Environmental Assessment and Review Framework

March 2016

IND: Visakhapatnam-Chennai Industrial Corridor Development Program

Prepared by the Department of Industries, Government of Andhra Pradesh for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 29 February 2016)

Currency unit	–	India rupee/s (INR)
INR1.00	=	$0.0145
$1.00	=	INR68.7525

ABBREVIATIONS

ADB	–	Asian Development Bank
APPCB	–	Andhra Pradesh Pollution Control Board
APRDC	–	Andhra Pradesh Road Development Corporation
AP Transco	–	Andhra Pradesh Transmission Corporation
AE	–	Assistant Engineer
ASI	–	Archeological Survey of India
ASO	–	Assistant Safeguards Officer
CETP	–	Common Effluent Treatment Plant
CFE	–	Consent for Establishment
CFO	–	Consent for Operation
CGWA	–	Central Ground Water Authority
CPCB	–	Central Pollution Control Board
EA	–	executing agency
EARF	–	environmental assessment and review framework
EAC	–	Expert Appraisal Committee
EC	–	Environmental Clearance
EIA	–	environmental impact assessment
SEIAA	–	State Environmental Impact Assessment Authority
EMP	–	environmental management plan;
GOI	–	Government of India
GoAP	–	Government of Andhra Pradesh
GVMC	-	Greater Visakhapatnam Municipal Corporation
IA	–	implementing agency
IEE	–	initial environmental examination
PIU	–	Project Implementation Unit
PMU	–	Project Management Unit
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MOEF	–	Ministry of Environment and Forest
MSWM	–	Municipal Solid Waste Management
NEP	–	National Environment Policy
NHAI	–	National Highways Authority of India
NOC	–	No Objection Certificate
NP	–	National Park
NPV	–	Net Present Value
PAM	–	Project Administration Memorandum
PMSC	–	Project Management Consultant
PO	–	Project Officer
PPTA	–	project preparatory technical assistance
PWD	–	Public Works Department
APIIC	–	Andhra Pradesh Industrial Investment Corporation
REA	–	Rapid Environmental Assessment Checklist
RF	–	Resettlement Framework

RoW	–	Right of Way
SPS	–	Safeguard Policy Statement, 2009
STP	–	Sewage Treatment Plant
UNSECO	–	United Nations Educational, Scientific and Cultural Organization
VCIC	–	Vishakhapatnam Chennai Industrial Corridor
VCICDP	–	Vishakhapatnam Chennai Industrial Corridor Development Program
WLS	–	Wildlife Sanctuary

CONTENTS

Tables

Figures

List of Annexures

I. INTRODUCTION

A. Overview of the Project

1. The Vishakhapatnam-Chennai Industrial Corridor Development Program (VCICDP) is proposed to support the Government of Andhra Pradesh (GoAP) for infrastructure development, and policy and institutional reforms to stimulate economic growth and employment generation.

2. VCICDP will help boost manufacturing sector growth along the Visakhapatnam-Chennai Industrial Corridor (VCIC), which runs over 800 km from north to south covering almost the entire coastline of the state of Andhra Pradesh covering a population of 49.4 million and an area of 160,205 km^2. The VCIC is part of the East Coast Economic Corridor, which is India's first coastal economic corridor, and is poised to play a critical role in driving India's new "Act East Policy" and "Make in India" initiatives. The "Act East Policy" is a proactive initiative focused on, among others, increasing the integration of the Indian economy with the dynamic global production networks of the Association of Southeast Asian Nations.

3. VCICDP will complement the ongoing efforts of the Government of Andhra Pradesh (GoAP) to enhance manufacturing sector growth and create high quality jobs in the state of Andhra Pradesh.

4. **Impact and Outcome.** The impact of VCICDP will be an increased contribution of the manufacturing sector to the state's GDP, trade, and employment. The outcome will be enhanced growth and competitiveness of the VCIC. The Program-based Loan (PBL) will support policy reforms and institutional development in the state's industrial sector (Output 1); and the multitranche financing facility (MFF – two tranches) will support priority infrastructure investments in VCIC (Outputs 2 and 3).

5. **Outputs.** The outputs of VCICIDP are:

(i) **Output 1:** Corridor management strengthened and ease of doing business improved. This will include (i) capacity development of institutions engaged in corridor management; (ii) a strategic road map and support to enhance the ease of doing business; (iii) an e-portal and a single-desk system for issuing business-related licenses, with incentives for women entrepreneurs; (iv) industrial and sector policies to stimulate industrial development, with special incentives for women; and (v) improvement in trade facilitation and logistics. Considering the demand for skilled workers across multiple sectors, the GoAP has committed to use part of the PBL to provide support for high quality content development for training institutions for skills development, and support to Andhra Pradesh State Skills Development Corporation (APSSDC) for training of workers and entrepreneurs every year.

(ii) **Output 2:** VCIC infrastructure strengthened. This will include the development of (i) internal roads, water supply, sewerage, and drainage in selected industrial clusters; (ii) roads for connectivity between industrial nodes, ports, and urban areas, and road safety measures; (iii) the power transmission and distribution system in the industrial corridor; and (iv) urban water supply in Visakhapatnam.

(iii) **Output 3:** Institutional capacities, human resources, and program management strengthened. This will include (i) establishment of project development facility;

(ii) skills enhancement of workers and entrepreneurs, especially women; (iii) support for project management; and (iv) support for investor promotion.

6. Project 1, which is representative of subprojects to be financed under the MFF, will primarily focus on two of the four nodes identified in the VCIC. The industrial area investments reflect the need for high quality internal infrastructure within the industrial clusters. Output 2 will finance common industrial effluent treatment facility in Atchutapuram and Naidupeta clusters, and strengthen services (drainage, internal connectivity, and service center) in Naidupeta cluster. Project 1 includes strengthening and widening Samaralakota-Rajanagarm section (29.6 km) of State Highway-2 to four lanes to improve connectivity between Kakinada Port and National Highway-17, and upgrading seven power substations to support Transmission Corporation of Andhra Pradesh's (APTransco) efforts for supplying power at high quality and reliability. To address the increased pressure on urban services in Visakhapatnam, Project 1 supports investments in urban water supply in the north-west zone of the city for reduction in nonrevenue water and improving service delivery to 24x7 water supply.

B. Purpose of EARF

7. In accordance with ADB's Safeguard Policy Statement (SPS), 2009 VCICDP requires an Environmental Assessment and Review Framework (EARF) to provide guidance on safeguard screening, assessment, institutional arrangements, and processes to be followed for components of the project, where design takes place after ADB Board approval. The subproject selection will be in accordance with the environmental project selection criteria as outlined in this EARF to ensure all subprojects under VCICDP will not deteriorate or interfere with the environmental sensitivity of a subproject area but rather improve environmental quality.

8. This EARF is prepared based on (i) ADB's SPS, 2009, and (ii) national and State of Andhra Pradesh environmental acts, rules, regulations, and standards and (iii) other applicable international rules, regulations and standards. It covers (i) the general anticipated impacts of subprojects likely to be financed under the facility on the environment, involuntary resettlement, and indigenous peoples; (ii) the safeguard criteria that are to be used in selecting projects; (iii) the requirements and procedure that will be followed for screening and categorization, impact assessments, development of management plans, public consultation and information disclosure, and monitoring and reporting; (iv) the institutional arrangements (including budget and capacity requirements) and government's and ADB's responsibilities and authorities for the preparation, review and clearance of safeguard documents is a guiding document during implementation. The executing agency will agree with ADB on screening and categorization, environmental assessment, preparation and implementation, monitoring, and updating existing safeguard plans to facilitate compliance with the requirements specified in ADB SPS, 2009 and government rules and laws.

9. As for the subsequent tranche, the applicability and relevance of this EARF will be reviewed and updated to ensure relevance and consistency with all applicable laws and regulations in India and SPS, 2009. In the event that there is a discrepancy between the laws and regulations of India and ADB SPS, the ADB SPS will prevail. In addition, Government of India will carry out due diligence works on on-going projects to assess the status of compliance with the safeguards-related plans and EARF.

10. All environmental assessment is required to follow the procedures outlined in this EARF. Any component included in VCICDP shall comply with Government of India environmental requirements and ADB SPS, 2009. All environmental documents will be endorsed by

Department of Industries, Government of Andhra Pradesh and sent to ADB for approval and disclosure.

C. Project Components

11. VCICDP Tranche 1 is classified as category B for environmental safeguards. No significant environmental impacts have been identified for the tranche 1 subprojects during project processing and to be anticipated during the project implementation. All proposed subproject sites are located outside sensitive areas and any impacts during construction and operation can be avoided and/or mitigated through proper design and good high-quality construction and operations and maintenance practices. The VCICDP detailed components and subprojects are shown in Table 1.

Table 1: Subprojects and Components Proposed Under VCICDP

Component	Subprojects
Industrial infrastructure Enhancing support infrastructure in industrial estates / SEZ's	(i) Improvement of internal and external roads connectivity network; (ii) Construction of WTP/STP; (ii) Improvement in the industrial water supply and construction of common effluent treatment plan (CETP) construction (iii) Development of hazardous and solid waste management; and (iv) Improvement in the power infrastructure.
Urban Investments: Water Sector Enhancing Urban infrastructure in towns / cities	(i) Rehabilitation of the water supply and distribution systems; (ii) Construction of water treatment plan (WTP) and/or sewage treatment plant (STP)
Investment in connectivity-Roads State road widening / strengthening for enhanced and better connectivity to national highway / ports	(i) Conversion to four lane from double lane; (ii) Conversion to double lane from single lane; (iii) Strengthening of existing road; (iii) Construction of road over bridge (ROB) / road under bridge (RUB) / Culverts / drainage line along the existing road; and (iv) Road maintenance activities including but not limited to activities such as sweeping of shoulders, roadside railing repair, centerline painting, small bridge deck replacement, road lighting improvements, culvert rehabilitation to pavement strengthening and replacement of both the subgrade and pavements for section of roads of varying length.
Investment in Power Sector Construction of substations / power transmission and distribution lines in industrial area / city Transmission and distribution network improvements	(i) Construction and/or upgrading of substations ; and (ii)Installation and/or upgrading of transmission towers, poles and stringing of conductors

12. Four draft initial environmental examination (IEEs) with environmental management plans (EMPs) were prepared during VCICDP processing corresponding to each sector subproject[1] in accordance with SPS, 2009, and government laws. Accordingly, the potential environmental impacts are mainly related to the construction period, which can be minimized by

[1] Draft IEEs were prepared for (i) common effluent treatment plants in selected industrial clusters of Naidupeta and Atchutapuram (ii) roads for connectivity between industrial nodes and ports, urban areas, other nodes, and road safety measures in rajanagaram to samarlakota road section in kakinada; (iii) power transmission and distribution system in the industrial corridor section around Vishakhapatnam; and (iv) urban water supply in Visakhapatnam.

the mitigating measures and environmentally-sound engineering and construction practices. Mitigation and monitoring measures are included in EMPs the of IEEs. Other Tranche 1 subprojects are expected to have similar environmental safeguard issues and preparation of corresponding IEEs will follow the details and methodologies of these sample IEEs.

II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

A. Environmental Legislation (National and State Laws)

13. Implementation of VCICDP will be governed by environmental acts, rules, policies, and regulations of the Government of India. These regulations impose restrictions on the activities to minimize/mitigate likely impacts on the environment. Many of these are cross sector and several of them are directly related to environmental issues. The most important of these is the "Environmental Impact Assessment (EIA) Notification, 2006".

14. In addition to the EIA Notification, 2006, there are a number of other acts, rules and regulations currently in force that could apply to VCICDP. Salient features and applicability of these legislations are provided in Table 2. This presents specific requirements for the project. Annex 2 provides the environmental standards for air, surface water, groundwater, emissions, noise, vehicular exhaust and disposal to land/agricultural use of sludge and bio-solids.

Table 2: Applicable Government of India Environmental Legislations and Specific Requirements

No.	Legislation	Requirements for the Project	Applicability
1	National Environment Policy (NEP), 2006	Project should adhere to the NEP principle of: enhancing and conservation of environmental resources and abatement of pollution	The policy governing the environmental rules and legislations and is applicable to all the subprojects.
2	EIA Notification, 2006	Environmental clearances (EC)	Construction of CETP/STP/WTP The proposed component of the water supply, power distribution network, transmission lines and road construction are not anticipated to require Environmental Clearance.
3	Water (Prevention and Control of Pollution) Act, 1974 amended 1988 and its Rules, 1975	• Consent for establishment (CFE) and consent for operation (CFO) from APPCB • Compliance to conditions and disposal standards stipulated in the CFE and CFO	Applicable to all the subproject specifically for the construction and operation of sewage treatment plant and CETP
4	Air (Prevention and Control of Pollution) Act, 1981, amended 1987 and its Rules, 1982	• CFE and CFO from APPCB as applicable • Compliance to conditions and emissions standards stipulated in the CFE and CFO.	For the subproject, the following will require CFE and CFO: (i) diesel generators; (ii) hot mix plants; and (iii) vehicles emitting air pollutants.

No.	Legislation	Requirements for the Project	Applicability
5	Environmental (Protection) Act, 1986 amended 1991 and the following rules/notifications: • Environment (Protection) Rules, 1986 including amendments • Municipal Solid Wastes (Management and Handling) Rules, 2000 • Noise Pollution (Regulation and Control) Rules, 2000 • Environmental Standards of Central Pollution Control Board (CPCB) • Notification of Eco Sensitive Zones • Wetland (Conservation and Management) Rules, 2010 • Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2009	• CETPs/STPs should be designed and operated to meet disposal standards. Inlet effluent at CETP should also meet the standards - compliance with emission and disposal standards during construction. • Solid waste and sludge generated at proposed facilities shall be disposed in accordance with the MSWM Rules. • Compliance with noise standards • Compliance to environmental standards (discharge of effluents) • Restriction of activities (including construction, tree cutting, etc.) in the notified zones. There are no eco sensitive zones in or near the subproject locations • Applies to protected wetlands (Ramsar sites, wetlands in eco sensitive areas and UNESCO heritage sites & in high altitudes, and wetlands notified by Government of India) - Prohibits/ regulates activities within and near the wetlands. None of the subproject locations has protected wetlands • Rules defines and classifies hazardous waste provides procedures for handling hazardous waste • Requires Pollution Control Board's consent for handling hazardous waste • Procedure for storage of Hazardous wastes and provides procedures for recycling, reprocessing or reuse, important and export of hazardous waste • Rules for development of treatment, storage, disposal facility (TSDF) for	Applicable to all subprojects

No.	Legislation	Requirements for the Project	Applicability
		hazardous wastes such that TSDF shall be developed following guidelines issued by CPCB	
6	Indian Wildlife (protection) Act, 1972 amended 1993 and Rules 1995 Wildlife (Protection) Amendment Act, 2002	• Covers wildlife sanctuaries, national parks, biosphere reserves, etc. • Specifies required permission from Chief Wildlife Warden/ State Wildlife Board/National Board of Wildlife	Applicable to subprojects located within core or buffer zone of protected areas. However, Tranche 1 subprojects are not located in or adjacent to any protected areas. Applicability to Tranche 2 subprojects will be assessed during preparation of periodic financial request.
7	Indian Forest Act, 1927 • Forest (Conservation) Act, 1980 amendment 1988 and the following rules/notifications • Forest (Conservation) Rules, 1981 amended 1992 and 2003 • Guidelines for diversion of forest lands for non-forest purpose	• Declaration of forest areas (reserved, protected and village forests), and regulation of activities within the forests • Restricts use of forest lands for non-forest purposes; • Prior permission for use of forest land for project proposes from Ministry of Environment and Forest (MoEF) • Approval of Ministry of Environment and Forest (MoEF) for any acquisition of forest land • Application for use of forest of land to be made to Forest Department, GoAP • Project proponent to identify non-forest land which is to be transferred to Forest Department for taking up afforestation program. • Net Present Value (NPV) of the forest land to be used, cost of afforestation, tree cutting, etc., as determined by Forest Department, is to be paid to the Forest Department.	Applicable to all subprojects located in forest lands. Subproject located in forests requires prior permission to take up the works.
8	Ancient Monuments and Archaeological Sites and Remains Acts, 1958, its Rules,1959 and notification, 1992	• No excavation/construction work is allowed within 300 m boundary of the protected monument • Requires prior permission of Archaeological Survey	Applicable to subprojects located in proximity of protected monuments/sites

No.	Legislation	Requirements for the Project	Applicability
		of India (ASI) for taking works within 500 m of boundary of the Protected Monuments	
9	Contract Labour (Regulation and Abolition) Act, 1970; • The Inter-State Migrant Workmen (Regulation of Employment and • Conditions of Service) Act, 1979	• Department of Labour, GoAP as principle employer • Contractor shall register with Labour Department, GoAP if inter-state migrant workmen are engaged • Adequate and appropriate amenities and facilities shall be provided to workers including housing, medical aid, traveling expenses from home and back, etc.,	• Applicable to all construction/civil works. • PIUs to obtain Certificate of Registration. • Contractors to obtain license from designated labour officer
10	The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 and the Cess Act of 1996	• Cess should be paid at rate not exceeding 2% of the cost of construction as may be notified • The employer is required to provide safety measures at the building or construction work and other welfare measures, such as canteens, first-aid facilities, ambulance, housing accommodation for workers near the workplace etc. • The employer has to obtain a registration certificate from the Registering Officer	Applicable to any building or other construction work and employ 10 or more workers
11	The Child Labour (Prohibition and Regulation) Act, 1986	• No child below 14 years of age will be employed or permitted to work in all the subprojects.	No child below 14 years of age will be employed or permitted to work in all the subprojects.
12	Minimum Wages Act, 1948	• All construction workers should be paid not less than the prescribed minimum wage	Applicable to all subprojects.
13	Workmen Compensation Act, 1923	• Compensation for workers in case of injury by accident	Applicable to all subprojects.
14	Equal Remuneration Act, 1979	• Equal wages for work of equal nature to male and female workers	Applicable to all subprojects.
15	AP State Environment Policy	• Follows the National Environment Policy, 2006 • Project implementation should adhere to the policy	Applicable to all subprojects.

