22nd August, 2013, S.O. 2731(E), dated the 9th September, 2013, S.O. 562(E), dated the 26th February, 2014, S.O.637(E), dated the 28th February, 2014, S.O.1599(E), dated the 25th June, 2014, S.O. 2601 (E), dated 7th October, 2014, S.O. 2600(E) dated 9th October, 2014, S.O. 3252(F) dated 22nd December, 2014, S.O. 382 (E), dated 3rd February, 2015, and S.O. 811(E), dated 23rd March, 2015, S.O. 996 (E) dated 10th April, 2015, S.O. 1142 (E) dated 17th April, 2015, S.O. 1141 (E) dated 29th April, 2015, S.O. 1834(E) dated 6th July, 2015 and S.O. 2572(E) dated 14th September, 2015, S.O. 141(E) dated 15th January, 2016, S.O. 190(E) dated 20th January, 2016, S.O. 648(E) dated 3rd March, 2016 and S.O. 2269(E) dated 1st July, 2016.

APPENDIX –XIV

ENVIRONMENTAL CONDITIONS FOR BUILDINGS AND CONSTRUCTIONS

(CATEGORY '1': 5,000 to less than 20,000 Square meters)

MEDIUM	S.N.	ENVIRONMENTAL CONDITIONS
Topography and Natural Drainage	1	The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site. No construction is allowed on wetland and water bodies. Check dams, bio-swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.
Water Conservation, Rain Water Harvesting, and Ground Water Recharge	2	Use of water efficient appliances shall be promoted. The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Bye-Laws, 2016. A rain water harvesting plan needs to be designed where the recharge bores (minimum one recharge bore per 5,000 square meters of built up area) is recommended. Storage and reuse of the rain water harvested should be promoted. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority. All recharge should be limited to shallow aquifer.
	2(a)	At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.
Waste Management	3	Solid waste: Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Sewage: In areas where there is no municipal sewage network, onsite treatment systems should be installed. Natural treatment systems which integrate with the landscape shall be promoted. As far as possible treated effluent should be reused. The excess treated effluent shall be discharged following the CPCB norms. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organisation (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013. The provisions of the Solid Waste (Management) Rules 2016 and the e-waste (Management) Rules 2016, and the Plastics Waste (Management) Rules 2016 shall be followed.
Energy	4	Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC. Outdoor and common area lighting shall be Light Emitting Diode (LED). Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.

Air Quality and Noise	5	Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3 meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site. Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution. Wet jet shall be provided for grinding and stone cutting. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules 2016. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask. For indoor air quality the ventilation provisions as per National Building Code of India shall be made.
	5 (a)	The location of the DG set and exhaust pipe height shall be as per the provisions of the CPCB norms.
Green Cover	6	A minimum of 1 tree for every 80 square meters of land should be planted and maintained. The existing trees will be counted for this purpose. Preference should be given to planting native species.
	6 (a)	Where the trees need to be cut, compensatory plantation in the ratio of 1:3 (i.e. planting of 3 trees for every 1 tree that is cut) shall be done and maintained.

(Category '2': 20,000 to less than 50,000 Square meters)

MEDIUM	S.N.	ENVIRONMENTAL CONDITIONS
Topography and Natural Drainage	1	The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site. No construction is allowed on wetland and water bodies. Check dams, bio-swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
Water Conservation, Rain Water Harvesting, and Ground Water Recharge	2	A complete plan for rain water harvesting, water efficiency and conservation should be prepared. Use of water efficient appliances should be promoted with low flow fixtures or sensors. The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Bye-laws, 2016. A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority. All recharge should be limited to shallow aquifer
	2(a)	At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.

Waste Management	3	Solid waste: Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Sewage: Onsite sewage treatment of capacity of treating 100% waste water to be installed. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per CPCB norms. Natural treatment systems shall be promoted. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organisation (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013. The provisions of the Solid Waste (Management) Rules 2016 and the e-waste (Management) Rules 2016, and the Plastics Waste (Management) Rules 2016 shall be followed.
	3 (a)	All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.
	3(b)	Organic waste compost/ Vermiculture pit with a minimum capacity of 0.3 kg /person/day must be installed.
Energy	4	Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC. Outdoor and common area lighting shall be LED. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
	4 (a)	Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.
	4 (b)	Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.
	4 (c)	Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include flyash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials. Fly ash should be used as building material in the construction as per the provisions of the Fly Ash Notification of September, 1999 as amended from time to time.
Air Quality and Noise	5	Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3 meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site. Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution. Wet jet shall be provided for grinding and stone cutting. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules 2016. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with

