

## Initial Environment Examination

Project Number: 46462-003 November 2019 Part A: Main Report (Pages 1 – 46)

## IND : Odisha Skill Development Project

Prepared by : Skill Development and Technical Education Department, Government of Odisha

This initial environmental examination report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

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## Asian Development Bank



### ODISHA SKILL DEVELOPMENT AUTHORITY

No. OSDA/WSC/19-20/162

Dated: 30-10-2019

To,

**Country Director**,

India Resident Mission, Asian Development Bank

4, San Martin Marg, Chanakyapuri,

New Delhi- 110021 (India)

Subject: Submission of Updated Initial Environmental Examination Report for Odisha Skill Development Project (Loan No. : 3539-IND, Project No. 46462-003)

Sir,

The Initial Environmental Examination (IEE) report for Odisha Skill Development Project (OSDP) was approved in April 2017. Subsequent to the approval, there were some changes in components of OSDP project. To cater for minor changes in environmental impacts and mitigation measures on account of changes in the project components, the approved IEE report has been updated. We are submitting herewith the updated IEE document in Soft and Hard versions.

The updated IEE document is also in line with the approved Environmental and Social Management Framework (ESMF) document of the project. It is requested that this updated IEE document may be approved so that relevant portions of this may be included in bidding document to comply with loan covenants.

Thanking you,

Yours Sincerely,

For Odisha Skill Development Authority,

2

Chief Executive Officer

Encl. As Above Rashmita Parida, L.A. 5 Director of Employment & CEO OSDA



## Updated Initial Environmental Examination

### September 2019

India: Odisha Skill Development Project (OSDP)

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

This updated Initial Environmental Examination Report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

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### ABBREVIATIONS

BMC BDA CGWA CO DG DPR DTET EHS EMP ESMC Gol GoO GRC IT ITC ITES ITI LPG MoEFCC MoSDE MSME NCVT NOC NOX OSDA OSDP OSDS OSEM OSPCB RPL RSPM SDTED SDEC SEIAA SO <sub>2</sub> SPCB SPM SPS STP ToT	<ul> <li>Bhubaneswar Municipal Corporation</li> <li>Bhubaneswar Development Authority</li> <li>Central Ground Water Authority</li> <li>Carbon Monoxide</li> <li>Diesel Generator</li> <li>Detailed Project Report</li> <li>Directorate of Technical Education &amp; Training</li> <li>Environment, Health &amp; Safety</li> <li>Environment and Social management Cell</li> <li>Government of India</li> <li>Government of Odisha</li> <li>Grievance Redressal Committee</li> <li>Information Technology</li> <li>Industrial Training Centre</li> <li>Information Technology Enabled Service</li> <li>Industrial Training Centre</li> <li>Industrial Training Centre</li> <li>Industrial Training Institute</li> <li>Liquid Petroleum Gas</li> <li>Ministry of Environment, Forest and Climate Change</li> <li>Ministry of Skill Development and Entrepreneurship</li> <li>Micro Small and Medium Enterprises</li> <li>National Council for Vocational Training</li> <li>No Objection Certificate</li> <li>Oxides of Nitrogen</li> <li>Odisha Skill Development Authority</li> <li>Odisha Skill Development Project</li> <li>Odisha Skill Development Project</li> <li>Odisha Skate Employment Mission</li> <li>Odisha State Employment Masion</li> <li>Odisha State Pollution Control Board</li> <li>Recognition of Prior Learning</li> <li>Respirable Suspended Particulate Matter</li> <li>Skill Development and Technical Education Department</li> <li>Skill Development Authority</li> <li>Sulphur dioxide</li> <li>State Pollution Control Board</li> <li>Suspended Particulate Matter</li> <li>Skill Development and Technical Education Department</li> <li>Skill Development and Employment Centre</li> <li>State Pollution Control Board</li> <li>Suspended Particulate Matter</li> <li>Safeguard Policy Statement</li> <li>Sewage Treatment Plant</li> <li>Training of Trainers</li> </ul>
STP	- Sewage Treatment Plant
ToT	- Training of Trainers
WSC	- World Skill Center

### CURRENCY EQUIVALENTS

(As of 29 August 2019)

Currency unit	_	Indian rupee/s (Re/Rs)
Re1.00	=	\$0.014
\$1.00	=	Rs 71.2550

### WEIGHTS AND MEASURES

dB(A) A-weighted decibel ha - hectare km-kilometer km<sup>2</sup>-square kilometer µg-microgram m - Meter m<sup>2</sup>-square meter MW (megawatt) – megawatt

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### EXECUTIVE SUMMARY

1. **Background.** The Government of Odisha (GoO) has taken several initiatives to improve its skills development system and address skills shortages. It had set up a high-level Odisha State Employment Mission (OSEM) in 2005–2006 to specifically address the problems of youth unemployment and underemployment. It has established the Skill Development and Technical Education Department (SDTED)<sup>1</sup> to bring together Directorate of Technical Education and Training (DTET), OSEM, employment generation services, and labor regulation under one department. While the establishment of SDTED improved coordination among different agencies, it has not necessarily enhanced the operational efficiency of its sub-units. DTET is unable to meet industry demands due to poor infrastructure and outdated standards, assessment, and certification processes.

The existing training capacity and quality in the state is inadequate to meet the 12th 2. five-year plan target of training one million people. Recognizing weak institutional capacity for market-relevant training, the GoO has also established an autonomous implementation institution, the Odisha Skill Development Society (OSDS) in 2015 (now named as Odisha Skill Development Authority (OSDA)), to implement market-responsive skills programs. This institutional arrangement aims to train one million people and provide greater access to quality training in tribal interior areas of Odisha. In May 2016, the GoO also established the Odisha Skill Development Authority (OSDA) headed by an eminent industry leader with the aim of bringing OSEM and OSDS under one umbrella to ensure effective formulation, implementation and monitoring of skill development programs in Odisha. The Odisha Skill Development Project (OSDP) will help the GoO to streamline this arrangement. In Odisha, the Industrial Training Institutes (ITI) and Industrial Training Centers (ITC) have an estimated combined capacity of around 75,000 seats per year, far below to address the skill potential in the state. Hence, to assist in overcoming these challenges and to enhance the employability of the youth of Odisha and their productivity on employment, the Asian Development Bank (ADB) is supporting the GoO to foster the skill initiatives in the state. OSDP will provide training to about 151,000 working age population during the project period mainly in the age group of 15-34 years in the state of Odisha in higher level manufacturing and services skills aligned to human development strategies of the state. The project will reach out to the youth, disadvantaged groups, and workers in the unorganized, informal and formal sectors by adopting a menu-driven approach to build their skills and increase their employment potential.