No.	Legislation	Requirements for the Project	Applicability
		aims	
16	The Motor Vehicles Act, 1988	• Standards for vehicular pollution and prevention control. The authority also checks emission standards of registered vehicles, collects road taxes, and issues licenses. • In August 1997, the Pollution under Control Certificate (PUC) program was launched in an attempt to crackdown on the vehicular emissions in the States. • All the vehicles that will be used in construction of the subprojects will have to comply with the PUC norms set down under this act.	Applicable to all subprojects.
17	Coastal Regulation Zone (CRZ) Notification 6th January 2011 • Central Government have declared the coastal stretches of seas, bays, estuaries, creeks, rivers and back waters which are influenced by tidal action (in the landward side) up to 500m from the High Tide Line (HTL) and the land between the Low Tide Line (LTL) & High Tide Line (HTL) as "Coastal Regulation Zone" (CRZ), as per the provisions of the CRZ Notification 6th January 2011.	The main objectives of the Coastal Regulation Zone Notification, 2011 are: • to ensure livelihood security to the fishing communities and other local communities living in the coastal areas; • to conserve and protect coastal stretches and; • to promote development in a sustainable manner based on scientific principles, taking into account the dangers of natural hazards in the coastal areas and sea level rise due to global warming.	Applicable to all subprojects.
18	Minor Mineral and concession Rules	For opening new quarries. Regulate use of minor minerals like stone, soil, river sand etc.	Applicable to all subprojects.
19	The Mining Act(1952)	The mining act has been notified for safe and sound mining activity. The construction of road subprojects will require aggregates. These will be procured through mining from riverbeds and quarries	Applicable to all subprojects.
20	Notification for use of fly ash from thermal power plants within 100km reaches of the	The MoEF had issued in 2009 a notification that all brick units within 100km radius of thermal	Applicable to all subprojects within 100km reaches of thermal power plants.

No.	Legislation	Requirements for the Project	Applicability
	project.	power plants were required to use fly ash for making bricks as well as using it for construction activities like building or roads.	
21	Public Liability and Insurance Act 1991	Protection from hazardous materials and accident.	Applicable to all subprojects.
22	National Environment Appellate Authority Act (NEAA) 1997	Grievances process and how they will be dealt with.	Applicable to all subprojects.
23	Explosive Act 1984 - For transporting and storing diesel, bitumen etc.	Safe transportation, storage and use of explosive material.	Applicable to all subprojects.
24	The Factories Act, 1948 - The Andhra Pradesh Factory Rules	The Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours and rendering information-regarding accidents or dangerous occurrences to designated authorities.	Applicable to all subprojects.
26	Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.	The Rules provide for mandatory preparation of On-Site Emergency Plans by the industry and Off-Site Plans by the district collector and the constitution of four tier crisis groups at the center, district, and local levels for the management of chemical disaster.	Applicable to all subprojects.
27	Permission for extraction of ground water for use in road construction activities from State Ground Water Board.	Extraction of groundwater.	Applicable to rehabilitation and improvement of water supply. To be obtained prior to initiation of any work involving abstraction of groundwater
28	Permission for use of water for construction purpose from irrigation department	Use of surface water for construction	Applicable to all subprojects. To be obtained prior to initiation of any work involving use of surface water for construction

15. Subprojects in forest lands will be avoided. However, in unavoidable cases like non-availability of suitable non-forest lands, water supply rising mains/trunks mains traversing forest lands and power distribution lines passing through any designated forest area, the forest land conversion will follow the "Guidelines for Diversion of Forest Lands for Non-Forest Purpose" under Forest (Conservation) Act, 1980[2]. The proposal for conversion and compensatory

[2] (i) Forest land involving up to 5 hectares (ha) will cleared by MoEF Regional Office; and (ii) Forest land involving more than 5 ha and up to 40 ha will be cleared by the MoEF Regional Office after referring the case to Central MoEF

afforestation should be submitted by project proponent to Forest Department, Government of Andhra Pradesh which will then forward it to the MoEF for approval. The following guidelines will be adhered to in the process:

(i) An equivalent area of non-forest land will be made available for afforestation
(ii) As far as possible, the non-forest land for compensatory afforestation should be identified contiguous to or in the proximity of a reserved Forest or protected forest. If non-forest lands are not available in the same district other non-forest land may be identified elsewhere in the state.
(iii) Where non-forest lands are not available, compensatory afforestation may be carried out over degraded forest twice in extent to the area being diverted.

16. In Andhra Pradesh State, there are two national parks (NP) and 21 wildlife sanctuaries (WLS). None of these protected areas are located in the vicinity of the subproject locations.

17. Cutting of trees in non-forest land, irrespective of land ownership, also requires permission from local administration. Afforestation to the extent of two trees per each tree felled is mandatory.

B. Government of India Environmental Assessment Procedures

18. The EIA Notification, 2006, sets out the requirement for environmental assessment in India. This states that prior environmental clearance (EC) is mandatory for the development activities listed in its schedule, and must be obtained before any construction work or land preparation (except land acquisition) may commence. Projects are categorized as A or B depending on the scale of the project and the nature of its impacts.

(i) Category A projects require EC from MoEF. The proponent is required to provide preliminary details of the project in the prescribed form, after which an Expert Appraisal Committee (EAC) of the MoEF prepares comprehensive terms of reference (ToR) for the environmental impact assessment (EIA) study within 60 days. On completion of the study and review of the report by the EAC, MoEF considers the recommendation of the EAC and provides the EC if appropriate.

(ii) Category B projects require EC from the State Environment Impact Assessment Authority (SEIAA). The State-level EAC categorizes the project as either B1 (requiring EIA study) or B2 (no EIA study), and prepares ToR for B1 projects within 60 days. On completion of the study and review of the report by the EAC, the SEIAA issues the EC based on the EAC recommendation. The Notification also provides that any project or activity classified as category B will be treated as category A if it is located in whole or in part within 10 km from the boundary of protected areas, notified areas or inter-state or international boundaries.

19. Common Effluent Treatment Plant (CETP) development (new or modification) will attract EIA Notification and classified as Category B. Except CETP at Naidupet SEZ, none of the transport, power, urban / industrial water supply and sewerage infrastructure proposed under VCICDP attracts EIA Notification Schedule, and therefore EC is not required. APIIC has already applied for obtaining EC for the proposed CETP at Naidupeta, TOR has been issued and Public Hearing for the project is underway.

C. International Environmental Agreements

20. India is a party to the following international convention that may apply to this project, especially in selection and screening of subprojects under restricted/sensitive areas.

Table 3: International Agreements and Applicability to VCICDP

No.	Agreement	Requirements for the Project
1	Ramsar Convention on Wetlands of International Importance, 1971. The Convention on Wetlands of International Importance, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. According to the Ramsar list of Wetlands of International Importance, there are 25 designated wetlands in India which are required to be protected.	There is one Ramsar Site[3] in Andhra Pradesh however it is not located within or adjacent to the any of the project sites. If in future any of the activities are undertaken in the proximity of Ramsar wetlands, shall follow the guidelines of the convention (The Ramsar Convention Handbooks for the wise use of wetlands, 4th ed. (2010), (http://www.ramsar.org/cda/en/ramsar-pubshandbooks/main/ramsar/1-30-33_4000_0__)
2	Convention on the Transboundary Movements of Hazardous Wastes and Their Disposal, 1989 To protect human health and the environment against the adverse effects of hazardous wastes. This aims at (i) reduction of hazardous waste generation, promotion of environmentally sound management (ii) restriction of transboundary movements, and (iii) a regulatory system for transboundary movements.	Sludge/rejects generated from tertiary treatment process likely to have heavy metals and may fall in hazardous waste category. The sludge/rejects will be disposed within the country, and therefore will not attract this convention.
3	Convention Concerning the Protection of the World Cultural and Natural Heritage (Paris 1972)	This Convention defines and provides for the conservation of the world`s heritage by listing the natural and cultural sites whose value should be preserved. Not applicable for Project 1 subprojects. Site selection for the succeeding tranche can refer to the existing list, if available, to avoid impacts in areas with cultural and natural heritage value.
4	Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington 1973) – also known as CITES was signed on 20 November 1981.	This Convention provides a framework for addressing the overharvesting and exploitation patterns that threaten species of flora and fauna. Under the Convention, the governments agree to restrict or regulate trade in species that are threatened by unsustainable patterns. Not applicable for Project 1 subprojects. The succeeding tranche will ensure that the same will not cause any harvesting and exploitation of wild flora and fauna during construction and operation.
5	Convention on Biological Diversity (1992)	This provides for a framework for biodiversity and requires signatories to

[3] Kolleru Lake

No.	Agreement	Requirements for the Project
		develop a National Biodiversity Strategy and Action Plan. Not applicable for Project 1 subprojects. The succeeding tranche will refer to the applicable National Biodiversity Strategy and Action Plan in selecting the project sites and that any replacement to cleared vegetation resulting from the project will be consistent with the objectives and priorities of the Action Plan.
6	Convention on the Conservation of Migratory Species of Wild Animals (Bonn 1979)	This sets the framework for agreements between countries important to the migration of 8 threatened species. Not applicable for Project 1 subprojects. Selection of sites for succeeding tranche will avoid areas known to be habitat of migratory species of wild animals.
7	United Nations Framework Convention on Climate Change (UNFCCC), 1993	The UNFCC is an international environmental treaty with the main objective to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system. India signed the UNFCC on 10 June 1992 and ratified it on 1 November 1993. The project will ensure that all construction activities will not significantly increase the GHG emissions and ensure that design of all infrastructure are resilient climate change impacts

D. ADB Safeguards Policy

The SPS has the objectives to (i) avoid adverse impacts of projects on the environment and affected people; (ii) where possible; minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible; and (iii) help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage environmental and social risks. The environment safeguard requires due diligence which entails addressing environmental concerns, if any, of a proposed activity in the initial stages of project preparation.

The SPS categorizes potential projects or activities into categories of impact (A, B or C) to determine the level of environmental assessment required to address the potential impacts. The tranche 1 projects are categorized as environment Category B because potential adverse environmental impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed readily. Accordingly, this EARF has been prepared for ensuring the requisite procedures are followed during implementation.

E. Assessment of Institutional Capacity

21. **Implementation Arrangement.** The implementation arrangements are summarized in Table 4. The Department of Industries (DOI) will be the executing agency. A program

management unit (PMU) will be established within the Directorate of Industries, which is under the DOI, for planning, implementation, monitoring and supervision, and coordination for both the PBL and MFF. Project implementation units (PIUs), established in Andhra Pradesh Industrial Infrastructure Corporation (APIIC); Andhra Pradesh Road Development Corporation (APRDC); Greater Visakhapatnam Municipal Corporation (GVMC); and APTransco, will be responsible for implementing the MFF. The PMU will recruit consulting firms—project management and supervision consultant (PMSC), and other consultants in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). Procurement of civil works and goods will be carried out in accordance with ADB's Procurement Guidelines (2015, as amended from time to time).

Table 4Table 4: Implementation Arrangements for VCICDP

Aspects	Arrangements		
Implementation period	June 2016–December 2024 (MFF); June 2016–December 2022 (Project 1)		
Estimated completion date	31 December 2024 (MFF); 31 December 2022 (Project 1)		
Project management			
(i) Oversight body	A program steering committee will provide policy direction on matters relating to the VCICDP. The committee, chaired by Chief Secretary, will comprise representatives of key collaborative agencies. It will review implementation and provide guidance.		
(ii) Executing agency	Department of Industries		
(iii) Key implementing agencies	APIIC, APRDC, GVMC, and APTransco		
Procurement	International competitive bidding	8 contracts (works)	$432.67 million
	National competitive bidding	5 contracts (works)	$132.31 million
Consulting services	QCBS (80:20)-PMSC	International: 60 person-months; National: 1,182 person-months	$ 14.31 million
	QCBS (80:20)-Project Development Facility	3 packages	$10 million
	CQS-Road Safety Awareness	2 packages; 84 person-months	$2 million
	CQS-Resettlement Monitoring Agency	1 package; 104 person months	$1.1 million
Advance contracting and Retroactive financing	For each tranche, ADB may, subject to its policies and procedures, allow, upon request, advance contracting and retroactive financing of civil works, equipment and materials, and consulting services. Retroactive financing will be up to 20% of the ADB loan amount for eligible expenditures incurred prior to loan effectiveness but not earlier than 12 months prior to the signing of the loan agreement.		
Disbursement	The loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

ADB = Asian Development Bank, APIIC = Andhra Pradesh Industrial Infrastructure Corporation, APRDC = Andhra Pradesh Road Development Corporation, APTransco = Transmission Corporation of Andhra Pradesh, CQS = consultants qualification selection, GVMC = Greater Visakhapatnam Municipal Corporation, MFF = multitranche financing facility, PMSC = project management and construction supervision consultant, QCBS = quality- and cost-based selection, VCICDP = Visakhapatnam–Chennai Industrial Corridor Development Program.

Source: Asian Development Bank.

22. DOI is responsible for overall strategic planning, guidance and management of the VCICDP, and for ensuring compliance with conditions and loan covenants responsible. The PMU will be responsible for planning, implementation, monitoring and supervision, and coordination of all activities under the Program and the MFF.

23. In the current institutional set up, environmental safeguard related functions are housed within the department's organizational set-up, and are handled by the respective project officers (Environment). There is no safeguards division set-up at PMU level, and all the safeguard related activities are directly handled by concerned departments. Project officer's in the departments will be assisted by specialist consultants in all safeguard related activities - preparation of environmental documents, obtaining regulatory clearances, implementation and monitoring of Environmental Management Plans (EMPs), etc.

24. The implementing agencies will be responsible for preparing environmental impact assessment (EIA) or initial environmental examination (IEE) reports, monitoring of safeguards issues, providing support and guidance for performance criteria and development planning.

25. At present, the capacity to handle environmental safeguard related tasks at department level is available in APRDC and APIIC. The capacity to handle these issues in APTransco and Greater Vishakhapatnam Municipal Corporation (GVMC)GVMCis limited and such issues are handled with the help of consultants / firms.

26. During the implementation VCICDP, PIUs will be supported by specialist consultants for management and monitoring of environmental safeguards implementation. During the operation phase, subproject operation will be monitored by APPCB.

27. To comply with ADB SPS 2009, the executing and implementing agencies of the project need to have a sustained capacity to manage and monitor environmental safeguards. Therefore the executing and implementing agencies require capacity building measures for (i) a better understanding of the project-related environmental issues; and (ii) to strengthen their role in implementation of mitigation measures and subsequent monitoring. Thus, trainings and awareness workshops are included in the project with the primary focus of enabling the VCICDP PMU and PIUs staff to conduct impact assessments and carry out environmental monitoring and implement EMPs. After participating in such activities, the participants will be able to make environmental assessments for subsequent subprojects, conduct monitoring of EMPs, understand government and ADB requirements for environmental assessment, management, and monitoring (short- and long-term), and incorporate environmental features into future project designs, specifications, and tender/contract documents and carry out necessary checks and balances during project implementation.

28. **Government Regulatory Body.** The Andhra Pradesh Pollution Control Board (APPCB) is the main state-level regulatory agency that is responsible environment protection and pollution control. APPCB through its 19 Regional Offices (RO) across the state regulates environmental protection related activities. Subproject towns across the Vishakhapatnam Chennai Industrial Corridor are under the jurisdiction of different Regional Officer's and they will monitor the Subprojects operation and compliance with the standards.

29. APPCB monitors the environmental parameters to check whether or not it meets the standards stipulated in its consent order. Surveillance monitoring by APPCB staff, at least once

a year, by visiting the project sites and collecting the sample and testing at APPCB laboratory, and specific monitoring in case of public complaints.

F. Lessons learnt from the previous ADB Projects implemented in India

30. Experiences and lessons learnt from the projects implemented in India – focusing on environmental safeguards, is presented in the table below, with possible remedies which can be included in the subprojects to be considered in the succeeding tranche.