		dust pollution shall be provided with dust mask. For indoor air quality the ventilation provisions as per National Building Code of India.
	5 (a)	The location of the DG set and exhaust pipe height shall be as per the provisions of the CPCB norms.
Green Cover	6	A minimum of 1 tree for every 80 sq.mt. of land should be planted and maintained. The existing trees will be counted for this purpose. Preference should be given to planting native species.
	6 (a)	Where the trees need to be cut, compensatory plantation in the ratio of 1:3 (i.e. planting of 3 trees for every 1 tree that is cut) shall be done and maintained.
Top Soil preservation and reuse	7	Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.
Transport	8	A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria. 1. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic. 2. Traffic calming measures. 3. Proper design of entry and exit points. 4. Parking norms as per local regulation.

(Category '3': 50000 to 150000 m^2)

MEDIUM	S.N.	ENVIRONMENTAL CONDITIONS
Topography and Natural Drainage	1	The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site. No construction is allowed on wetland and water bodies. Check dams, bio-swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
Water conservation - Rain Water Harvesting, and Ground Water Recharge	2	A complete plan for rain water harvesting, water efficiency and conservation should be prepared. The local bye-law provisions on rain water harvesting should be followed. If local bye-law provisions are not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Bye-laws, 2016. A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority. All recharge should be limited to shallow aquifer.
	2(a)	At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.
	2 (b)	Use of water efficient appliances should be promoted. Low flow fixtures or sensors be used to promote water conservation.

	2 (c)	Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
Solid Waste Management	3	Solid waste: Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. The provisions of the Solid Waste (Management) Rules 2016 and the e-waste (Management) Rules 2016, and the Plastics Waste (Management) Rules 2016 shall be followed.
	3 (a)	All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.
	3(b)	Organic waste composter/Vermiculture pit with a minimum capacity of 0.3 kg /person/day must be installed.
Sewage Treatment Plant	4	Onsite sewage treatment of capacity of treating 100% waste water to be installed. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per CPCB norms. Natural treatment systems shall be promoted. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organisation (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.
Energy	5	Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC. Outdoor and common area lighting shall be LED. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
	5 (a)	Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.
	5 (b)	Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.
	5 (c)	Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include flyash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials. Fly ash should be used as building material in the construction as per the provisions of the Fly Ash Notification of September, 1999 as amended from time to time.
Air Quality and Noise	6	Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3 meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site. Wheel washing for the vehicles used be done. Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution. Wet jet shall be provided for grinding and stone cutting. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction

		and Demolition Waste Rules 2016. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask. For indoor air quality the ventilation provisions as per National Building Code of India.
	6 (a)	The location of the DG set and exhaust pipe height shall be as per the provisions of the CPCB norms.
Green Cover	7	A minimum of 1 tree for every 80 sq.mt. of land should be planted and maintained. The existing trees will be counted for this purpose. Preference should be given to planting native species.
	7 (a)	Where the trees need to be cut, compensatory plantation in the ratio of 1:3 (i.e. planting of 3 trees for every 1 tree that is cut) shall be done and maintained.
Top Soil Preservation and Reuse	8	Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.
Transport	9	A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria. 1. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic. 2. Traffic calming measures. 3. Proper design of entry and exit points. 4. Parking norms as per local regulation.
Environment Management Plan	10	An environmental management plan (EMP) shall be prepared and implemented to ensure compliance with the environmental conditions specified in item number 1 to 9 above. A dedicated Environment Monitoring Cell with defined functions and responsibility shall be put in place to implement the EMP. The environmental cell shall ensure that the environment infrastructure like Sewage Treatment Plant, Landscaping, Rain Water Harvesting, Energy efficiency and conservation, water efficiency and conservation, solid waste management, renewable energy etc. are kept operational and meet the required standards. The environmental cell shall also keep the record of environment monitoring and those related to the environment infrastructure.