3. The Initial Environmental Examination (IEE) report for OSDP was prepared and approved in April 2017. At that time there was a proposal to establish eight Advanced Skills Training Institutes (ASTIs) at different locations in the State. These ASTIs were to act as Hub for the nearby ITIs. But owing to some administrative and other reasons, GoO decided to establish a World Skill Center (WSC) at Bhubaneswar. Due to this, there were changes in project components, specially pertaining to infrastructure. Hence, environmental impacts and /or issues changed due to minor change of scope. On account of these facts, the ADB approved IEE report has been updated, considering the latest project components.

4. **Project description:** With minor change of scope, now the OSDP will set-up and operationalize World Skill Center (WSC) in an existing 18 Storey building of the Government known as "Idco Tower 2010"at Bhubaneswar. The WSC will have hostel facility, house classrooms, laboratories, libraries, and other associated utilities. OSDP will also upgrade all Government Industrial Training Institutes (ITI), out of which, 49 are existing, 21 are under construction and remaining 01 will be newly constructed. The WSC is located in

<sup>&</sup>lt;sup>1</sup>In 2012, Odisha established the Employment, Technical Education and Training Department, which was renamed as Skill Development and Technical Education Department (SDTED) in 2015

Bhubaneswar while it will act as a hub for Technical and vocational education and training institutions spread all over the state. The WSC will be set up and operated by Odisha Skill Development Authority (OSDA) with support from an international knowledge partner. The ADB will only finance WSC building retrofitting and equipment.

5. Based on the field based due diligence, and the environmental investigations undertaken, the Environment Category of project remains 'B' (for the current project configuration also) as per ADB's *Safeguard Policy Statement (SPS) 2009*. The layout plans for retrofitting and refurbishment of existing building known as 'Idco Tower 2010' have been finalized and detailed bill of quantities for civil works and bidding documents preparation is in progress. The updated initial environmental examination (IEE) report has been prepared considering the fact that minor civil works are required in retrofitting and refurbishment of building. The environmental implications during operation phase have also been quantified for WSC and these have been taken into account while updating the IEE report. An environmental assessment and review framework (EARF) has been prepared separately in accordance with ADB's SPS, *2009* for OSDP. Accordingly, environmental assessment will be taken up as per the EARF, if any additional component is added for ADB funding in future.

6. **Implementation arrangements.** The SDTED will be the executing agency (EA) for the OSDP. The implementing agency (IA) will be Odisha Skill Development Authority (OSDA). A team of technical, administrative and financial officials, including safeguards specialists, will be provided at the SDTED under a Project Management Unit (PMU) to implement, manage and monitor project implementation activities. An Environment and Social Management Cell (ESMC) will be established within PMU for management of safeguards. This ESMC cell will comprise of (a) Environmental Safeguard specialist, (b) Social Safeguard Specialist and (c) Gender Specialist. The PMU will be assisted by a Project Management Consultant (PMC). The Odisha State Industrial Infrastructure Development Corporation (Idco) has been entrusted with the responsibility of civil works for retrofitting and refurbishment in the 'Idco Tower 2010'.

7. **Description of the environment**. The baseline environmental status in and around the WSC site has been defined based on secondary data available in public domain, site visits, discussion with various relevant government agencies and stakeholder consultations. The 'Idco Tower 2010', where WSC is proposed to be established is located in the Mancheswar Industrial Estate area in the Bhubaneswar city. There are no national parks, sanctuaries, tiger reserves and bio-spheres within 15 km of WSC site. There is no requirement for cutting of any trees or shrubs for the building refurbishment and retrofitting.

Environmental management. Although, construction of building for educational 8. institutions has been exempted from obtaining prior environmental clearance under the provisions of the EIA Notification, 2006 subject to sustainable environmental management(Guidelines of sustainable environmental management stipulated in the MoEFCC notification no, S.O. 3252 (E) of 22 December 2014). However, for revalidation of prior environmental clearance obtained by Odisha Industrial Infrastructure Development Corporation for commercial utilization of 'Idco Tower 2010' building, is under process by the State Environmental Impact Assessment Authority (SEIAA), Odisha pertaining to the proposed utilization of WSC activities. The anticipated environmental risks and impacts during pre-construction, construction and operation phase have been presented in Chapter-5 of the report. The environmental management plan (EMP) and the environmental monitoring plan including the budget during pre-construction, construction and operation stages have been presented in Chapter-8 of the report. The WSC building will have its own sewage treatment plant of 230 KLD capacity. The treated water from STP will be recycled for usage in horticulture, air conditioning and flushing. The solid waste generated will be segregated and disposal will be integrated with Bhubaneswar city waste disposal. To take care of storm

water runoff 10 numbers of rainwater harvesting recharge pits have been planned in the building. The EMP will be made part of the bid and contract documents of contractor. The EMP budget has been estimated INR 1.0 million. This budget will be part of approved cost of the project. Since existing 'Idco Tower 2010' building will be used for the WSC establishment and operation, therefore, an environmental audit of this building has been taken up to assess any residual environmental issues and concerns. There are no residual environmental impacts, because of no past usage, as building is new and has not been occupied for any other activity. The prior environmental clearance was obtained for 'Idco Tower 2010'and the conditions of environmental clearance were complied with during preconstruction and construction phases. There was regular submission of environmental clearance compliance report to MoEFCC by the Odisha Industrial Infrastructure Development Corporation Ltd.

9. To ensure compliance with the EMP for the WSC, the contractor shall prepare the diagrams of the facilities, which depict the location of the stockpiles, chemicals, fuel, sanitation facilities and other construction materials within building premises. The proper placing and storage of materials are important to ensure that no hazard originates from the storage facility onto nearby water bodies and the neighboring community.

Public Consultation, information disclosure and grievance redress. The 10. stakeholder's consultations have been undertaken with stakeholders since the year 2015. In these consultations opinions of stakeholders and their suggestions have been obtained and those feasible have been incorporated in OSDP design. In general stakeholders have welcomed the WSC establishment. This updated IEE report once approved by ADB (in electronic version) will be disclosed at OSDA website and also the relevant sections of report will be translated in local language by OSDA. The updated IEE report copies will be made available at OSDA office, Odisha Industrial Infrastructure Development Corporation Office, WSC site office and Bhubaneswar Municipal Corporation (BMC) office. In order to establish a documented and structured approach towards understanding community expectations and manage their concerns, a Grievance Redressal Mechanism (GRM) for the community has been formulated. The GRM outlines the process and steps to be taken and the time limit within which the issue would need to be resolved to the satisfaction of the complainant. The team of safeguards specialists with the site manager will endeavor to get all complaints recorded and addressed in a uniform and consistent manner. This grievance mechanism will respond to the concerns and grievances of local communities. NGOs and any other aggrieved party or stakeholder(s). OSDP will share information about these mechanisms to the stakeholders through locally appropriate communication tools.

11. **Monitoring and Reporting.** The OSDA will be responsible for environmental monitoring. The Odisha Industrial Infrastructure Development Corporation, the agency responsible for implementation of civil works at site, will submit monthly, quarterly, and semi-annual environmental monitoring reports (EMRs) to the ESMC at PMU. The ESMC will consolidate the semi-annual EMRs and submit to OSDA and SDTED for onward submission to ADB. ADB will review and disclose the EMRs on its website. The approved semi-annual EMRs will also be disclosed at OSDA website.

