ENVIRONMENTAL, OCCUPATIONAL HEALTH & SAFETY AND SOCIAL (EHSS) MANUAL

Energy Efficiency Services Limited (EESL)

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History of amendments

The latest versions of the EHSS Manual, SOPs and Documentation Formats must be used at all times. In order to ensure that the EHSS manual maintains a record of the amendments made, this page needs to be updated whenever there is a change in the version number of the documents.

S. No	Date of amendment	Version	Details of amendment
1.	DD.MM.YYYY	01	Initial launch of the EHSS Manual, SOPs and Documentation Formats

Prepared by

Approved by

Abbreviations and references

BEE	Bureau of Energy Efficiency	CDM	Clean Development Mechanism
CFL	Compact fluorescent lamp	DISCOM	Distribution Company
CPCB	Central Pollution Control Board	DSM	Demand Side Management
EMP	Environment Management Plan	EPA	Environment Protection Agency (US)
FTL	Fluorescent tube light		
ICL	Incandescent lamp	IFC	International Finance Corporation
EHSS	Environmental, occupational health and safety and social	E&S	Environment and Social
ESCO	Energy service company	HPSV	High pressure sodium vapour
KPI	Key Performance Indicator	kWh	Kilo watt hour
LED	Light emitting diode	MH	Metal halide
MoEF	Ministry of Environment, Forests and Climate Change	SPCB	State Pollution Control Board
SDA	State Designated Agency	SOP	Standard Operating Procedure

1.Introduction

EESL is a Joint Venture of NTPC Limited, PFC, REC and POWERGRID to facilitate the implementation of energy efficiency projects in India. Our company takes on multiple responsibilities including that of an ESCO, a consultancy organization for facilitating Clean Development Mechanism projects and as a resource center for capacity building of SDAs, utilities & financial institutions. We work with multiple vendors and sub-contractors for project implementation, improvement of management practices and project monitoring. We believe that it is essential for us to identify, mitigate and manage the environmental, health and safety and social impacts of our direct and indirect operations. We emphasize that an effective EHSS management system enables us to focus on the potential risks our company is exposed to, and to implement preventive and corrective mitigation and management measures.

This Environmental, Occupational Health and Safety and Social (EHSS) manual or guideline outlines our company's vision, objectives, management system and governance controls on these subjects. Through this guideline and associated standard operating procedures, we intend to integrate the environmental, social, occupational health and safety principles of Indian national and state regulations, IFC Performance Standards and other international guidelines with the working strategy of our company. We are cognizant of a number of sector and regional best practices and have designed our standards to be in line with them. We also recognize that there may be certain EHSS requirements that may come up from time to time and we shall be committed to assess the feasibility of their integration into our standards from time to time.

1.1 Objective of the EHSS Manual

The main objective of this manual is to identify and mitigate EHSS risks both in office and on-site operations of our company. This pertains to our own operations and operations of our vendors and their sub-contractors thereof. The identification and mitigation of EHSS risks is also interlinked with their integration into our company's decision-making processes for new and existing projects.

The EHSS requirements in this manual must be adhered to by our company, our vendors and their sub-contractors thereof, as a minimum. Over and above this, our company, our vendors and their sub-contractors should meet all the national and local regulatory requirements, as applicable from time to time.

1.2 Applicability of the EHSS Manual

Since the date of first approval, the manual applies to our company for all our operational and managed sites. This also includes ongoing and current projects, new projects, corporate offices, and all employees, contractors and service suppliers. Compliance to the requirements in this manual is applicable to the entire lifecycle (including planning, assessment, exploration, evaluation, design, development, operation and closure) of the project/vendor/sub-contractor's tenure of work with us.

The EHSS manual is applicable to all our vendors, sub-contractors and their lower tiers. Vendors appointed by us will be liable to cascade the requirements down to the sub-tiers of their supply chain.

In case of a vendor or its sub-contractor wishing to follow a different EHSS manual, prior written permission must be sought from the EHSS head of the company.

1.3 Structure and usage of the manual

This manual is supported by the following two document sets as depicted in Fig 1

- Standard Operating Procedures (SOP) applicable for different tasks, business processes or risk areas
- Documentation Formats for preparation and maintenance of important records

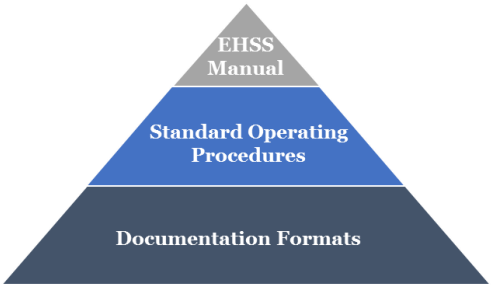


Fig 1 – EESL EHSS Manual Documentation Structure

The manual should be read in conjunction with the most updated versions of the (SOPs) and documentation formats for different sub-tasks at all times, as applicable.

This manual is intended to provide guidance on the basic framework for sound and sustainable EHS management and its continual improvement across all our operations. These standards are to be followed along with SOPs as good practise and mitigate EHS risks in operations. The list of SOPs and documentation formats is given below:

SOPs		
SOP 01	EHSS Risk Management	ver 01
SOP 02	Waste Management	ver 01
SOP 03	Fire and emergency procedures	ver 01
SOP 04	Electrical safety	ver 01
SOP 05	Work at height and fall prevention	ver 01
SOP 06	Portable tools and equipment	ver 01
SOP 07	Traffic safety	ver 01
SOP 08	Personal protective equipment	ver 01
SOP 09	Work permit system	ver 01
SOP 10	Safe lifting operations	ver 01
SOP 11	Health & Safety audit procedure	ver 01
SOP 12	Criteria for selection of warehouse	ver 01
Documentation formats		
DF 01	Legal checklist	ver 01
DF 02	Accident/Incident Reporting	ver 01
DF 03	EHSS Risk mitigation plan	ver 01
DF 04	Sample project report	ver 01

Table 1 – List of SOPs

1.4 EHSS Governance Structure

The EHSS function will directly report into the Managing Director. A separate EHSS Department will closely monitor the progress on risk identification, evaluation, mitigation and impact evaluation of EHSS issues. It shall be the responsibility of the head of EHSS department to oversee the EHSS risk mitigation process from time to time. The EHSS governance structure is embedded in the current structure of the organisation, as depicted in Fig 2.

Fig 2 –EHSS Governance Structure

The EHSS department comprises of the following type of employees and their detailed responsibilities are provided in the table below

Category of employees	Detailed roles and responsibilities	Reporting structure	Responsibility of recruitment/ nomination
EHSS Department Head	▪ Controller and primary approver of the EHSS Manual and linked documents ▪ Oversee the EHSS risk mitigation and management system at EESL ▪ Responsible for compliance of EESL, vendor and subcontractor (multiple tiers) operations with national and state regulations, IFC Performance Standards and EESL's EHSS manual ▪ Review and report on the progress of EHSS risk management to the MD, investors, government and public stakeholders, and other parties, as applicable ▪ Continuously review EHSS risks and impacts, approve the mitigation measures ▪ Conduct spot checks to identify gaps and oversee remedial measures ▪ Identify administrative and project departments within EESL whose representatives must be part of the EHSS department	Managing Director	HR in consultation with the Managing Director

	▪ Review proposals on proactive and remedial EHSS measures and forward the approved ones to relevant departments for further approvals and implementation ▪ Review the need for onboarding specialist advisors and take necessary action		
Full time dedicated staff	The EHSS department comprises of adequate number of full time staff who are responsible for the following tasks ▪ Continuous identification of EHSS risks in EESL's own and contracted operations ▪ Evaluation of the identified risks and corresponding impacts ▪ Integration of the identified risks, mitigation and monitoring methods into the EHSS manual and linked documents, if not already incorporated ▪ Undertake regular monitoring of E&S management plans through review of progress reports submitted by various departments and vendors or through self/third-party EHSS audits, as appropriate ▪ Identify the E&S training needs of employees, vendors and their subcontractors thereof ▪ Coordinate the approved E&S trainings and maintain the training information ▪ Collect the EHSS data from office locations, regional offices and facilities owned/rented by EESL for business activities	EHSS Departme nt Head	HR in consultation with the EHSS Department Head or other existing full time dedicated staff in the EHSS department
Departmental representatives	▪ Implementation of the EHSS mitigation and management plan within their operations (EESL, vendor and levels of sub-contractors) ▪ Providing regular monitoring and update reports, as required ▪ Proactive evaluation of the EHSS risks and corresponding impacts in their	In addition to their existing reporting structure, functional reporting to the	Heads or Designates from the Projects, BD, Technical, Contracts and other departments identified by the

	operations (EESL, vendor and levels of sub-contractors) ▪ Participate in update, review meetings and audits pertaining to EHSS ▪ Undergo EHSS trainings	EHSS Department Head	EHSS Department Head
Advisors	Advise EESL on specific topics for which they have been on boarded.	EHSS Department Head	HR in consultation with the Head of EHSS Department

Table 2: Roles and Responsibilities

The recruitment and employment terms of the EHSS department staff will be governed by standard EESL policies applicable to all other employees. The HR department is responsible for preparation of job descriptions for the recruitment of employees in the EHSS department.

2. Company overview and description of project activities

2.1 About EESL

The purpose of EESL is to create and propagate energy efficiency in the country, by beginning with appliances. One of our core objectives is to support the National Mission for Enhanced Energy Efficiency, under the National Action Plan on Climate Change. The company has evolved a strategic approach to stimulate the implementation of energy efficiency programs by assessing market conditions and barriers. This is undertaken through:

- Creating market access in public and private facilities through handholding, information dissemination and capacity building of facility owners
- Developing projects for various sectors addressing specific barriers and challenges
- Designing risk mitigation measures to address technical, financial and regulatory risks
- Enabling funding at reasonable rates for project implementation to attract private investment
- Aggregating projects to attract the most economical value for facility owners
- Developing model templates of agreements, payment security, etc. that are necessary for project implementation
- Disseminating best practices to stakeholders so that replication can occur
- Providing transaction support to facility owners to implement projects

2.2 Street Lighting Program

Under the street lighting program, the Bureau of Energy Efficiency pursued energy efficiency opportunities in 269 ULBs across 15 states. It has been estimated that retrofitting the entire conventional streetlights with LEDs could result in potential annual savings of 4300 million KWh, which is about 50% of the total energy consumed. Furthermore, the operational optimization could lead to an additional 15-20% energy savings. In order to implement this program, we are adopting two models:

2.2.1 Annuity model

In this model, we receive an annuity payment for the project duration (5 to 7 years) to recover the project capital cost, interest cost, equity returns, project management and annual maintenance fee. This annuity payment is lower than the savings achieved by the urban utility / government in energy and maintenance cost incurred in the baseline scenario.

2.2.2 Project financing model

In this model, we take an equity position in a street lighting project implemented by a private or public entity. The private or public entity signs the ESCO agreement with the urban utility or the government.

The program is implemented in partnership with Municipal Bodies and local Electricity Boards. We appoint a lighting vendor for end-to-end replacement of existing street lights with LED lights. The dismantled lights are either deposited with the Municipal body or are purchased back by the

lighting vendors through buy-back agreements. Refer Fig 3 for an overview of the street lighting project structure.