APPENDIX-XV

Accreditation of Environmental Auditors (Qualified Building Auditors)

The Ministry of Environment, Forest and Climate Change (MoEFCC), through qualified agencies shall accredit the Qualified Building Environment Auditors (QBEAs). The Qualified Building Environment Auditors could be a firm / organization or an individual expert, who fulfils the requirements. The Ministry will implement this process of accreditation through Quality Council of India (QCI), National Productivity Council or any other organization identified by the Government. The organizations like Indian Green Building Council, Bureau of Energy Efficiency etc. can also be associated in the process of accreditation, training, and renewal. The environmental consultants accredited by the QCI for building sector will be qualified as QBEAs. The QBEAs will meet the following criteria. The accrediting agency can improvise on these criteria.

Qualifications of the Auditor:

a. Education: Architect (Degree or Diploma), Town Planners (Degree), Civil Engineer / Mechanical Engineer (Degree or Diploma), PG in Environmental Science or any other qualification as per the scheme of the accreditation.

Training:

b. Mandatory training to be given by the accreditation body or their approved training providers. This will be as per the scheme of the accreditation.

Experience:

c. At least 3 years of work experience in the related field or building sector Environment Impact Assessment consultants accredited by QCI or any other experience criteria as per the scheme of the accreditation.

Infrastructure and equipment:

d. As per the scheme of the accreditation

Renewal:

e. The accreditation will be valid for 5 years and will be renewed as per the process developed under the accreditation scheme.

Accountability/Complaint redressal mechanism: Any complaints regarding the quality of the work of QBEAs shall be made to the accreditation body. The accreditation body shall evaluate the complaint and take appropriate action including black listing or cancellation of the accreditation with wide public notice. This will be in addition to the action at the level of local authority for penalty and blacklisting. The Ministry can also take such action in case of specific complaint or feedback.

APPENDIX-XVI

Environmental Cell at the level of Local Authority:

An Environmental Cell shall be setup at the local authority level to support compliance and monitoring of environmental conditions in buildings. The Cell shall also provide assistance in environmental planning and capacity building within their jurisdiction. The responsibility of this cell would be monitoring the implementation of this notification and providing an oversight to the Third-Party Auditing process. The cell will operate under the local authority.

Constitution of the cell:

The cell will comprise of at least 3 dedicated experts in following fields:

a. Waste management (solid and liquid)

b. Water conservation and management

c. Resource efficiency including Building materials

d. Energy Efficiency and renewable energy

e. Environmental planning including air quality management.

f. Transport planning and management.

The Cell shall induct at least two outside experts as per the requirements and background of dedicated experts. Existing environmental cells at the level of local authority can be co-opted and trained for this Cell.

Financial Support:

An additional fee may be charged along with processing fee for building permission for integrating environmental conditions and it's monitoring. The local authority can fix and revise this additional fee from time to time. The amount of this fee shall be deposited in a separate bank account, and used for meeting the requirement of salary / emoluments of experts and running the system of online application, verifications and the Environmental Cell.

Functions of the Cell:

1. The cell shall be responsible for assessing and appraising the environmental concerns of the area under their jurisdiction where building activities are proposed. The Cell can evolve and propose additional environmental conditions as per requirements. These conditions may be area specific and shall be notified in advance from time to time. These additional conditions shall be approved following a due consultation process. These environmental conditions will be integrated in building permissions by the sanctioning authority.

2. Develop and maintain an online system for application and payment of fees. The Cell shall maintain an online database of all applications received, projects approved, the compliance audit report, random inspections made. The Cell shall maintain a portal for public disclosure of project details including self certification and compliance audit reports filed by the Qualified Building Environment Auditors for public scrutiny of compliance of environmental conditions by the project.

3. Monitoring the work of Environmental Audit process carried by the Qualified Building Auditors.

4. The Cell shall review the applications; finalize the additional environmental conditions if required within 30 days of the submission of the application to the local authority.

5. The Cell shall adopt risk based random selection of projects for verifying on site for certification of QBA, compliance of environmental conditions and five yearly audit report.

6. The Cell shall recommend to the local authority for financial penalty for non-compliance of environmental conditions by the project proponent.

7. The Cell shall recommend to the accrediting body and the local authority against any Qualified Building Environment Auditor, if any lapse is found in their work.