Table 5: Lessons Learnt from past ADB Project implementation

No	Field	Details	Remedial measures
1	Government approvals and clearances - delay	Obtaining approvals and clearances from Government regulatory agencies is time consuming and cumbersome, especially related to forest and environment. For some projects, where forest land acquisition was necessary, the implementation was either delayed or alternative non-forest sites were to be identified as forest department denied approval. In some instances the Forest Department revoked the clearance issued for construction of a water reservoir in forest land, necessitating identification of alternative non-forest site that resulted in change in design and delay in implementation	Cumbersome and time consuming process may be correct to deter project agencies to go for forest lands. Therefore: Avoid locating project facilities in forests or lands with any encumbrances. Create awareness in PIUs officials to avoid forest lands If unavoidable, liaise with local forest office right from site identification.
2	Documentation of IEE studies: non-inclusion of Project Associated Facilities in the IEE study	The subproject included works from WTP to consumer end, while the intake and raw water transmission works were part of a state funded project implemented by the state department to cover several towns. The intake is located in a River, which is a habitat for endangered species and declared as sanctuary. As the intake/source augmentation works are not in the scope, the issues related to intake were not considered in the IEE.	As per the ADB SPS 2009, environmental assessment study should include all associated facilities. Associated facilities may be funded separately (by the borrower/client or by third parties), and whose viability and existence depend exclusively on the project and whose goods or services are essential for successful operation of the project
3	Poor implementation of environmental safeguards during construction.	While there is significant improvement in documentation of environmental studies, the implementation of EMP during construction has been poor. Even with the continuous efforts, implementation is poor. Workers are reluctant to use personal protection equipment siting inconvenience in work, and	Create awareness in workers on work place safety & public safety Create awareness in staff, administrators, supervising staff and general public regarding EMP provisions and contractor's responsibilities

No	Field	Details	Remedial measures
		contractors show least interest in implementation of measures including public safety, road blocks, traffic management and dust control. The main reasons are lack of awareness and ignorance on workers part and lack of instruments to deal with non-compliances (penalties or incentives). Almost always the construction progressed slowly, and the main focus of PIU and PMU has been on timely completion and construction quality, at the cost of poor EMP implementation. Importantly most of the project staff and local administrators are of the belief that these are common temporary inconveniences during construction and have to be tolerated. Another main problem is of subcontracting by the contractor to small firms with no experience in good and safe construction methods	Increase contractor accountability towards EMP implementation Introduce penalties for non-compliance Introduce incentives for good implementation of EMP

ADB = Asian Development Bank; EC = Environmental Clearance; EIA = Environmental Impact Assessment; EMP = Environmental Management Plan; IEE = Initial Environmental Examination; PIU = Project Implementation Unit; PMU = Project Management Unit

III. ANTICIPATED ENVIRONMENTAL IMPACTS

31. As VCICDP is classified as Category B as per ADB SPS, IEEs will be prepared for Projects 1 and 2[4] subprojects during project implementation to assess and review the anticipated environmental impacts during design, pre-construction, construction and operation phases of the project.

32. Based on the four IEEs prepared for Project 1 sample subprojects, VCICDP is (i) not likely to cause any significant adverse environmental impacts; (ii) any impacts during construction and operation can be mitigated through proper design and good construction and operations practices; (iii) environmental impacts during the construction activities are anticipated to be temporary, localized and can be easily avoided or minimized with the implementation of mitigation and monitoring measures which are detailed in the EMP. Other measures such as preparation and implementation of traffic management plans shall be done in coordination and consultation with all the stakeholders of the project.

33. As proposed subprojects for Project 2 are of similar in nature and scope with Project 1, the anticipated impacts during design, construction, and operation are expected to be of same scale, duration and magnitude. General environmental impacts are identified below in Table 6 which are to be re-assessed during implementation:

Table 6: Anticipated Environmental Impacts for Subprojects

[4] Tranches 1 and 2

Impact field	Anticipated impact on the environment	Applicability to Subprojects (transport / energy / industrial / urban)
Design Phase		
Environmental Clearance	Environmental clearances, consents, and permits are required in order to implement the project. Land allotment letter, if required, is of prime interest. If not pursued on timely basis, this can delay the project. Necessary environmental clearances and permits have to be obtained and follow the guidelines issued by the authorities.	All subprojects
Utilities	Telephone lines, electric poles and wires, water pipe (old) existing within right-of-way (ROW) require shifting without disruption to services.	All subprojects
Water Supply	Health risk due to temporary closure of existing water supply.	All subprojects
Asbestos cement pipes	Risk of contact with carcinogenic materials	Urban
Social and Cultural Resources	Ground disturbance can uncover and damage archaeological and historical remains. Access to sites of cultural/religious importance may be affected during civil constructions (especially during pipe laying type of works).	All subprojects
Construction work camps, hot mix plants, storage areas, and disposal areas	Locations may cause encroachment/impact either directly or indirectly on adjacent environments. It may also include the impacts on the people who might lose their homes or livelihoods due to the subproject activities.	All subprojects
Traffic	Traffic flow will be disrupted if routes for delivery of construction materials and temporary blockages during construction activities are not planned and coordinated.	All subprojects
Land and RoW for WTP / STP, transmission towers and transmission lines	Conversion of present land use to proposed land use, if not pursued on timely basis can delay the project.	Energy / Transport / Industrial
Construction Phase		
Sources of materials	Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	All subprojects
Air Quality	Emissions from construction vehicles, equipment, and machinery used for excavation and construction resulting to dust and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons. Sensitive receptors (e.g. hospitals, schools, churches) may be affected temporarily by	All subprojects

Impact field	Anticipated impact on the environment	Applicability to Subprojects (transport / energy / industrial / urban)
	increased traffic and related impacts during the construction phase (from the proposed detour). Fugitive dust can also impact on roadside air quality during construction. Exhaust fumes from construction machinery, and potential smoke from cooking fires. Burning of waste and cleared vegetation Odors from use of toilet facilities other than provided facilities.	
Geology and Soil	Strong water flows into open excavations below the water table will occur, causing micro-tunnel collapse. Layers of mixed fill cover natural ground surface in many places. Contamination from spillage of petroleum products, spent engine oil and oil leaks from construction vehicle maintenance taking place on site.	Transport / Energy
Drainage and Hydrology	The proposed development is situated within an existing built up area where the water supply infrastructures already exist. Due to the nature and locality of the subproject there is unlikely any significant impacts on water resources within the immediate area.	Urban
Surface water quality	Mobilization of settled silt materials, run-off from stockpiled materials, and chemical contamination from fuels and lubricants during construction works can contaminate downstream surface water quality.	Transport / Energy
Noise and Vibration	Sensitive receptors (hospitals, schools, churches) may be affected temporarily by increased traffic and related impacts Use of heavy vehicles and equipment may generate high levels of noise. Vibrations resulting from blasting, bulk earthworks, micro-tunneling, and compaction may create significant disturbances to nearby people and businesses. Disturbance from afterhours work.	Transport
Biodiversity Flora and Fauna	The proposed development is situated within an existing built up area where the water supply infrastructures already exist. No areas of ecological diversity occur within the subproject location. Due to the nature and locality of the subproject there is unlikely to any significant impacts on biodiversity within the area The pipe laying for the transmission mains may however affect existing roadside trees.	Transport / Energy
Ecological resources	Felling of the trees–affect terrestrial ecological balance and affect terrestrial and aquatic	Transport / Energy

Impact field	Anticipated impact on the environment	Applicability to Subprojects (transport / energy / industrial / urban)
	fauna/wildlife.	
Existing infrastructure and facilities	There is likely to have temporary disruption of infrastructure and services during the pipe laying of the transmission mains. There are a number of existing infrastructure and services (roads, railway lines, telecommunication lines, power lines and various pipelines within the vicinity of the subproject.	All subprojects
Aesthetics, landscape character and sense of place	The presence of heavy duty vehicles and equipment, temporary structures at construction camps, stockpiles, may result in impacts on aesthetics and landscape character	Transport / Energy
Accessibility	Due to the location and nature of the subproject, there will be interference with access Existing public transport facilities and operations will be affected by the road closure and detours. Shops and establishments are located along the transmission mains alignment therefore will need to be relocated during construction. This may impact on livelihoods. There will be disruptions to health services, education services, local businesses, transport services, pedestrian movements, due to traffic and construction related noise, visual, and air pollution.	Transport / Urban
Traffic	Increased volume of construction vehicles on the roads may lead to increased wear and tear of roads in the vicinity of the subproject site. Road safety concerns due to slow moving construction vehicles. Traffic flow within the vicinity will be affected. The temporary road closure will result in a decrease in overall network performance in terms of queuing delay, travel times/speeds. The road closure will impact on a public transport operations and routing. On street parking and loading bays will be affected by the proposed road closure. Pedestrian movements will be affected by the road closure.	All subprojects
Socio-economic income	Impede the access of residents and customers to nearby shops. Shops may lose business temporarily.	Transport / Urban
Occupational Health and Safety	Danger of construction related injuries. Open fires in construction camp can result in accidents Safety of workers and general public must be ensured.	All subprojects

Impact field	Anticipated impact on the environment	Applicability to Subprojects (transport / energy / industrial / urban)
	Poor waste management practices and unhygienic conditions at temporary ablution facilities can breed diseases. Standing water due to inadequate storm water drainage systems, inadequate waste management practices, pose a health hazard to providing breeding grounds for disease vectors such as mosquitoes, flies and snails. The use of hazardous chemicals in the micro-tunneling and restoration of roads can pose potential environmental, health and safety risks. Road safety may be affected during construction, especially when traffic is detoured.	
Asbestos cement pipes	Health risk in case of their presence in the RoW and/or during the rehabilitation of the existing water supply distribution network	Urban
Workers conduct	Construction workers on site disrupting adjacent land uses by creating noise, generating litter, and possible loitering.	All subprojects
Employment generation	The subproject will provide employment opportunities for local people during construction. Expectations regarding new employment will be high especially among the unemployed individuals in the area. Labor gathering at the site for work can be a safety and security issue, and must be avoided. The training of unskilled or previously unemployed persons will add to the skills base of the area.	All subprojects
Community health and safety	Community hazards which can arise during construction (e.g., open trenches, air quality, noise, falling objects, etc.). Trenching on concrete roads using pneumatic drills will cause noise and air pollution. Traffic accidents and vehicle collision with pedestrians during material and waste transportation.	All subprojects
Construction waste	Trenching will produce additional amounts of waste soil. And also accumulation of debris waste materials and stockpiling can cause environmental visual pollution.	Transport / Urban
Work camps	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants. This may cause conflict with residents and problem of waste disposal and disruptions to residents.	Transport / Energy
Social and cultural resources	The proposed development will not require demolition of ASI- or state-protected	Transport / Energy

Impact field	Anticipated impact on the environment	Applicability to Subprojects (transport / energy / industrial / urban)
	monuments and buildings however there is risk of archaeological chance finds. Sites of social/cultural importance (schools, hospitals, religious place, tourism sites) may be disturbed by noise, dust, vibration, and impeded access.	
Clean up operations, restoration and rehabilitation	Impacts on social or sensitive receptors when post construction requirements are not undertaken, e.g. proper closure of camp, disposal of solid waste, and restoration of land after subproject construction.	All subprojects
Operation & Maintenance Phase		
General Maintenance	Maintenance activities may cause disturbance to sensitive receptors, dusts, and increase in noise level.	All subprojects
Air Quality	Sensitive receptors (e.g. hospitals, schools, churches) may be affected temporarily by increased traffic and related impacts during transmission mains and distribution network maintenance.	All subprojects
Biodiversity flora and fauna	The proposed development is situated within an existing built up area where the water supply infrastructures already exist. No areas of ecological diversity occur within the subproject location. Due to the nature and locality of the subproject there is unlikely to any significant impacts on biodiversity within the area during maintenance works The use of fertilizers and herbicides in maintenance of newly planted trees, landscape and vegetation may however affect the environment.	Transport / Energy
Land Uses	Due to the location and nature of the subproject, there will be interference with access during maintenance works Existing public transport facilities and operations will be affected by the road closure and detours. There will be disruptions to health services, education services, local businesses, transport services, pedestrian movements, due to traffic and maintenance-related noise, visual, and air pollution.	Transport / Energy
Health and Safety	Danger of operations and maintenance-related injuries. Safety of workers and general public must be ensured. Poor waste management practices and unhygienic conditions at the improved facilities can breed diseases. Standing water due to inadequate storm water drainage systems, inadequate waste	All subprojects

Impact field	Anticipated impact on the environment	Applicability to Subprojects (transport / energy / industrial / urban)
	management practices, pose a health hazard to providing breeding grounds for disease vectors such as mosquitoes, flies and snails. The use of hazardous chemicals in the WTPs can pose potential environmental, health and safety risks.	
Noise and vibrations	Sensitive receptors (hospitals, schools, churches) may be affected temporarily by increased traffic and related impacts Disturbance from afterhours work.	All subprojects
Workers conduct	Maintenance workers on site disrupting adjacent land uses by creating noise, generating litter, and possible loitering.	All subprojects
Solid waste	Solid waste residuals which may be generated by the WTPs and STPs include process residuals, used filtration membranes, spent media and miscellaneous wastes. Process residuals primarily consist of settled suspended solids from source water and chemicals added in the treatment process.	All subprojects
Waste water	Wastewater from the WTPs and STPs include filter backwash and supernatant liquid from the sludge beds/ponds. These waste streams may contain suspended solids and organics from the raw water, dissolved solids, high or low pH, heavy metals, etc.	Urban / Industrial
Sludge generation	Sludge generated from the CETP and WTP may contain heavy metals and other hazardous substance.	Urban / Industrial
Hazardous chemicals	Water treatment involves the use of chemicals for coagulation, disinfection and water conditioning.	Urban / Industrial
Economic developments	Impediments to residents and businesses during routine maintenance.	Urban

IV. ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS AND/OR COMPONENTS

A. Environmental Criteria for Subproject Selection

34. The following criteria will be used for excluding sites which might have significant negative environmental impacts:

(i) ecologically sensitive area such as national parks, wildlife sanctuaries, biosphere reserves, internationally recognized areas, etc.;
(ii) potential for disrupting the life and property of the indigenous or tribal population;
(iii) need for significant amount of land acquisition and resultant compensation; and
(iv) encroachment on historic and cultural features like international or central or state protected monuments and archeological/historical sites.

35. Guidelines for project selection in Table 7 provide further guidance to avoid or minimize adverse impacts during the identification and finalization of subprojects.

Table 7: Environmental Considerations in Subproject Selection

Component	Criteria	Remarks
1. Overall selection guideline (applicable to all components	Comply with all requirements of ADB SPS and relevant national and state requirements	See Section II of this EARF
	Site selection process shall avoid where possible land acquisition and involuntary resettlement where possible including impacts on vulnerable persons and indigenous peoples	See Resettlement Framework and Indigenous Peoples Planning Framework
	Subproject selection will not result in the destruction/disturbance to historical and cultural places/values	Approval from concerned authority if unavoidable
	Site selection shall avoid where possible locations in protected areas, including reserved forests or biodiversity conservation hotspots (wetlands, national reserved, forest reserves, and sanctuaries)	
	The subproject shall avoid where possible, and minimize to extent feasible facilities in locations with social conflict	
	The subproject shall avoid, where possible tree cutting and if any trees have to be removed, two trees will be planted for every tree removed	Approval from Forest Department
	The subproject shall retain mature roadside trees which are important/valuable or historically significant.	
	The subproject shall reflect inputs from public consultation and disclosure for site selection	
2. Urban and Industrial Water Supply	Comply with all requirements of relevant national law.	See Section II of this EARF
	Locate all new facilities/buildings at least 100 m from houses, shops or any other premises used by people, thus establishing a buffer zone to reduce the effects of noise, dust and the visual appearance of the site.	Distance restriction may be reviewed depending on site availability and buffer zone planning
	Locate all new facilities/buildings at sites where there is no risk of flooding or other hazards that	

Component	Criteria	Remarks
	might impair functioning of or present a risk of damage to existing water treatment plants, reservoirs, or its environs.	
	Consult the Department of Archaeology regarding the archaeological potential of proposed sites of buildings, primary mains, and distribution network to ensure that these are located in areas where there is a low risk of chance finds.	
	Avoid all usage of pipes that are manufactured from asbestos concrete	
	Locate pipelines within road right of way (ROW) as far as possible, to reduce the acquisition of new land.	
	Ensure that pipeline routes do not require the acquisition of land from private owners in amounts that are a significant proportion of their total land holding (>10%).	
	Ensure that communities who relinquish land needed for pipelines or other facilities are provided with an improved water supply as part of the scheme.	
	Ensure that improvements in the water supply system are combined with improvements in sewerage and drainage to deal with the increased discharge of domestic wastewater.	
3. Industrial CETP	Comply with all requirements of relevant national and local laws, rules, and guidelines. Environmental Clearance from MoEF	Atchutapuram CETP; Naidupet CETP & for future CETP's planned for Tranche 2
	The existing CEPTs should have valid CFE and CFO from the APPCB	
	The proposal is techno-economically feasible and the cost recovery formula adopted should be ratified by all member units of CETP, competent agencies like IITs or relevant CSIR institutions. Cost of such appraisal should be part of design cost.	
	Evaluate the option of mixing sewage with industrial effluent if	

Component	Criteria	Remarks
	it is advantageous to the process. If yes, ensure appropriate arrangement to receive the sewage at the CETP inlet and a suitable agreement with the municipality including for cost sharing should be in place.	
	Subproject design and operation adheres to the notified inlet and outlet standards. Continuous flow meters are installed at the outlet of CEPT to monitoring effluent quality.	
	Subproject should be limited to provision of tertiary treatment facilities for already operating CETPs with primary, and secondary and necessary hazardous sludge disposal facilities.	Utilize TSDF hazardous disposal facilities approved by APPCB. If necessary, provide improved disposal facilities to comply with Hazardous Waste (HW) Rules, 2009. At present, solid waste/sludge from CETP is being sent to TSDF (yderabad) for disposal as per HW Rules, 2009
	Tertiary treatment facility should be located within the existing CETP compound.	
	Locate facilities where there is no risk of flooding or other hazards that might impair operations and present a risk of damage to the facilities or its environs.	
	Adequate linkage with Treatment, Storage & Disposal Facility (TSDF) for disposal of hazardous wastes generation from the proposed facility. Subproject shall include a sludge management plan based on sludge characteristics (i.e. hazardous, nonhazardous)	Currently, TSDF operator collects the waste from CETP and transport to TSDF with consent from APPCB.
	Hazardous sludge is transported to TSDF safely and securely following HW Rules, 2009. Should follow the CPCB guidelines for Transportation of Hazardous Wastes, 2006 including transport, labeling and safety provisions.	Consent from Andhra Pradesh Pollution Control Board is mandatory for transport of hazardous waste
	No manual handling of sludge allowed.	
	Workers should be provided with personal protection equipment and workers should be trained in	