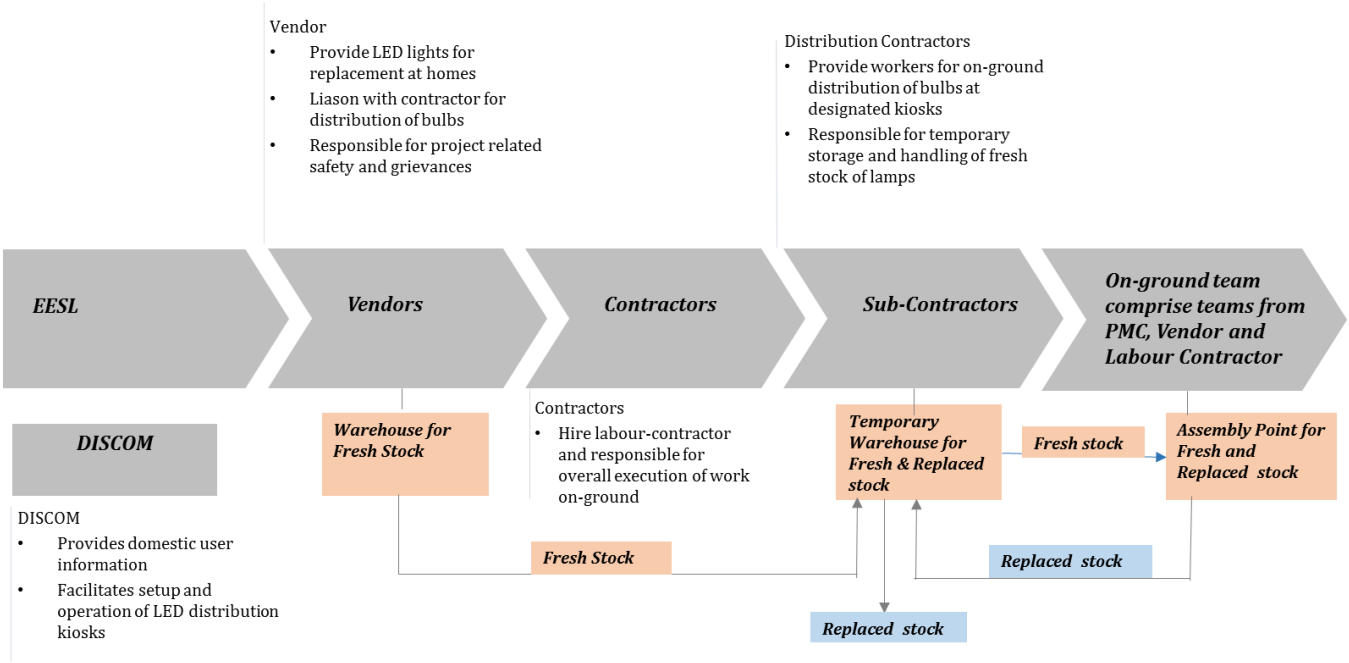


Fig 3 –Project structure of street lighting program

2.3 DSM Based Efficient Lighting Program (DELP)

In the DELP program, energy inefficient Incandescent Bulbs (ICLs) are replaced with more efficient LEDs for domestic and/or commercial consumers. The initial capital cost for the consumers is drastically reduced through the two mechanisms mentioned below.

2.3.1 Standard Offer Program

In this program, the government or distribution agency procures demand side resources at a pre-determined price. The program treats demand side resources as energy produced by consumers and the utility pays for this energy and/or demand reductions. This program is comparable to feed-in-tariffs (FITs) used to promote renewable energy. In this mechanism, we recover the project implementation cost and overheads from the utility / government based on energy saved during the period and the Standard Offers Price for the given period.

2.3.2 On-bill financing

Under this mechanism, the cost of implementation is recovered from consumers as a component of their electricity bill over a period of time. The project development cost and other related costs in this model are borne by the distribution utility / government. The utility may charge this additional cost to the consumers as part of their ARR filings.

The DSM based efficient lighting program is run in partnership with the local electricity distribution companies. We appoint a vendor for distribution of LEDs to households in the participating states. Refer Fig 4 for an overview of the DELP structure.

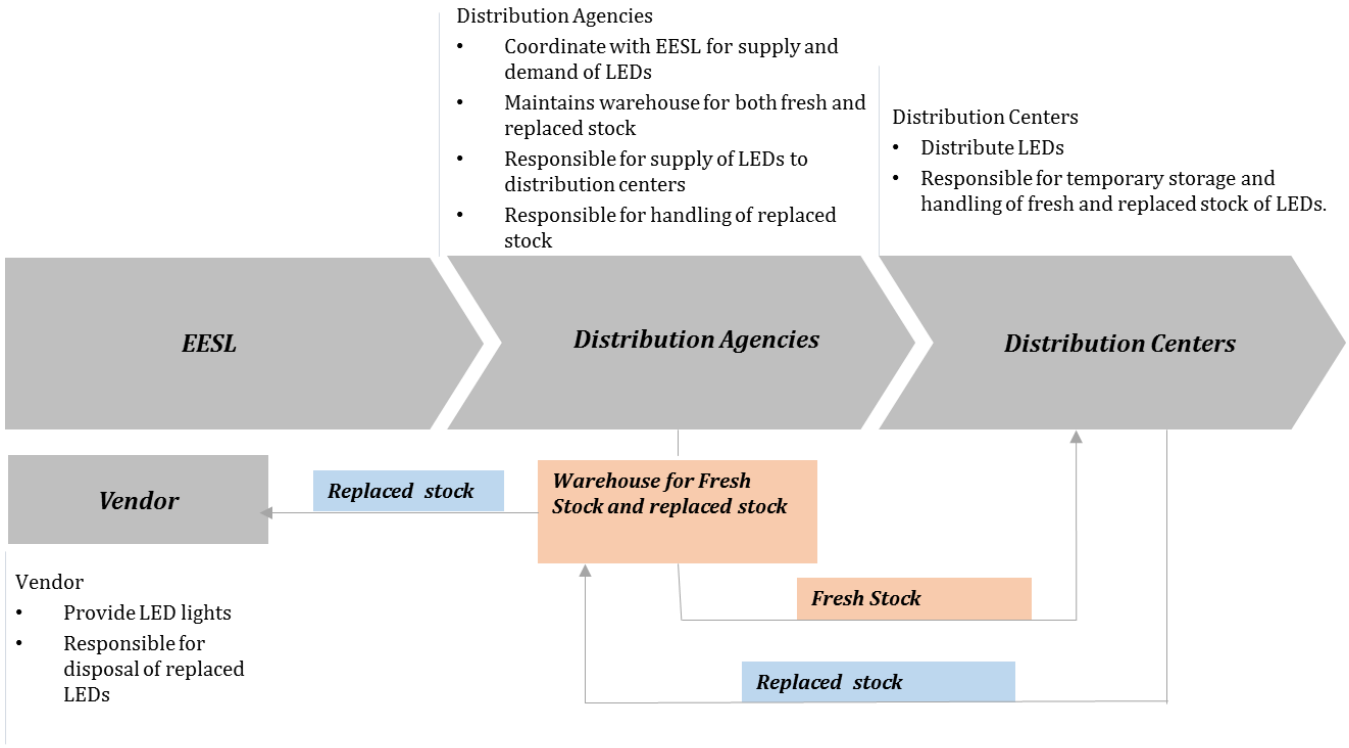


Fig 4 –Project structure of domestic efficient lighting program

2.4 Key EHSS risk areas

Hazard identification and risk assessment is the first step towards identification and evaluation of risks. The EHSS department undertakes risk assessment on a quarterly basis by referring to ***SOP 01 – EHSS Risk Management*** and using the format ***DF 03 – EHSS risk management plan***

The identified risks are categorized as extremely high, high, medium and low based on the likelihood of occurrence (probability of risk) and quantification of impact, as depicted in Fig 5. Risk assessment depends on:

- Hazard identification
- People and processes involved
- Risks and precautions
- Liability on EESL (regulatory, financial, technical, operational, reputational)

While categorization of risks, the existing mitigation plans must be taken into account and residual risks must be considered for corrective action. The risks identified have been presented in table 3 below:

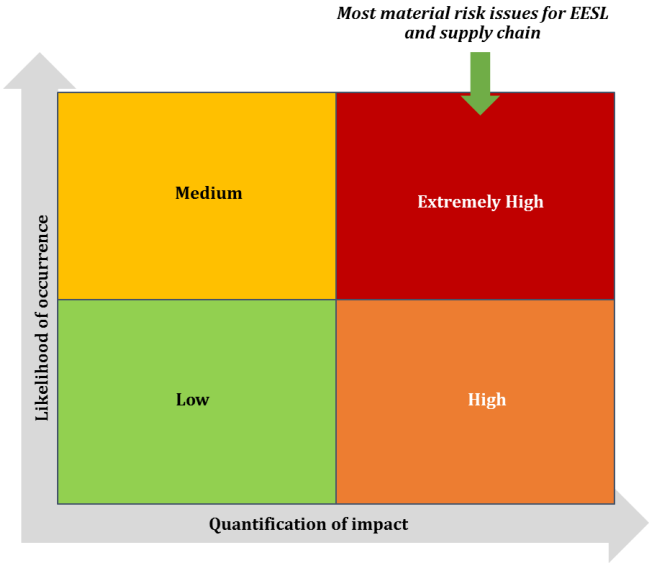


Fig 5 –Risk prioritising matrix

S. No	Description of the risk area	Consequence	Likely impact on EESL	Applicability to projects		Rating
				Street lighting	DELP	
1.	Handling of replaced stock in street lighting	Proper handling of replaced stock of street lights is important. Improper handling may lead breakage of bulbs which can lead to ▪ mercury poisoning ▪ lead poisoning	▪ Regulatory non-compliance ▪ Financial loss – fines & penalties for regulatory non-compliance ▪ Reputation damage ▪ Loss & damage to neighbourhood/ community	√		Extremely high
2.	Safety practices at site level	Workers should follow proper working practices like usage of PPEs, proper equipment and tools otherwise following consequences may occur: ▪ Accidents or fatalities while working at height ▪ Accidents or fatalities due to electrical hazards ▪ Traffic accidents as a result of working without adequate barricading or signage's	▪ Loss to life and property – Workers and third parties/neighbourhood ▪ Financial loss – medical expenses, compensation ▪ Reputation damage	√		Extremely High
3.	Social issues of sub-contractors like minimum wage violation, working overtime, lack of insurance etc.	Labour related problems may occur due to violation of labour rights, lack of employee benefits and poor working.	▪ Regulatory non-compliance ▪ Financial loss – fines & penalties for regulatory non-compliance ▪ Delay in timelines due to worker strikes/agitation ▪ Reputation damage	√	√	High
4.	Emergency preparedness and inadequate fire control measures at offices and	Lack of emergency preparedness and inadequate fire control measures can lead to health and safety issues.	▪ Loss to life and property – Workers and neighbourhood ▪ Regulatory non-compliance	√	√	Medium

	project warehouses.	This might leads to critical injuries to workers and damage to the equipment stored in the event of fire.	▪ Financial loss – fines & penalties for regulatory non-compliance ▪ Delay in timelines due to property damage ▪ Reputation damage			
5.	Proper accident/incident reporting system	There should be a formal mechanism of reporting accidents/ incidents related to health and safety at the site. Lack of proper incident reporting system leads to improper assessment of the EHS gaps in the operating procedures.	▪ Regulatory non-compliance ▪ Loss to life and property – Workers and neighbourhood ▪ Financial loss – medical expenses, compensation ▪ Reputation damage	√	√	Medium
6.	Grievance mechanism redressal mechanism	It is important to have a formal grievance redressal mechanism for vendors and sub-contractors to avoid discrimination and corruption issues.	▪ Delay in timelines due to internal issues ▪ Possible financial loss – compensation, legal fees ▪ Reputation damage	√	√	Medium

Table 3: EHSS Risk Areas

On a regular basis, the EHSS department undertakes risk identification to update the risk prioritisation matrix. The EHSS department also prepares a legal checklist to list down the national, state level and regional regulations applicable to the company and specific projects. This checklist will be updated by the EHSS department at the following frequency:

- Launch of a new national, state, local regulation, act, notification, revision or government order
- Launch of new projects by EESL
- Launch of existing projects in new geographies (states)

Refer **DF 01 – Legal checklist** for a format for preparing and maintaining the list of applicable EHSS regulations.

