IGBC Rating System for Green Logistics Parks & Warehouses

(Including Cold Storages, Distribution Centres, Retail Warehouses, Industrial Parks & Light Manufacturing Units with Warehouses, Free-trade & Warehousing Zones)

Pilot Version

Abridged Reference Guide

October 2020

IGBC

Confederation of Indian Industry

125 Years: 1895-2020

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Foreword from the Indian Green Building Council (IGBC)

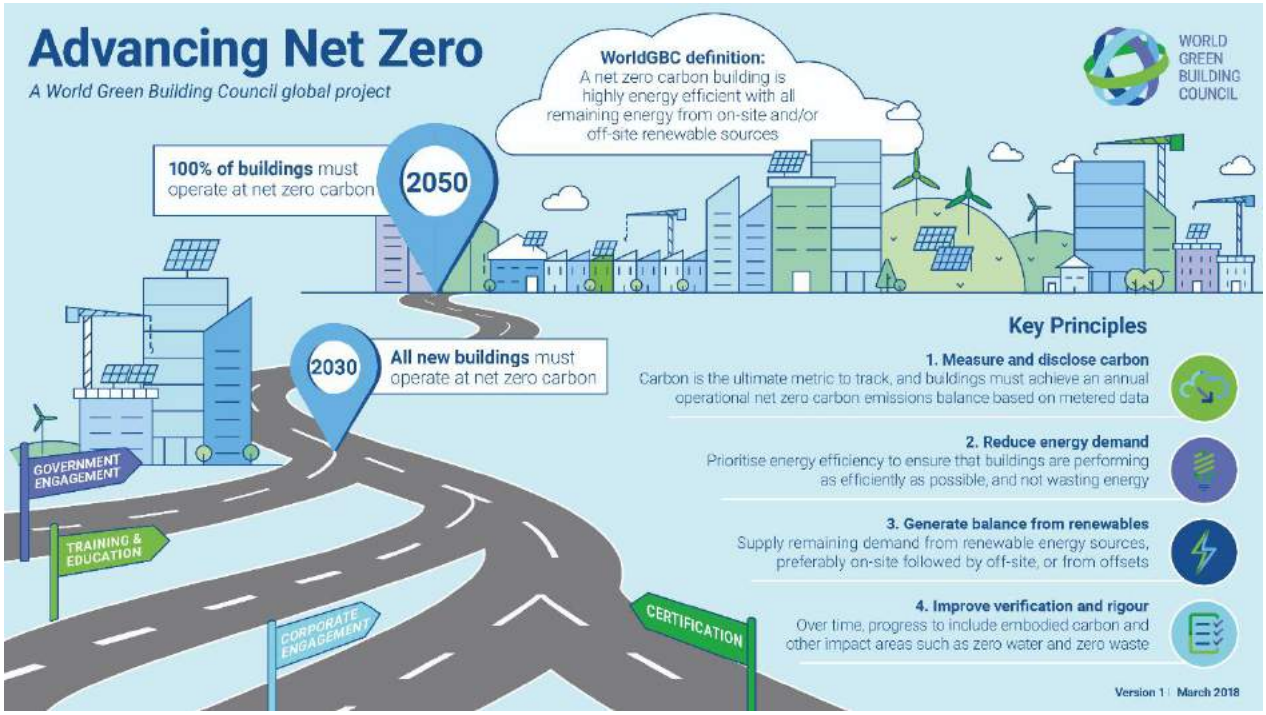
The Indian Construction sector is witnessing tremendous growth in infrastructure and buildings. As the sector is growing rapidly, it is imperative to consider green measures while developing the infrastructure and buildings so as to balance consumption and conservation of natural resources. To enable the construction industry to be environmentally sensitive, CII-Sohrabji Godrej Green Business Centre has established the Indian Green Building Council (IGBC). IGBC, is a consensus driven not-for-profit Council, representing the building industry, and consists of more than 1,712 committed members. The Council encourages builders, developers, logistics service providers, owners, architects and consultants to design & construct green buildings, thereby enhancing the economic and environmental performance of buildings.