Component	Criteria	Remarks
	handling, loading, transport and unloading waste.	
	Provide necessary safety belts and nets to avoid accidental falls.	
	Sludge should be handled carefully without spills either during handling or transport. Sludge should be transported in closed containers with appropriate labels	
	Prepare Emergency Response Plan for sludge transportation.	
	Ensure that appropriate training is provided to the operating agency in operation and maintenance of the tertiary treatment plant and sludge disposal; this should be part of design build contract. Arrange for extended contract period to cover a minimum five year operation during which the output should meet. Notify all member industries about the design inlet quality of effluents to be received at CETP. Project should not create nuisance to neighboring areas due to foul odor and influx of insects, rodents, etc.	
	All risks and vulnerabilities related occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation are identified and addressed in the project design & implementation.	
	Ensure that there is no impairment of downstream water quality due to inadequate treatment of industrial effluent. Ensure that there are no overflows and flooding of neighboring areas/ properties with raw effluent. Ensure that the project will not lead to environmental pollution due to inadequate sludge disposal. Ensure that the project should not lead to contamination of surface and groundwater due to disposal on land. All health and safety hazards to workers from toxic gases, hazardous material,	

Component	Criteria	Remarks
	pathogens etc. are identified, and appropriate mitigation measures are included in the project.	
4. Urban and Industrial Sewerage and Sanitation	Will comply with all requirements of relevant national and state law, including the Water (Prevention and Control of Pollution) Act 1974.	See Section II of this EARF
	Will locate STP preferably 250 m from any inhabited areas, in locations where no urban expansion is expected in the next 20 years, so that people are not affected by odor or other nuisance from the plant.	Distance restriction may be reviewed depending on the technology adopted for the treatment of wastewater, site availability and buffer zone planning
	Avoid locating sewage pumping stations and wet well within 50m of any uninhabited areas, and within 100m of sensitive sites such as hospitals, schools, temples, etc. to minimize nuisance impacts from odour, rodents, etc.	
	Will locate STP at sites where there is a suitable means of disposal for the treated wastewater effluent (e.g. into a natural water course or SWF canal)	
	Will locate STP at sites where there is no risk of flooding or other hazards that might impair functioning of the plant and present a risk of damage to the plant or its environs.	Flood statistics data of the project area needs to be reviewed.
	Will consult the relevant records of national and/or local archaeological agencies regarding the archaeological potential of proposed sites of STP, pumping stations and main sewers, to ensure that these are located in areas where there is a low risk of chance finds.	
	Will ensure that sewage is treated at all times to national wastewater discharge standards, and confirm this by regular monitoring of effluent from the STP	
	Will ensure that no wastewater is discharged into a water course in which it could be a hazard to downstream users (e.g. a	

Component	Criteria	Remarks
	waterway that is used for as a source of water for domestic or municipal supply)	
	Will locate sewage pipelines within the ROW of roads to eliminate acquisition of new land.	
	Will include measures to ensure the safe disposal of sewage sludge without causing an environmental hazard, and if possible to promote its safe and beneficial use as an agricultural fertilizer.	Any sludge reuse should be to improve soil properties and sustain soil fertility and avoid any contamination risks.
5. Urban and Industrial Transport and Roads	New roads or widening of existing roads involving land acquisition and/or resettlement shall not be included in the program, except as otherwise accepted by ADB and subject to compliance requirements under ADB's SPS (2009)	
	Comply with all requirements of relevant national and local laws, rules, and guidelines.	
	Projects shall involve improvements within the boundary of existing facilities only. Where new facilities are required, these shall be sited on vacant government land and ROWs where feasible.	
	Develop road improvement schemes (road widening, bridge construction, etc.) only where the need is clearly demonstrated by appropriate traffic and hazard studies.	
	Prioritize the widening of existing roads over construction of new roads and conduct widening within the existing ROW to avoid the need to acquire new land.	
	Include the provision of new or improved drainage to remove the increased runoff caused by increasing the road surface area.	
	Include tree planting alongside roads to provide a natural barrier to noise and visual impacts, and include additional man-made barriers if necessary	
5. Urban and Industrial Power Sector/Transmission-Distribution Network	Subprojects will display performance-based design consistent with international	

Component	Criteria	Remarks
	benchmarks for system efficiency and operational risk.	
	Subprojects should have quantifiable energy efficiency improvements and environmental emissions reductions.	
	Subprojects will be eligible for construction in accordance with the approved feasibility assessment, which includes engineering, financial, economic, environmental and social justifications.	
	Safety measures will be incorporated in the subproject design as required under the relevant policies, statutory requirements and regulations.	
	Design of subprojects will be finalized taking into account the input from public consultation carried out in the social and environmental assessments as appropriate.	
	Environmental screening of the subprojects will be done using the applicable rapid environmental assessment (REA) checklists and an initial environmental examination (IEE) or environmental impact assessment (EIA) including an environmental management plan with budget for implementation will be prepared following the ADB's Safeguard Policy Statement (2009)	
	Aside from the criteria above, the subproject must not be listed in ADB`s prohibited investment activities list given in Appendix 5[5] of SPS 2009.	

B. Environmental Assessment Procedures for Projects

[5] (i) Activities involving harmful or exploitative forms of forced labour or child labour; (ii) Any activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phase-out bans, such as pharmaceuticals, pesticides, ozone-depleting substances, polychlorinated biphenyls and other hazardous chemicals, wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and transboundary trade in waste or waste products; (iii) Activities of gambling, casinos, and equivalent enterprises; (iv) Production of, trade in, or use of un-bonded asbestos fibers; (v) Commercial logging operations or the purchase of logging equipment for use in-primary tropical moist forests or old-growth forests; and (vi) Marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

1. Screening and Categorization

The nature of the environmental assessment required for a project depends on the significance of its environmental impacts, which are related to the type and location of the project, the sensitivity, scale, nature and magnitude of its potential impacts, and the availability of cost-effective mitigation measures. Projects are screened for their expected environmental impact and are assigned to one of the following four categories:

(i) **Category A.** Projects could have significant adverse environmental impacts. An EIA is required to address significant impacts.
(ii) **Category B.** Projects could have some adverse environmental impacts, but of lesser degree or significance than those in category A. An IEE is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment report.
(iii) **Category C.** Projects are unlikely to have adverse environmental impacts. No EIA or IEE is required, although environmental implications are reviewed.
(iv) **Category FI.** Projects involve a credit line through a financial intermediary or an equity investment in a financial intermediary. The financial intermediary must apply an environmental management system, unless all Projects will result in insignificant impacts.

2.

36. As soon as sufficient information on a subproject is available, the PIUs with the help of PMSC environment safeguards specialist will conduct screening to determine the works' environmental category by completing ADB's rapid environmental assessment (REA) checklists[6] in Annexure 3 and submitting this for review to the PMU, which will determine required environmental assessment and environmental consents as per national and state requirements.

37. VCICDP PMU will submit completed REA checklist to ADB for review. To ensure that the project meets ADB's environmental safeguard requirements, as stipulated in the SPS 2009, projects will be screened, and the level of environmental assessment required (EIA/IEE) will be determined. It is anticipated that most eligible projects[7] will fall into either category B or C, as projects will be of small scale and often involve improvement or rehabilitation of the existing system/facilities. While category C projects will not require an environmental assessment, environmental implications will be reviewed.

38. Simultaneously, VCICDP PMU should liaise with State Environmental Impact Assessment Authority (SEIAA) of Andhra Pradesh regarding the Project Category as per the EIA Notification, 2006. State Road projects (new or rehabilitation/improvements), Small urban Infrastructure projects, power sector distribution, industrial infrastructure projects are listed under Category B, however, applying general condition of project location, this subproject may be classified as Category A. For ADB purpose, this can still be classified as Category B due to less significant impacts.

[6] For CETP component, REA Checklist of Sewage Treatment should be used
[7] Any potential Cat A subproject will be screened out by the screening process and will be considered outside the EARF

3. Preparation of Environmental Assessment Report

39. Environmental assessment documents prepared under the project will, to the extent possible, meet both ADB and Government of India requirements in order to streamline the environmental procedures required by both ADB and government.

40. For projects projected to have some adverse environmental impacts, but which are expected to be less significant than those of category A projects, an IEE is required. Appendix 1 of ADB's SPS, 2009 provides the specific outlines and contents to be followed while preparing EIAs/IEEs. Appendix 5 provides the outline of an ADB environmental assessment report. Also, the sample IEEs prepared during project preparation provide a good sample which can be followed for preparation of environmental assessments in subsequent subprojects.

41. As per GOI requirements, Category A projects require EC from the central Ministry of Environment and Forests (MoEF), while Category B project require EC for the state-level EIA Authority (SEIAA). Upon submission of application form with necessary project details (including Feasibility Report / DPR) along with the draft Terms of Reference (ToR) for the EIA Study, the Expert Appraisal Committee (EAC) of the MoEF or SEIAA, as the case may be, finalizes comprehensive ToR for the EIA study. The proponent should conduct EIA study with the help of an Accredited Consultant Agency.[8] MoEF published EIA guidance manuals for several sectors including for CETPs[9], which should be used in preparation of draft TOR and the conduct of EIA study. Content and format of EIA Report as per the EIA Notification, 2006 is provided in Appendix 5. On completion of the study and review of the report by the EAC/SEAC, MoEF/SEIAA considers the recommendation of the EAC/SEAC and provides the EC if appropriate.

42. Pollution prevention for conservation of resources, particularly technology for management of sewage, industrial effluent and sludge, occupational and community health and safety will be addressed in the EIA/IEEs. The EIA/IEE will also reflect meaningful consultation and disclosure process with a provision for grievance redress mechanism.

43. ADB requires that an EMP must be developed as part of the EIA/IEE. The EMP will outline specific mitigation measures, environmental monitoring requirements, and related institutional arrangements, including budget requirements for implementation. Where impacts and risks cannot be avoided or prevented, mitigation measures and actions will be identified so that the subproject is designed, constructed, and operated in compliance with applicable laws and regulations and meets the requirements specified in the EMP. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the subproject's impacts and risks. Key considerations include mitigation of potential adverse impacts to the level of "no significant harm to third parties," the "polluter pays" principle, the precautionary approach, and adaptive management. A template for environmental management process and monitoring plan is provided in Appendix 6 as a guide for preparing a robust EMP.

44. If some residual impacts are likely to remain significant after mitigation, the EMP will also include appropriate compensatory measures (offset) that aim to ensure that the project does not

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[8] As per the Office Memorandum (OM) of MoEF dated December 2, 2009, EIA/EMP reports prepared only by such Consultancy agency accredited for respective EIA sectors by National Accreditation Board for Employment and Training (NABET) / Quality Council of India (QBI) shall be accepted for review and issuance of EC.

[9] http://environmentclearance.nic.in/writereaddata/Form-1A/HomeLinks/TGM_CETP_010910_NK.pdf

cause significant net degradation to the environment. Such measures may relate, for instance, to conservation of habitat and biodiversity, preservation of ambient conditions, and greenhouse gas emissions.

45. The EIA Notification, 2006, also requires that the EIA includes a comprehensive program for monitoring the effectiveness of mitigation measures. An Environmental Management Plan is required, identifying mitigation measures and specifying administrative arrangements to ensure that mitigation measures are implemented and their effectiveness is monitored after approval of the EIA. A budget for the EMP should also be provided.

46. All EIAs/IEEs will be conducted and EMPs prepared prior to the award of construction contracts. The bid documents will include the requirement to incorporate necessary resources to implement the EMP. The EMP will form part of the contract document, and, if required, will need to be further updated during the construction phase of a subproject. According to EIA Notification, 2006, Environmental Clearance (EC), if required, must be obtained before any construction work or land preparation (except land acquisition) may commence.

4. Environmental Audit of Existing Facilities

47. For subprojects involving facilities and/or business activities that already exist or are under construction, the executing and implementing agencies will undertake an environment audit, including on-site assessment, to identify past or present concerns related to impacts on the environment. The objective of the compliance audit is to determine whether actions were in accordance with ADB's safeguard principles and requirements for borrowers/clients, and to identify and plan appropriate measures to address outstanding compliance issues. Where noncompliance is identified, a corrective action plan agreed on by ADB and the implementing agencies will be prepared. The plan will define necessary remedial actions, the budget for such actions, and the time frame for resolution of noncompliance. The audit report (including corrective action plan, if any) will be made available to the public in accordance with the information disclosure requirements of ADB SPS, 2009. For environment category A projects involving facilities and/or business activities that already exist or are under construction, the implementing agency will submit the audit report to ADB to disclose on ADB's website. If a project involves an upgrade or expansion of existing facilities that has potential impacts on the environment, the requirements for environmental assessments and planning specified in ADB SPS, 2009 will apply in addition to compliance audit.

C. Review of Environmental Assessment Reports

48. IEEs will be prepared by PIUs and submitted to PMU which will forward the IEEs for ADB's review. ADB will review draft final reports of: (i) IEEs of any subprojects that have been updated due to changes in design; and (ii) IEEs of any new subproject classified as Category B.

49. For subproject processing, the steps to be followed are shown in Table 8. It is the responsibility of the executing and implementing agencies to ensure subprojects are consistent with the legal framework, whether national or state/local. Compliance is required in all stages of the project including design, construction, and operation and maintenance.

Table 8: Environmental Procedures for Project Processing

Project Stage	ADB Procedure	Government of India
Subproject identification	REA checklist	Categorization according to schedule and general/specific conditions of EIA Notification,
	Categorization (A/B/C): PMU to	

Project Stage	ADB Procedure	Government of India
	review the REA checklists and reconfirm the categorization	2006. Naidupet Industrial Estate has applied for Environment Clearance to Ministry of Environment & Forests (MoEF). Subprojects in the Industrial estate will be taken up for implementation after the EC is obtained. None of the other subprojects to be financed under APICDP are currently listed in the Schedule, and therefore EIA Notification 2006 will not applicable. EA and IAs should liaise with the SEIAA / MoEF regularly to confirm the legal status in case if any new amendments are notified
Detailed design	Preparation of EIA/IEE Updating of sample IEEs based on detailed design	Submit Consent for Establishment (CFE) application along with Project Report to APPCB.
	For projects involving facilities and/or business activities that already exist or are under construction, the borrower/client will undertake an environment and/or social compliance audit, including on-site assessment, to identify past or present concerns related to impacts on the environment, and involuntary resettlement. Where non-compliance is identified, a corrective action plan agreed on by ADB and the borrower/client will be prepared.	Incorporate appropriate compliance conditions, modifications, suggestions into the project design, and finalize the Detailed Project Report
	Public consultation will be carried out in a manner commensurate with the impacts of affected communities. The consultation process and its results are to be documented and reflected in the IEE.	PIUs to conduct meaningful consultations. Proceedings, records and issues raised will be included in the IEE. Measures to address issues will be considered in the design and EMP.
	Disclosure: For category A: Disclosure on ADB's website of a draft full EIA (including the draft EMP) at least 120 days prior to the ADB Board consideration, and/or EARF before project appraisal where applicable; the final EIA; updated EIAs and corrective action plans; and environmental monitoring reports. For category B: Disclosure on ADB's website of the final IEE; updated IEEs and corrective action plans; and environmental monitoring	PIUs to disclose project-related information in forma and language understandable by stakeholders and affected people.

Project Stage	ADB Procedure	Government of India
	reports. In addition, for all categories, environmental information will be in an accessible place and in a form or language understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used.	
	Mitigation measures specified in EIA/IEE study incorporated in project design	PIUs to include in IEE which will be included in bid and contract documents.
	Identify and incorporate environmental mitigation and monitoring measures (including the EMP) into bid/contract documents.	
Appraisal	EMP and other environmental covenants are incorporated into the facility framework agreement, loan/project agreement, and project administration memorandum (PAM)	To be included in the PAM of Project 2
Approval	ADB to review and clear EIA/IEE prior to approval and issuance of tender and other bidding documents during detailed design stage. Complete EIA/IEE disclosed to public	
Contract award	Obtain necessary environmental clearances, consents, and no-objection certificates (NOCs) prior to contract award. Implementation of EMP including monitoring plans based on EIA/IEE findings to be incorporated into civil works contracts.	Ensure that CFE is issued prior to award of contract
Implementation	Submission of semi-annual monitoring report to ADB including corrective action plan where non-compliance is identified.	Monitoring and reporting as per conditions stipulated in the CFE (during construction phase) and CFO (during commissioning and operation phases). CFO Renewal. For CETP/STP, CFOs must be renewed every 1 or 3 years.

ADB = Asian Development Bank; CFE = Consent for Establishment; CFO = Consent for Operation; EARF = Environmental Assessment and Review Framework; EMP = Environmental Management Plan; IEE = Initial Environmental Examination; PMU = Project Management Unit; MoEF = Ministry of Environment & Forest; NOC = No Objection Certificate; PAM = Project Administration Memorandum; SEIAA = State Environmental Impact Assessment Authority; STP = Sewage Treatment Plant; REA = Rapid Environmental Assessment Checklist; APPCB = Andhra Pradesh Pollution Control Board

V. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM

A. Public Consultation and Information Disclosure

50. Meaningful stakeholder consultation and participation is part of the project preparation and implementation strategy. A consultation and participation strategy will be designed and implemented with the assistance of consultants. By addressing stakeholder needs, there is greater awareness of the benefits and "ownership" of the project among stakeholders, which in turn contribute to sustainability. The consultation process during the project preparation has solicited inputs from a wide range of stakeholders, including government officials, NGOs, residents near the subproject locations and towns, marginalized/vulnerable beneficiary groups, and project-affected persons (APs).

51. Consultation, participation, and disclosure will ensure that information is provided and feedback on proposed subproject design is sought early, right from the subproject preparation phase, so that the views/preferences of stakeholders including potential beneficiaries and affected people can be adequately considered, and continue at each stage of the subproject preparation, processing, and implementation.