3.New projects, planning and contracts

It is essential to integrate EHSS issues into new projects throughout the project life-cycle. This will include consideration of EHSS issues during project conceptualization, feasibility and evaluation, design and planning, execution, monitoring and maintenance phases. EESL aims to minimise the EHSS risks and negative consequences on EESL by considering and incorporating EHSS issues into various stages of the project process beginning with project conceptualisation.

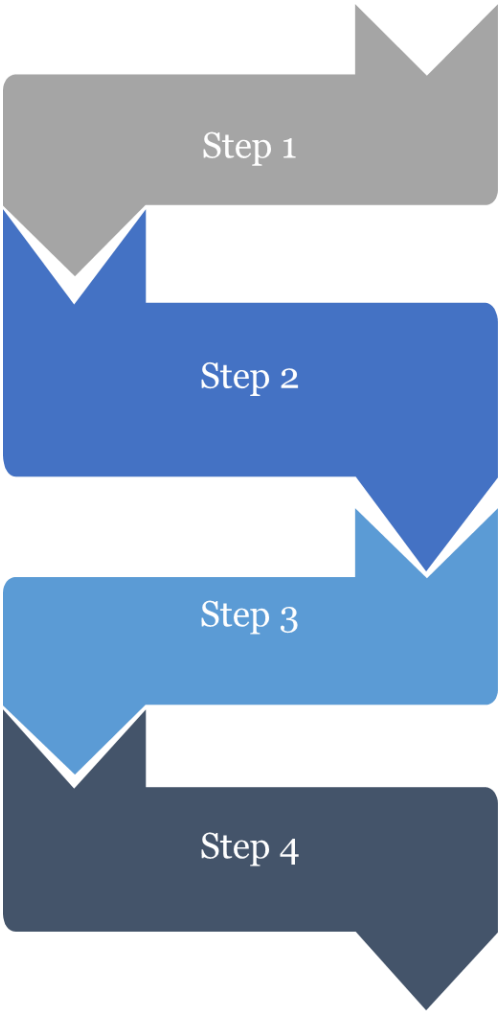
3.1 Key Considerations for new projects

EESL ensures that all new projects consider and integrate EHSS issues/aspects into the project concept, feasibility, design and operational phases. This implies that the project teams will ensure that the following requirements are complied with:

- All new projects comply with our Environment Policy, requirements in the most updated EHSS manual, Standard Operating Procedures (as applicable) and international standards (e.g. IFC, etc.);
- All new projects comply with the applicable national, regional and local regulatory requirements, as listed in the updated legal checklist prepared by the EHSS department
- EHSS matters are given equal priority as other business functions (ex. Financial, technical, etc.) when considering new projects;
- A commitment to continual improvement is adopted as part of the project concept that takes into account positive and negative; direct and indirect impacts of projects
- Assigned EHSS department representatives and senior management are engaged in considering all EHSS aspects of new projects;
- EHSS matters are incorporated for the full life-cycle of the project including project concept, feasibility, design and operational phases; and
- Consultation and feedback is obtained from stakeholders/ sub-contractors for (e.g. Bajaj, Osram, Fiem etc.) at the earliest opportunity on how EHSS issues associated with the project are being considered and prioritized.

3.2 Key Aspects to be considered during project conceptualization and planning phases

A project goes through a number of decision 'gates' such as project definition, feasibility, concept, design and procurement. EHSS is integrated into each decision gate and taken fully into account for project decision-making. If an identified EHSS risk is regarded as being potentially significant to the success of the project, then a 'go/no-go' decision process shall be taken. The EHSS steps to be followed for new projects are depicted by the schematic below:



Assign a 'project owner' for every new project who, as part of his/her role, liaises with the EHSS department to identify the EHSS risks in the upcoming project. Upon identification, the project owner liaises with the other project team members to ensure that such issues are fully considered in the entire project life cycle. All project owners will ensure that all new projects have an updated legal checklist which is communicated in writing to all the project team members (EESL personnel, vendors and their entire product & service supply chain).

Conduct EHSS risk screening exercise in accordance with ***SOP 01 – Risk Assessment*** and identify applicable EHSS requirements under national, state level, local regulations and IFC performance standards. Depending on the type and extent of project:

- Carry out consultation with external stakeholders (Ex. Community, Vendors, Government, etc.)
- Identify, analyze and evaluate EHSS risks throughout project lifecycle
- Consider inputs from internal or external technical expertise, where required; and
- Prepare a project specific risk mitigation plan and implement it

Identify and obtain EHSS related operating permits and licenses in accordance with statutory timelines. Ensure that the vendors and their entire supply chain adheres to EESL EHSS manual, environment policy, and related standards and procedures. Consider sustainability credentials of suppliers, equipment, materials and contractors in the procurement process to supports EESL's commitments and enhances sustainability performance in the supply chain.

Extract and implement the site safety plan from project risk mitigation plan prepared in Step 2 for operational phase. This will include key appointments and role and responsibilities, schedule of works, documented site rules, induction requirements, risk assessments and safe work method statements, and monitoring, auditing and review schedules and required documentation.

Fig 6 –EHSS steps to be followed for new projects

The EHSS steps to be followed for new projects is further elaborated below:

Step 1

At the time of conceptualising a new project or an existing project in a new geography, the following steps are to be followed

- All new projects have an assigned 'project owner'. The project owner is ideally a team member from the project team and is someone with overall responsibility for the management of the project. The project owner, as part of his/her role, liaises with the EHSS department to ensure that EHSS risks are identified, prioritised and fully considered in the project planning and implementation process;
- All project owners will ensure that all new projects have an updated legal checklist

Step 2

The second step involves undertaking the risk assessment and obtaining an approval from the project head on the identified and prioritised risks, risk mitigation plan and legal checklist. The following sub-steps are required to be followed to accomplish this task

- An EHSS risk screening exercise shall be conducted in accordance with ***SOP 01 – Risk Assessment.*** The risk screening will be undertaken by the EHSS department in consultation with the project owner. Depending on the nature and scale of the project, this may involve consultation with external stakeholders (recognizing commercial sensitivities may preclude stakeholder engagement early in the project cycle).
- The EHSS risk assessment process shall identify, analyses and evaluate current and future scenarios, as far as practical, and identify critical risks to EESL and the project. These may include, but not be limited to, public violence, electrical safety, trip and fall risks etc.
- The risk screening exercise shall include input from internal or external technical expertise, where required.
- All new projects, as part of the above EHSS risk screening exercise, shall consider and identify EHSS related applicable national, regional and local regulations that might apply at any stage to the proposed project. In addition, the screening shall identify which IFC Performance Standards and EESL SOPs will apply. In case the regulation is more stringent than the EESL EHSS manual and SOPs, the regulation supersedes the EHSS manual
- The risk assessment shall be reviewed at a defined on a defined interval to confirm it remains relevant and any new risks identified can be incorporated. The frequency of the review shall be defined by the project owner, and as a minimum shall be no less than quarterly (depending on the anticipated duration of the project planning phase) or when new information (e.g. design changes) becomes available.
- The risk assessment will be approved by the project head, along with the project legal checklist, risk mitigation plan and frequency of review. Refer **DF 03 – Risk mitigation plan** for a format of the risk mitigation plan
- These approved documents will be maintained in EESL project office for a period of 10 years
- The approved documents are communicated in writing to all the project team members (EESL personnel, vendors and their entire product & service supply chain).

Step 3

Once the risk mitigation plan is identified, regulatory approvals need to be secured. From the EHSS perspective, the following sub-steps must be followed:

- Regulatory permits, licenses and approvals as identified in Step 2 should be obtained in accordance with statutory timelines (where these exist) or prior to project commencement in case no timelines are specified in the regulations
- Contractor procurement processes shall include consideration of EHSS issues and shall ensure that contractors adhere to our EHSS manual, environment policy, and related standards and procedures. Specifically, the following requirements must be embedded into the request for proposal document provided to vendors
    - The bidder must specify the method of recycling or disposing all hazardous waste collected from the project. This should specifically include the proposed method of disposing or recycling the dismantled lights/appliances. Details of the Central/ State Pollution Control Board authorised recycling units must be provided along with the proposed methodology for monitoring and reporting on the quantity of hazardous waste generated, collected and disposed/recycled

    - The bidder must describe the environment, health, safety and social policies and management systems implemented in their company, and how these will be communicated to further supply chain entities
    - The bidder must describe the existing or proposed emergency preparedness procedure at each facility to be managed by them
    - The bidder must describe the grievance redressal mechanism that is proposed to be implemented for the project, specifically describing the infrastructure setup, governance mechanism and structure, grievance redressal procedure and timelines
- Apart from the above aspects, procurement processes for new projects shall take into account the sustainability credentials of suppliers, equipment, materials and contractors such that the procurement process supports our commitments and enhances sustainability performance in the supply chain;
- A site safety plan for the operational phase of the new project shall be developed that includes, but is not limited to, key appointments and role and responsibilities, schedule of works, documented site rules, induction requirements, risk assessments and safe work method statements, and monitoring, auditing and review schedules and required documentation

Step 4

Once the vendor is identified and appointed, the site safety plan shall be extracted from the approved risk mitigation plan and implemented on site. The following aspects will be considered:

- Extract and implement the site safety plan from project risk mitigation plan prepared in Step 2 and 3 for operational phase
- This will include key appointments and role and responsibilities, schedule of works, documented site rules, induction requirements, risk assessments and safe work method statements, and monitoring, auditing and review schedules and required documentation.

The requirements in the operational phase are further elaborated in section 3.1.2 below.

3.3 Key aspects to be considered in the operational phase

Our project teams and project owner will ensure that potential EHSS risks and impacts associated with the new project are effectively managed. The project teams shall ensure the following:

- All project phase and operational phase regulatory permit and license requirements have been obtained, up-to-date and implemented as per the requirements of local, regional and national regulatory requirements and other international standards (e.g. IFC performance standards etc.);
- Warehouse selection should consider the guidelines mentioned in ***SOP 12 - Criteria for selection of warehouse***
- Operational plans (e.g. environmental management plans, site safety plans etc.) and risk management programmes are implemented;
- Requirements associated with the new project operations are communicated to:
    - Our project teams
    - Vendors
    - Entire product and service supply chain of the vendors (including sub-contractors, their sub-contractors, agents, labour contractors, equipment providers, etc.)