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Wastewater Discharge Standards

[1][SCHEDULE – VI]

(See rule 3A)

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS PART-A : EFFLUENTS

S. No.	Parameter	Standards			
		Inland surface water	Public Sewers	Land for irrigation	Marine coastal areas
1	2	3			
		(a)	(b)	(c)	(d)
1.	Colour and odour	See 6 of Annexure-I	--	See 6 of Annexure -I	See 6 of Annexure-I
2.	Suspended solids mg/l, Max.	100	600	200	(a) For process waste water- 100 (b) For cooling water effluent 10 percent above total suspended matter of influent.
3.	Particulate size of suspended solids	Shall pass 850 micron IS Sieve	--	--	(a) Floatable solids, max. 3 mm. (b) Settleable solids, max. 850 microns.
[2]4.	***	*	--	***	--
5.	pH Value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	shall not exceed 5°C above the receiving water temperature	--	--	shall not exceed 5°C above the receiving water temperature

S. No.	Parameter	Standards			
		Inland surface water	Public Sewers	Land for irrigation	Marine coastal areas
1	2	3			
		(a)	(b)	(c)	(d)
7.	Oil and grease mg/l Max.	10	20	10	20
8.	Total residual chlorin mg/l Max.	1.0	--	--	1.0
9.	Ammonical nitrogen (as N), mg/l Max.	50	50	--	50
10.	Total Kjeldahl Nitrogen (as NH_3) mg/l, Max.	100	--	--	100
11.	Free ammonia (as NH_3) mg/l, Max.	5.0	--	--	5.0
12.	Biochemical Oxygen demand [1][3 days at 27°C] mg/l max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/l, max.	250	--	--	250
14.	Arsenic (as As), mg/l, max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg), mg/l, Max.	0.01	0.01	--	0.01
16.	Lead (as Pb) mg/l, Max.	0.1	1.0	--	2.0
17.	Cadmium (as Cd) mg/l, Max.	2.0	1.0	--	2.0
18.	Hexavalent Chromium (as Cr+6), mg/l max.	0.1	2.0	--	1.0

S. No.	Parameter	Standards			
		Inland surface water	Public Sewers	Land for irrigation	Marine coastal areas
1	2			3	
		(a)	(b)	(c)	(d)
19.	Total chromium (as Cr.) mg/l, Max.	2.0	2.0	--	2.0
20.	Copper (as Cu) mg/l, Max.	3.0	3.0	--	3.0
21.	Zinc (As Zn.) mg/l, Max.	5.0	15	--	15
22.	Selenium (as Se.) mg/l, Max.	0.05	0.05	--	0.05
23.	Nickel (as Ni) mg/l, Max.	3.0	3.0	--	5.0
[1]24.	* * *	*	*	*	*
[1]25.	* * *	*	*	*	*
[1]26.	* * *	*	*	*	*
27.	Cyanide (as CN) mg/l Max.	0.2	2.0	0.2	0.2
[1]28.	* * *	*	*	*	*
29.	Fluoride (as F) mg/l Max.	2.0	15	--	15
30.	Dissolved Phosphates (as P), mg/l Max.	5.0	–	--	--
[2]31.	* * *	*	*	*	*
32.	Sulphide (as S) mg/l Max.	2.0	–	--	5.0
33.	Phenoile compounds (as C_6H_5OH) mg/l, Max.	1.0	5.0	--	5.0

S. No.	Parameter	Standards			
		Inland surface water	Public Sewers	Land for irrigation	Marine coastal areas
1	2			3	
		(a)	(b)	(c)	(d)
34.	Radioactive materials :				
	(a) Alpha emitter micro curie/ml.	10^{-7}	10^{-7}	10^{-8}	10^{-7}
	(b) Beta emitter micro curie/ml.	10^{-6}	10^{-6}	10^{-7}	10^{-6}
35.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
36.	Manganese (as Mn)	2 mg/l	2 mg/l	--	2 mg/l
37.	Iron (as Fe)	3 mg/l	3 mg/l	--	3 mg/l
38.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	--	0.2 mg/l
39.	Nitrate Nitrogen	10 mg/l	--	--	20 mg/l
[1]40.	* * *	*	*	*	*