The Green Building Movement in India has been spearheaded by IGBC since 2001, by creating awareness amongst the stakeholders. Thus far, the Council has been instrumental in enabling 7.17 Billion sq.ft. of green building footprint in the country. The Council's activities have enabled a market transformation with regard to the green building materials and technologies.

IGBC continuously works to provide tools that facilitate the adoption of green building practices in India. The development of IGBC Green Logistics Parks and Warehouses rating system is another important step in this direction.

IGBC and WorldGBC

Indian Green Building Council (IGBC) is the only council in the country to be recognised by World Green Building Council (WorldGBC). The WorldGBC is a global network of GBCs with over 70 countries. IGBC is one of the founding members of the WorldGBC since its inception in 2004. IGBC works very closely with WorldGBC on global projects and campaigns such as Advancing Net Zero, Better Places for People, World Green Building Week, Asia-Pacific Regional Network Awards, etc.



Source: Advancing Net Zero Infographic, World Green Building Council

I. Introduction

The Logistics ecosystem plays a key role in driving the economy of the country. An efficient, effective and robust logistics ecosystem can have a domino effect on the socio-economic growth of a region/country. India with its vast road & rail network, coastline and airports provides an ideal platform for logistics operation. With thrust on few key policies and automation, the logistics sector in India is booming.

Since the last decade, the Logistics sector in India has witnessed a rapid rise in demand for freight-forwarding, warehousing and supply chain. This demand, more so the demand for warehousing, is expected to grow exponentially in the coming years. While the increase in demand for logistics and warehousing certainly augurs well for the country, it is imperative for these developments to adopt green principles in order to optimise the use of resources and aid growth in a sustainable manner.

Adopting green concepts and techniques in the logistics sector can help address socio-economic & environmental issues in a broad sense. The green concepts will also address national priorities such as - water conservation, energy efficiency, reduction in fossil fuel use for commuting & transportation, conserving natural resources, handling of consumer waste, warehouse management and overall supply chain management. Further, these green concepts enhance occupant health, productivity and well-being.

Against this background, the Indian Green Building Council (IGBC) has launched the **'IGBC Green Logistics Parks and Warehouses Rating System (Pilot Version)'**, **a 'first-of-its-kind and an exclusive rating system for Logistics Parks and Warehouses in India**, to address the aforementioned priorities.

IGBC would be addressing Liquid storage and Container storage sectors within the rating system in the subsequent versions.

II. Benefits of Green Logistics Parks and Warehouses

The IGBC Green Logistics Parks and Warehouses rating system addresses the three pillars of sustainability i.e. Social, Environmental and Economical; thereby, the logistics park and warehouse projects going green can have multi-fold tangible and intangible benefits.

The tangible benefits include reduction in water and energy consumption right from day one of occupancy. The energy savings could range from 20-30% and potable water savings around 30-40%; along with, reduction in greenhouse gas emissions, optimised

lead time and enhanced storage space utilization.

The intangible benefits include conservation of scarce national resources, better health & well-being of occupants and higher productivity of workforce.

The rating system also addresses social aspects like basic facilities for occupants, drivers & construction workforce, park security, service vehicle parking and green measures beyond the fence for nearby communities.

III. National Priorities Addressed in the Rating System

The IGBC Green Logistics Parks and Warehouses rating system addresses the most important national priorities which include - water conservation, handling of waste, energy efficiency, reduced use of fossil fuels, reduction in GHG emissions, lesser dependence on virgin materials and health & well-being of occupants. The rating system requires the application of National standards and codes such as the NBC, ECBC, MoEF guidelines, CPCB guidelines, and several others. The overarching objective is to be better than the national standards so as to create new benchmarks.

- **Water Conservation:**

  Most of the Asian countries are water stressed and in countries like India, the water table has reduced drastically over the last decade. IGBC Green Logistics Parks and Warehouses rating system encourages the use of water in a self-sustainable manner through reduce, recycle and reuse strategies. By adopting this rating programme, Green Logistics Parks and Warehouses can save potable water to an extent of 30 - 40%.