    - Workers undertaking actual project implementation
- Monitoring of EHSS risks and implementation status of the agreed risk mitigation plan during operational phases (including plant, infrastructure and equipment) is undertaken on a periodic basis. This monitoring should be undertaken by the vendor safety officers, our project team members, EHSS department representatives and third party auditors (as per requirement). Monitoring activities shall be commensurate with the project's identified risks and impacts. This can be sourced from the approved risk mitigation plan for the project
- Changes identified in relation to the project during the operational phase shall be managed through an effective management of change programme. In case the project undergoes major changes in terms of the infrastructure setup, sector of work, geography and project duration, a fresh evaluation of the EHSS risks must be undertaken. In case new risks are identified, the risk management plan must be updated accordingly.

3.4 Evaluation of project performance on EHSS aspects

Each EESL project owner will ensure the entire project complies with the requirements of this EHSS manual. Performance against meeting the requirements of this manual shall be assessed periodically, documented and, where required, reported to the management by the EHSS department. The assessment of performance shall include setting and reporting on key performance indicators (KPIs) where these have been established at the company level or at a project level. The KPIs as approved in the project's risk mitigation plan will be utilised for the assessment. The reporting format to monitor EHSS risks has been provided in Appendix 1. The evaluation of performance shall include, as a minimum, confirmation that:

- Senior management have been involved in and participating in new project decision making processes;
- New project designs have considered EHSS risks in the full life-cycle of the project as described in section 3.1
- A EHS risk assessment has been undertaken, is documented and has been reviewed at defined intervals; and
- All EHS-related operating permits and licenses have been identified and obtained prior to project commencement and in accordance with statutory timelines (where these exist).

Refer Appendix 2 for indicative project KPIs.

4. Environment

4.1 EESL Environment Policy

We recognize that effective management of environment impacts is a fundamental part of our business. We strive to integrate sound environmental practices across the management and governance systems to minimize environmental impacts and attain a leadership position in environmental stewardship.

We will endeavour to:

- Maintain positive legal compliance to environmental regulations;
- Progressively develop, implement and maintain an internationally accepted environmental management system;
- Implement pollution prevention and control systems which are defined by the inherent processes of each operation and are in line with internationally disseminated technologies and practices;
- Conserve resources by implementing management programmes and initiatives, adopting efficient technologies and manufacturing process improvements, wherever feasible;
- Adopt principles to manage wastes through application of best available techniques before discharging to the environment;
- Raise environmental awareness through participation and consultation with employees at all levels of our operations through training and creative, diverse and effective channels of communication;
- Engage internally and externally with stakeholders and service providers to broaden our understanding of environmental priorities, their links to global issues and initiate actions on key environmental challenges;
- Influence our contractors and suppliers to adopt EESL policies, principles and practices and encourage appropriate environmental management across the supply and value chain; and
- Actively communicate and disclose our approach and achievements to stakeholders and service providers.

This policy will be reviewed periodically for its suitability and updated as necessary.

4.2 Environmental impacts and risks due to projects

The environmental impacts due to projects are likely to occur both during the installation stage and maintenance stage, whereas the impacts of office operations happen continuously.

4.2.1 Project impacts and risks

The project environmental impacts are due to e.g. the street lighting and DELP programs being run by the company. The major environmental impact is waste management.

Hazardous waste

The hazardous wastes are classified into 12 categories. Project warehouses have the potential to generate hazardous wastes. The most common form of hazardous waste includes dismantled bulbs

and used oil (from DG sets). Improper storage, handling and disposal of waste can lead to lead contamination and mercury pollution.

Lead pollution

Incandescent bulbs and High Pressure Sodium Vapour based luminaire (HPSV) might contain lead[1]. If disposed improperly, the old inventory might lead to lead contamination of ground water and soil. According to US EPA, humans may be exposed to lead by eating and drinking food or water containing lead. Even low levels of lead in children can result in behaviour and learning problems, lower IQ and hyperactivity, slowed growth, hearing problems and anaemia. In adults it can lead to cardiovascular effects, increased blood pressure and incidence of hypertension, decreased kidney function, reproductive problems (in both men and women).

Mercury pollution

Fluorescent lights both in form of FTLs (tube lights) and CFLs (bulbs), HPSV and Metal Halide based luminaires contain toxic levels of mercury. However, it should be noted that mercury is released only when the bulb breaks. Thus fluorescent lights should be disposed in a proper manner. According to US EPA, when liquid mercury is exposed to air, harmful, invisible vapours are emitted. Mercury in the air may settle into water bodies and affect water quality. This airborne mercury can fall to the ground in raindrops, in dust, or simply due to gravity (known as “air deposition”). After the mercury falls, it can end up in streams, lakes, or estuaries, where it can be transferred to methylmercury through microbial activity. Methylmercury accumulates in fish at levels that may harm the fish and the other animals that eat them. MH bulbs also contain iodine and other toxic chemicals.

Batteries and e-waste

The project warehouses can generate batteries waste on account of using industrial batteries from UPS systems, and e-waste from electronic equipment, such as computers, telephones and printing machines.

Noise pollution

The on-site installation work (specifically street lighting) is carried out in the day time. The installation activity causes noise pollution, which may impact certain residential and commercial areas significantly. These involve schools, hospitals, old age homes and similar areas where vulnerable sections of the community reside. However, since the installation time of the street lights is less, these impacts can be managed easily by giving prior notifications to the concerned personnel.

Air pollution

The air pollution can occur in two scenarios – where drilling or dismantling is required during light installation; and during disposal of debris at the recycling facility. These impacts are quantified at both the sources and assessed for mitigation measures.

[1] Department of Toxic Substance Control, Government of California

4.2.2 Office operation impacts

The environmental impacts of operating office locations (main, regional and sales offices) include the following:

Energy consumption

Energy consumption occupies a major share of offices' environmental impact. In our offices, we understand the source of energy – grid supply, battery banks and DG sets. Based on the assessment by the EHSS department, two types of initiatives may be launched:

- Energy efficiency – Reducing the energy consumption of office areas through capex (replacement of appliances and equipment with energy efficient ones, motion sensor lighting, HVAC, modifications in building design to tap more natural light and heat) and non-capex initiatives (employee awareness, switching off lights, AC, switches and plugs when not needed)
- Renewable energy – Installation of solar panels for generation of electricity, usage of solar energy powered appliances (ex. Lights)

Water consumption

Water consumption is the second major environmental impact of office operations. Water is generally used for washing, cleaning and potable purposes. In order to reduce the water consumption in office locations, it is essential to monitor the total water usage and calculate the potential reduction measures. The EHSS department takes charge of these assessments and implements water reduction measures. These could include low pressure water dispensers, sensor based faucets, bio-toilets, etc.

Solid and effluent waste generation and disposal

The solid waste can be categorized as office waste, food waste and e-waste. The EHSS department will review the waste generation statistics on a timely basis and propose mitigation plans to address the identified risks. The key challenge with waste management is segregation at source. This can be achieved by removing desk side bins and implementing recycling hubs instead. Here, waste can be segregated into streams which compels employees to separate out paper, plastics, metals, glass and food waste. Subsequently, the sustainability measures can include the following:

- Recycling of paper and other materials
- Implementing waste to energy solutions, example implementing biogas reactors to generate gas for cooking/heating from food waste
- Handing over e-waste to authorized recyclers or manufacturers

Hazardous waste, batteries and e-waste

If the office locations have DG sets installed for backup power, then the used oil from the DG sets is classified as hazardous waste. The office locations can generate batteries waste on account of using industrial batteries from UPS systems, and e-waste from electronic equipment, such as computers, telephones and printing machines.

4.3 Waste Management

Waste management is clearly coming out as a major concern for our operations. Since waste management is governed by stringent national and state regulations, it is essential that we and our supply chain follow the most appropriate waste disposal methods.

4.3.1 Procedure for Collection, transportation, storage, and disposal of dismantled lights

- At the assembly point where the replacement of lights is taking place, there must be designated storage boxes for collecting the damaged luminaries. The damaged and undamaged lights should never be collected in the same box.
- While transporting these old lights from the assembly points to the warehouse, it must be stored separately in a covered container and should not be mixed with other waste materials.
- At the warehouse there must be designated area for storing hazardous materials, and segregation between damaged and undamaged luminaries must be maintained.
- There must be adequate PPEs provided to the workers engaged in the collection, storage, loading and unloading work to prevent the exposure of workers with the toxic materials.
- Warehouse must have adequate ventilation arrangement to prevent the accumulation of toxic gases from the damaged bulbs and tubes
- There must be a legal agreement for the safe disposal or recycling of hazardous waste material between the vendor and the SPCB authorized hazardous waste recycling/disposal units
- The management must ensure that all the necessary records are maintained as per the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008

Refer ***SOP 02 – Waste Management*** for detailed processes on waste segregation, storage, handling and disposal.

5.Occupational health and safety

5.1 Emergency preparedness and fire safety

Emergency preparedness, readiness for evacuation and fire safety are critical to the safety of man and material within our operations. At our offices, project warehouses and other facilities identified as 'large facilities' by the EHSS department, it is essential to implement an emergency evacuation plan. Follow ***SOP 03 – Fire and emergency procedures*** to implement this plan.

5.1.1 First aid

First aid kits are placed in all our offices, project warehouses and project vehicles when on-site installation/distribution is being undertaken. The components of first aid kit will be in accordance with the state factories rules. The following items should be present in the first aid kit:

- Sterilized dressings – small, medium and large
- Sterilized burn dressings
- 1 (1 oz.) bottle containing a two per cent, alcoholic solution of iodine
- 1 (1 oz.) bottle containing sal-volatile having the dose and mode of administration indicated on the label
- A snake-bite lancet
- 1 (1 oz.) bottle of potassium permanganate crystals
- 1 pair scissors
- Tablets Aspirin
- Burn Ointment
- Dettol

The EHSS department will ensure that adequate personnel within the company and project teams (including on-site teams which comprises of PMC, vendor and labour contract workers under the sub-contractors) are trained in first aid assistance. In case first aid needs to be delivered, following steps should be adopted:

- If the affected person has undergone an electric shock and is still in contact with the equipment causing the shock, switch of the electrical power to that source
- Do not touch the victim's body with bare hands, but if rubber gloves are not available at the site, pull the person off the source of shock using a non-conductor – example newspaper, shirt, wood etc.
- In case of heart attack, the prescribed CPR procedures should be followed
- In case of burns, cut off the fire

5.2 Working practices

The working practices at EESL and project locations are in line with the EHSS manual. At our offices, ergonomics forms an important aspect of safe working method and employees should always maintain good posture. Other processes where employees/workers are bound to work in the certain posture for a long time must follow these guidelines:

- Weight of the arms should always be supported
- Head position should be appropriate. Avoid craning of neck and head

- Slouching should be avoided and a firm straight posture should be adopted
- If employees are using the computer, brightness and screen clarity should be adequate. The monitor, mouse and keyboard should be placed at comfortable positions. The monitor should not be higher than the eye level
- Avoid typing while talking on the phone
- Rest your eyes periodically
- Once in 30 mins, walk or stand for 5 mins
- Feet should be firmly rested on the ground or seat base, they should not be dangling

Project specific working methods are defined in the following SOPs. It is the responsibility of the EHSS department and project teams to ensure that these SOPs are followed diligently.

SOP 04 – Electrical safety

SOP 05 – Work at height and fall prevention

SOP 06 – Portable tools and equipment

SOP o7 – Traffic safety

SOP 08 – Personal Protective Equipment

SOP 09 – Work permit system

SOP 10 – Safe lifting operations

6. Human rights and social issues

6.1 Social factors

It is necessary to identify and manage the social factors that are applicable to our company, our corporate office and our operations including stakeholders or sub-contractors. There are some local and national regulations for social factors such as living wages, working hours etc. which are to be followed for the workers and the employees. This is also applicable to our supply chain.