52. APs will be consulted at various stages in the project cycle to ensure: (i) incorporation of their views/concerns on compensation/resettlement assistance and environmental impacts and mitigation measures; (ii) inclusion of vulnerable groups in project benefits; (iii) identification of help required by APs during rehabilitation, if any; and (iv) avoidance of potential conflicts for smooth project implementation. It will also provide adequate opportunities for consultation and participation to all stakeholders and inclusion of the poor, vulnerable, marginalized, and APs in the project process.

53. Relevant information about any major changes to project scope will be shared with beneficiaries, affected persons, vulnerable groups, and other stakeholders.

54. A variety of approaches can be adopted. At minimum, stakeholders will be consulted regarding the scope of the environmental and social impact studies before work commences, and they will be informed of the likely impacts of the project and proposed mitigation once the draft EIA/IEE and resettlement plan reports are prepared. The report will record; number of participants on each stakeholder's meeting; date; approach method or style; the views of stakeholders and indicate how these have been taken into account in project development (Annexure-5. Consultations will be held with a special focus on vulnerable groups.

55. The key stakeholders to be consulted during project preparation, EMP implementation, and project implementation include:

(i) Project beneficiaries;
(ii) Andhra Pradesh Industrial Association (s)
(iii) Elected representatives, community leaders, religious leaders, and representatives of community-based organizations;
(iv) local NGOs;
(v) Andhra Pradesh Pollution Control Board
(vi) local government and relevant government agency representatives, including local authorities responsible for land acquisition, protection, and conservation of forests and environment, archaeological sites, religious sites, and other relevant government departments;
(vii) residents, shopkeepers, and business people who live and work alongside the roads which would be widened, where pipes will be laid and near sites where facilities will be built;
(viii) Custodians, and users of socially and culturally important buildings;

(ix) VCICDP PMU and consultants; and
(x) ADB, Government of Andhra Pradesh and the Government of India

B. Information Disclosure

56. Information is disclosed through public consultation and making relevant documents available in public locations. The following documents will be submitted to ADB for disclosure on its website:

For category B projects:
(i) final IEE;
(ii) a new or updated IEE and corrective action plan prepared during project implementation, if any; and
(iii) environmental monitoring reports.

For category C projects:
(i) A due diligence report (Annexure-5)
(ii) environmental monitoring reports; and
(iii) for projects involving facilities and/or business activities that already exist or are under construction, environmental audit report.

57. VCICDP PMU will send written endorsement to ADB for disclosing these documents on ADB's website. VCICDP PMU will also provide relevant safeguards information in a timely manner, in an accessible place and in a form and languages understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used.

C. Grievance Redress Mechanism

58. **Common Grievance Redress Mechanism.** Project grievance redress mechanism will be established to evaluate, and facilitate the resolution of APs' concerns, complaints, and grievances related to social and environmental issues of the project. The GRM will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the project.

59. A common GRM will be in place for social, environmental, or any other grievances related to the project. Every grievance shall be registered and careful documentation of process with regard to each grievance undertaken, as explained below. The PIU environmental and social safeguards officers will have the overall responsibility for timely grievance redress on environmental and social safeguards issues, including keeping and maintaining the complaint and redress records. Public awareness campaign will be conducted to ensure that awareness on the project and its grievance redress procedures is generated.

60. Affected persons will have the flexibility of conveying grievances/suggestions by sending grievance redress/suggestion in writing, through telephone call to Divisional Engineer (DE), GVMC/ AT Transco/ APRDC/ APIIC PIU's safeguard manager, or by filling forms for complaints/suggestion by email in the VCICD Project site to be installed under the AP Transco/ APRDC/ APIIC/ GVMC websites. The RF provides the sample grievance registration form. Careful documentation of the name of the complainant, date of receipt of the complaint, address/contact details of the person, location of the problem area, and how the problem was resolved will be undertaken. The PIUs' safeguard officers will have the overall responsibility for

timely grievance redressal on environmental and social safeguards issues and for registration of grievances, related disclosure, and communication with the aggrieved party.

61. **Grievance Redressal Committee.** Grievance Redressal Committee (GRC) will be established at two-levels, one at PIU level and another at PMU level, to receive, evaluate and facilitate the resolution of displaced persons concerns, complaints and grievances. The GRC will provide an opportunity to the APs to have their grievances redressed prior to approaching the jurisdictional sub court. The GRC is aimed to provide a trusted way to voice and resolve concerns linked to the project, and to be an effective way to address affected person's concerns without allowing it to escalate resulting in delays in project implementation.

62. The GRC will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the project. The GRC is not intended to bypass the government's inbuilt redressal process, nor the provisions of the statute, but rather it is intended to address displaced persons concerns and complaints promptly, making it readily accessible to all segments of the displaced persons and is scaled to the risks and impacts of the project.

63. The PIU level GRCs will function out of each District where the subproject is being implemented. The GRC will be Chaired by Joint Collector and comprising of the Divisional Engineer acting as its member secretary and the following members: (i) RDO/Sub Collector of the division; (ii) Project Director, DRDA; (iii) Chief Executive Officer, Zilla Parishad; (iv) District Panchayat Officer; (v) District Education Officer; (vi) District Medical and Health Officer; (vii) District Level representative of DISCOM; and (viii) Superintendent, RWS Panchayat Raj Department.

64. The Project Director, PMU will be the appellate authority who will be supported by the PMSC and Safeguard Officer of PMU, and concerned PIUs to make final decisions on the unresolved issues.

65. **Grievance redress process.** In case of grievances that are immediate and urgent in the perception of the complainant, the contractor and PMSC on-site personnel will provide the most easily accessible or first level of contact for quick resolution of grievances. Contact phone numbers and names of the concerned Divisional Engineer, PIU safeguard officers and contractors will be posted at all construction sites at visible locations. The PIU safeguard officers will be responsible to see through the process of redressal of each grievance.

(i) **1st Level Grievance.** The phone number of the PIU office should be made available at the construction site signboards. The contractors, DE and PIU safeguard officers can immediately resolve on-site in consultation with each other, and will be required to do so within 7 days of receipt of a complaint/grievance.

(ii) **2nd Level Grievance.** All grievances that cannot be redressed within 7 days at field/ward level will be reviewed by the PIU level grievance redress committee (GRC) with support from PIU safeguard officers and PMSC environment and resettlement specialists. PIU level GRC will attempt to resolve them within 15 days.

(iii) **3rd Level Grievance.**The PIU safeguard officers will refer any unresolved or major issues to the PMU/State-level GRC, who in consultation with PIU will resolve them within 15 days.

66. Despite the project GRM, an aggrieved person shall have access to the country's legal system at any stage, and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

67. In the event that the established GRM is not in a position to resolve the issue, the affected person also can use the ADB Accountability Mechanism through directly contacting (in writing) the Complaint Receiving Officer (CRO) at ADB headquarters or the ADB India Resident Mission (INRM). The complaint can be submitted in any of the official languages of ADB's developing member countries. The ADB Accountability Mechanism information will be included in the project-relevant information to be distributed to the affected communities, as part of the project GRM.

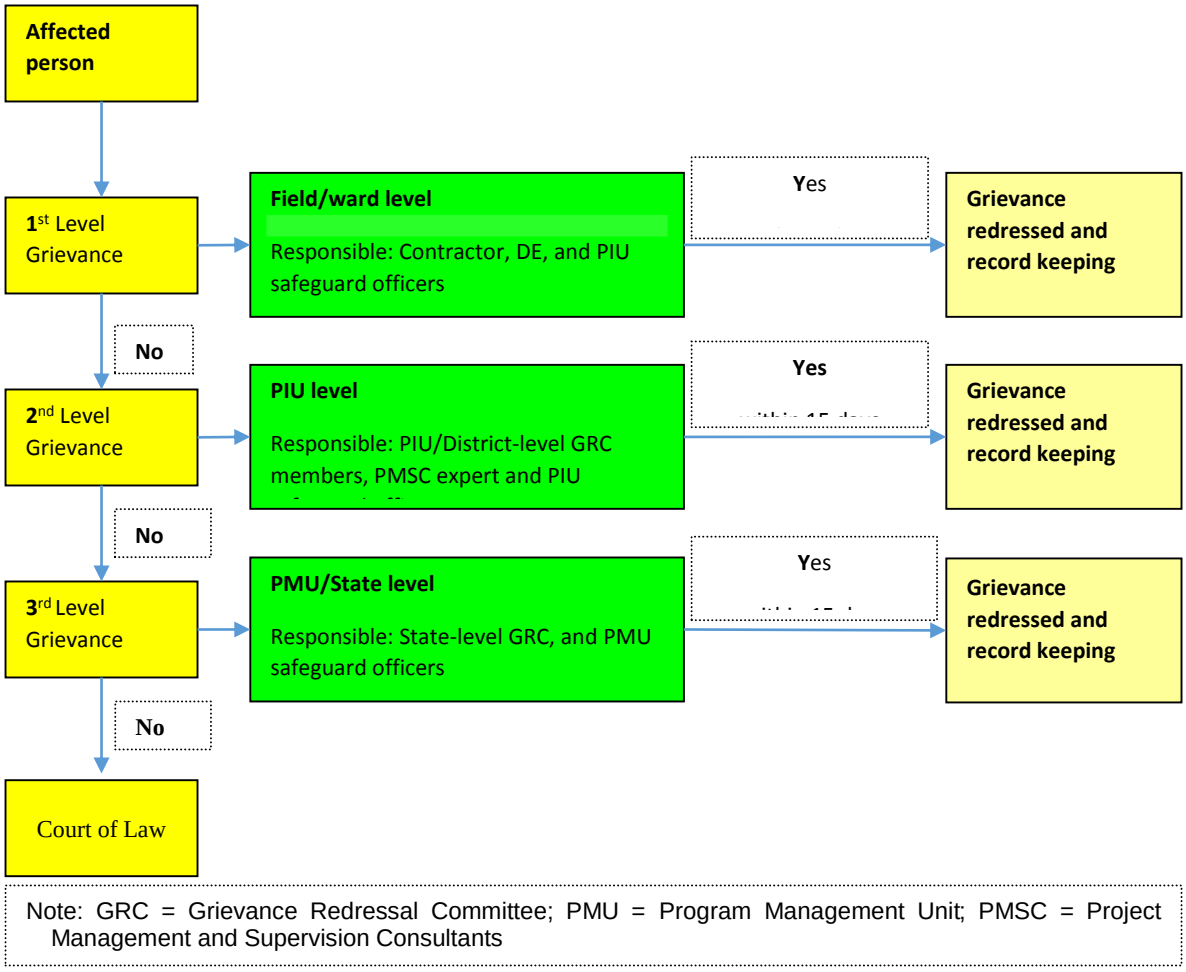
68. **Recordkeeping.** Records of all grievances received, including contact details of complainant, date the complaint was received, nature of grievance, agreed corrective actions and the date these were effected and final outcome will be kept by PMU. The number of grievances recorded and resolved and the outcomes will be displayed/disclosed in the PMU office, and on the web, as well as reported in the semi-annual social and environmental monitoring reports to be submitted to ADB.

69. Periodic review and documentation of lessons learned. The PMU, and PIUs, supported by the PMSC specialist will periodically review the functioning of the GRM and record information on the effectiveness of the mechanism, especially on the PIU's ability to prevent and address grievances.

70. **Costs.** All costs involved in resolving the complaints (meetings, consultations, communication and reporting/information dissemination) will be borne by the respective PIUs; while costs related to escalated grievances will be met by the PMU. Cost estimates for grievance redress are included in resettlement cost estimates. The grievance redress process is shown in Figure 1.

71. The GRCs will continue to function throughout the project duration.

Figure 1: VCICDP Grievance Redress Mechanism



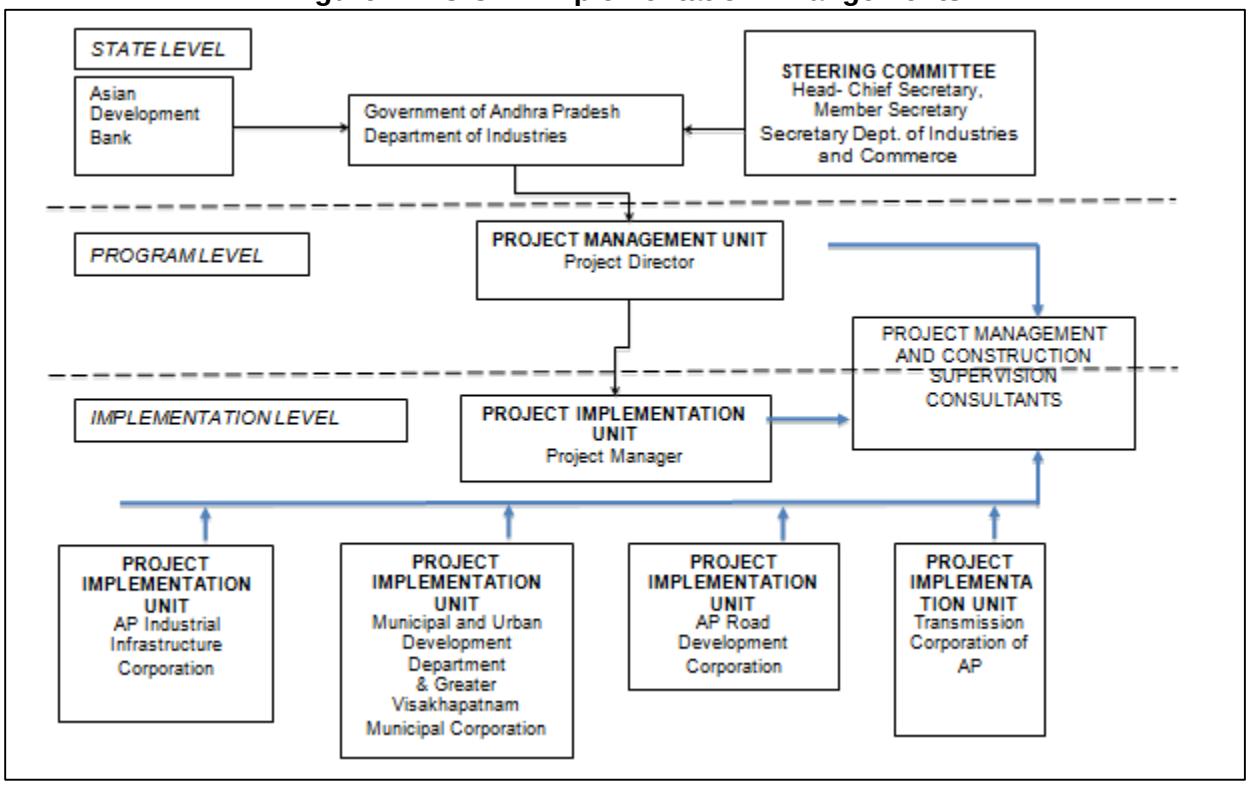
Note: GRC = Grievance Redressal Committee; PMU = Program Management Unit; PMSC = Project Management and Supervision Consultants

VI. INSTITUTIONAL ARRANGEMENTS AND RESPONSIBILITIES

72. DOI will be the executing agency. A PMU will be established within the Directorate of Industries, which is under the DOI, for planning, implementation, monitoring and supervision, and coordination for both the PBL and MFF. PIUs, established in APIIC, APRDC, GVMC, and APTransco, will be responsible for implementing the MFF. PMU will recruit PMSC to provide support in implementation of VCICDP.

73. PMU will support PIUs in implementation, management and monitoring of the project. PMU and PIUs will be assisted by PMSC respectively. PIUs will appoint construction contractors to build infrastructure. Once the infrastructure is built and commissioned, the PIUs will operate and maintain the infrastructure. At state-level a Project Steering Committee (PSC) will be established to provide overall policy direction for the implementation of VCICDP.

Figure 2: VCICDP Implementation Arrangements



A. Safeguard Implementation Arrangement

74. **Project Management Unit.** The PMU structure is as provided in the Table 9 below. PMU will be supported by PSMC. PMU will appoint a safeguards coordinator as a part of the PMSC team to collect information and progress on environmental and social safeguards compliance.

Table 9: Tentative PMU Structure

Position	Tasks
Project Director	Overall Project Management
Project Director (Department of Industries)	Management of land-related issues
Procurement Officer	Procurement of consultants, civil works, goods, and NGOs, etc.
PMSC (Senior Engineer)	Technical officer with engineering background and preferably experience of multilateral projects
Institutional Coordination and Policy Reforms officer	Policy and Institutional support
Investment Promotion Officer	Coordination of VCICDP promotion, marketing
Monitoring and Evaluation Officer	Monitoring project results
PMSC (Environmental Safeguards Officer)	Environmental safeguards compliance
PMSC (Social Safeguards and Gender Officer)	Resettlement compliance, social, gender
Chief Accountant and Financial Management Officer	Project accounting, audit and reporting
Accountant	Accounting
Office Manager	Office management

75. Key tasks and responsibilities of the PMU environmental safeguards officer are as follows:

(i) confirm existing IEEs/EMPs are updated based on detailed designs and that new IEEs/EMPs are prepared in accordance with the EARF and subproject selection criteria related to safeguards;
(ii) confirm whether IEEs/EMPs are included in bidding documents and civil works contracts;
(iii) provide oversight on environmental management aspects of subprojects;
(iv) ensure SEMPs prepared by contractors are cleared by PIUs prior to commencement of civil works;
(v) establish a system to monitor environmental safeguards of the project including monitoring the indicators set out in the monitoring plan of the SEMPs;
(vi) facilitate and confirm overall compliance with all Government rules and regulations regarding site and environmental clearances as well as any other environmental requirements (e.g., Location Clearance Certificates, Environmental Clearance Certificates etc.), as relevant;
(vii) supervise and provide guidance to the PIUs to properly carry out the environmental monitoring and assessments as per the EARF;
(viii) review, monitor and evaluate the effectiveness with which the SEMPs are implemented, and recommend necessary corrective actions to be taken as necessary;
(ix) consolidate monthly environmental monitoring reports from PIUs and submit semi-annual monitoring reports to ADB;
(x) ensure timely disclosure of final IEEs/SEMPs in locations and in a form and language accessible to the public and local communities; and
(xi) address any grievances brought about through the Grievance Redress Mechanism (GRM) in a timely manner.