- **Handling of Consumer Waste:**

  Handling of waste in buildings is extremely difficult as most of the waste generated is not segregated at source and has a high probability of going to landfills. This continues to be a challenge to the municipalities which needs to be addressed. The rating system intends to address this by encouraging warehouses to segregate the domestic and process waste thereby reducing the quantity of waste diverted to landfill.

- **Energy Efficiency:**

  The service sector is one of the largest consumers of electrical energy. Through IGBC Green Logistics Parks and Warehouses rating system, warehouses can reduce energy

consumption through energy efficient - building envelope, lighting, air conditioning systems, etc., The energy savings that can be realised by adopting this rating programme can be to the tune of 20 - 30%.

- **Reduced Use of Fossil Fuels:**

  Fossil fuels are slowly depleting resource, all over the world. The use of fossil fuel for transportation has been a major source of pollution and increased GHG emissions. The rating system encourages the use of efficient transport modal mix, optimal vehicular routing and alternate fuel vehicles for transportation.

- **Reduced Dependency on Virgin Materials:**

  The rating system encourages projects to use materials that are bio-degradable, reusable & with recycled content and discourages the use of virgin materials, thereby, addressing environmental impacts associated with extraction and processing of scarce natural resources.

- **Health and Well-being of Occupants:**

  Health and well-being of occupants is given significant importance in the IGBC Green Logistics Parks and Warehouses rating system. The rating system ensures adequate ventilation, daylight and basic facilities which are essential in the logistics parks & warehouses.

III. IGBC Green Logistics Parks and Warehouses Rating System

A. Features

IGBC Green Logistics Parks and Warehouses rating system is a voluntary and consensus-based programme.

The rating system has been developed based on the design concepts, materials and technologies that are presently used in the logistics sector. The objective of IGBC Green Logistics Parks and Warehouses rating system is to facilitate a holistic approach to create environment friendly warehouses, through passive architectural designs, enhanced operations & facilities, transportation efficiency, water efficiency, effective handling of waste, energy efficiency, and focus on occupant comfort & well-being.

The rating system evaluates certain mandatory requirements & credit points using a prescriptive approach and others on a performance-based approach. The rating system is evolved so as to be comprehensive and at the same time user-friendly.

Some of the unique aspects addressed in this rating system are as follows:

- Recognition for passive architectural features
- Design of docking bays and dock levellers
- Electric vehicles for indoor material handling
- GHG inventory and mitigation measures
- Access to multi-modal transportation
- Transport modal mix
- Vehicular routing
- Efficiency & maintenance of service vehicles
- Parking for service vehicles
- Green packaging
- Green procurement policy
- Eco-labelled products, materials & equipment
- Basic amenities for staff & drivers
- Green measures beyond the fence
- Green measures cost analysis
- Recognition of Supply chain and Warehouse management professionals
- Reporting of energy and water consumption data on an annual basis, to facilitate research in this area

IGBC Counsellors would provide advisory services and add value to the project teams in implementing green measures. The Counsellors would also audit the site before the award of rating.

B. Scope

❖ The rating system is designed to address a variety of storage facilities for both New & Existing typologies including, but not limited to, Logistics Parks (including Multi Modal Logistics Parks), Warehouses, Cold Storages, Distribution Centres, Value-add facilities (Assembly, Packaging, Repackaging), Free-trade & Warehousing Zones, Industrial Parks & Light Manufacturing Units with

Warehouses (with minimum 50% storage area) and Retail Warehouses (with minimum 50% storage area), from government, co-operative and private orgranisations.