6.1.1 Child labour

We have a strong commitment to not employ child labour in any of our operations. We will ensure that no child labour or worker is employed at our office facilities, project locations and project warehouses. We also commit to discourage forced and bonded labour, EESL will continuously monitor this parameter to identify non-compliances.

6.1.2 Working hours and overtime

This section is applicable to only those persons who are categorized as 'Workers' in the Factories Act, 1948 or similar regulations. Eg- workers involved in housekeeping, security, material handling, logistics etc. It does not apply to office staff.

The daily work hours for any adult worker should not exceed 8 hours per day/48 hours per week. The work spread over should not exceed 10-1/2 hours in a day. The work spread over is the total time spent at work, including breaks – tea break(s), lunch or other rest time. The maximum daily work hours (time spend on work excluding breaks) should not exceed 9 hours per day for an adult. In case of overtime, the overtime wage should be paid at the rate of twice his ordinary rate of wages of the worker. All workers should be allowed to take a weekly holiday on the first day of the week, which is Sunday or any other day as may be approved by the employer. In case of permission to work on a weekly holiday, there should be a provision to allow compensatory holiday in lieu of un-availed weekly holiday.

In case of an adult worker, rest interval of at least half an hour should be provided, in such a way that no period of work shall exceed 5-1/2 hours. The young person as per provision of Factories Act, 1948 is defined as "adolescent" (a person who has completed 15 years of age, but not completed 18 years of age). It mentions that working hours of adolescent workers are limited to 4-1/2 hours a day. It also specifies that the spread-over should not exceed 5 hours. The provisions of the Act also specify that female adolescent workers are prohibited to work between 7.00 pm to 8.00 am as per Section 71 of the Factories Act, 1948.

The employment of adolescent workers shall follow the regulations listed under Factories Act, 1948. As per Section 87 of Factories Act 1948, the dangerous operation is any manufacturing process or operation carried on in a factory exposes any persons employed in it to a serious risk of bodily injury, poisoning or disease, there is a provision of prohibiting or restricting the employment of women, adolescents or children in the manufacturing process or operation.

As per the Minimum Wages Act, 1948 the number of hours of work for adolescent shall be fixed by the medical practitioner as approved by the Government, which be decided on consideration of adolescent as an adult or child. The adolescent should, however, not be allowed to work for more than 4-1/2 hours on any day.

6.1.3 Documents and records related to working hours to be maintained

- Both EESL and supply chain actors (Vendor, Contractor, Sub-contractor, Labour Contractor, Equipment provider, etc.) should maintain attendance (absent/present) and time in/out register for all workers. The in-out timings recorded in the registered should either be entered by the workers themselves, or if entered by the supervisor, should be signed by the worker on a daily basis. These records are to be maintained at the distribution/ installation sites during project operational phase and at our office during project maintenance phase. The register must also record overtime hours done of workers.

6.1.3 Wages

The details of wages for both EESL employees and its sub-contractors is provided below:

- The contractor shall be responsible for payment of wages to each worker employed by him as contract labour and such wages shall be paid by him before the expiry of 7th day of a particular month.
- The contractor shall ensure that minimum wages, as prescribed by the State Labour Department are paid to the workers, depending on their skill category
- We shall nominate a representative duly authorized by him to be present at the time of disbursement of wages by the contractor and it shall be the duty of such representative to certify the amounts paid as wages in such manner as may be prescribed.
- In case the contractor fails to make payment of wages within the prescribed period or makes short payment, then we shall be liable to make payment of wages in full or the unpaid balance due, as the case may be, to the contract labour employed by the contractor and recover the amount so paid from the contractor either by deduction from any amount payable to the contractor under any contract or as a debt payable by the contractor.
- The Contractor shall make payment of contribution by way of employees' contribution towards Provident Fund, Family Pension Scheme, Deposit Linked Insurance Scheme, Administrative Charges, etc. at the rates made applicable from time to time by Government of India or other Statutory authorities.

6.1.4 Documents and records related to wages to be maintained

- We and our contractor shall maintain registers and records giving particulars of contract labour employed, the nature of work performed by the contract labour, the rates of wages paid to the contract labour and other particulars if any.
- The wage register shall contain the information about daily working hours, overtime hours, number of days worked, deductions if any, bonus payment, leaves obtained and any other information as may be prescribed.
- The Contractor shall keep and maintain registers and forms as prescribed under the Factories Act, 1948, Payment of Bonus Act, 1965, Payment of Gratuity Act, Contract Labour Act, PF Act and other Labour Laws in force from time to time.

6.1.4 Insurance

EESL shall ensure that all the workers are covered under employee state insurance scheme. Contractors shall be responsible for ensuring that provisions of state insurance scheme or equivalent are made available to all their workers. This will give the workers free medical treatment in case of any accident or illness in their dedicated hospitals. In case of any accident the

workers shall be given first aid at the nearest medical center / hospital. If required the worker could be then taken to the ESIC hospitals for further treatment. Otherwise, workman can also be covered under any personal accident policy with medical extension added in the policy. The Contractor shall make payment of compensation in case accidental injury in accordance with provisions of Workmen Compensation Act, 1923. The contractors shall periodically provide to EESL, sufficient documents (insurance deductions/cover note etc) with regards to coverage of their workers under relevant insurance schemes.

Currently, we are communicating the need to obtain insurance in our General Conditions of Contract and Instructions to Bidders documents when we procure direct services. We also need to strengthen the percolation of worker insurance in supply chain further down, especially in the case of labour contractors. We intend to do that with the help of our vendors. It is the responsibility of the project teams to monitor the insurance compliance of labour contractors.

6.2 Gender equality

Women play an important role in the well-being of the society and our company. We are committed to providing equal opportunities to both genders and end gender related discrimination, if any. We strongly support the sustainable development goals, including SDG 5 on achieving gender equality and empowering all women and girls. The EHSS department and HR department will proactively identify cases of gender discrimination with key focus on the following topics:

- Gender based violence, including sexual harassment at the workplace
- Disparity in benefits provided
- Termination on account of pregnancy

Through our HR policies we have ensured that we treat all our employees equally. In order to promote women to take up challenging roles, the HR department will continuously identify opportunities. These could be interventions that assist women to work flexible hours, people or resource support (especially medical, childcare, etc.), networking and capacity building initiatives.

6.3 Grievance redressal

In a project there might be some issues, concerns, problems, or claims (perceived or actual) that an individual or group of workers or local community wants a company or contractor to address and resolve. Grievance mechanism provides a platform for the workers and community to express their concerns and issues to the management, and receive the effective solutions for the same in a time bound manner. The grievance mechanism system must be transparent and legitimate to enhance the trust between the workers, society, and the system.

Grievance mechanism in its scope covers all our operations. It is applicable to all the relevant stakeholders of the project like workers, local community, vendor and contractors. This system must ensure that all the grievance of the workers and community must be addressed in a time bound and effective manner. At each level of the project, there are designated representatives, who will look at the grievance raised at the workplace and ensure timely mitigation measures for the same. There is also a provision of continuous monitoring of the system to track the issues and the solution. Monitoring the system will be beneficial in the trend analysis of the issues and the effectiveness of the system to resolve the same.

6.3.1 Receive and Register

Vendor, Contractor, and the labour contractor must have a representative to look at the problems and issues faced by the workers and the local community members. There must be one representative at each level to receive and address the complaints raised by the workers and local community. It should be ensured that all the issues raised must be registered and shall be resolved in a timely manner. It is necessary to keep the identity of complainant confidential.

6.3.2 Review and Investigate

It is very important that the issues registered must be reviewed and investigated in detail within the limited period of time. Management should try to investigate the issue with in seven working days. It is essential to conduct root cause analysis of the issues and to have an assessment of the number of workers/ people getting impacted by that problem. It also provides an opportunity to conduct assessment of the risk it poses on the project.

6.3.3 Resolve the Issue

The issue must be resolved within the limited time period and the recommended solutions must be SMART (Specific, Measurable, Attainable, Relevant and Time-bound). The solution must address all the issues raised by complainant and ensure preventive measure to avoid the same issue.

S. No	Roles	Responsibilities
1	Labour Contractor	Ensure all the grievances raised by the workers or local community must be registered at site. Work along with contractor and vendors to resolve the issues raised by the complainant.
2	EHS Coordinator	Ensure that concerns raised by the workers and community must be registered and evaluated as per the required procedure.
3	Contractor	Must ensure that all the issues raised must be investigated in details and timely solution provided to the complainant. Must ensure continuous monitoring of the issues raised and evaluate the effectiveness of the solutions.
4	Vendor	Ensure that all the issues raised must be evaluated in details and timely solution must be provided in all the cases. Must ensure that issue once raised should be monitored continuously to prevent its reoccurrence. All grievances must be reported to EESL, along with the corrective action and timeline. Vendors will be responsible for documentation of issues in sub-tiers, however, EESL will conduct self/third party reviews to check any instances of bypass.
5	EESL - EHSS department	Keep track of grievances and monitor their progress carefully. Ideate on newer methods of obtaining grievances from various sources;eg setting up SMS/internet messaging based groups, consolidating list of mobile numbers and sending alerts to workers

Table 4: Issue Resolution Roles and Responsibilities

It is most important to monitor the issues registered on a regular basis. The issues raised in the grievance mechanism will be assessed monthly for the actions being taken and its closure. This analysis will help in the trend analysis of the issues taking place at the workplace and to assess the effectiveness of the solutions provided by the system

7.Monitoring, evaluation and reporting

7.1 Accident, incident reporting and investigation

The effective, reporting, classification and resulting actions including investigation, closure and communication of incidents, is crucial to enable EESL to understand the effectiveness of its EHS risk management programmes and to ensure that the organization learns lessons so as to be able to avoid future recurrences.

7.1.1 General requirements

EESL's project operations and project owners shall implement and maintain procedures and other arrangements for the effective, reporting, classification, escalation, investigation, closure and communication of incidents (including near misses). The Project Owners are the local bodies – Municipal Corporations and with whom EESL ties up for project execution. These requirements also apply to incidents involving contractors (directly commissioned by, or under our direction) whilst they are on EESL premises, or engaged in off-site activities (not on the contractor's own premises). It shall be ensured that personnel have the necessary competencies, appropriate to their role in the process (lead investigator/team member), to be able to conduct effective incident investigation and root cause analysis. This shall include formal training where necessary.

7.1.2 Initial incident actions

The initial incident action pertains to procedures that will be implemented to ensure the prompt reporting of incidents. These procedures shall identify those that are to be informed of an incident, as described below:

- An incident shall be reported to the relevant business or site personnel on the same work day on which it occurs (or is discovered).
- Dependent on the incident classification, we shall be informed of incidents within the time period stated in the table below.

Refer ***DF 02 – Accident/Incident Reporting*** for the format for reporting incidents.