12. **Conclusions and recommendations.** All clearance(s) /NOC(s) /permission(s) /approval(s) as applicable for water withdrawal, power supply, layout plan of premises, modification of environmental clearance, etc. will be obtained before start of construction activities. An occupancy certificate before occupying retrofitted and refurbished 'ldco Tower 2010'- building for equipment installation will be required from Bhubaneswar Municipal Corporation. The WSC is unlikely to cause any significant adverse impacts. The potential impacts that are associated with design, construction and operation can be mitigated without difficulty through proper engineering design and the incorporation or application of recommended mitigation measures and procedures. Based on the findings of this updated

IEE report, the environment category of OSDP continues to "B". No further special study or detailed environmental impact assessment (EIA) needs to be undertaken to comply with ADB SPS, 2009 or Government of India's EIA Notification, 2006.

### I. INTRODUCTION

### A. Project Background

1. With a total population of 42 million, Odisha's economy is shifting from agriculture to industry and services. However, Odisha's economic transformation has not generated equitable income growth for the state's population. Odisha has one of the highest poverty rates in India. More than half of the working population continues to be engaged in agriculture, while only 24% are employed in industry and another 25% in services. A mere 15% of households in Odisha report to have a regular salary earner<sup>2</sup>. The core problem in Odisha is the low employability of its young workforce in the formal sector due to low education and skill levels. Nearly 34% of Odisha's population is in the ages of 15-34, yet, 33% of this 15-34 age group have education just up to grade 8 and another 25% up to grade 10. Only about 7% have diploma or above certificate and very small proportion of the youth in Odisha have any formal vocational training (1.1% compared to 2.8% for India).

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

3. While Odisha aimed to train one million people by the end of 12th five-year plan i.e. 2017, the existing training capacity and quality could not meet this target. The state has only been able to train about 10.38 lakhs people in the last five years and now aims to train 15 lakhs people in next five years. The current skills development system of Odisha faces many constraints: (i) the system is fragmented with weak institutional coordination; (ii) access to training institutions is not geographically even and their capacity is insufficient to meet the 12th plan target; (iii) quality and relevance of training is weak due to outdated curriculum, inadequate equipment, and lack of industry experienced trainers, especially in ITIs; (iv) training programs are not closely linked to employers or labor market demand; (v) there is a lack of reliable labor market information system; (vi) a robust quality assurance system is lacking to benchmark training institutions to international standards; (vii) lack of mentor institutions makes it difficult for exiting ITIs to transform into more effective institutions; and (viii) lack of viable training models for higher-cost capital intensive manufacturing hampers the development of more advanced training programs.

4. The GoO has taken several initiatives to improve its skills development system and address skills shortages. It had set up a high-level Odisha State Employment Mission (OSEM) in 2005–2006, chaired by the Chief Minister, to specifically address the problems of youth unemployment and underemployment. It has established the Skill Development and Technical Education Department (SDTED)<sup>3</sup> to bring together Directorate of Technical Education and Training (DTET), and labor regulation under one department. While the

<sup>&</sup>lt;sup>2</sup>National Sample Survey, 2011-12

<sup>&</sup>lt;sup>3</sup> In 2012, Odisha established the Employment, Technical Education and Training Department, which was renamed as Skill Development and Technical Education Department (SDTED) in 2015

establishment of SDTED improved coordination among different agencies, it has not necessarily enhanced the operational efficiency of its sub-units. DTET is unable to meet industry demands due to poor infrastructure and outdated standards, assessment, and certification processes.

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

The proposed OSDP will support the GoO to improve the employability, productivity, 6. and income of its working-age population by enhancing the capacity to supply high-quality, market-responsive skills training in line with the state's development strategies in priority sectors, such as manufacturing, construction, and services. The project design incorporates emerging national and international good practices. The impact of OSDP will be increased employability and productivity of Odisha's working age population. The outcome will be increased skills and employment in priority sectors for males and females. With minor change of scope, now the OSDP will set-up and operationalize World Skill Center (WSC) in an existing 18 Storey building of the Government known as "Idco Tower 2010" at Bhubaneswar. The WSC will have hostel facility, house classrooms, laboratories, libraries, and other associated utilities. OSDP will also upgrade all Government Industrial Training Institutes (ITI), out of which, 49 are existing, 21 are under construction and remaining 01 will be newly constructed. The WSC is located in Bhubaneswar while it will act as a hub for Technical and vocational education and training institutions spread all over the state. The WSC will be set up and operated by Odisha Skill Development Authority (OSDA) with support from an international knowledge partner. There are four outputs of the OSDP project:

7. **Output 1: Equitable access to market-responsive skills development programs increased**- This output will support a network of WSC as hub and all government ITIs as spokes under a hub-and-spoke model. The network will support changes in the skill ecosystem covering WSC training (19,000), ITI training (60,000), polytechnic training (32,000), Self-employment initiative (15,000) and RPL certification (25,000) across the state of Odisha. This output has four sub-outputs: (i) increased access to quality training through a hub-and-spoke model, with the provision of already constructed building for WSC<sup>4</sup> and hostels, workshops, and laboratory equipment for WSC and all government ITIs <sup>5</sup> (ii) improved access to training for women and disadvantaged social groups; (iii) market-responsive training programs delivered for the state's priority sectors in collaboration with key industry players; and (iv) RPL systems established.

8. **Output 2: Quality and relevance of skills development programs improved-** This output focuses on ensuring the quality of training programs by supporting the following suboutputs: (i) a robust quality assurance system established to ensure that training programs meet acceptable standards and apply credible assessment and certification procedures; (ii) a pool of about 250 master trainers created and a mechanism developed to train about 6,000 trainers, including about 1,000 assessors; (iii) WSC and all government ITIs

<sup>&</sup>lt;sup>4</sup>The ADB loan will finance WSC equipment and refurbishment for WSC.

<sup>&</sup>lt;sup>5</sup>The Government will finance hostels, workshops, and laboratory equipment for the ITIs including WSC hostel

benchmarked against a set of key performance indicators to be identified; and (iv) technology-enabled training and learning programs promoted.

9. **Output 3: Skills ecosystem strengthened-** In line with the national priority to consolidate and strengthen training programs within a common framework at the state level, this output comprises the following sub-outputs: (i) partnerships with international and national knowledge institutions and other government departments promoted; (ii) career counseling and placement centers established in WSC and all government ITIs; (iii) self-employment initiatives piloted to train 15,000 people to demonstrate viable replication and scaling-up schemes; and (iv) a skill database and inventory developed to help recruit appropriate candidates and to link trainees with potential employers before training begins.