❖ The pilot version of the rating system is broadly classified into three categories as listed below:

a) Logistics Parks

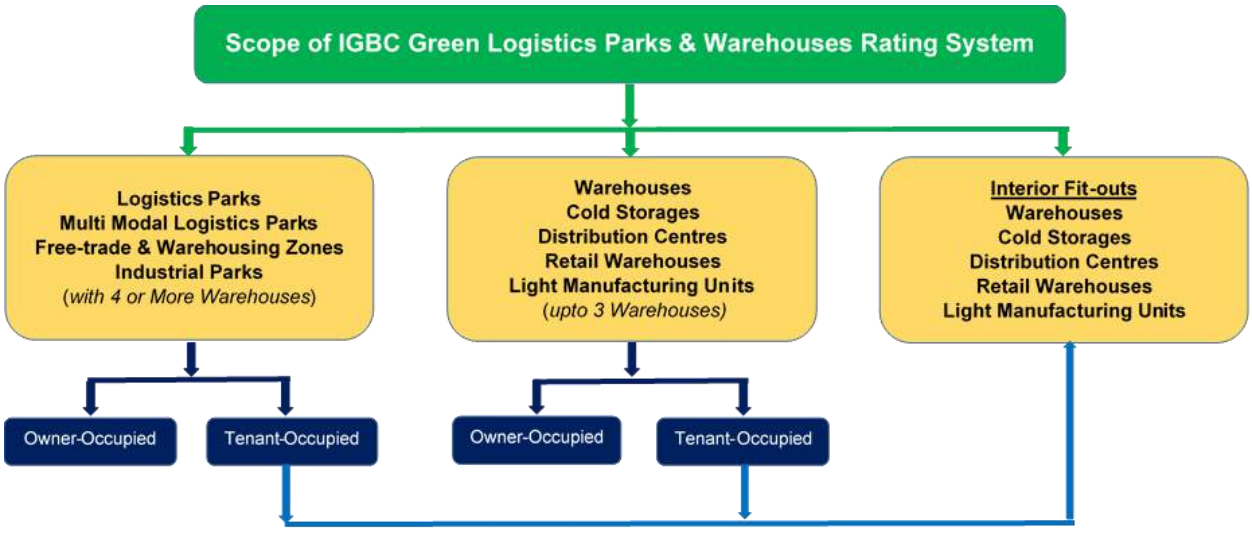
- Applicable to both Owner-occupied and Tenant-occupied projects, which have 4 or more warehouses within the park.

b) Warehouses

- Applicable to both Owner-occupied and Tenant-occupied projects, which have upto 3 warehouses.

c) Interior Fit-outs

- Applicable only to Tenant-occupied projects, in the Logistics Parks, Warehouses, Cold Storages, Distribution Centres, Free-trade & Warehousing Zones, Industrial Parks & Light Manufacturing Units with Warehouses (with minimum 50% storage area) and Retail Warehouses (with minimum 50% storage area), etc.



❖ **Applicabilty:**

➢ **Owner-occupied** category is applicable to Logistics Parks, Warehouses, Cold Storages, etc., as defined in the scope, which are owned and operated by a single logistic service provider. E.g. 3PLs, Government Owned Logistics Parks.

- **Single tenant-occupied** (with minimum 10 year lease period) and **Built-to-suit single tenant-occupied** Logistics Parks/ Warehouses with the consent of developer can be considered under Owner-occupied category.

- **Tenant-occupied** category is applicable to Logistics Parks, Warehouses, Cold Storages, etc., as defined in the scope, which are leased to one or multiple logistic service providers.

- **Interior Fit-out** category is applicable to tenant(s) occupying Warehouse(s), Cold Storage(s) etc., in a leased Logistic Park / Warehouse.

❖ **New / Existing Typologies:**

- **New** Logistics Parks / Warehouses / Interior Fit-outs are those which are in design / construction stage or in operation for less than one year.
  - Major renovation in Logistics Parks / Warehouses / Interior Fit-outs includes, but not limited to, major renovation of external façade (wall and glazing), lighting and HVAC systems. Major renovation projects will be considered under New Logistics Parks / Warehouses / Interior Fit-outs.

- **Existing** Logistics Parks / Warehouses / Interior Fit-outs are those which are in operation for more than one year.