76. **Project Implementation Units.** In APRDC Head Office, the safeguards specialists of APRDC currently working on a World Bank Project will coordinate all environmental and social aspects of the projects. In APTransco, given the isolated locations of the proposed sub projects, the subprojects are under different Superintending Engineers and will implement the subprojects through respective circle offices and a special projects cell. The respective Senior Engineers will be deputed/designated as safeguard compliance officers covering both environment and social safeguards. In APIIC, the Senior Engineer will be deputed/designated as safeguard compliance officer in addition to the environmental engineer. In GVMC, the Deputy Engineer will be deputed/designated as safeguard compliance officer in addition to the environmental engineer.

Table 10: PIU Environmental Safeguard Officer Tasks and Responsibilities

PIU Environmental Safeguard Officer	**Tasks and Responsibilities**
Environmental Safeguards - APRDC	(i) include IEEs/EMPs in bidding documents and civil works contracts; (ii) review and approve SEMPs prepared by contractors; (iii) oversee day-to-day implementation of SEMPs by contractors including compliance with all government rules and regulations; (iv) take necessary action for obtaining rights of way; (v) oversee environmental monitoring by contractors; (vi) take corrective actions when necessary; (vii) submit monthly environmental monitoring reports to PMU;

PIU Environmental Safeguard Officer	Tasks and Responsibilities
	(viii) conduct continuous public outreach and awareness building related to environmental management; (ix) address grievances brought about through the GRM in a timely manner; and (x) organize an induction course for the training of contractors in environmental management to be delivered by PMSC consultants
Senior Engineer Cum Compliance Officer (DE Level) – APTransco	(i) Ensure complete payment and other resettlement assistants provided to the affected people prior to displacements (physical and economical) and starts of civil works in the affected areas; (ii) Coordinate with Safeguard Manager of PMU and ensure all social/environmental requirements if any are met.
Senior Engineer Cum Compliance Officer – APIIC	(iii) Coordinate with Safeguard Manager and ensure all social/environmental requirements are met.
Environmental Engineer - APICC (not exclusive to this project)	(i) include IEEs/EMPs in bidding documents and civil works contracts; (ii) review and approve SEMPs prepared by contractors; (iii) oversee day-to-day implementation of SEMPs by contractors including compliance with all government rules and regulations; (iv) take necessary action for obtaining rights of way; (v) oversee environmental monitoring by contractors; (vi) take corrective actions when necessary; (vii) submit monthly environmental monitoring reports to PMU; (viii) conduct continuous public outreach and awareness building related to environmental management; (ix) address grievances brought about through the GRM in a timely manner; and (x) organize an induction course for the training of contractors in environmental management to be delivered by PMSC consultants.
Deputy Engineer Cum Compliance Officer - GVMC	(i) Coordinate with Safeguard Manager and ensure all social/environmental requirements are met.
Environmental Engineer - GVMC	(i) include IEEs/EMPs in bidding documents and civil works contracts; (ii) review and approve SEMPs prepared by contractors; (iii) oversee day-to-day implementation of SEMPs by contractors including compliance with all government rules and regulations; (iv) take necessary action for obtaining rights of way; (v) oversee environmental monitoring by contractors; (vi) take corrective actions when necessary; (vii) submit monthly environmental monitoring reports to PMU; (viii) conduct continuous public outreach and awareness building related to environmental management; (ix) address grievances brought about through the GRM in a timely manner; and (x) organize an induction course for the training of contractors in environmental management to be delivered by PMSC consultants

77. **Project Management and Supervision Consultants.** The PMU and PIUs will be assisted by PMSC which will be staffed with environmental and social safeguard specialists to provide required assistance and regular progress report on safeguards implementation. The environmental specialist will have overall responsibility in implementation of environmental safeguards, including appropriate monitoring and reporting responsibilities. Key tasks and

responsibilities of the PSMC environmental specialists (1 for urban and industries, and 1 for roads and power) are as follows:

(i) Update the EARF as required;
(ii) Update the IEEs including site- and subproject-specific EMPs for Project 1;
(iii) Prepare the IEEs and EMPs for Project 2 components;
(iv) Supervise EMP implementation;
(v) Prepare a monitoring report of final site- and subproject-specific EMPs and communicate with the stakeholders, including ADB on the progress, of the subprojects including environmental safeguards compliance;
(vi) Prepare semi-annual environmental safeguards compliance reports; and
(vii) Support the implementing agencies in preparing periodic financing requests and necessary environmental safeguard reports for subsequent tranches.
(viii) Establish a system to monitor environmental safeguards of the Project; prepare indicators for monitoring important parameters of safeguards;
(ix) Ensure all requisite approvals and no objection certificates are in place to allow implementation, and that these are renewed in a timely manner where required;
(x) Ensure that provisions and conditions of all necessary permits, consents, NOCs, etc., are incorporated in the IEEs/RPs;
(xi) Take proactive action to anticipate the potential environmental impacts of the Project to avoid delays in implementation;
(xii) Assist PIUs in the establishment of GRC for IEE implementation;
(xiii) Support the PIUs and PMU in the GRM implementation to address any grievances submitted in a timely manner and establish record keeping system for complaint and redressal status of the project;
(xiv) Assist the PIUs and PMU in the project GRM mechanism and complaint solution;
(xv) Assist the PIUs and PMU for GRM record keeping for first tier complaint and redressed actions;
(xvi) Ensure that the relevant environmental mitigation measures specified in the updated EMP will be incorporated into bidding documents and approved by the ADB prior to the issuance of the invitation for bidding;
(xvii) Closely monitor and supervise to ensure that all mitigation measures and monitoring requirements set out in the EMP are implemented and complied with throughout the project implementation, and when required, prepare or recommend necessary corrective actions to be taken and monitor its implementation;
(xviii) Provide on-the-job training programs to PIU staff involved in Project implementation for strengthening their capacity in managing and monitoring environmental safeguards; and
(xix) Assist the PIUs' safeguards officer to sensitize the turnkey contractors on ADB SPS, EARF, and GRM during detailed design and civil works implementation.and

78. **Civil works contracts and contractors.** EMPs are to be included in bidding and contract documents and verified by the PIUs and PMU. The contractor will be required to designate an Environment, Health and Safety (EHS) supervisor to ensure implementation of EMP during civil works. Contractors are to carry out all environmental mitigation and monitoring measures outlined in their contract.

79. The PMU and PIUs will ensure that bidding and contract documents include specific provisions requiring contractors to comply with: (i) all applicable labor laws and core labor standards on (a) prohibition of child labor as defined in national legislation for construction and

maintenance activities; (b) equal pay for equal work of equal value regardless of gender, ethnicity, or caste; and (c) elimination of forced labor; and with (ii) the requirement to disseminate information on sexually transmitted diseases, including HIV/AIDS, to employees and local communities surrounding the project sites.

Table 11: Institutional Roles & Responsibility: Environmental Safeguards

Phase	PMU / PIUs	PMSC	ADB
Appraisal stage of all Subprojects under the investment program	PMU / PIUs to review the REA checklists and draft EIA/IEE. PMU / PIUs to submit draft EIA/IEE to ADB for review and approval. PMU / PIUs to disclose on its website the approved EIA/IEE. PMU / PIUs to ensure disclosure of information throughout the duration of the subproject.	PMSC to conduct REA for each subproject using checklists and to prepare EIA/IEE	ADB to review the REA checklists and reconfirm the categorization. ADB will review and approve EIA reports (Category A) and IEE reports (Category B) subprojects. ADB to disclose on its website the submitted EIA/IEE report.
Detailed Design Phase of all Subprojects under the investment program	PMU / PIUs with the assistance of PMSC to incorporate the EMP, environmental mitigation and monitoring measures into contract documents. PMU / PIUs to obtain all applicable consents/permits/clearances PMU to submit to ADB final IEE for approval and disclosure at ADB website.	PMSC to revise the IEE and EMP in accordance with detailed design changes if warranted. PMSC to ensure incorporation of EMP in bid documents and contracts. PMSC to prepare inventory of utilities to be affected by the subproject.	ADB will review and approve updated EIA reports (Category A) and IEE reports (Category B) subprojects. ADB to disclose on its website updated EIA/IEE report.
Pre-construction Phase of all Subprojects under the investment program	PMU / PIUs to conduct public consultation and disclosure during IEE process and comments will be reflected in the IEE report. PMU / PIU to monitor the disclosure and public consultation. PIU and PMSC to approve contractor‘s proposed locations for construction work camps, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes. PMU to submit to ADB in prescribed format semi-annual Environment Monitoring Report 6 months after Loan effective date.	PMSC to ensure statutory clearances and permits from government agencies/other entities are obtained prior to start of civil works. PMSC to ensure disclosure of information prior to start of civil works and throughout the duration of the construction period. PMSC to approve contractor‘s site-specific environmental plan (such as traffic management plan, waste management plan, locations for camp sites, storage areas, lay down areas, and other sites/plans specified in the EMP). PMSC to conduct	

Phase	PMU / PIUs	PMSC	ADB
		baseline environmental conditions and inventory of affected trees	
Construction Phase of all Subprojects under the investment program	PMU / PIUs will review 6-monthly monitoring and EMP implementation report including the status of Project compliance with statutory clearances and with relevant loan covenants and submit the 6-monthly report to ADB and seek permission to disclose the same in the investment program web site.	PMSC to monitor the implementation of mitigation measures by Contractor. PMSC to prepare monthly progress reports including a section on implementation of the mitigation measures (application of EMP and monitoring plan) PMSC (as per EMP) will conduct environmental quality monitoring during construction stage (ambient air and noise, and water quality). PMSC to prepare the six-monthly monitoring report on environment by focusing on the progress in implementation of the EMP and issues encountered and measures adopted, follow-up actions required, if any.	ADB to review the 6 monthly report, provide necessary advice if needed to the PMU and approve the same. ADB to disclose on its website environmental monitoring reports.
Pre-operation Phase (Commissioning and Defect Liability Period)	PMU / PIUs to review monitoring report of PMSC on post-construction activities by the contractors as specified in the EMP PMU / PIU to review applicable consents requirements	PMSC to apply for the CTOs prior to commissioning. PMSC to monitor and approve post-construction activities by the contractors as specified in the EMP.	
Operation Phase of all Subprojects under the investment program	PIUs to conduct monitoring, as specified in the environmental monitoring plan. APPCB to monitor the compliance of the standards regarding drinking water quality, ground water, ambient air, effluent quality from treatment plant, noise, as applicable.		

Notes: APPCB = Andhra Pradesh State Pollution Control Board, PMSC = Project Management Consultants, CTE = Consent to Establish, CTO = Consent to Operate, PMSC = Design and Supervision Consultant, EIA = Environmental Impact Assessment, EMP = Environmental Management Plan, IEE = Initial Environmental Examination, PMU = Project Management Unit; PIU = Project Implementation Unit; REA = Rapid Environmental Assessment

VII. INSTITUTIONAL CAPACITY AND DEVELOPMENT

80. The PMSC environmental safeguards specialist will be responsible for training PMU and PIUs on environmental awareness and management in accordance with both ADB and government requirements. Typical modules would be as follows: (i) sensitization; (ii) introduction to environment and environmental considerations in water supply and wastewater projects; (iii) review of IEEs and integration into the project detailed design; (iv).improved coordination within nodal departments; and (v) monitoring and reporting system. Specific modules customized for the available skill set will be devised after assessing the capabilities of the target participants and the requirements of the project. The contractors will be required to conduct environmental awareness and orientation of workers prior to deployment to work sites. The proposed training project, along with the frequency of sessions, is presented in Table 11.

Table 12: Training Program for Environmental Management

Description	Contents	Schedule	Participants
Pre-construction stage			
Orientation workshop	Module 1 – Orientation - ADB Safeguard Policy Statement - Government of India Environmental Laws and Regulations	1/2 day (at Hyderabad) (50 persons)	PMU, and PIUs – APRDC, APIIC, AP Transco, GVMC officials involved in project implementation
Description	**Contents**	**Schedule**	**Participants**
	Module 2 – Environmental Assessment Process - ADB environmental process, identification of impacts and mitigation measures, formulation of an environmental management plan (EMP), implementation, and monitoring requirements - Review of environmental assessment report to comply with ADB requirements - Incorporation of EMP into the project design and contracts	1/2 day (at Hyderabad) (50 persons)	PMU, and PIUs – APRDC, APIIC, AP Transco, GVMC officials involved in project implementation.
Construction stage			
Orientation program/ workshop for contractors and supervisory staff	- Roles and responsibilities of officials/contractors/consultants towards protection of environment - Environmental issues during construction - Implementation of EMP - Monitoring of EMP implementation - Reporting requirements	1 day (at Subproject locations) (15 persons)	PMU PIUs Contractors

Description	Contents	Schedule	Participants
Experiences and best practices sharing	- Experiences on EMP implementation – issues and challenges - Best practices followed	1 day on a regular period to be determined by PMU, PIUs, and PMSC (at Hyderabad / Visakhapatnam) (50 persons)	PMU PIUs Contractors

ADB = Asian Development Bank; EMP = Environmental Management Plan; PIU = Project Implementation Unit; PMU = Project Management Unit; PMSC = Design and Supervision Consultant; APRDC=Andhra Pradesh Road Development Corporation; APIIC= Andhra Pradesh Industrial & Infrastructure Corporation; AP Transco=Andhra Pradesh Transmission Corporation; GVMC=Greater Vishakhapatnam Municipal Corporation

B. Staffing and Budget

81. Costs required for implementing the EARF will cover the following activities:

(i) Conducting environmental assessments of new subprojects, preparing and submitting reports, and public consultation and disclosure;
(ii) Application for government regulatory consents, approvals; and
(iii) Implementation of EMP and long-term surveys.

82. For budgeting purposes, it is assumed that all new subprojects will be classified by ADB as category B[10] (requiring IEE). Some subprojects may require a simpler environmental review, but this is discounted for budgeting purposes.

83. Each of the IEEs prepared to date involved approximately 25days of effort by an experienced environmental specialist, conducting the following activities: (i) site visit to assess environmental conditions and potential impacts of the scheme; (ii) liaison with Government agencies and others to obtain any environmental/social data that might be available locally (e.g. population figures, designated sites, etc.); (iii) consultation with the local community to inform them about the scheme and identify their views and concerns; (iv) assessment of impacts and development of mitigation; and (v) desk study and report preparation.

84. The infrastructure involved in each scheme is generally straightforward, and will take between 1 and 2 years to build. Environmental monitoring during construction will also be straightforward, and will involve periodic site observations and interviews with workers and others, plus checks of reports and other documents. This will be conducted by PMSC environment safeguard specialist assisted by the PMU Safeguards Coordinator. The PMSC environment safeguard specialist will prepare IEEs, or environmental reviews for new subprojects. The budget therefore includes the full cost of the environment specialist.

85. The cost of mitigation measures and surveys during construction will be incorporated into the contractor's costs, which will be binding on him for implementation. The surveys will be conducted by the contractors.

86. The operation phase mitigation measures are again of good operating practices, which will be the responsibility of the PIUs. The existing technical staff should be trained in new requirements and operation and maintenance. All monitoring during the operation and

[10] This does not imply that all subprojects will ONLY be Cat B under the MFF.

maintenance phase will be conducted by government regulatory agencies like APPCB as per their mandate therefore, there are no additional costs. The indicative costs of EARF implementation[11] for each PIUs are shown in Table 12.

Table 13: Indicative Cost of EARF Implementation

Component	Description	Number	Cost Per Unit (US$)	Cost (US$)	Source of Funds
A. Consultants Costs					
PMSC environmental safeguards specialist	Responsible for environmental safeguards of the project	48 person months (spread over entire project implementation period)	$2,500	$120,000	Remuneration and budget for travel covered in the PMSC contract
B. Administrative Costs					
Legislation, permits and agreements, Utilities shifting, etc.	Costs for forest permission, tree plantation, etc.	Lump sum	$50,000	$50,000	Included in the overall project cost The approvals/ permits that are to be obtained by contractor at his own expense are not included here
C. Environmental Monitoring Costs					
Baseline monitoring prior to construction	During detailed design stage to establish existing environmental conditions	Lump sum	$25,000	$25,000	Included in the PMSC contract
	Before start of construction works	One sample each for noise, ambient air quality, receiving/adjacent body of water	$3,000 per subproject	$30,000	Contractor's cost
Monitoring during construction	Sampling sites near sensitive areas (schools, hospitals, places of	Noise, ambient air quality, and water quality -	Contractor's liability	Not applicable	Contractor's cost

[11] This is an indicative cost for each PIUs (APRDC, APTRANSCO, APIIC & GVMC). Total cost for EARF implementation for the VCICDP will be the addition of all the PIUs costs.