National Ambient Air Quality Standards

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual*	50	20	- Improved West and Gaeke
		24 hours**	80	80	-Ultraviolet fluorescence
2	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual*	40	30	- Modified Jacob & Hochheiser (Na-Arsenite)
		24 hours**	80	80	- Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM_{10} $\mu g/m^3$	Annual*	60	60	- Gravimetric - TOEM
		24 hours**	100	100	- Beta attenuation
4	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$ $\mu g/m^3$	Annual*	40	40	- Gravimetric - TOEM
		24 hours**	60	60	- Beta attenuation
5	Ozone (O_3) $\mu g/m^3$	8 hours**	100	100	- UV photometric - Chemilminescence
		1 hour**	180	180	- Chemical Method
6	Lead (Pb) $\mu g/m^3$	Annual*	0.50	0.50	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
		24 hours**	1.0	1.0	
7	Carbon Monoxide (CO) mg/m^3	8 hours**	02	02	- Non Dispersive Infra Red (NDIR) spectroscopy
		1 hour**	04	04	
8	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence
		24 hours**	400	400	-Indophenol blue method
9	Benzene (C_6H_6) $\mu g/m^3$	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m^3	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m^3	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m^3	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

Ambient Air Quality Standards in Respect of Noise

SCHEDULE

see rule 3(1) and 4(1)

Ambient Air Quality Standards in respect of Noise

Area Code	Category of Area/Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

Note:- 1. Day time shall mean from 6.00 a.m. to 10.00 p.m.

2. Night time shall mean from 10.00 p.m. to 6.00 a.m.

[1][3. Silence zone is an area comprising not less than 100 metres around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority].

4. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A "decibel" is a unit in which noise is measured.

"A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is an energy mean of the noise level over a specific period.

Note: The principal rules were published in the Gazette of India vide number, S.O.123(E), dated 14th February, 2000 and subsequently amended vide S.O.1046(E), dated 22nd November, 2000, S.O. 1088(E), dated 11th October, 2002, S.O. 1569(E), dated the 19th September, 2006 and S.O.50(E), dated 11th January, 2010.

Height Restrictions with Respect to Approach Funnels and Transitional area of Airport

A.1.1. Height restrictions with respect to approach funnels

Height Restrictions – Approach Funnels

Distance from nearest runway end (in meters)	Maximum Permissible height above the elevation of the nearest runway end (in meters)
Up to 360	0
361 to 510	6
511 to 660	9
661 to 810	12
811 to 960	15
961 to 1110	18
1111 to 1260	21
1261 to 1410	24
1411 to 1560	27
More than 1560	30

Height restrictions with respect to transitional area

Height Restrictions- transitional area

Distance of the inner boundary of the Transitional Area (outer boundary of the airport) (in meters)	Maximum Permissible height above the elevation of the airport reference point (in meters)
Up to 21	0
22 to 42	3
43 to 63	6
64 to 84	9
85 to 105	12
106 to 126	15
127 to 147	18
148 to 168	21
169 to 189	24
190 to 210	27
More than 210 m	30

Terms of Reference (Technical) for Environment Due Diligence

Scope of Work

1. **Details of available infrastructural facilities**: This includes details of following but not limited to:
   - Details of ownership of land/property;
   - Total area, built up area, area covered under green belt/landscaping with layout;
   - Details of existing activities and proposed activities;
   - Details of space earmarked for existing operation and proposed operation as per activities including hostel and vehicle parking facilities;
   - Details of water supply and source;
   - Details of power supply and source including back up power;
   - Details of waste water management;
   - Details of solid waste management;
   - Details of air emission management from DG sets, laboratory and workshops;
   - Details of firefighting facilities;
   - System in place for monitoring EHS aspects and implementation of requisite mitigation measures; etc.

2. **Status of regulatory compliance**; includes verifying applicability and compliance of following but not limited to:
   - Environment clearance as per EIA notification, 14 September 2006 and amendments thereof;
   - Consent to establishment and operate as per The Water (Prevention and Control of Pollution) Act, 1974 and amendments thereof and The Air (Prevention and Control of Pollution) Act, 1981 and amendments thereof;
   - Status of compliance of conditions stipulated as a part of environment clearance, consent to establishment and consent to operate;
   - Guidelines for ground water extraction prescribed by the Central Ground Water Authority (CGWA), 2012;
   - The Hazardous Waste (Management and Handling) Rules, 2008 and amendments thereof;
   - The Batteries (Management and Handling) Rule, 2001 and amendments thereof;
   - The e-waste (Management and Handling) Rule, 2011 and amendments thereof;
   - Occupancy certificate from local development authority or municipal corporation;
   - NOC from District Chief Fire Office;
   - Relevant applicable labour laws;
   - Litigation pending, if any; etc.