❖ **Precertification / Provisional Certification:**

- **Precertification** is offered for Tenant-occupied Logistics Parks and Warehouses.

- **Provisional Certification** is offered for Owner-occupied Logistics Parks and Warehouses.

- Precertification / Provisional Certification is not offered for Interior Fit-outs.

❖ **Certification:**

- **Certification** is offered for all categories and typologies.

- The **Rating** awarded to the project would be based on the category as specified below, along with New / Existing typology.

Category	Sub-category	Rating
Logistics Parks	Owner-occupied Tenant-occupied	IGBC Green Logistics Park
Warehouses	Owner-occupied Tenant-occupied Interior Fit-outs	IGBC Green Warehouse
Cold Storages	Owner-occupied Tenant-occupied Interior Fit-outs	IGBC Green Cold Storage
Distribution Centres	Owner-occupied Tenant-occupied Interior Fit-outs	IGBC Green Distribution Centre
Multi-modal Logistics Parks	Owner-occupied Tenant-occupied	IGBC Green Multi-modal Logistics Park
Free-trade & Warehousing Zones	Owner-occupied Tenant-occupied	IGBC Green Free-trade & Warehousing Zone
Industrial Parks with Warehouses	Owner-occupied Tenant-occupied	IGBC Green Industrial Warehouses
Light Manufacturing Units with Warehouses	Owner-occupied Tenant-occupied Interior Fit-outs	IGBC Green Light Manufacturing Warehouse
Retail Warehouses	Owner-occupied Tenant-occupied Interior Fit-outs	IGBC Green Retail Warehouse

The rating awarded would be mentioned on Plaque/ Name plate and Certificates.

C. Validity

Logistics Parks

The rating awarded for IGBC Green Logistics Parks would be valid for a period of 5 years. Thereafter, the logistics park has to apply for re-certification with the prevailing version of the rating system. The logistics park can also apply for re-certification/ renewal within 5 years of award of the rating for a superior rating, if new green features are implemented or existing green features are enhanced. The recertification/ renewal of new projects will be considered under Existing Logistics Parks category.

Warehouses

The rating awarded for IGBC Green Warehouses (including Interior Fit-outs) would be valid for a period of 3 years. Thereafter, the warehouse has to apply for re-certification with the prevailing version of the rating system. The Warehouse can also apply for re-certification/ renewal within 3 years of award of the rating for a superior rating, if new green features are implemented or existing green features are enhanced. The recertification/ renewal of new projects will be considered under Existing Warehouses category.

IV. The Future of IGBC Green Logistics Parks and Warehouses Rating System

New logistics policies and green building materials, equipment & technologies are being introduced in the country regularly to upgrade the infrastructure and operations. With the continuous upgradation and introduction of newer policies, green technologies & products, it is important that the rating programme also keeps pace with current standards and technologies.

Therefore, the rating programme will undergo periodic revisions to incorporate the latest advancements and changes. It is important to note that the project teams applying for IGBC Green Logistics Parks and Warehouses rating system should register their projects with the latest version of the rating system. During the course of implementation, projects have an option to transit to the latest version of the rating system.

IGBC will highlight new developments on its website (www.igbc.in).

V. Overview and Process

IGBC Green Logistics Parks and Warehouses rating system (Pilot version) addresses green features under the following categories:

- Park Planning & Design
- Park Facilities & Operations
- Transport Efficiency
- Energy Efficiency
- Water Conservation
- Resource Management
- Health & Well-being
- Innovation in Design & Operation

The guidelines detailed under each mandatory requirement & credit, facilitates the design, construction and renovation of new & existing logistics parks and warehouses (as defined in the scope). Different levels of green building certification are awarded based on the total credits earned. However, every Logistics park/ warehouse should meet certain mandatory requirements, which are non-negotiable.