10. **Output 4: Institutional capacity strengthened-** This output aims to strengthen the capacity of institutions, including the SDTED, OSDA, DTET, and ITIs, to ensure the effective implementation of planned activities. There are four sub-outputs: (i) financial and administrative autonomy of OSDA strengthened; (ii) International knowledge partner engaged to build capacity and support OSDA set-up and operate the WSC; (iii) a robust and unified monitoring and evaluation system institutionalized; and (iv) a project management consultant (PMC) team engaged to support capacity building of ITI, OSDA, SDTED, and DTET.

11. OSDP will provide training to about 151,000 working age population during the project period mainly in the age group of 15-34 years in the state of Odisha in higher level manufacturing and services skills aligned to human development strategies of the state. The project will reach out to the youth, disadvantaged groups, and workers in the unorganized, informal and formal sectors by adopting a menu-driven approach to build their skills and increase their employment potential.

12. Skill Development and Technical Education Department (SDTED), Government of Odisha will be the executing agency (EA) and Odisha Skill Development Authority (OSDA) will be the implementing agency (IA). The executing and implementing agencies will hire project management consultant (PMC), contractors, and operators, and other expert agencies for various activities to be carried out during design, pre-construction, construction and operation phases.

13. The Initial Environmental Examination (IEE) report for OSDP was prepared and approved in April 2017. At that time there was a proposal to establish eight Advanced Skills Training Institutes (ASTIs) at different locations in the State. These ASTIs were to act as Hub for the nearby ITIs. But owing to some administrative and other reasons, GoO decided to establish a World Skill Center (WSC) at Bhubaneswar. Due to this, there were changes in project components, specially pertaining to infrastructure. Hence, environmental impacts and /or issues changed due to minor change of scope. On account of these facts, the ADB approved IEE report has been updated, considering the latest project components.

### B. ADB Safeguard Policies and Environment Category of the Project

14. The Asian Development Bank has defined its Safeguard requirements under its *Safeguard Policy Statement 2009* (SPS 2009). The SPS 2009 requires environmental assessment, mitigation and commitment towards environmental protection. The prime objectives of SPS 2009 is to (i) avoid adverse impacts of projects on the environment and affected people, where possible; and (ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible.

ADB as per SPS 2009 classifies a project into Environment Category<sup>6</sup> A, B or C depending on potential adverse environmental impacts.

Based on the field based due diligence, and the environmental investigations 15. undertaken, the OSDP Environment Category continues to be 'B' as per ADB's SPS 2009. The layout plans for retrofitting and refurbishment of the existing building for the equipment installation have been finalized. The equipment list for 7 trades to be taken up at the WSC building has also been finalized. This updated IEE report captures the environmental impacts associated with the retrofitting and refurbishment of existing building for the installation of equipment for the 7 trades in WSC. This updated IEE report also includes mitigation and monitoring measures to address environmental impacts as results of civil works to be taken up at WSC for retrofitting and refurbishment of building for installation of equipment. The land for Precision Engineering trade is being acquired close to the WSC site. Therefore, the environmental assessment for this will be carried out later in accordance with the Environmental Assessment and Review Framework (EARF) prepared for the project as per ADB's SPS, 2009. The environmental assessment for any additional subproject, if planned, will also be taken up as per EARF. The updated Rapid Environmental Impact Assessment (REA) checklist is given in Appendix 1.

### C. Report Structure

16. This updated IEE report contains twelve sections including this introductory section: (i) Introduction; (ii) Legal Framework and Legislative Requirements (iii) Description of project; (iv)Description of the environment; (v) Environmental impacts and mitigation measures; (vi) Analysis of alternatives; (vii) Institutional arrangements and responsibilities; (viii)Environmental management plan; (ix)Public consultation and information disclosure; (x) Grievance redress mechanism;(xi) Environmental Audit of Existing 18 Storey Building; and (xii)Findings and conclusions

<sup>&</sup>lt;sup>6</sup>**Category A.** A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment is required.

**Category B**. A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required.

**Category C**. A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.

### II. LEGAL FRAMEWORK & LEGISLATIVE REQUIREMENTS

17. The legal framework and legislative requirements<sup>7</sup> are covered in this chapter. The Ministry of Environment, Forest and Climate Change (MoEFCC), Govt. of India (GoI) has the overall responsibility to set policy and standards for environment, flora & fauna protection in close coordination with the Central Pollution Control Board. This includes setting of air, noise, and water quality standards, and the requirements for environment clearance, forest clearance, and wildlife clearance and for other activities/projects to be taken up. The implementation of this project will be governed by the national, state and local level relevant acts, rules, regulations, and standards. The executing and implementing agencies will ensure that full compliance with statutory environmental requirements at the national, state, municipal, and local levels by the facility owners and the contractors in all stages of the project implementation including design, construction, operation and maintenance. Some of the major laws and acts that will be applicable during construction and operation phases are detailed below:

## The Environment (Protection) Act, 1986 and the Environmental Impact Assessment Notification, September 2006 and amendments thereof

18. The Environment (Protection) Act, 1986 (EPA Act, 1986) was enacted for the nationwide protection and improvement of environment which includes water, air and land and their interaction with human beings and other ecosystem. The Central Government may make rules in respect of quality of air, water or soil for various areas and purposes if it deems necessary. It can also specify maximum allowable limits of concentration of various environmental pollutants.

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

20. As per MoEFCC notification (**Appendix 2**) dated 22 December 2014(S.O. 3252 (E)) the educational institutes, college, hostel for educational institution shall not require any environmental clearance and shall ensure sustainable environmental management.

21. The salient provisions under The EPA Act, 1986 include but not limited to the following:

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

<sup>&</sup>lt;sup>7</sup> SPS 2009 mandates all ADB-financed activities to be compliant with the host country environmental regulatory framework/regulations

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

### The Water (Prevention and Control of Pollution) Act, 1974 and amendments thereof

22. The Water (Prevention and Control of Pollution) Act, 1974 resulted in the establishment of the Central and State level Pollution Control Boards (CPCB and SPCB) whose responsibilities include managing water quality and effluent standards (**Appendix 3**<sup>8</sup>), as well as monitoring water quality, prosecuting offenders and issuing licenses for construction and operation of developmental projects requiring water as a resource. It is to be noted that OSPCB is considering reducing the BOD<sub>3</sub> and COD levels in treated sewage to 10 mg/l and 50 mg/l respectively to make it more eco-friendly for using in flushing, gardening and horticulture purposes. Under the Water Act, Consent to Establish (CTE) or No Objection Certificate (NOC) is required for setting up a new project or for expansion of the existing facility prior to starting the project activity. Consent to Operate (CTO) is required before commencing the project.

# The Water (Prevention and Control of Pollution) Cess Act, 1977 and amendments thereof

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

### The Air (Prevention and Control of Pollution) Act, 1981 and amendments thereof

24. Under the Air Act, Consent to Establish (CTE) or No Objection Certificate (NOC) is required for setting up a new project or for expansion of the existing facility prior to starting the project activity. Consent to Establishment (CTE) and Consent to Operate (CTO) is required before commencing the construction and operations of the proposed project respectively. The Air (Prevention and Control of Pollution) Act, 1981, empowers the SPCBs to enforce ambient air quality standards set by the CPCB enclosed as **Appendix 4**<sup>9</sup>.