In the case of a Category 4 or 5 accident or incident, work shall cease immediately and not be re-started until after the accident or incident has been investigated and risk controls reviewed, that necessary corrective and preventive actions have been taken to reduce risk to an acceptable level, and that formal authorization to re-start has been given by top management. The project teams shall ensure that any relevant statutory incident reporting requirements are complied with. Eg- Form 18 and Form 18A, under Factories Act, 1948 and reporting requirements as per IS 18001: 2007

7.1.3 Incident classification and escalation steps

Project team will be responsible for incident classification and escalation steps. The incidents will be categorized according to their actual severity and maximum reasonable consequence, according to the EESL Incident Classification System (See Appendix 1). Our project teams will ensure that the following incident escalation steps and recording / reporting actions are followed in the event of an incident.

Incident Category	Description	Incident Escalation Steps	Recording / Reporting Actions

1 & 2	Negligible / Minor	Managed locally in accordance with local procedures.	All incidents recorded in the Incident Management Database & Reporting System in line with requirements (See Appendix) and reported monthly in the Incident Monthly Report.
3	Moderate	• Managed locally in accordance with local procedures • Must be reported by email to the EESL CEO, COO, Head of Sustainability / HSE and Legal Counsel within 24 hours of the incident occurrence.	
4	Serious	• Initially managed locally in accordance with local procedures • Must be reported by email to the EESL CEO, COO, Head of Sustainability / HSE and Legal Counsel within 12 hours of the incident occurrence. • If additional support is needed then the protocol for calling a "Crisis" will be followed.	
5	Catastrophic	• Initially managed locally using the subsidiary Emergency Plan • Must be reported by email to the EESL CEO, COO, Head of Sustainability / HSE and Legal Counsel within 12 hours of the incident occurrence. • If additional support is needed then the protocol for calling a "Crisis" will be followed	
Potential Category 4 & 5 Near Misses	Serious	• Managed locally in accordance with local procedures • Must be reported by email to the EESL CEO, COO, Head of Sustainability / HSE and Legal Counsel within 24 hours of the near hit incident occurrence.	

Table 5: Accident/Incident Escalation matrix

Crisis Protocol

A crisis is defined as any unplanned event that significantly threatens the health and welfare of EESL's stakeholders; causes operational disruption; or causes physical or environmental damage and harm to the EESL's public standing.

In any crisis, EESL's foremost concern is for the protection of human life, health, and welfare. Protection of property and the protection of the integrity and reputation of EESL are also critical; however, they are always secondary to protection of life, health, and welfare.

A primary responsibility of the EESL crisis management team - is to make recommendations for the senior management that they may successfully lead through the crisis. The crisis management team will manage the crisis from beginning to end, making determinations about the scope and nature of

the response, as well as coordinating communication of information about the crisis to all internal and external stakeholders. The crisis management team will comprises of:

- Head - Projects & BD
- Head – Corporate Planning
- Head – Environmental, Health and Safety
- Head - Human Resources

7.1.4 Investigation of incidents

The procedure for investigation of incidents, includes two aspects – investigation teams and investigation methodology. The composition of investigation teams will vary depending on the actual/potential consequence of the incident. The investigation team must comprise of individuals competent to complete the investigation. The local Supervisor(s) would typically be expected to be involved in all incident investigations. Area, line and site management would typically be expected to lead and/or participate in higher category incidents.

Our project team and EHSS Department shall ensure that legal defences are not compromised during the initial or subsequent management/investigation of an incident. EHSS department will lead the root cause analysis. Mechanisms / methodologies / tools (including root cause analysis) to establish immediate, underlying and root causes of incidents, appropriate to the actual/potential consequence of the incident should be applied. Category 4 and 5 incidents (including Potential Category 4 and 5 Near Misses) shall be investigated by root cause analysis (refer Appendix 5)

The formal written report should be produced as fast as is reasonably possible (e.g. in India 7/10 days to meet the Government Factories Department reporting requirements) but in any case within 28 days of the incident unless specific documented reasons prevent this. Prioritised corrective and preventive actions shall be identified to address the identified immediate, underlying and root causes. These will be supported by clear responsibilities for completing the actions together with allocated timescales and resources.

Proposed corrective and preventive actions (including identified control measures) shall be reviewed and approved by senior management. They shall be subject to risk assessment to ensure that (i) they are appropriate to the nature and scale of the hazards and associated risks and (ii) that additional risks are not unwittingly being introduced into the organization.

7.1.5 Closure of reported incidents

Upon incident investigation, formal systems shall be in place to ensure that the status of corrective and preventive actions is monitored through to closure. The EHSS department should take this responsibility for monitoring. Confirmation of the effectiveness of corrective and preventive actions shall be undertaken by the project teams.

7.1.6 Communication regarding the incident for future precaution

It shall be ensured that lessons learned from incident investigations are documented and communicated to relevant employees and, where appropriate, contractors. Systems shall be in place to manage the external communication of information relating to incidents where this is needed. Systems shall be in place to review and, where appropriate, act upon incident information received from other EESL sites.

7.1.7 Review of incident and investigation data

Our senior management shall undertake and document a periodic (at least annual) review of incident and investigation data to identify any trends, assess the effectiveness of current risk controls, and establish whether any additional measures are necessary. Incident classification, reporting and investigation procedures shall be periodically reviewed as needed to ensure that they remain current, relevant to the business, effective and in alignment with relevant EESL policies and standards. Our EHSS department shall review all Class 5 incidents with the CEO in person or by Telepresence within one month of the completion of the final investigation report. The report will be submitted to the Board of Directors and the EESL EHSS Committee for review.

Each of our operation shall ensure they comply with the requirements of this standard. Performance against meeting the requirements of this Standard shall be assessed periodically, documented and, where required, reported to the company. The evaluation of performance shall include, as a minimum, confirmation that:

- Incidents are being reported and acted upon.
- Incidents are being correctly classified.
- Investigations are being carried out by competent personnel – including the active involvement of management – using appropriate methodologies.
- Investigations are identifying basic and underlying causes and contributory factors.
- Corrective and preventive actions, appropriate to the nature of hazards and level of risk, are being identified and implemented.
- The effectiveness of corrective and preventive actions is being assessed.
- Learning arising from incidents are being communicated inside and, where appropriate, outside the company.
- Senior Management and BOD/EHSS department reviews have taken place.

7.2 Corrective and preventive action

It is essential to ensure that a programme is in place in relation to the management of identifying, recording, tracking and closing-out actions. This includes consideration of corrective actions (e.g. resulting from inspections, audits, etc.) and preventive actions to prevent reoccurrence and/or ensure continual improvement in sustainability performance.

- We shall have a centralized system for managing actions that need to be addressed. The process shall ensure that and corrective and preventive actions are taken as appropriate. The process shall ensure that actions are tracked; the actions are communicated to those potentially affected; and monitoring and verification mechanisms are implemented to ensure actions continue to be managed effectively.
- We shall also be consistent with the requirements of the *Incident Reporting and Investigation* Standard (including the tracking and close-out of actions arising from incidents and near misses).
- We shall appoint a nominated individual with responsibilities for managing the collection and collation of corrective and preventive actions.
- Each operation/business shall have an equivalent corrective and preventive action process as mentioned in subsequent sections.

7.2.1 Process for corrective and preventive action

We shall ensure that a formal corrective and preventive action programme that conforms to EESL requirements, Company and operation requirements, stakeholder requirements and regulatory requirements, as applicable is in place. The project teams, in consultation with the EHSS department shall define and document definitions associated with non-conformance, corrective and preventive actions. The project teams shall define activities and that have the potential to generate non-conformances and corrective/preventive actions. This may include, but not be limited to, non-conformances and actions associated with the following:

- Accident/Incidents and near misses (including grievances and stakeholder concerns);
- Internal audits;
- External audits by a third party (e.g. stakeholders and regulators)
- EESL audits including self-assessment questionnaires
- Inspections;
- Compliance assessments;
- Management reviews;
- Staff suggestions schemes.
- Whistle-blower procedures

Refer ***SOP 11 –Health & Safety audit procedure*** for conducting internal audits on safety

The project team shall develop and implement a procedure that outlines the roles and responsibilities associated with identifying and investigation non-conformances. These might include processes for:

- Identifying and recording non-conformances;
- Communicating non-conformances;
- Investigating and taking action to correct non-conformances;
- Determining corrective and preventive actions;
- Assigning roles and responsibilities for actions; and
- Deciding upon, and approving, action timelines for completion and close-out.
- Keeping aging reports for management review

The project teams shall ensure a process is in place to assign and track corrective and preventive actions that consider the following:

- Preventive and corrective actions shall be communicated to relevant personnel.
- Actions taken shall be communicated to external stakeholders as appropriate.
- An escalation process shall be established for actions that become significantly overdue, specifying reporting lines and due process.
- Operations shall ensure periodic management reviews consider the effectiveness of action tracking and closure processes and identify opportunities for reoccurrence.

Sample project reporting format can be obtained from ***Documentation Format 04 – Sample project report.*** The project teams should ensure that vendor specific project reports are obtained on a quarterly basis and submitted in due time to the EHSS department.

Each of our operation shall ensure that it complies with the requirements of this Standard. Performance against the requirements of this Standard shall be assessed periodically, documented and, where required, reported to the company. The evaluation of performance shall include, as a minimum, confirmation that:

- A formal corrective and preventive process is in place;
- A Manager at the operation level has been assigned with ultimate responsibility and accountability for action tracking and close-out;
- Actions are being completed according to due dates (suggested Key Performance Indicator is number of outstanding actions and an aging report);
- Actions have been communicated to affected personnel.

8.Capacity building, training and awareness

We shall ensure all employees including front-line leaders, senior managers and including contractor employees working on EESL operations are competent to carry out their work activities effectively and manage the associated risks and impacts appropriately. Employees shall be equipped with the necessary knowledge, skills and behaviours to provide a basis for continuous improvement, to protect the day-to-day health and safety of employees and contractors.

Training is intended to develop appropriate *knowledge*, *skills and behaviours* which will enable individuals to become competent in their roles, to fulfil their responsibilities and required activities in their specific environment whilst remaining safe, healthy and simultaneously contributing to the overall long-term sustainability of the company. In this way, training is a key risk mitigation method for the business. Training shall be based on the following principles:

- Training shall be provided to both employees and contractors based on role, risk, and responsibilities;
- The training programme shall seek to ensure competency and quality outcomes rather than only training attendance;
- The training programme shall focus on the needs of the audience and use different learning methods to cater for differing needs, and
- Training shall be an ongoing and iterative process.

8.1 Competency framework

Competency derives from the three elements of knowledge (through provision of information) which over time becomes skill (through coaching and practice) and leading on from this, the ability to demonstrate positive behaviours (through acting out the correct messages and responsibilities). Training shall target all three elements cumulatively in order to achieve competency. In order for the business to understand what competencies are required as well as a current state of the existing competencies within the business, a Competency Framework shall be created.

- The first stage of the Competency Framework is to identify the knowledge, skills and behaviours required per job function, taking into consideration associated risks and activities, legal and regulatory requirements and leadership level and responsibilities;
- Competency frameworks shall be designed on a stepped scale for example competency levels 1-3 or 1-5 to reflect the different competency requirements of different employee groups for each subject area. The following example is based on a management of change:

Competency Level 1	**Competency Level 2**	**Competency Level 3**
Knowledge that a change in person, equipment, process or environment can increase risk.	Ability to identify needs for change management and Communicate this to staff.	Champions the importance of Change Management at an operational level.
Understanding that many incidents occur as a result of poorly managed changes.	Ability to be involved in a Change Management processes and organize associated people and resources.	Assesses the effectiveness of change management at an operational level.