Component	Description	Number	Cost Per Unit (US$)	Cost (US$)	Source of Funds
	worship, historical/cultural areas)	monitoring points and frequency will be finalized before construction			
D. Other Costs					
Public consultations and information disclosure	Information disclosure and consultations during preconstruction and construction phase, including public awareness campaign through media	As per requirement	Lump sum	$600,000	Covered under PMSC
Capacity building (PMSC & PMSC)	(i) Orientation workshop for officials involved in the project implementation on ADB Safeguard Policy Statement, Government of India environmental laws and regulations, and environmental assessment process; (ii) induction course for contractors, preparing them on EMP implementation and environmental monitoring requirements related to mitigation measures, and on taking immediate action to remedy unexpected adverse impacts or ineffective mitigation	Module 1 – immediately upon engagement of the PMSC environmental safeguard specialist Module 2 – prior to award of civil works contracts (twice a year for 4 years) Module 3 – prior to start of Phase 2 and upon completion of the project	Module 1 - $1,500 Module 2 - $900 Module 3 - $3,000	$5,400	Covered under PMSC

Component	Description	Number	Cost Per Unit (US$)	Cost (US$)	Source of Funds
	measures found during the course of implementation; and (iii) lessons learned information sharing				
GRC implementation	Costs involved in resolving complaints (meetings, consultations, communication, and reporting/information dissemination)	Lump sum	Part of administration cost of PMUs	$3,000 per year	PMU cost
Any unanticipated impact due to project implementation	Mitigation of any unanticipated impact arising during construction phase and defect liability period	Lump sum	Contractor's liability	As per insurance requirement	Contractor's insurance

PMU = Project Management Unit; PIU = Project Implementation Unit; PMSC = Design and Supervision Consultant

VIII. MONITORING AND REPORTING

87. DOI will monitor and measure the progress of EMP implementation. The monitoring activities will correspond with the project's risks and impacts. In addition to recording information on the work and deviation of work components from original scope, PMU, PIUs, and PMSC will undertake site inspections and document review to verify compliance with the EMP and progress toward the final outcome.

88. PIUs / PMSC will submit monthly monitoring and implementation reports to PMU, who will take follow-up actions, if necessary. DOI will submit semi-annual monitoring reports to ADB. The suggested monitoring report format is in Annexure 5. A construction site checklist is attached at Annexure 6, which is to be filled by the PMSC/PIUs supervising staff, and attached to monthly reports. Subproject budgets will reflect the costs of monitoring and reporting requirements. For projects likely to have significant adverse environmental impacts during operation, reporting will continue at the minimum on an annual basis. Monitoring reports will be posted in a location accessible to the public.

89. Compliance with loan covenants will be screened by the Department Of Industries, Government of Andhra Pradesh.

90. ADB will review project performance against the DOI, GoAP, commitments as agreed in the legal documents. The extent of ADB's monitoring and supervision activities will be commensurate with the project's risks and impacts. Monitoring and supervising of social and

environmental safeguards will be integrated into the project performance management system. 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 or social impacts;
(ii) conduct supervision missions with detailed review by ADB's safeguard specialists/officers or consultants for projects with significant adverse social or environmental impacts;
(iii) review the periodic monitoring reports submitted by EAs to ensure that adverse impacts and risks are mitigated, as planned and agreed with ADB;
(iv) work with EAs 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; and
(v) prepare a project completion report that assesses whether the objective and desired outcomes of the safeguard plans have been achieved, taking into account the baseline conditions and the results of monitoring.

Annexure 1: INDICATIVE LIST OF PROPOSED SUBPROJECTS

Sl.No	Name of the Package	TRANCHE 1 (PROJECT 1)		TRANCHE 2 (PROJECT 2)	
		Contract Value, INR millions	Contract Value, USD millions	Contract Value, INR millions	Contract Value, USD millions
1	Construction of Common Effluent Treatment plant at Atchutapuram and Naidupet Industrial cluster	1800	27	-	-
2	Augmenting utility services for Atchutapuram Industrial cluster, Visakhapatnam [Summer storage, bulk water supply and Utility duct]	2085	32	-	-
3	Augmenting utility services for Naidupet Industrial cluster. [SWD, power, internal road and one stop centre]	-	-	3715	56
4	Supply and laying of water supply pipeline and laying of connectivity road to Naidupet Industrial cluster	-	-	2180	33
5	Supply and Laying of water supply pipeline along Raiwada canal	2921	44		
6	Rehabilitation of water supply and distribution network at Vishakhapatnam municipal area & Ankapalle Water	-	-	3795	58
7	Laying of 4 lane road from Samalkota to Rajanagaram	2723	41	-	-
8	Laying of 4 lane road from Kakinada to Samalkota	-	-	1750	27
9	Laying of 4 lane road between (I) Atchutapuram - Anakapalle and (ii) Krishnapatnam port to Nellore via Muthukur	-	-	5464	83
10	Implementation of ICT-based Intelligent Traffic Management Systems, Moving-weighing-bridges, check posts, blind spots improvements or other components (to be identified later)	-	-	630	10
11	Augmenting power distribution capacity for meeting Industry demand at Kapuleppada, Oszone Valley, Achutapuram and Mangalgiri /AIIMS locations (Laying of power cable and associated civil works)	4180	63	-	-
12	Augmenting power distribution capacity for meeting Industry demand at Nakapalle/ Chandanada, Pydibhimavaram, Naidupeta and Kakinada SEZ locations [substation, cable, transmission lines and associated civil works)	-	-	4918	75
13	Augmenting power distribution capacity for	2929	44	-	-

Sl.No	Name of the Package	TRANCHE 1 (PROJECT 1)		TRANCHE 2 (PROJECT 2)	
		Contract Value, INR millions	**Contract Value, USD millions**	**Contract Value, INR millions**	**Contract Value, USD millions**
	meeting Industry demand at Rachagunneri and Yerpedu locations [substation, cable, transmission lines and associated civil works)				
	Grand total, MFF, in USD millions	**16,638**	**252**	**22,453**	**340**

Annexure 2: ENVIRONMENTAL STANDARDS

General Standards for Discharge of Environmental Pollutants (Wastewater)

S. No.	Parameter	Inland surface water	Public sewers	Land for irrigation
	2		3	
	.	(a)	(b)	(c)
1	Suspended solids mg/l, max.	100	600	200
2	Particle size of suspended solids	shall pass 850 micron IS Sieve	-	-
3	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
4	Temperature	shall not exceed 5oC above the receiving water temperature		
5	Oil and grease, mg/l max,	10	20	10
6	Total residual chlorine, mg/l max	1.0	-	-
7	Ammonical nitrogen N),mg/l, max.	50	50	-
8	Total kjeldahl nitrogen (as N);mg/l, max. mg/l, max.	100	-	-
9	Free ammonia (as NH3), mg/l,max.	5.0	-	-
10	Biochemical oxygen demand (3 days at 27oC), mg/l, max.	30	350	100
11	Chemical oxygen demand, mg/l, max.	250	-	-
12	Arsenic(as As).	0.2	0.2	0.2
13	Mercury (As Hg), mg/l, max.	0.01	0.01	-
14	Lead (as Pb) mg/l, max	0.1	1.0	-
15	Cadmium (as Cd) mg/l, max	2.0	1.0	-
16	Hexavalent chromium (as Cr + 6),mg/l, max.	0.1	2.0	-
17	Total chromium (as Cr) mg/l, max.	2.0	2.0	-
18	Copper (as Cu)mg/l, max.	3.0	3.0	-
19	Zinc (as Zn) mg/l, max.	5.0	15	-
20	Selenium (as Se)	0.05	0.05	-
21	Nickel (as Ni) mg/l, max.	3.0	3.0	-
22	Cyanide (as CN) mg/l, max.	0.2	2.0	0.2
23	Fluoride (as F) mg/l, max.	2.0	15	-
24	Dissolved phos- phates (as P),mg/l, max.	5.0	-	-
25	Sulphide (as S) mg/l, max.	2.0	-	-

S. No.	Parameter	Inland surface water	Public sewers	Land for irrigation
26	Phenolic compounds (as C6H50H)mg/l, max.	1.0	5.0	-
27	Radioactive materials: (a) Alpha emitters micro curie mg/l, max. (b)Beta emittersmicro curie mg/l	10-7 10-6	10-7 10-6	10-8 10-7
28	Bio-assay test	90% suivival of fish after 96 hours in 100% effluent	90% suivival of fish after 96 hours in 100% effluen	90% suivival of fish after 96 hours in 100% effluen
29	Manganese	2 mg/l	2 mg/l	-
30	Iron (as Fe)	3mg/l	3mg/l	-
31	Vanadium (as V)	0.2mg/l	0.2mg/l	-
32	Nitrate Nitrogen	10 mg/l	-	-

Environmental Standards for Common Effluent Treatment Plants (CETP)

(as per the Environment (Protection) Rules, 1986 and as amended till date)

A. Inlet Effluent Quality for CETP

Parameter	Concentration in mg/l
pH	5.5 – 9.0
Temperature °C	45
Oil & Grease	20
Phenolic Compounds (as C_6H_5OH)	5.0
Ammonical Nitrogen (as N)	50
Cynide (as CN)	2.0
Chromium hexavalent (as Cr+6)	2.0
Chromium (total)(as Cr)	2.0
Copper (as Cu)	3.0
Lead (as Pb)	1.0
Nickel (as Ni)	3.0
Zinc (as Zn)	15
Arsenic (as As)	0.2
Mercury (as Hg)	0.01
Cadmium (as Cd)	1.0
Selenium (as Se)	0.05
Fluoride (as F)	15
Boron (as B)	2.0
Radioactive Materials	
Alpha emitters, Hc/ml	10-7
Beta emitters, He/ml	10-8

Note: 1. These Standards apply to the small scale industries, i.e. total discharge upto 25 KL/Day. 2. For each CETP and its constituent units, the State Board will prescribe standards as per the local needs and conditions; these can be more stringent than those prescribed above. However, in case of clusters of units, the State Board with the concurrence of CPCB in writing, may prescribe suitable limits.

B. Treated Effluent Quality of CETP

Parameter	Into inland surface waters	On land for Irrigation	Into Marine Coastal areas
	(a)	(b)	(c)
pH	5.5 - 9.0	5.5 – 9.0	5.5 – 9.0
BOD1[3days at 27°C]	30	100	100
Oil & Grease	10	10	20
Temperature	Shall not exceed 40°C in any section of the stream within 15 metres downstream from the effluent outlet	-	45°C at the point of discharge.
Suspended Solids	100	200	a) For process waste water – 100 b) For cooling water effluents 10 percent above total suspended
			matter of effluent cooling water
Dissolved Solids (inorganic)	2100	2100	-
Total residual chlorine	1.0	-	1.0
Ammonical nitrogen(as N)	50	-	50
Kjeldahl nitrogen (as N)	100	-	100
Chemical Oxygen Demand	250	-	250
Arsenic (as As)	0.2	0.2	0.2
Mercury (as Hg)	0.01	-	0.01
Lead (as Pb)	0.1	-	1.0
Cadmium (as Cd)	1.0	-	2.0
Total Chromium (asCr)	2.0	-	2.0
Copper (as Cu)	3.0	-	3.0
Zinc (as Zn)	5.0	-	15
Selenium (as Se)	0.05	-	0.05
Nickel (as Ni)	3.0	-	5.0
Boron (as B)	2.0	2.0	-
Percent Sodium	-	60	-
Cynide (as CN)	0.2	0.2	0.2
Chloride (as Cl)	1000	600	-
Fluoride (as F)	2.0	-	15

Parameter	Into inland surface waters	On land for Irrigation	Into Marine Coastal areas
Sulphate (as SO_4)	1000	1000	-
Sulphide (as S)	2.8	-	5.0
Pesticides	Absent	Absent	Absent
Phenolic compounds (as C_6H_5OH)	1.0	-	5.0

Concentration in mg/l except pH & Temperature

Note: All efforts should be made to remove colour and unpleasant odour as far as possible.

1 Substituted by Rule 2 of the Environment (Protection) Amendment Rules, 1996 notified by G.S.R.176(E), dated 2.4.1996 may be read as BOD (3 days at 27oC) wherever BOD 5 days 20oC occurred.

National Ambient Air Quality Standards

Pollutant	Concentration in ambient Air			
	Average	Industrial, Residential and other rural area	Ecologically Sensitive Area (Notified by Central Government)	Methods of Measurement
SO_2 ug/m^3	Annual* 24 hours**	50 80	20 80	- Improved West and Geake - Ultraviolet Fluorescence
NO_x ug/m^3	Annual* 24 hours**	40 80	30 80	- Modified Jacob and Hochheiser - Chemiluminescence
PM10 ug/m3	Annual* 24 hours**	60 100	60 100	- Gravimetric - TEOM - Beta Attenuation
$PM_{2.5}$ ug/m^3	Annual* 24 hours**	40 60	40 60	- Gravimetric - TEOM - Beta Attenuation
Ozone (O_3) ug/m^3	8 Hours** 1 Hour**	100 180	100 180	- UV Photometric - Chemiluminescence - Chemical Method
Lead ug/m^3	Annual* 24 hours**	0.50 1.0	0.50 1.0	- AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
CO ug/m^3	8 Hours** 1 Hour**	2000 4000	2000 4000	- Non Dispersive Infra Red Spectroscopy
NH_3 ug/m^3	Annual* 24 hours**	100 400	100 400	- Chemiluminescence - Indophenol blue method
Benzene (C_6H_6) ug/m^3	Annual*	05	05	- Gas Chromatography based Continuous Analyzer - Adsorption followed by GC Analysis
Benzo Pyrene- Particulate Phase only ug/m^3	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis

Pollutant	Concentration in ambient Air			
	Average	Industrial, Residential and other rural area	Ecologically Sensitive Area (Notified by Central Government)	Methods of Measurement
Arsenic ng/m^3	Annual*	06	06	- AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper
Nickel ng/m^3	Annual*	20	20	- AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper

Source: Gazette of India, Part II-Section -3-Subsection (i)

* Annual Arithmetic Mean of minimum 104 measurements in a year taken twice a week 24-hourly at uniform interval.

** 24-hourly / 8-hourly values or 0.1 hourly monitored values shall be complied with 98% of the time in the year. However, 2% of the time, it may exceed but not on two consecutive days.

Ambient Noise Standards

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

Gazette Notification dated 26th December 1989. It is based on the weighted equivalent noise level (Leq).

* Day time is from 6 am to 9 pm whereas night time is from 9 pm to 6 am

** Silence zone is defined as area up to 100 meters around premises of hospitals, educational institutions and courts. Use of vehicles horns, loud speakers and bursting of cracking are banned in these zones

These noise standards have been given the status of statutory norms vide Noise Pollution (Regulation and Control) Rules, 2000. However, these rules have changed the periods for 'Day Time' and 'Night Time' to 6 a.m. to 10 p.m. and 10 p.m. to 6 am respectively.

Surface Water Quality Classification Criteria

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20°C 2mg/l or les
Outdoor bathing (Organised)	B	Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20°C 3mg/l or less

Propagation of Wild life and Fisheries	D	pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	pH betwwn 6.0 to 8.5 Electrical Conductivity at 25°C micro mhos/cm Max.2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l

Source: Central Pollution Control Board
MPN = Most Probable Number

Vehicle Exhaust Emission Norms

1. Passenger Cars

Norms	**CO(g/km)**	**HC+ NOx(g/km)**
1991Norms	14.3-27.1	2.0(Only HC)
1996 Norms	8.68-12.40	3.00-4.36
1998Norms	4.34-6.20	1.50-2.18
India stage 2000 norms	2.72	0.97
Bharat stage-II	2.2	0.5
Bharat Stage-III	2.3	0.35(combined)
Bharat Stage-IV	1.0	0.18(combined)

2. Heavy Diesel Vehicles

Norms	**CO(g/kmhr)**	**HC (g/kmhr)**	**NOx (g/kmhr)**	**PM(g/kmhr)**
1991Norms	14	3.5	18	-
1996 Norms	11.2	2.4	14.4	-
India stage 2000 norms	4.5	1.1	8.0	0.36
Bharat stage-II	4.0	1.1	7.0	0.15
Bharat Stage-III	2.1	1.6	5.0	0.10
Bharat Stage-IV	1.5	0.96	3.5	0.02

Source: Central Pollution Control Board
CO = Carbon Monixide; g/kmhr = grams per kilometer-hour; HC = Hydrocarbons; NOx = oxides of nitrogen; PM = Particulates Matter

Good International Industry Practice – EHS Guidelines for Environmental Standards

WB-EHS Guidelines (www.ifc.org/ehsguidelines) are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP), as defined in IFC's Performance Standard 3: Resource Efficiency and Pollution Prevention.

Annexure 3: REA CHECKLISTS

Rapid Environmental Assessment (REA) Checklist (ROADS & HIGHWAYS)

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES), for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
B. Potential Environmental Impacts Will the Project cause…			
▪ encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?			

Screening Questions	Yes	No	Remarks
▪ encroachment on precious ecology (e.g. sensitive or protected areas)?			
▪ alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site?			
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?			
▪ increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation during project construction and operation?			
▪ noise and vibration due to blasting and other civil works?			
▪ dislocation or involuntary resettlement of people?			
▪ dislocation and compulsory resettlement of people living in right-of-way?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress?			
▪ hazardous driving conditions where construction interferes with pre-existing roads?			
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?			
▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?			

Screening Questions	Yes	No	Remarks
▪ accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials?			
▪ increased noise and air pollution resulting from traffic volume?			
▪ increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.			