The various levels of rating awarded are as below:

Certification Level
Certified
Silver
Gold
Platinum

A. When to use IGBC Green Logistics Parks and Warehouses Rating System

IGBC Green Logistics Parks and Warehouses Rating System (Pilot version) is designed primarily for Logistics Parks, Warehouses, Cold Storages etc., as defined in the scope. For further details on when to use this rating system, please refer to the Scope in the introduction.

The project team can evaluate all the possible points to apply under the rating system using a suitable checklist. The project can apply for IGBC Green Logistics Parks and

Warehouses Rating System certification, if the project can meet all the mandatory requirements and achieve the minimum required points.

B. Registration

Organisations interested in registering their projects under IGBC Green Logistics Parks and Warehouses rating system for Precertification and/or Certification are advised to first register with IGBC. The website includes information on registration fee for IGBC member organisations as well as non-members.

Registration is the first step which helps establish initial contact with IGBC and provides access to the required documents and important communications, along with other necessary information. IGBC website provides all important details on IGBC Green Logistics Parks and Warehouses Rating System registration, precertification & certification - process, timeline and fee.

Note: *Owners, developers & tenants with multiple logistics parks /warehouses/ cold storages and other projects as defined in the scope of rating system can approach IGBC staff for Volume projects proposal.*

C. Certification

To achieve the IGBC Green Logistics Parks and Warehouses certification, the project must satisfy all the mandatory requirements and the minimum number of credit points.

The project team is expected to provide supporting documents at preliminary and final stage of submission, for all the mandatory requirements and the credits attempted.

The project needs to submit the following:

1. General information about project, including
    a. Project brief stating project type, different type of spaces, occupancy (permanent & transient), number of floors, area statement, warehouse layouts, details of service vehicles & parking etc.,
    b. General drawings (in PDF format only):
        i. Master/ Site plan
        ii. Parking plans
        iii. Floor plans
        iv. Elevations

v. Sections

c. Photographs taken at various stages of the project

2. Narratives and supporting documentation such as drawings, calculations (in excel sheets), declarations/ contract documents, purchase invoices, manufacturer data sheets/ letters/ material test reports, etc., for each mandatory requirement and credit.

The project documentation is submitted in two phases - Preliminary submittal and Final submittal.

Preliminary phase involves submission of all documents, which shall include the mandatory requirements and the minimum number of credits. After the preliminary submission, review is done by third-party assessors and review comments would be provided within 35 calendar days. The next phase involves submission of clarifications to preliminary review queries and final submittal. This review will be provided within 35 calendar days, after which the rating is awarded.

It is important to note that the mandatory requirements and credits earned in the preliminary review are only considered as expected. These mandatory requirements and credits are not awarded until the final documents are submitted, along with additional documents showing implementation of design, construction and operational features, as applicable. If there are changes in any 'expected credits' after preliminary review, these changes need to be documented and resubmitted during the final review.

Before the release of final review along with the IGBC rating, a site visit is carried out by IGBC to verify the green features implemented in the project.

The threshold criteria for certification levels are as under:

Logistics Parks:

Certification Level	Logistics Parks				Recognition
	Owner Occupied		Tenant Occupied		
	Existing	New	Existing	New	
Certified	40-49	40-49	36-44	36-44	Best Practices
Silver	50-59	50-59	45-53	45-53	Outstanding Performance
Gold	60-74	60-74	54-62	54-62	National Excellence
Platinum	75-100	75-100	63-90	63-90	Global Leadership

Warehouses:

Certification Level	Warehouses				Recognition
	Owner Occupied		Tenant Occupied		
	Existing	New	Existing	New	
Certified	40-49	40-49	36-44	36-44	Best Practices
Silver	50-59	50-59	45-53	45-53	Outstanding Performance
Gold	60-74	60-74	54-62	54-62	National Excellence
Platinum	75-100	75-100	63-90	63-90	Global Leadership

Interior Fit-outs:

Certification Level	Interior Fit-outs		Recognition
	Existing	New	
Certified	30-36	30-36	Best Practices
Silver	37-44	37-44	Outstanding Performance
Gold	45-55	45-55	National Excellence
Platinum	56-75	56-75	Global Leadership

IGBC will recognise Green Logistics Parks and Warehouses (including Interior Fit-outs) that achieve one of the rating levels with a formal letter of certification and a mountable plaque.