Awareness that any changes which affect a person or process needs to be communicated to all affected parties	Will raise awareness of the importance of Change Management with peers and reports	Seen as a subject matter expert and can provide advice and expertise to operations in implementing Change Management processes.

Table 6: Competence framework

- The second stage of the Competency Framework is to identify which existing competencies individual employees and contractors have. Existing education, training, qualifications and experience shall be considered in context of the skills required to fulfil their role, however it is advised that baseline training is repeated for high risks. This process will confirm what skills are currently in place for the existing workforce and gaps which need addressing through the Training Needs Analysis, and
- Specific competencies for the EESL Programme shall be developed which will include Stakeholder Management, Environmental Impacts and Controls, Health and Safety Hazards and Controls and social factors.

8.2 Training needs analysis

The Competency Framework will dictate Competency Requirements, and when these are mapped against existing employee and contractor skills, a Training Needs (or Gap) Analysis will result. Where gaps are identified, these must be addressed through a defined training plan stating who requires training in which areas, to which competency level, and who will provide this training. HR Department in collaboration with EHSS Department will be responsible for the undertaking training need analysis. A Training Needs Analysis shall be completed as follows:

- For all employees and contractors as a baseline. Training needs must be created on a yearly basis for each operation based on risk;
- For new employees and contractors. This must address the risks and responsibilities including appropriate induction and skills building. Training requirements for new starters must be identified with a development plan to address the increased risk of their presence due to inexperience;
- Within Change Management Processes. If there are any planned or unplanned changes to scope, environment, legislation, equipment, personnel, operational conditions or processes, training must be provided to ensure any additional risk is mitigated, and
- When an incident has occurred and training is identified as either a contributing or causal factor. High risk groups must be identified, such as new starters, who require additional and immediate mitigations such as additional supervision alongside a coaching and training plan to address competency gaps.

8.3 Training delivery and methods

Training Delivery is a critical consideration to ensure the effectiveness of learning and competency. Training programmes must be developed and delivered based on the outcome of the Training Needs Analysis. Training can be delivered in-house and/or through external training providers, however the following shall be considered as a minimum for both types of training:

- Consideration of the audience being trained, including language and literacy abilities;
- Setting objectives (goal, purpose and intent) of the training based on the required competencies;
- Use of the most appropriate (and varied) training methods for the required competencies;
- Ensure that the trainers or facilitators are experienced and/or qualified to deliver training. Checks must be made on external trainers, such as asking for copies of relevant training certificates and references;
- Where internal courses are deployed by internal staff, 'Train the Trainer' courses shall be provided to equip trainers with the skills necessary to train on internal EESL requirements and practices, and
- Training for significant risks shall be repeated every year as a minimum for all employees and contractors.

Training can comprise both formal and informal training methods for example:

Formal	Informal
E-Learning	Coaching
PowerPoint	Mentoring
Classroom Training	Background Reading
Flip Chart sessions	On-the-job learning
Learning based games	Focused discussions
Toolbox Talks	Leading by Example

Table 7: Training methods

Using a combination of these methods, effective trainers, both internal and external to the organisation will be able not only to transfer knowledge and tangible skills, but also behaviours, organisational culture and values.

8.4 Induction for new employees

Inductions for new employees (to their role, responsibilities, site and relevant risks), contractors (to their role, responsibilities, site and relevant risks) and visitors (to the site and relevant risks) must be provided. Inductions will be maintained and delivered consistently by competent personnel and should cover as a minimum:

Induction to site

- Site orientation, site rules and no-go areas;
- Emergency procedures and medical facilities;
- Site hazards and associated risk controls;
- Incident reporting procedures, and
- An overview of group and site-level Sustainability Policies.

Induction to Role and Responsibilities

- Requirements and risks associated with the role;
- Expectations and responsibilities;
- Company and site Policies, Systems and Standards;
- Integrated Health, Safety and Sustainability practices, and
- Relevant risks and control measures for EESL operations and activities.

Employees, contractors and visitors receiving induction training shall confirm through documented acceptance that induction training has been provided.

All new employees and contractors shall receive induction training prior to starting their job function. Additional supervision will also be implemented until the individual is deemed and documented competent to work alone.

8.5 Training resources

EHSS Department will be responsible for the training resources and would be assisted by Consultants employed for the preparation of training materials. Training resources shall be varied, appropriate to the audience, activity and environment wherever possible with maximum use of examples and case studies to maximise the impact and longevity of the messages conveyed. For example use of the following shall be considered:

- Multimedia (photos, audio, videos);
- Incident Investigations;
- Practical scenarios and role-plays, and
- Company and industry safety shares and case studies.

During or at the end of training, competency shall be assessed by someone who is qualified to do so using consistent and demonstrable criteria. The acquired competency can then be added to the individual's training record.

For contractors, due to the increased risk profile, and in line with Contractor Management practices, business units shall collaborate with the EHSS department to assess the competency of all contractors prior to their appointment on EESL projects to ensure levels of competency are appropriate to the scope of work being undertaken.

All our employees assessing contractor competencies shall have the appropriate level of skill and expertise to conduct the assessment. Contractor qualifications shall be requested and maintained on record. A sample set of qualifications are given below:

Aspect	Criteria
Technical Ability	Experience Plant and Equipment Personnel Ability
Management Capability	Past Performance and Quality Project Management Organization Experience of technical personnel

	Management Knowledge
Health & Safety	Safety Experience modification rating OSHA Incident Rate Management Safety Accountability

Table 8: Contractors Qualification

The competency of subcontractors conducting activities contracted out by approved contractors shall be assessed and documented by the approved contractor and our company. Where gaps in competencies are identified, appropriate training shall be provided in conjunction with increased levels of supervision.

8.6 Record keeping and reporting

It shall be ensured that participation in internal and external training is recorded and records are valid, up to date and kept secure, typically in the personnel training file. Only an approved internal or external trainer can issue a certificate of training or training attendance. Copies of training and evaluation materials shall be retained.

As a minimum, training records shall include the date of training, location, name of trainee(s), name of training course or competency, pass or fail (where applicable and if so, reasons where possible), level of competency achieved, sign-off by relevant authorised trainer, any relevant certification achieved and any remedial actions (for example in the case of competency not being achieved).

Documented checks on the qualifications and experience of employees and contractors where their qualifications are relevant shall be maintained where required. For example, new employees and contractors shall be asked for their technical certificates such as a driver's licence and required qualifications for operations.

Appendix 1 - List of major regulations applicable to EESL

S. No	Legislation	Central/ state
1.	The Water (Prevention and Control of Pollution) Act, 1974 and amendments	Central
2.	The Environment Protection Act, 1986 and amendments	Central
3.	The Air (Prevention and Control of Pollution) Act, 1981 and amendments	Central
4.	Hazardous Waste (Management and Transboundary Movement) Rules, 2008, 2011 and 2015	Central
5.	E-wastes (Management and Handling) Rules, 2011	Central
6.	Batteries (Management and Handling) Rules, 2001	Central
7.	Contract Labour (Regulation and Abolition) Act, 1970 and amendments	Central
8.	Minimum Wages Act, 1948 and amendments	Central
9.	Payment of Wages Act, 1936 and amendments	Central
10.	Workmen's Compensation Act, 1923 and amendments	Central
11.	Employees' State Insurance Act, 1948 and amendments	Central
12.	Maternity Benefits Act, 1961 and amendments	Central
13.	Sexual Harassment at the Workplace (Prevention, Prohibition and Redressal) Act, 2013 and amendments	Central
14.	Environmentally Sound Mercury Management in the Fluorescent Lamp Sector	Central
15.	The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996	Central

Appendix 2 – Accident and Incident classification system

Incident Category	Definition	Severity Criteria						Action	Maximum time allowed
		Safety	**Health**	**Environment**	**Social**	**Labour**	**Security**		
Category 1	Negligible	First Aid Case	N/A	Inside warehouse - Toxic/ Hazardous material and volume up to 1m^3 or equivalent vol. of gas emission/ discharge of waste	Complaints - Local complaints in company office (written or verbal) from external sources.	Complaints - Concern / Grievances restricted to local complaints in company office (written or verbal) by Employees / Contractors.	N/A	1. Manage locally in accordance with local procedures.	-
				Outside warehouse - Causing negligible, reversible environmental impact, requiring very minor or no remediation				2. All incidents recorded in the Group Incident Management Database & Reporting System	2 Weeks
								3. Statutory report to authorities (as required by local regulatory agencies)	Statutory Requirement
				Complaints - Local complaints in company office (written or verbal)				4. Report monthly in the Incident Monthly Report	Monthly

				from external sources.					
Category 2	Minor	Medical Treatment Injury	N/A	Inside warehouse- Toxic/ Hazardous material and volume up to 1-10m^3 or equivalent vol. of gas emission / discharge of waste	Complaints - Receipt of multiple complaints on same topics from external sources	Complaints - Receipt of multiple complaints on same topics by Employees / Contractors	Robbery or Assault	1. Manage locally in accordance with local procedures.	See Local Procedures
				Outside Warehouse 1) Toxic/ Hazardous material and volume up to 1m^3 or equivalent vol. of gas emission/ discharge of waste 2) Causing minor, reversible environmental impact, requiring minor remediation	Protest - Minor protest (single family / small group less than 5 people)	Protest Type - Minor protest (small group less than 5 people)		2. All incidents recorded in the Group Incident Management Database & Reporting System	1 Week
								3. Statutory report to authorities (as required by local regulatory agencies)	Statutory Requirement
				Complaints - Receipt of multiple complaints on same topics from external sources	Coverage - Minor / adverse local public or media attention	Coverage - Minor / adverse local public or media attention		4. Report monthly in the Incident Monthly Report	Monthly

Category 4	Serious	Lost Time Injury / Illness	Complaints - Receipt of multiple complaints on same topics from/ to Local NGO/ Govt. body	Complaints - Receipt of complaints / multiple complaints on same topics from / to National NGO / State Govt. body	Complaints - Receipt of complaints / multiple complaints on same topics from / to National Union/ State Govt. body	Shooting (non-fatal)	1. Manage locally in accordance with local procedures	-
							2. Report by email to the EESL and EHS head	12 Hours
			Coverage - In Regional media- Newspaper / TV	Protest - Large scale demonstration (group including more than 20 people) - No work stoppage	Protest Type - Large scale strike (group including more than 20 people) - No work stoppage		3. Report to the EHS Head and CEO	12 Hours
							4. Statutory report to authorities (as required by local regulatory agencies)	Statutory Requirement
			Inside Warehouse- Toxic/ Hazardous material and volume up to 100-1000m^3 or equivalent vol. of gas emission/ discharge of waste	Coverage - In National media- Newspaper / TV/ Internet	Coverage - In Regional media- Newspaper / TV/ Internet		5. Investigate for root cause analysis	Investigation within 28 days
							6. Report monthly in the Incident Monthly Report	Monthly
Category 5	Catastrophic	Fatality / ies	Outside Warehouses–	Complaints - Receipt of	Complaints - Receipt of	Assault – Fatal	1. Manage locally in	-