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

25. Under the new regulation, different areas and zones are to be identified as industrial, commercial, residential and silence areas and anyone exceeding the specified noise level (**Appendix5**<sup>10</sup>) would be liable for action.

# Municipal Solid Wastes (Management and Handling) Rules 2016 and amendments thereof

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

### The Batteries (Management and Handling) Rule, 2001 and amendments thereof<sup>11</sup>

27. These rules apply to every manufacturer, importer, re-conditioner, assembler, dealer, recycler, auctioneer, consumer and bulk consumer involved in manufacture, processing,

<sup>8</sup> www.envfor.nic.in/ www.ospcboard.org

<sup>9</sup> www.envfor.nic.in/www.ospcboard.org

<sup>10</sup> www.envfor.nic.in/ www.ospcboard.org

<sup>11</sup> Rules are under revision

sale, purchase and use of batteries or components thereof. It lays down the responsibilities of a consumer or bulk consumer in terms of disposing off the used batteries and filing a half-yearly return to the state board.

# The Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016

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

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

### The e-waste (Management and Handling) Rule, 2016 and amendments thereof

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

### The Plastic (Management and Handling) Rule, 2016 and amendments thereof

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

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

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

#### The Wildlife (Protection) Act, 1972 and amendments thereof

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

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

### Wetlands (Conservation and Management) Rules, 2010 and amendments thereof

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

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

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

# The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 & Rules 2007 and amendments thereof

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

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

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

### The Child Labor (Prohibition and Regulation) Act 1986

37. A child is defined as a person who has not completed 14years of age. The Act prohibits employment of children in certain occupation and processes (part II, Section 3). The Act also specifies conditions of work for children, if permitted to work. These include a working day of maximum of 6 hours a day (including rest), no work period exceeding 3 hours at a stretch, and no overtime (Section 7). The Act requires maintenance of a register for employed children (Section 11). The Constitution of India (Part III, Article 24 - Fundamental Rights) describes that no child below the age of fourteen years shall be employed to work in any factory or engaged in any other hazardous employment.

### The Bonded Labor (Abolition) Act 1976

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

### The Trade Union Act 1926

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

#### Minimum Wages Act 1948

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

#### Workmen's Compensation Act 1923

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

### Maternity Benefit Act, 1961

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

### Applicability of legal framework

43. The legal framework with respect to environmental issues, relevant legislation, its applicability, enforcement agency and responsibility lies to have been listed in **Table 1**.

Issues	Relevant	Applicability	Enforcement	Responsibility
	Legislation		Agency	
Environmental Clearance	EIA notification, 14 September, 2006 and amendments thereof.	As per MoEFCC notification (Appendix 2) dated 22 December 2014 (S.O. 3252(E)) the schools, colleges, educational institutes and hostels for educational institutions shall not require any environmental clearance, and shall ensure sustainable environmental management as per guidelines provided in Annexure-1 of the Notification. Hence EIA Notification 2006 is not applicable <sup>12</sup> .	OSPCB /MoEFCC / Local Urban Bodies and the Development Authorities	Contractor and Implementing agency as applicable
		Revalidation of prior environmental clearance obtained by Odisha Industrial Infrastructure Development Corporation for commercial utilization of 'Idco Tower 2010' building, is under process by the State Environmental Impact Assessment Authority (SEIAA), Odisha pertaining to the proposed utilization of WSC activities.	00000	
Water	TheWater(PreventionandControlofPollution)Act,1974and	<ul> <li>Not Applicable</li> <li>For the retrofitting of existing building for WSC and later for carrying out</li> </ul>	OSPCB	Contractor and Implementing agency as applicable

### Table-1: The Legal Framework

<sup>&</sup>lt;sup>12</sup>Since building was earlier planned for commercial utilization so an environmental clearance was obtained. Since now building is planned is planned to be utilized for education purposes, therefore, Odisha Industrial Infrastructure Development Corporation has submitted application to the State Level EIA Authority for the revision of environmental clearance and /or for information of Authority for the purpose of future directions.

Issues	Relevant	Applicability	Enforcement	Responsibility
	amendments	training /teaching activities	Agency	
	thereof	no CTO and CTE		
	The Water	required. The STP		
	(Prevention and	operations will be self		
	Control of	regulated and no CTO or		
	Pollution) Cess	CTE required. The		
	Act. 1977 and	OSPCB circular showing		
	amendments	exemption is appended in		
	thereof	Appendix 6.		
Ambient Air	The Air	Water from municipal		
	(Prevention and	supply will be used and		
	Control of	being educational		
	Pollution) Act,	activities to be taken up no		
	1981 and	water cess returns		
	amendments	required.		
	thereof	• DG sets and fuel burning		
		machinery's stack height		
		the perms petified under		
		this act and CPCB		
		quidelines The DG set		
		have already been		
		installed in Tower close to		
		WSC Tower and not		
		planned as part of OSDP.		
		The installed DG set will		
		be used for emergency		
		power in WSC also. The		
		CTO for these DG sets		
		shall be ensured by WSC.		
Noise	The Environment	Applicable during minor		Contractor and
110130	(Protection)	civil works for retrofitting		Implementing
	Second	and refurbishment in WSC		agency as
	Amendment	building.		applicable
	Rules, 2002	5		
	(Noise Limits for	Noise limit standards for		
	New Generator	DG sets and ambient		
	Sets)	noise level as prescribed		
	The Noise	under these act and rules.		
	Pollution	These rules will be		
	(Regulation and	applicable during		
	2000 And	construction and		
	amendments	operations of wSC.		
	thereof			
Hazardous	The Hazardous	Not Applicable	OSPCB	Contractor and
Substances &	and Other	No hazardous waste		Implementina
Wastes	Wastes	generation in construction		agency as
	(Management	and operations of WSC		applicable
	and	subproject;		
	Transboundary	Small waste oil generated		
	Movement)	during operation phase will		
	Rules, 2016	be disposed off through		
		authorized recyclers.		
Batteries	The Batteries	Applicable	OSPCB	Contractor and
waste	(Management	• Disposal of battery waste		Implementing
	and Handling)	through OSPCB		agency as