3. **Details of surrounding environment setting**; includes description of adjacent infrastructural facilities, approach roads, nearest habitation, nearest water body(ies), forest area & wild life sanctuary (within 10 km radius), system in place for water supply, wastewater and solid waste disposal, public transport, socioeconomic profile of surrounding area, etc.
4. **Impacts due to operation of ASTI**; includes assessment of impacts on the adequacy of proposed infrastructural facilities, existing operation, availability of power from grid and back-up power, water supply and resources, ambient air quality, noise level, , wastewater management, solid waste management, Occupational health & safety, community disturbance and safety, etc.
5. **Recommendations**; includes mitigation measures, requirement of manpower and monitoring for implementation, corresponding budget, etc.

Audit Team

Team should have one environment professional and one social professional having more than 10 years of relevant experience.

Environmental, Health and Safety Checklist for Reporting

	Yes/No/NA	Details enclosed (Yes/No)	Comments
ENVIRONMENT			
Is water or other means used to prevent dust generation?			
Are roadways defined and used by site personnel?			
Is there adequate watering equipment when cutting and chasing?			
Is ambient air quality monitoring performed to ensure compliance as per monitoring plan? Provide details.			
Are noisy work tasks defined, controls used to reduce noise levels and signage utilized?			
Is noise level monitoring performed to ensure compliance as per monitoring plan? Provide details.			
Are signs posted to alert personnel?			
Is hearing protection provided and used where required?			
Is waste water disposed of as per regulatory requirement?			
Is monitoring and testing performed as per monitoring plan? Provide details.			
Is solid (hazardous and non-hazardous) waste is being collected, handled and disposed of as per regulatory requirement?			
Provide status of compliance to stipulated conditions by ADB and regulatory agencies			
Is any violation to stipulated compliance observed? If yes then details with action taken report?			
Provide details, if any action is envisaged to be implemented			
SAFETY			
Electrical			
Does a licensed electrician test portable electrical equipment on regular basis (on quarterly basis or agree upon)?			
Are all electrical leads supported above the ground with insulated hooks or stands?			
Are extension leads correctly connected to temporary power boards?			

	Yes/No/NA	Details enclosed (Yes/No)	Comments
Are temporary power boards weatherproof?			
Is the electrical testing register maintained on site?			
Is all electrical equipment in good condition?			
Action taken report, if any based on findings/violation.			
Provide details, if any action is envisaged to be implemented			
Hazardous material storage and handling			
Are Material Safety Data Sheets available for all hazardous substances?			
Is a chemical register kept on site?			
Do site personnel understand MSDS's ?			
Are appropriate signs posted at storage areas on site?			
Are containers appropriately labeled?			
Are chemical storage facilities provided with appropriate containment area? i.e. bunds and containment medium			
Is appropriate PPE supplied when using hazardous materials?			
Provide action taken report, if any violation or spillage?			
Provide details, if any action is envisaged to be implemented			
Civil Works			
Are excavation permits developed and implemented on site?			
Is a site plan available for existing and new services?			
Are new and existing services identified on site and controls implemented to prevent accidental contact?			
Are procedures in place to avoid isolated personnel working in excavations?			
Is signage and barricading used to reduce erosion or collapse?			
Are excavations regularly inspected for erosion or collapse?			

	Yes/No/NA	Details enclosed (Yes/No)	Comments
Are excavations battered or benched to prevent collapse?			
Has safe access/egress been provided for deep excavations?			
Has spoil material and equipment been stored away from excavation edges?			
Action taken report, if any based on findings/violation.			
Provide details, if any action is envisaged to be implemented			
Mechanical Works			
Are hot work permits developed for site?			
Are permits completed and signed by supervisors and kept on site?			
Are gas cylinders stored upright in a lockable trolley?			
Firefighting equipment is located at work area?			
Is welding equipment in good working order?			
Are screens and ventilation provided for welding works?			
Is there any risk of dust exploding?			
Action taken report, if any based on findings/violation.			
Provide details, if any action is envisaged to be implemented			
Cranes and Rigging			
Crane certificates of inspection provided and kept on record at site.			
Crane driver's certificate of competency and licenses.			
Is the manufacturer's instruction book and cranes log book in crane and completed daily?			
Riggers and dogmen certified and recorded and used for crane operations?			
Is there a safe working zone established for crane operation?			
Is all rigging equipment in good condition with inspection records kept on site?			