Rapid Environmental Assessment (REA) Checklist (Sewage Treatment)

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by the Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title

Sector Division:

Screening Questions	Yes	No	Remarks
B. Project Siting Is the project area…			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
A. Potential Environmental Impacts Will the Project cause…			

Screening Questions	Yes	No	Remarks
▪ impairment of historical/cultural monuments/areas and loss/damage to these sites?			
▪ interference with other utilities and blocking of access to buildings; nuisance to neighboring areas due to noise, smell, and influx of insects, rodents, etc.?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ impairment of downstream water quality due to inadequate sewage treatment or release of untreated sewage?			
▪ overflows and flooding of neighboring properties with raw sewage?			
▪ environmental pollution due to inadequate sludge disposal or industrial waste discharges illegally disposed in sewers?			
▪ noise and vibration due to blasting and other civil works?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical,and biological hazards during project construction and operation?			
▪ discharge of hazardous materials into sewers, resulting in damage to sewer system and danger to workers?			
▪ inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances, and protect facilities?			
▪ road blocking and temporary flooding due to land excavation during the rainy season?			
▪ noise and dust from construction activities?			
▪ traffic disturbances due to construction material transport and wastes?			
▪ temporary silt runoff due to construction?			

Screening Questions	Yes	No	Remarks
▪ hazards to public health due to overflow flooding, and groundwater pollution due to failure of sewerage system?			
▪ deterioration of water quality due to inadequate sludge disposal or direct discharge of untreated sewage water?			
▪ contamination of surface and ground waters due to sludge disposal on land?			
▪ health and safety hazards to workers from toxic gases and hazardous materials which maybe contained in confined areas, sewage flow and exposure to pathogens in untreated sewage and unstabilized sludge?			
▪ large population increase during project construction and operation that causes increased burden on social infrastructure (such as sanitation system)?			
▪ social conflicts between construction workers from other areas and community workers?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

Rapid Environmental Assessment (REA) Checklist (General)

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES), for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Legally protected Area (core zone or buffer zone)			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Special area for protecting biodiversity			
C. Potential Environmental Impacts Will the Project cause…			
▪ impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to physical cultural resources?			
▪ disturbance to precious ecology (e.g. sensitive or protected areas)?			

Screening Questions	Yes	No	Remarks
▪ alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?			
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?			
▪ increased air pollution due to project construction and operation?			
▪ noise and vibration due to project construction or operation?			
▪ involuntary resettlement of people? (physical displacement and/or economic displacement)			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?			
▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			

Screening Questions	Yes	No	Remarks
▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
▪ generation of solid waste and/or hazardous waste?			
▪ use of chemicals?			
▪ generation of wastewater during construction or operation?			

Rapid Environmental Assessment (REA) Checklist (Urban Development)

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by the Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area…			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
B. Potential Environmental Impacts Will the Project cause…			

Screening Questions	Yes	No	Remarks
▪ impacts on the sustainability of associated sanitation and solid waste disposal systems and their interactions with other urban services.			
▪ deterioration of surrounding environmental conditions due to rapid urban population growth, commercial and industrial activity, and increased waste generation to the point that both manmade and natural systems are overloaded and the capacities to manage these systems are overwhelmed?			
▪ degradation of land and ecosystems (e.g. loss of wetlands and wild lands, coastal zones, watersheds and forests)?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable group?			
▪ degradation of cultural property, and loss of cultural heritage and tourism revenues?			
▪ occupation of low-lying lands, floodplains and steep hillsides by squatters and low-income groups, and their exposure to increased health hazards and risks due to pollutive industries?			
▪ water resource problems (e.g. depletion/degradation of available water supply, deterioration for surface and ground water quality , and pollution of receiving waters?			
▪ air pollution due to urban emissions?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical and biological hazards during project construction and operation?			
▪ road blocking and temporary flooding due to land excavation during rainy season?			
▪ noise and dust from construction activities?			
▪ traffic disturbances due to construction material transport and wastes?			
▪ temporary silt runoff due to construction?			

Screening Questions	Yes	No	Remarks
▪ hazards to public health due to ambient, household and occupational pollution, thermal inversion, and smog formation?			
▪ water depletion and/or degradation?			
▪ overpaying of ground water, leading to land subsidence, lowered ground water table, and salinization?			
▪ contamination of surface and ground waters due to improper waste disposal?			
▪ pollution of receiving waters resulting in amenity losses, fisheries and marine resource depletion, and health problems?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction?			
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

Rapid Environmental Assessment (REA) Checklist (Power Transmission)

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:	
Sector Division:	

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
B. Potential Environmental Impacts Will the Project cause…			
▪ encroachment on historical/cultural areas, disfiguration of landscape and increased waste generation?			
▪ encroachment on precious ecosystem (e.g. sensitive or protected areas)?			
▪ alteration of surface water hydrology of waterways crossed by roads and resulting in increased sediment in streams affected by increased soil erosion at the construction site?			

Screening Questions	Yes	No	Remarks
▪ damage to sensitive coastal/marine habitats by construction of submarine cables?			
▪ deterioration of surface water quality due to silt runoff, sanitary wastes from worker-based camps and chemicals used in construction?			
▪ increased local air pollution due to rock crushing, cutting and filling?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ chemical pollution resulting from chemical clearing of vegetation for construction site?			
▪ noise and vibration due to blasting and other civil works?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ social conflicts relating to inconveniences in living conditions where construction interferes with pre-existing roads?			
▪ hazardous driving conditions where construction interferes with pre-existing roads?			
▪ creation of temporary breeding habitats for vectors of disease such as mosquitoes and rodents?			
▪ dislocation and compulsory resettlement of people living in right-of-way of the power transmission lines?			
▪ environmental disturbances associated with the maintenance of lines (e.g. routine control of vegetative height under the lines)?			
▪ facilitation of access to protected areas in case corridors traverse protected areas?			
▪ disturbances (e.g. noise and chemical pollutants) if herbicides are used to control vegetative height?			

Screening Questions	Yes	No	Remarks
▪ large population influx during project construction and operation that cause increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases from workers to local populations?			
▪ risks to community safety associated with maintenance of lines and related facilities?			
▪ community health hazards due to electromagnetic fields, land subsidence, lowered groundwater table, and salinization?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project (e.g., high voltage wires, and transmission towers and lines) are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

A Checklist for Preliminary Climate Risk Screening

Country/Project Title:
Sector :
Subsector:
Division/Department:

Screening Questions		Score	Remarks[12]
Location and Design	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme		

[12] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Screening Questions		Score	Remarks[12]
of project	weather related events such as floods, droughts, storms, landslides?		
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?		
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?		
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High):_____

Other Comments:_____
_____
_____
_____

Prepared by: _____

Annexure 4: OUTLINE OF AN ADB ENVIRONMENTAL ASSESSMENT REPORT

An environmental assessment report is required for all environment category A and B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks. A typical EIA report contains the following major elements, and an IEE may have a narrower scope depending on the nature of the project. The substantive aspects of this outline will guide the preparation of environmental impact assessment reports, although not necessarily in the order shown.

A. Executive Summary

This section describes concisely the critical facts, significant findings, and recommended actions.

B. Policy, Legal, and Administrative Framework

This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

C. Description of the Project

This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

D. Description of the Environment (Baseline Data)

This section describes relevant physical, biological, and socioeconomic conditions within the study area. It also looks at current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

E. Anticipated Environmental Impacts and Mitigation Measures

This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [Appendix 2, para. 6]), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

F. Analysis of Alternatives

This section examines alternatives to the proposed project site, technology, design, and operation including the no project alternative in terms of their potential environmental

suitability under local conditions; and their institutional, training, and monitoring requirements. It also states the basis for selecting the particular project design proposed and, justifies recommended emission levels and approaches to pollution prevention and abatement.

G. Information Disclosure, Consultation, and Participation

This section:

- describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;
- summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and
- describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

H. Grievance Redress Mechanism

This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

I. Environmental Management Plan

This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the project's impacts and risks):

(i) Mitigation:

- identifies and summarizes anticipated significant adverse environmental impacts and risks;
- describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and
- provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.

(ii) Monitoring:

- describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and
- describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.

(iii) Implementation arrangements:

- specifies the implementation schedule showing phasing and coordination with overall project implementation;
- describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and
- estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.

(iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

J. Conclusion and Recommendation

This section provides the conclusions drawn from the assessment and provides recommendations**.**

Annexure 5: OUTLINE OF AN ENVIRONMENTAL DUE DILIGENCE REPORT

A. Executive Summary

This section describes concisely the critical facts, significant findings, and recommended actions.

B. Updates on Policy, Legal, and Administrative Framework

This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party. This section also discusses the rationale for the environmental categorization of the project.

C. Description of the Project

This section describes the changes in the scope of the project and provides an updated description of and technical specifications/design of the project.

D. Description of the Environment (Baseline Data)

This section describes relevant physical, biological, and socioeconomic conditions within the study area. It also looks at current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

E. Anticipated Environmental Impacts and Mitigation Measures

This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [Appendix 2, para. 6]), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

F. Analysis of Alternatives

This section examines alternatives to the proposed project site, technology, design, and operation including the no project alternative in terms of their potential environmental suitability under local conditions; and their institutional, training, and monitoring requirements. It also states the basis for selecting the particular project design proposed and, justifies recommended emission levels and approaches to pollution prevention and abatement.

G. Information Disclosure, Consultation, and Participation

This section:

- describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;
- summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and
- describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

H. Grievance Redress Mechanism

This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

I. Environmental Management Plan

This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the project's impacts and risks):

(i) Mitigation:

- identifies and summarizes anticipated significant adverse environmental impacts and risks;
- describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and
- provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.

(ii) Monitoring:

- describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and
- describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.

(iii) Implementation arrangements:

- specifies the implementation schedule showing phasing and coordination with overall project implementation;
- describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs,

procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and

• estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.

(iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

J. Conclusion and Recommendation

This section provides the conclusions drawn from the assessment and provides recommendations**.**

Annexure 6: RECORDS OF PUBLIC CONSULTATION

The following table is the suggested format for recording the minutes of the public consultations conducted for the project.

Date and Venue of Public Consultation	Number of attendees	Issues /concerns raised during the public consultation	Response of the EA/IA on how to address the issues and concerns

Attachments:
Attendance sheets
Photo documentation

Annexure 7: SAMPLE ANNUAL ENVIRONMENTAL MONITORING REPORT

TEMPLATE

This template must be included as an appendix in the IEE that will be prepared for EACH sub- project. It can be adapted to the specific subproject as necessary.

I. Introduction

- Overall project description and objectives
- Description of subprojects
- Environmental category of the subprojects
- Details of site personnel and/or consultants responsible for environmental monitoring
- Overall project and subproject progress and status

No.	Subproject Name	Status of Subproject				List of Works	Progress of Works
		Design	Preconstruction	Construction	Operational Phase		
		□	□	□	□		
		□	□	□	□		
		□	□	□	□		

II. Compliance status with national/state/local statutory environmental requirements

No.	Subproject Name	Statutory Environmental Requirements	Status of Compliance	Action Required

III. Compliance status with environmental loan covenants

No. (List Schedule and Paragraph Number of Loan Agreement)	Covenant	Status of Compliance	Action Required

IV. COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

a. Provide the monitoring results as per the parameters outlined in the EMP. Append supporting documents where applicable, including environmental site inspection reports.

b. There should be reporting on the following items which can be incorporated in the checklist of routine environmental site inspection reports, followed with a summary in the semi-annual report send to ADB. Visual assessment and review of relevant site documentation during routine site inspection need to note and record the following:

- what are the dust suppression techniques followed for site, and if any dust was noted to escape the site boundaries;
- if muddy water was escaping site boundaries, or muddy tracks were seen on adjacent roads;
- adequacy of type of erosion and sediment control measures installed on-site, condition of erosion and sediment control measures, including if these were intact following heavy rain;
- are there designated areas for concrete works and refueling;
- are there spill kits on site, and if there are site procedure for handling emergencies;
- is there any chemical stored on site and what is the storage condition;
- are there any dewatering activities, if yes, where is the water being discharged;
- how are the stockpiles being managed;
- how are solid and liquid waste being handled on-site;
- review of the complaint management system; and
- checking if there are any activities being undertaken outside of working hours, and how that is being managed.

Summary Monitoring Table

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum, those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Design Phase						
Pre-construction Phase						
Construction Phase						
Operational Phase						

Overall Compliance with EMP

No.	Subproject Name	EMP Part of Contract Documents (Y/N)	EMP Being Implemented (Y/N)	Status of Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed and Additional Measures Required

V. APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

Brief description on the approach and methodology used for environmental monitoring of each subproject

VI. MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS (AMBIENT AIR, WATER QUALITY, AND NOISE LEVELS)

- Brief discussion on the basis for monitoring
- Indicate type and location of environmental parameters to be monitored
- Indicate the method of monitoring and equipment to be used
- Provide monitoring results and an analysis of results in relation to baseline data and statutory requirements

As a minimum the results should be presented as per the tables below.

Air Quality Results

Site No.	Date of Testing	Site Location	Parameters (Government Standards)		
			PM_{10} $\mu g/m^3$	SO_2 $\mu g/m^3$	NO_2 $\mu g/m^3$

Site No.	Date of Testing	Site Location	Parameters (Monitoring Results)		
			PM_{10} $\mu g/m^3$	SO_2 $\mu g/m^3$	NO_2 $\mu g/m^3$

Water Quality Results

Site No.	Date of Sampling	Site Location	Parameters (Government Standards)					
			pH	Conductivity µS/cm	BOD mg/l	TSS mg/l	TN mg/l	TP mg/l

Site No.	Date of Sampling	Site Location	Parameters (Monitoring Results)					
			pH	Conductivity µS/cm	BOD mg/l	TSS mg/l	TN mg/l	TP mg/l

Noise Quality Results

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Government Standard)	
			Daytime	Nighttime

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Monitoring Results)	
			Daytime	Nighttime

VII. SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS

- Summary of follow up time-bound actions to be taken within a set timeframe.

APPENDIXES

- Photos
- Summary of consultations
- Copies of environmental clearances and permits
- Sample of environmental site inspection report
- Other

7

SAMPLE ENVIRONMENTAL SITE INSPECTION REPORT

Project Name
Contract Number

NAME: _____ DATE: _____

TITLE: _____ DMA: _____

LOCATION: _____

GROUP: _____

WEATHER CONDITION: _____

INITIAL SITE CONDITION: _____

CONCLUDING SITE CONDITION:

Satisfactory _____ Unsatisfactory _____ Incident _____ Resolved _____ Unresolved _____

INCIDENT:
Nature of incident:
_____
_____

Intervention steps:
_____
_____
_____

Incident issues:
Resolution

Project activity stage	Survey	
	Design	
	Implementation	
	Pre-commissioning	
	Guarantee period	

Inspection

Emissions	Waste minimization
Air quality	Reuse and recycling
Noise pollution	Dust and litter control
Hazardous substances	Trees and vegetation

Site restored to original condition Yes ☐ No ☐

Signature
_____

Sign off

_____ _____

Name **Name**
Position **Position**

Annexure 8: CONSTRUCTION SITE CHECKLIST FOR EMP MONITORING

Yes (√) No (x)

Monitoring Details: _____

EHS supervisor appointed by contractor and available on site
Construction site management plan (spoils, safety, material, schedule, equipment etc.,) prepared
Traffic management plan prepared
Dust is under control
Excavated soil properly placed within minimum space
Construction area is confined; no traffic/pedestrian entry observed
Surplus soil/debris/waste is disposed without delay
Construction material (sand/gravel/aggregate) brought to site as & when required only
Tarpaulins used to cover sand & other loose material when transported by vehicles
After unloading , wheels & undercarriage of vehicles cleaned prior to leaving the site
No AC pipes disturbed/removed during excavation
No chance finds encountered during excavation
Work is planned in consultation with traffic police
Work is not being conducted during heavy traffic
Work at a stretch is completed within a day (excavation, pipe laying & backfilling)
Pipe trenches are not kept open unduly
Road is not completely closed; work is conducted on edge; at least one line is kept open
Road is closed; alternative route provided & public is informed, information board provided
Pedestrian access to houses is not blocked due to pipe laying
Spaces left in between trenches for access
Wooden planks/metal sheets provided across trench for pedestrian
No public/unauthorized entry observed in work site
Children safety measures (barricades, security) in place at work sites in residential areas
Prior public information provided about the work, schedule and disturbances
Caution/warning board provided on site
Guards with red flag provided during work at busy roads
Workers using appropriate PPE (boots, masks, gloves, helmets, ear muffs etc)
Working conditions at CETP are assessed by EHS expert and ensure that there is no risk
Workers conducting or near heavy noise work is provided with ear muffs
Contractor is following standard & safe construction practices
Deep excavation is conducted with land slip/protection measures
First aid facilities are available on site and workers informed
Drinking water provided at the site
Toilet facility provided at the site
Separate toilet facility is provided for women workers
Workers camps are maintained cleanly
Adequate toilet & bath facilities provided
Contractor employed local workers as far as possible
Workers camp set up with the permission of PIU
Adequate housing provided
Sufficient water provided for drinking/washing/bath
No noisy work is conducted in the nights
Local people informed of noisy work o blasting activity conducted Pneumatic drills or other equipment creating vibration is not used near old/risky buildings 9

Annexure 9: SAMPLE GRIEVANCE REGISTRATION FORM

(To be available in Telegu and English)

The _____Project welcomes complaints, suggestions, queries, and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.
Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing *(CONFIDENTIAL)* above your name. Thank you.

Date	**Place of registration**	**Project Town** **Project:**			
Contact information/personal details					
Name		**Gender**	* Male * Female	**Age**	
Home address					
Place					
Phone no.					
E-mail					
Complaint/suggestion/comment/question Please provide the details (who, what, where, and how) of your grievance below: If included as attachment/note/letter, please tick here:					
How do you want us to reach you for feedback or update on your comment/grievance?					

FOR OFFICIAL USE ONLY

Registered by: (Name of official registering grievance)
Mode of communication: Note/letter E-mail Verbal/telephonic
Reviewed by: (Names/positions of officials reviewing grievance)
Action taken:

Whether action taken disclosed:	Yes No
Means of disclosure:	