Issues	Relevant Legislation	Applicability	Enforcement Agency	Responsibility
	Rule, 2001 and amendments thereof	authorized recyclers will be taken up during construction and operations of WSC.		applicable
e-waste	The e-waste (Management and Handling) Rule, 2016 and amendments thereof	<ul> <li>Applicable</li> <li>Disposal of e-waste through OSPCB authorized recyclers</li> </ul>	OSPCB	Contractor and Implementing agency as applicable
Groundwater withdrawal	Guidelines for ground water extraction prescribed by the Central Ground Water Authority (CGWA) , 2012	<ul> <li>Not Applicable</li> <li>Permission from the State Water Resource Department for extracting ground water in accordance with the conditions stipulated in the CGWA guidelines. This will not be applicable as water supply from PHED is planned for WSC operations;</li> <li>Similarly permission will be required, if the source of water is going to be municipal or river, from the municipality or irrigation department respectively. This will not be applicable as water supply from PHED is planned to be used</li> </ul>	Odisha State Water Resource Department;	Contractor and Implementing agency as applicable
Labor	<ul> <li>Building and Other Construction Workers Act, 1996 and amendments thereof;</li> <li>The Child Labor (Prohibition and Regulation) Act, 1986 and amendments thereof;</li> <li>Minimum</li> </ul>	<ul> <li>Applicable</li> <li>Obtain "certificate of registration" in case ten or more building workers or other construction worker will be employed and ensure issues related to building workers such as hours of work, welfare measures and other, safety and health, etc.</li> <li>Ensure that no child labor is engaged at site for construction or operation works either directly or by the subcontractors</li> <li>Ensure payment of</li> </ul>	District Labor Commissioner	Contractor and Implementing agency as applicable
	<ul> <li>Wages Act, 1948 and amendments thereof;</li> <li>Workmen's</li> </ul>	by the government		

Issues	Relevant	Applicability	Enforcement	Responsibility
	Legislation		Agency	
	Compensation	<ul> <li>In case of any personal</li> </ul>		
	Act, 1923 and	injury caused to workman		
	amendments	during construction or		
	thereof;	operational phase, ensure		
	The other labor	the payment of		
	related	compensation in		
	legislations	accordance with the		
	applicable for the	provisions of act		
	Project include			
	the following:			
	<ul> <li>Equal</li> </ul>	Ensure equal		
	remuneration	remunerations to either of		
	Act, 1976 and	the gender.		
	amendments			
	thereof			
	<ul> <li>The employees</li> </ul>	Ensure appropriate		
	state insurance	insurance cover is taken to		
	act, 1948	cover un-skilled, semi-		
	<ul> <li>The E.P.F. and</li> </ul>	skilled and skilled		
	Miscellaneous	laborers.		
	Provisions act,	• Ensure implementation of		
	1952 and	all labor related acts/rules.		
	amendments			
	thereoi			
	Payment Of     Popula     Act			
	1065 ACI,			
	amendments			
	thereof			
	<ul> <li>Payment of</li> </ul>			
	Gratuity Act			
	1972 and			
	amendments			
	thereof			
	Public			
	Provident Fund			
	Act. 1968 and			
	amendments			
	thereof			
	• The maternity			
	benefit Act,			
	1961 and			
	amendments			
	thereof			
	• The personal			
	Injuries			
	(compensation			
	1062 and			
	amendmente			
	thereof			
	The personal			
	iniuries			
	(emergency)			
	Provisions Act,			
	1962 and			
	amendments			
	thereof			

Issues	Relevant	Applicability	Enforcement	Responsibility
 			Адепсу	
	<ul> <li>ESI (Employees State Insurance) Act, 1948 and amendments thereof</li> <li>The Contract Labor (Regulation &amp; Abolition) Act, 1970 and Rules and amendments thereof</li> <li>The inter-state migrant workmen (Regulation of employment and conditions of service) Act, 1979 and amendments thereof</li> <li>Employer's Liability Act, 1938 and amendments thereof</li> <li>The Bonded Labor (Abolition) Act, 1976</li> </ul>			
Layout design, Occupancy certificate	<ul> <li>National Building Code -2005 and amendments thereof;</li> <li>Relevant district/city development authority and municipal corporation regulations</li> </ul>	<ul> <li>Wherever applicable</li> <li>This code and its various provisions including, but not limited to, landscaping, fire safety plan, structural design etc. will be followed during design and planning.</li> <li>Development Authority (ies) has delegated the power for approval of layout plan and issuing occupancy certificate to the Municipal Corporation in case the land is coming under Municipal Corporation otherwise approval shall be granted by respective Development Authority</li> <li>Approval of layout plan before commencing construction and</li> </ul>	<ul> <li>Respective Development Authority;</li> <li>Respective Municipal Corporation;</li> <li>Respective Chief Fire Officer;</li> <li>Civil Aviation Authority;</li> </ul>	Contractor and Implementing agency as applicable

Issues	Relevant	Applicability	Enforcement	Responsibility
Usages of designated forest land	<ul> <li>Forest Act 1980 and Rules 1981 and amendments thereof</li> <li>The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Dwellers (Recognition of Forest Rights) Act 2006 &amp; Rules 2007 and amendments thereof</li> </ul>	Occupancy certificate before occupying constructed building will be required from respective municipal corporation/local development authority (as applicable). • Fire approval will be obtained at the time of issuing of occupancy certificate. • The height restrictions with respect to approach Funnels and Transitional area of Airport as detailed in <b>Appendix 7</b> will be adhered to. The 'Idco Tower 2010' is already constructed, so this restriction of height is not applicable. However, WSC sub-project will comply with all the prescribed standards as per development authority's rules and regulations. Not applicable	MoEFCC, and State Forest Department	Contractor and Implementing agency as applicable
wild life sanctuary within an area of 10 Km radius around the project site	(protection) Act 1972 and amendments thereof	WSC is beyond 10 km from Nandan Kanan Wildlife sanctuary This sanctuary is about 15 km from the WSC site.	Life Board	Implementing agency as applicable
Presence of wetlands	Wetlands (Conservation and	Not applicable	State Wetland Authority	Contractor and Implementing agency as

Issues	Relevant Legislation	Applicability	Enforcement Agency	Responsibility
	Management) Rules, 2010 and amendments thereof			applicable
Clearance for CRZ	Coastal Regulation Zone (CRZ) Notification, 2011 and amendments thereof	Not applicable	State Coastal Management Authority	Contractor and Implementing agency as applicable
Removal of trees	Relevant district/city development authority and municipal corporation regulations	<ul> <li>Not Applicable, no tree cutting required at WSC site</li> </ul>	City Forest Division	Contractor and Implementing agency as applicable
Natural Disaster	<ul> <li>National Disaster Management Act, 2005, and amendments thereof;</li> <li>Odisha State Disaster Management Policy;</li> <li>Odisha State Disaster Management Plan</li> </ul>	<ul> <li>Applicable Measures, as outlined in the State Disaster Management Plan, will be adopted for prevention and mitigation of disasters</li> </ul>	Odisha State Disaster Management Authority	Contractor and Implementing agency as applicable
Vehicular Movement	Motor Vehicles Act, 1988 and Rules, 1989 and amendments thereof	<ul> <li>Applicable</li> <li>Project will follow up Central Motor Vehicle (CMV) rules for transportation of diesel or any other hazardous substance</li> </ul>	Local Transportation Authority	Contractor and Implementing agency as applicable

### III. DESCRIPTION OF THE PROJECT

### A. Preamble

44. The OSDP project components include WSC and ITI upgradation and support infrastructure such as hostels. The WSC will be made functional by the utilizing the existing 18 storey building named as 'Idco Tower 2010'. The building is newly constructed and there are no commercial or industrial activities inside. The building is located in the Mancheswar Industrial Estate in Bhubaneswar city. It was constructed for commercial utilization by the Odisha Industrial Infrastructure Development Corporation. Now planned utilization for the WSC will be educational purposes. In this section of updated IEE report, brief description of project components has been given.