	Yes/No/NA	Details enclosed (Yes/No)	Comments
Provide details of any incident/accident and action take report.			
Provide details, if any action is envisaged to be implemented			
Scaffolding			
Scaffold types in use			
Are standards on solid foundations with adequate soul boards?			
Is there adequate bracing in all directions?			
Are the ties correctly positioned and fixed?			
Are there working platforms at required locations?			
Are handrails and kickboards installed on scaffolds over 2mts?			
Are mesh guards installed where a risk of material falling may occur? i.e. bricks.			
Is there access to and from all working platforms?			
Are working platforms the correct distance from the working face?			
Are ladders of an industrial grade?			
Are ladders secured top and bottom and exceeding platform 1 meter at a 4:1 pitch?			
Are scaffold boards secured to prevent uplift from winds?			
When completed, are scaffolds tagged with scaftag system or similar?			
Are signs or barriers erected for incomplete scaffolds?			
Are scaffolds regularly inspected and records kept of details?			
Action taken report, if any based on findings/violation.			
Provide details, if any action is envisaged to be implemented			
Confined Space			
Are permits developed for confined space works?			
Are emergency procedures developed for confined space works?			

	Yes/No/NA	Details enclosed (Yes/No)	Comments
Is emergency rescue equipment available?			
Are personnel trained for confined space works including sentries?			
Provide details of any incident/accident and action take report.			
Provide details, if any action is envisaged to be implemented			
Work at Height			
Are procedures developed for working at heights?			
Are permits developed for working at height?			
Are emergency procedures developed for retrieval of a fallen or injured person?			
Are personnel trained for working at heights?			
Is safe access and egress provided for personnel?			
Are harnesses inspected and inspection records kept on site?			
Are barriers, barricades and signs erected to delineate restricted areas?			
Provide details of any incident/accident and action take report.			
Provide details, if any action is envisaged to be implemented			
Personal Protective Equipment (PPE)			
Are signs displayed to identify the required PPE?			
Is PPE readily available and complying with the relevant standards?			
Are personnel trained in the use of the specific PPE?			
Provide details, if any action is envisaged to be implemented			
Traffic Management			
Has traffic management plan been shared with police and others?			
Are all roadwork signs and devices installed according to the plan?			

	Yes/No/NA	Details enclosed (Yes/No)	Comments
Have safety barriers been installed correctly?			
Have the needs of other road users, pedestrians and pedestrian support vehicles been provided for?			
Provide action taken report in case any violation and findings			
Provide details, if any action is envisaged to be implemented			
Emergency Response /First Aid			
Are site personnel aware of the first aid location and is it clearly identified?			
Is the first aid box adequately stocked?			
Are there adequate first aid personnel clearly identified for contact.			
Are first aid treatment records kept on site?			
Are emergency response personnel trained in site emergency procedures? Last test date of emergency procedure			
Provide action taken report in case any violation and findings			
Provide details, if any action is envisaged to be implemented			
Training and Consultation			
Is there a site induction for new starters to project?			
Are induction records maintained on site?			
Is emergency response and evacuation training conducted?			
Are personnel trained in fire precautions and use of fire extinguishers?			
Is training for identified hazardous work processes conducted? i.e. confined spaces.			
Are visitors inducted as to site hazards and procedures?			
Have managers and supervisors attended a health and safety course?			
Are hazards, incidents, and accidents reported to site personnel at toolbox meetings?			
Do supervisors conduct regular toolbox meetings?			