			1) Toxic/ Hazardous material and volume up to 10-100 m^3 or equivalent vol. of gas emission/ discharge of waste 2) Causing serious environmental impact, with medium-term effect, requiring significant remediation	complaints / multiple complaints on same topics from/ to International NGO / Central Govt. body	complaints / multiple complaints on same topics from / to Central Govt. body	Direct Terrorist Attack	accordance with local procedures	
							2. Report immediately by verbal communication to the EESL CEO, and EHS head	0 Hours
							3. Report immediately by email communication to the EESL CEO, and EHS head	12 Hours
			Complaints - Receipt of complaints / multiple complaints on same topics from/ to National NGO/ State Govt. body	Protest - Large scale demonstration (group including more than 20 people) - Stoppage of Work	Protest Type - Large scale strike (group including more than 20 people) - Stoppage of Work		4. Report to the EESL CEO, and EHS head	12 Hours
							5. Statutory report to authorities (as required by local regulatory agencies)	Statutory Requirement
			Coverage - In National media-	Coverage - In International media-	Coverage - In International media-		6. Investigate for root	Investigation within 28 days

			Newspaper / TV / Internet	Newspaper / TV/ Internet	Newspaper / TV/ Internet		cause analysis	
							7. Report monthly in the Incident Monthly Report	Monthly
Potential Category 4 or 5 Near Miss	Near Miss	See above for Category 4 and 5 Incidents					1. Manage locally in accordance with local procedures	See Local Procedures
							2. Report to the EESL CEO, and EHS head	24 Hours
							3. Statutory report to authorities (as required by local regulatory agencies)	Statutory Requirement
							4. Investigate for root cause analysis	Investigation within 28 days
							5. Report monthly in the Incident Monthly Report	Monthly

Appendix 3 – Indicative key performance indicators

Level	EHSS risks	Indicative key performance indicators (KPI)
Company (EESL)	Environmental impacts due to office operations	▪ Reduction in energy consumption (absolute/per capita/per sft) ▪ Reduction in Scope 1, Scope 2 & Scope 3 GHG emissions ▪ Reduction in water consumption (absolute/per capita) ▪ Quantity of water recycled ▪ Reduction in waste generation ▪ Quantity of waste recycled Benchmarks could be drawn from national average consumption figures, indicative set is given below: ▪ Energy consumption (2014): 19522.15 MegaJoules/capita (Source: mospi.nic.in/Mospi_New/upload/Energy_stats_2015_26mar15.pdf) ▪ Water consumption (2003); 52 cu meter/year per capita (Source: http://www.unwater.org/downloads/Water_facts_and_trends.pdf) ▪ Municipal solid waste (2004-05): 39,031 Tons per day (cumulative across 59 cities; Source: http://www.cpcb.nic.in/divisionsofheadoffice/pcp/MSW_Report.pdf)
	Health & safety risks (of fire, other emergencies)	▪ Total locations with/without fire and emergency preparedness procedures (emergency evacuation plan and firefighting equipment) ▪ Number and category of incidents reported ▪ Hours of training on EHS aspects (absolute/per capita/per department) ▪ Number of mock drills conducted ▪ Total number of employees certified in emergency preparedness (third party certification such as for First Aid and Firefighting Trainings.). ▪ Total number of audits conducted & findings closed
	Social risks (discrimination, harassment, etc.)	▪ Number of complaints received and resolved ▪ Actions taken with respect to those complaints ▪ Hours of training provided on these issues ▪ Number of committee meetings held (ethics committee, sexual harassment committee, etc.)
Project		
Street lighting	Environmental damage due to improper disposal of dismantled lights	▪ Number of bulbs replaced as per type of bulbs dismantled (vendor wise breakup) ▪ Number of bulbs to be dismantled ▪ Number of bulbs sent to recycling unit (vendor wise breakup) ▪ Details of recycling units used by each vendor ▪ Hazardous waste disposal consent from SPCB for all recyclers ▪ Quantities of dismantled bulbs collected & processed by the recyclers

		▪ Manifests for the total number of bulbs given to the recyclers (vendor wise)
	Accidents, incidents due to improper working practices	▪ Number and category of incidents reported ▪ Number of incidents investigated and closed ▪ Hours of training on EHS aspects (absolute/per capita/per department)
	Social issues (Ex. Minimum wage violation, excessive overtime)	▪ Total cases of minimum wage violation ▪ Percentage of workers with/without accidental insurance ▪ Percentage of workers undertaking excessive overtime consistently
	Harassment and discrimination	▪ Number of complaints received and resolved ▪ Actions taken with respect to those complaints ▪ Hours of training provided on these issues ▪ Number of committee meetings held (ethics committee, sexual harassment committee, etc.)
	Lack of emergency preparedness and inadequate fire control measures at project warehouses	▪ Total locations (esp. warehouses) with/without fire and emergency preparedness procedures (emergency evacuation plan and firefighting equipment) ▪ Hours of training on EHS aspects (absolute/per capita/per department) ▪ Number of mock drills conducted ▪ Total number of employees certified in emergency preparedness (third party certification) ▪ Total number of audits conducted & findings closed
DELP	Accidents, incidents due to improper working practices	▪ Number and category of incidents reported ▪ Number of incidents investigated and closed ▪ Hours of training on EHS aspects (absolute/per capita/per department)
	Social issues (Ex. Minimum wage violation, excessive overtime)	▪ Total cases of minimum wage violation ▪ Percentage of workers with/without accidental insurance ▪ Percentage of workers undertaking excessive overtime consistently
	Harassment and discrimination	▪ Number of complaints received and resolved ▪ Actions taken with respect to those complaints ▪ Hours of training provided on these issues ▪ Number of committee meetings held (ethics committee, sexual harassment committee, etc.)
	Lack of emergency preparedness	▪ Total locations (esp. warehouses) with/without fire and emergency preparedness procedures (emergency evacuation plan and firefighting equipment)

	and inadequate fire control measures at project warehouses	▪ Hours of training on EHS aspects (absolute/per capita/per department) ▪ Number of mock drills conducted ▪ Total number of employees certified in emergency preparedness (third party certification) ▪ Total number of audits conducted & findings closed

Appendix 4 - Sample photographs of safety procedures

Sample 1 – Work in progress board with traffic diversion

Sample 2 – Safety harnesses used while replacement of street light

Sample 3 - Safe usage of cranes

Appendix 5 – Accident Investigation/Root Cause Analysis Form

Complete This Report When Injured Employee Needs To Seek Medical Attention

Date of Injury_____ Time of Injury_____AM/PM

Employee_____ Insurance Claim Number_____

Please indicate the location of the accident_____

What task was being performed, how did the accident happen, and explain the nature of the injury____ _____
_____
_____

Describe any tools, machinery, equipment, or PPE that was being used at the time of the accident_____ _____

Was the employee working alone?_____ Witness Name(s)_____

How much experience did the employee have in performing this task?_____

_____

****

STEP 1—Obtain and review physical evidence, employee and witness information, and paper evidence pertinent to the investigation.

Physical—Photographs, drawings, equipment manuals, etc… (Forward with report)

Employee/Witnesses—statements, interviews

Paper—Policies, programs, training records, maintenance records, incident reports, etc.

STEP 2—Direct Cause, Contributing Cause, and Root Cause

Use the following listing as an aid for identifying the factors that led to the accident.

Don't be limited by the categories listed—add items as needed. Check all that apply.

****

POLICIES/PROGRAMS		COMMUNICATION	
Not Developed or Inadequate		Insufficient Planning For Tasks	
Developed and Communicated		Lack of Worker Communication	
Developed—Not Communicated		Lack of Supervisor Instruction	
Developed-Not Followed/Enforced		Sufficient Supervisor Instruction	
Developed—Not Understood		Confusion After Communication	
Lack of Disciplinary Policy		Lack of Understanding of Task	
Disciplinary Policy Not Enforced		Work Team Breakdown	

HAZARDS		BLOODBORNE PATHOGEN	
Unidentified or Not Labeled		Unaware/Aware of Air Borne Hazard	
Known But Not Corrected		Stuck With Contaminated Needle	
Known But Not Reported		Client Contact/Exposure	
Created by External Factors		Inmate Contact/Exposure	
Known But Not Reported		Sharps Container Not Available	
Condition Changed Not Conveyed		Improper Cleanup	
Equipment Repaired Deficiently		Contaminated Waste Not Labeled	
PPE Not Adequate or Defective			

PRODUCTIVITY FACTORS		WORK BEHAVIOR	
Heavy Workload		Shortcuts Taken	
Tight Schedule To Complete Task		Deviations-Common, Allowed etc…	
Long/Unusual Working Hours		Special Infrequent Task	
Falsely Perceived Need to Hurry		Tool/Equipment Used Improperly	
Staff Assistance Unavailable		History of Accidents/Incidents	
Staff Assistance Inadequate		Disregard/Refused to Follow Procedure	
Changes in Process		Staff Assistance Required	
Was Employee Ill?		Horseplay	
Medication, Drugs, Alcohol Factors		Repetitive or Physically Demanding	
Double Shift		Going On/Coming Off Vacation	

TRAINING		ENVIRONMENT	
Deficient Orientation Training		Weather/Temperature Factors	
Deficient Job Specific Training		Poor Housekeeping	
Insufficient Training for New Process or Task		Poor Lighting	
Lack of Supervisor Follow-up or Reinforcement		Poor Visibility	
Lack of Supervisor Training		Air Quality	
Lack of Employee Training		Noise	
Communication of Expectations		Visibility of Labels/Warning Signs	
Communication of Rules/Policy		Visible and Audible Alarms	
Hazards Overlooked in Training			

Personal Protective Equip (PPE)		FACILITIES/EQUIPMENT	
Available		Poor Facility Design	
Required		Poor/Faulty Equipment or Design	
Required PPE Not Used/Worn		Poor Workstation Design	

Trained On How To Use		**Equipment Not Guarded**	
Adequate Fit		**Equipment Repair Deficient**	
PPE Not Used Adequately		**Lack of Preventative Maintenance**	
Poor Condition		**Employee Lack of Knowledge**	
Adequate for Job Performed		**Equipment Failure**	
Lack of Supervisor Enforcement		**Inadequate Inspection Timelines**	

STEP 3—CAUSES

<u>From the categories identified above, circle the major cause or causes of the accident:</u>

POLICIES/PROCEDURES **PRODUCTIVITY FACTORS**

TRAINING **ENVIRONMENT**

FACILITIES/EQUIPMENT **HAZARDS**

BLOODBORNE PATHOGEN **WORK BEHAVIORS**

COMMUNICATION **PERSONAL PROTECTIVE EQUIPMENT**

****

Comments Related to Investigation_____

_____

_____

_____

_____

STEP 4—ROOT CAUSE ANALYSIS

Why Did This Happen?
WHY…?

WHY…?

WHY…?

WHY…?

How Can This Be Prevented? (Develop Safety Policy, Enforce Safety Policies, Follow Safety Policies, Develop Training, Additional Training, etc…)

Steps For Corrective Action and Projected Completion Date:

Engineering Controls—Eliminate/ reduce hazards through equipment redesign, enclosure, replacement, substitution, etc. **Administrative Controls—**Eliminate/ reduce frequency and duration of exposure through (1) changes of work procedures and practices, and/or (2) scheduling, job rotation, breaks, etc. 3) Training 4) Additional Training

Personal Protective Equipment—for personal use that presents a barrier between worker and hazard.

1) **Est. Completion Date_____**

2) **Est. Completion Date_____**

3) **Est. Completion Date_____**

4) **Est. Completion Date_____**

The following persons have participated in the accident investigation and root cause analysis and are aware of the findings:

_____		_____	
Risk Manager	**Date**	**Witness**	**Date**
_____		_____	
Supervisor	**Date**	**Witness**	**Date**
_____		_____	
Employee	**Date**	**Witness**	**Date**