### B. Scope of OSDP

The scope of sub-projects under OSDP includes (i) setting up of WSC at 45. Bhubaneswar and (ii) support to existing 49 ITIs through installation and /or up-grdadation of equipment, machinery and laboratory (this component not under ADB funding). For the OSDP implementation OSDA has signed a memorandum of understanding with ITE Education Services (ITEES), Singapore. The WSC will be positioned as Post-ITI and Post-Polytechnic institution. The course duration shall be for one year and the initial student output is planned as 2000 students. The WSC will not only provide skill training of international standards but also will act as Mentor institution for ITI's. The WSC will produce top-notch graduates who are technically competent, versatile, innovative, and adaptable, highly sought after by the industries and enjoy good career prospects. The WSC will be established in the newly constructed 18 floor building at Mancheswar Industrial Estate at the outer skirts of Bhubaneswar city. This building is known as 'Tower 2010'. The building floors will be retrofitted and building will also be refurbished to make it amenable for usage. The retrofitting will require minor civil works. The location of the WSC building has been shown in Figure-1 below. The photographs of Tower where WSC is to be established are given in Appendix -8.



46. The WSC will be distinguished from existing TVET institutions with the following distinctive features:

• A premier skills training center that provides authentic learning environment with the state-of-art training equipment and facilities housed in an aesthetically appealing physical infrastructure that is befitting of world class institution;

- A mentor and model institution for ITI's in the area of leadership development, training of trainers, pedagogy, course curriculum, lab design and equipment specifications;
- A center for industries to collaborate and participate in skill training through brining the latest technology and industrial standards and norms;
- A center for skills competition and immersive experience of TVET; and
- A center to showcase TVET excellence in student experience, staff experience and brand experience.
- 47. At WSC training will be provided in the following trades:
  - (a) Mechatronics;
  - (b) Facility Technology (Air-conditioning & Refrigeration);
  - (c) Facility Technology (Mechanical & Electrical services);
  - (d) Facility Technology (Vertical transportation);
  - (e) Beauty & Wellness;
  - (f) Hair Fashion & Design; and
  - (g) Electrical Technology (Home and Industrial Automation).

48. The equipment list, for the above mentioned 7 trades, has been given in **Table-2**. The waste generation from equipment and overall from the trade have also been summarized in this table.

### Table-2: Trade Wise Equipment List

SI. No	Programs	Equipment and Machines	Waste Generation from Equipment	Quantities of various Wastes from Trade	
1	Facility Technology - MES	Electric Motors	No waste generation from eclectic motor during practical classes	1- During usage of drilling machine during practical classes, metallic chips to the exten	
		Small Mechanical workshop equipment (Tools and Trowel, pipe wrenches, machines)	No waste generation small mechanical workshop equipment	of 200 kg (refer <b>Appendix 9</b> ) per annum wi be generated. 2- Discarded lubricating oil (7 liters pe	
		Drilling Machine	Metallic waste in the form of chips will be generated from Drilling machine usage.	during usage of power hack sawing machine	
		Pumps	No waste generation from usage of pumps	for demonstration and practical classes	
		Air-conditioning Units residential	No waste generation from air- conditioning units residential		
		Power Hacksawing Machine	Generation of lubricating oil during usage of machine as little lubricating is used for cutting of metals while using it.		
		Diesel Tank	No waste generation from small diesel tank		
		Water Tanks	No waste generation		
		Electrical Panel Boards	No waste generation		
2	Facility Technology - ACR	Air-conditioning Units residential	Small pieces of copper wire/tube will be generated during practical classes.	1- The waste will be generated during practical classes. Small and broken pieces c	
		Air-conditioning Units commercial	Small pieces of copper wire/tube will be generated during practical classes.	copper wire /tube used during demonstration and practical classes will be generated. The	
		Cooling Tower	No waste generation	quantity has been estimated as 10 kg per	
		Pumps	No waste generation	annum (refer <b>Appendix 9</b> ).	
		Electric Motors	No waste generation		
		Electrical Panel Boards	No waste generation		
3	Facility	Lifts	No waste generation	The equipment used in this trade requires	
	Technology - Vertical Transport	Escalators	No waste generation	greasing once a year as part of maintenance.	
		Travellators	No waste generation		

SI. No.	Programs	Equipment and Machines	Waste Generation from Equipment /Machines	Quantities of various Wastes from Trade
		Electric Motors Electrical Panel Boards	No waste generation	
4 Mechatronics		Pneumatic Systems	There will be generation of small electrical wire/cable pieces during practical /demonstration classes.	1- Hydraulic oil waste during disconnection of hoses of hydraulic system. The hydrauli systems will be used during practical an
		Compressors	No waste generation	demonstration classes. The quantity of oil
		Computers	No waste generation	The oil drips will fall on floor and the floor will
		Hydraulic Systems	Hydraulic oil drops will be generated during practical /demonstration classes	be cleaned with cloth rags. 2- Metallic scrap to the extent of 2 kg per
		Computers	No waste generation	annum (refer Appendix 9) will be generated
		Small Mechanical workshop equipment (Tools and Trowel, pipe wrenches, machines)	No waste generation	classes. 3- Damaged electrical wires/cables from
	Electrical Panel Boards	No waste generation	will be generated. The quantity estimated is 100 kg per annum. (refer <b>Appendix 9</b> )	
		Drilling Machine	Metal chips will be generated due to usage of drilling machine.	
5	Beauty and	Chairs	No waste generation	1-Waste generated is from consumable used
	Wellness	Mirrors	No waste generation	during practical training and are general waste
		Small Tools of the Trade	No waste generation	bud and kitchen towel. Each student
		Water circulator system	No waste generation	<ul> <li>generates approximately 5 to 10gm of this waste during every practical lesson. The waste will be part of municipal solid waste, which has been calculated in the end.</li> <li>2- Plastic /Glass Bottles /Containers of consumables such as creams, liquid cosmetics, Cleanser, Toners, etc. will also be there.</li> <li>3- Soak Cotton pads from pedicure and manicure will also be discarded during the</li> </ul>