	Yes/No/NA	Details enclosed (Yes/No)	Comments
Do supervisors carry out risk assessments, and incident reports?			
Are health and safety committees established on site?			
Are health and safety committee meetings held regularly?			
Are health and safety committee meeting minutes discussed at toolbox meetings and displayed in the crib hut?			
Provide action taken report in case any violation and findings			
Provide details, if any action is envisaged to be implemented			
HEALTH			
Is there health related issues of workers, if yes provide details with action taken report?			
Provide status of medical facilities provided/available			
Provide details, if any action is envisaged to be implemented			
AMMENITIES			
Is covered shelter provided for resting on site for workers?			
Cool clean drinking water available at appropriate locations on site?			
Are there toilets for women on site?			
Are adequate sanitation , water supply etc provided in temporary township for workers, if any			
Provide details, if any action is envisaged to be implemented			

Environmental Monitoring Report

Environmental Monitoring Report

Loan Number: ----------
Reporting period: (month/year to month/year)

(Title of Project)

Prepared by: ----------

Implementing Agency: ----------

Executing Agency: ----------

Date: (dd/ mm/ yyyy)

Project Title /Loan number /report reference number /date of report

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(page no.)

Project Title /Loan number /report reference number /date of report

1. Introduction

- overall project description;
- project objectives;
- environmental category;
- environmental performance indicators, if any;
- overall project progress, agreed milestones and implementation schedules;
- any other information useful for assessing environmental performance of the project

(Limited to 3/4 of a page)

2. **Compliance status with National /State /Local statutory environmental requirements**

- Tabular presentation of statutory environmental requirements for the project at national, state and local levels (applicable to the borrower, sub-borrowers, contractors, vendors, etc. as the case may be), and the status of compliance thereof.
- If the project is not in compliance with any of those requirements, the report would provide actions proposed for achieving compliance within an agreed time frame duly approved by the respective regulatory agencies.

(Limited to 1/2 to 1 page)

3. Compliance status with the environmental covenants as stipulated in the Loan Agreement

- Tabular presentation of environmental covenants as stipulated in the Loan Agreement and the status of compliance thereof.
- If the project is not in compliance with any of those requirements, the report would provide actions proposed for achieving compliance within a time frame to be reviewed and approved by the ADB.

(Limited to 3/4 of a page)

4. Compliance status with environmental management and monitoring plans as stipulated in the environmental documentation as agreed with ADB

- Tabular presentation of environmental management and monitoring plans and environmental assessment and review framework/procedures as agreed and the status of implementation thereof.
- The status chart would provide details of actions proposed to be taken by various agencies, including contractors/vendors for implementation, the current status of compliance.
- In case any corrective measures are warranted, the status chart would outline the corrective action plan with an agreed time frame duly agreed by all those agencies concerned for ADB's review and concurrence.
- In case of corrective measures are implemented based on the earlier monitoring, the status chart would elaborate clearly the improvements noticed and further steps required if any.

(Limited to 2 pages)

5. Approach and methodology engaged for environmental monitoring of the project

- Monitoring basis
  - rationale for selection of sampling/ monitoring locations,
  - selection of environmental receptors /attributes for monitoring,
  - linkage with environmental performance indicators agreed upon,
  - phases of project – design, construction, operation
- Standards /monitoring methods to be employed for assessment
- Monitoring Quality Control

(Limited to 1 page)

6. Monitoring of environmental receptors/ attributes (e.g. ambient air, surface water, ground water, land, ecological aspects, noise, hazardous/toxic wastes, etc.)

- Type of environmental receptor/attribute to be monitored (for each type)
  - Method of monitoring
  - Duration and frequency of monitoring
  - Equipment /instrumentation to be used for monitoring
  - Sampling locations/ sites for monitoring (linked with Annexure 1 – location map)
  - Reporting monitoring results (provide tabular presentation)
  - Detailed analyses of monitoring reports and conclusions (use histograms or any other methods)
  - Correlate the monitoring results with statutory requirements at national/state/local levels
  - Corrective actions proposed in case on non-compliance /improvements noticed due to corrective actions taken during the reporting period, and further actions required if any.
  - Recommendations /Suggestions.

(Limited to 2 pages)

7. Any other environmental aspects, impacts observed during implementation which were not covered earlier

(Limited to 1/2 page)

8. Details of the public consultations conducted during the reporting period and issues raised and resolved
(Limited to 1 page)

9. Details of Grievance Redress Committee and complaints received from public and actions taken thereof to resolve

(Limited to 1 page)

10. Follow-up actions and conclusions

(Limited to 1/2 to 1 page)

Signed by:

Monitoring agency:
(name, title, date)

Authorized signatory from Implementing Agency /Executing Agency:
(name, title, date)

Annexure 1

Location Map for Environmentally Sensitive Sites and Monitoring Stations