SI. No.	Programs	Equipment and Machines	Waste Generation from Equipment /Machines	Quantities of various Wastes from Trade
				practical classes. These will also be part of municipal solid waste generated from WSC complex. There will be no generation of waste from equipment and accessories.
6	Hair Fashion and	Chairs	No waste generation	1-There will be generation of waste from the use of consumables during the practical and demonstration classes. The generation of
	Design	Mirrors	No waste generation	
		Small Tools of the Trade	No waste generation	various consumables wastes per semester is
		Water circulator system	No waste Generation	as follows: 1- Color =200 ml 2- Hydrogen peroxide =300 ml 3- Hair Rebounding cream =300ml 4- Hair rebounding neutralizer =400 ml
7	Home and	Electrical Panel Boards	No waste generation	1-The waste will be generated from pneumatic
Industrial Automatior (Electrical Technolog	Industrial	Computers	No waste generation	systems on account of consumables (PVC trunking and conduits metaltrunking and
	(Electrical Technology)	Pneumatic Systems	There will be generation of waste on account of usage of consumables such as PVC and metal trunking and conduits and electrical cables. The estimated quantities are PVC conduits and Trunking around 2 kg per annum and metallic trunking and conduits around 8 kg per annum.	conduits and electrical cables) used in pneumatic system during practical classes. Hence there will be generation of PVC trunking and conduit and metal trunking and conduit, as well as electrical cables. The estimated quantities are PVC conduits and Trunking around 2 kg per annum and metallic trunking and conduits around 8 kg per annum
		Electric Motors	No waste generation	(Refer <b>Appendix 9</b> ). These will be discarded when the sizes are very small over the time. Discarded items will be stored in bins.

Source: Odisha Skill Development Authority

Note: The waste quantities computed are indicative based on curriculum finalized and number of students planned to be enrolled. In case there is change in number of students and particular trade teaching /practical hours then the waste quantities will change. But whatever is quantity generated the disposal principal stated in this IEE document will be adopted.

49. The photographs of equipment proposed to be used in Mechanical and Electrical Services, Vertical Transport, Mechatronics and Electrical Technology trades have been shown below in **Figure-2**. The basis of generation of solid waste has been provided in **Appendix-9**.

# Figure-2: Photographs of Equipment Proposed to Used in MES, Vertical Transport and Mechatronics Trades



Pneumatic Training System













Pneumatic Components





50. In the Facility Technology (Mechanical and Electrical Services) course related to mechanical and electrical equipment and air conditioning unit maintenance will be taken up. The machines will include Car Engine, drilling machine, Electric Motors, various types of pumps used in industry and market.

51. In the Facility Technology Air Conditioning and Refrigeration, courses will be taught to cover maintenance and upkeep of domestic air conditioning units, industrial and commercial air conditioning plants, Cooling Tower maintenance and operations, and Pumps and electric motors used in air conditioning and refrigeration units.

52. In the Facility Technology- Vertical Transport trade, course curriculum will include operations and maintenance of lifts, escalators, travallators, electric motors and electrical panels used in these vertical transport facilities.

53. Mechatronics trade will include courses on operations and maintenance of pneumatic systems, compressors, hydraulic systems, computers and electrical panels used in these.

54. In the beauty and wellness trade courses will include Hair care, Skin care, Nail Design, Pedicure and Manicure.

55. In the Hair Fashion and Design, the courses will pertain to hair styles, care, hair beauty, etc.

56. In the Electrical Technology trade, the courses will cover on industrial and domestic automation.

57. The eighth trade known as Precision Engineering will be taken up at a separate location. For this land is being acquired. The environmental assessment for this will be taken up after completion of land acquisition.

58. The WSC building ('Idco Tower 2010') is constructed on a land of area approx. 4.0 acres. The built up area is 55,141.83 m<sup>2</sup>. In the eighteen floors besides the class room and laboratories/workshops for various trades, it will also have facilities for:

- (i) Skill Museum on ground floor;
- (ii) First Aid Room on first floor;
- (iii) Cafeteria for students (200 pax capacity) on first floor;
- (iv) Library on fifth floor;
- (v) Yoga Studios on tenth floor;
- (vi) Students' Activity Center on first floor;
- (vii) Staff Recreation Center on fifteenth floor;
- (viii) Broadcast Room on seventeenth floor; and
- (ix) Car parking facility at ground floor and basement.

59. The layout plans for all 18 floors have been finalized and these are given in **Figure-3**. The floor wise utilization of Idco Tower 2010 is described below:

- Basement-Water storages (treated water reserve, raw water reserve, fire water reserve, Recovered water reserve, Rain water storage) vehicle parking, STP and lift
- Ground Floor- Skill Museum, Students' Immersion Center, First Aid Room, Technician Office, Customer and Student Service Center, Discussion Rooms, Store, Lifts, etc.
- First Floor-Lift and Escalator System maintenance workshop, Meeting Rooms, Toilet Block, Cafeteria (308 seats), Store and Students' Activity Center
- Second Floor-Toilet Block, Pantry, Air Conditioning and Distribution System, Building Management System, Electrical Room and Air Conditioning Services
- Third Floor-Class Rooms, Mechanical Services, Girls' Toilet Block, Meeting Room, Lifts, Electrical and Mechanical Services, Lifts and Locker Rooms.
- Fourth Floor-Students' Interaction Area, Mechanical Services, Fire Detection and Protection Services
- Fifth Floor- Students' Mess (182 seats), Refuge Area, Terrace Garden, Toilet Block, Staff Office, Discussion Rooms, Lecture Hall and Library
- Sixth Floor-Girls' Mess (108 seats), Refuse Area, Girls' Toilet Block and Electrical Technology Workshop.
- Seventh Floor-Boys' Toilet Block and Electrical Technology Workshop (2 numbers)
- Eighth Floor- PLC Lab, Drive and Motor Lab, Toilet Block, Mechatronics Staff Office, Class Rooms (2 nos.), Meeting Room and Lifts
- Ninth Floor- Pneumatics Lab, Mechanical Technology Workshop, Girls' Toilet Bock, CAD Lab, Hydraulics Lab and Electronics workshop
- Tenth Floor- Yoga Studio, Communication Lab, Boys' Toilet Block, Employability Skill Class Rooms (4 nos.), Employability Skill Immersion Skill Room (2 nos.) and IT Staff Office
- Eleventh Floor-Reserved for Future Expansion

- Twelve Floor- Girls' Toilet Block, Meeting Room, Chemical Treatment Studio, Class Rooms (2 nos.), School of Services, Cutting and Styling Studios (3 nos.)
- Thirteenth Floor- Facial and Beauty Therapy Studio, Students' Interaction area, Girls' Toilet Block, Nail Care Studio, Beauty Therapy Lab, Beauty and Wellness Spa, Class Room and Computer Lab
- Fourteenth Floor- Entrepreneur Incubation Center, WSC Academy Staff Office, WSC Academy Training Rooms (4 nos.), Meeting Room, Male Toilet Block and WSC Academy Lounge
- Fifteenth Floor- Staff Recreation Center, Boys' Toilet Block, Interview Rooms (6 nos.), Discussion Rooms (2 nos.) and Executive Lecture Hall (247 seats)
- Sixteenth Floor- Deputy Director's Office, Board Room, Meeting Room and Terrace
- Seventeenth Floor- Broadcast Room, Administration Staff Office and Pantry
- Eighteenth Floor- Maintenance workshop and Terrace





