Reference National & State Logistics Policies:

The IGBC Green Logistics Parks & Warehouses rating system has been developed referring the objectives, thrust areas and frameworks outlined in the National & State Logistics policies & reports.

National Policies and Reports:

- Draft National Logistics Policy 2019, Ministry of Commerce, Government of India
- Logistics Efficiency Enhancement Program (LEEP) 2019 for the development of Multi Modal Logistics Parks, Ministry of Road Transport and Highways, Government of India
- Foreign Trade Policy 2015-2020 (Chapter 7A, Free Trade & Warehousing Zones, Ministry of Commerce & Industry)
- Logistics Ease Across Different States (LEADS) 2019, Ministry of Commerce & Industry

State Policies:

- Madhya Pradesh Warehousing & Logistics Policy 2012
- Scheme for Financial Assistance to Logistic Park, Gujarat Industrial Policy, 2015
- Maharashtra Industrial Integrated Policy 2018
- Maharashtra's Logistics Parks Policy 2018
- Uttar Pradesh Warehousing and Logistics Policy 2018
- Madhya Pradesh Logistics and Warehousing Order Dated 22 June 2018
- Chhattisgarh Logistics Park Policy 2018-23
- Logistics Park Development and Promotion Policy of West Bengal 2018
- Haryana Logistics, Warehousing & Retail Policy 2019
- Jammu & Kashmir State Logistics Policy 2019-2029 (Draft)
- Karnataka Industrial Policy 2020-2025

Reference National & International Guidelines, Codes and Standards:

The rating system has also been developed considering several National & International Guidelines, Codes and Standards, to benefit the projects in adopting, complying & exceeding with the byelaw requirements and best in-class industry practices.

The Guidelines, Codes & Standards referred and included in the rating system are listed below:

- Government of India Policies, Guidelines, Codes and Standards
  - Environmental Impact Assessment Notification 2006, Ministry of Environment Forest and Climate Change Guidelines
  - Guidelines for Waste Water Treatment, Central Pollution Control Board, Ministry of Environment Forest and Climate Change Guidelines
  - Bureau of Energy Efficiency, Ministry of Power
  - Ministry of New and Renewable Energy
  - Ground Water Management and Regulation, Central Ground Water Board, Ministry of Jal Shakti
  - Customized Rainfall Information System (CRIS), Hydromet Division, India Meteorological Department, Ministry of Earth Sciences
  - Ministry of Health & Family Welfare, Government of India
  - 'The Building and other Construction Workers Act, 1996 & Rules, 1998'
  - Bharat Stage Emission Standards (BSES) 2010, Central Pollution Control Board, Ministry of Environment Forest and Climate Change Guidelines
  - IS 10500-2012 'Drinking Water- Specification Standard', Bureau of Indian Standards
  - National Building Code 2016, Bureau of Indian Standards
  - Model Building Byelaws 2016, Ministry of Urban Development
  - Energy Conservation Building Code 2017, Bureau of Energy Efficiency
  - National Policy on Biofuels 2018, Ministry of Petroleum and Natural Gas
  - Ministry of Power Guidelines and Standards for Electric Charging Infrastructure, 2019
  - Uniform Plumbing Code of India 2018, Indian Plumbing Association*
  - ISHRAE Standard: 10003-2020, Commissioning Process for HVAC Systems, Indian Society for Heating, Refrigerating and Air-conditioning Engineers*

* *Developed by recognised National Associations*

- National Acts, Policies, Missions, Rules and Standards
    - Environment (Protection) Rules, 1986
    - Energy Conservation Act, 2001
    - Biological Diversity Act, 2002
    - Electricity Act, 2003
    - Water (Prevention and Control of Pollution) Cess (Amendment) Act, 2003
    - Groundwater harvesting through Mahatma Gandhi National Rural Employment Guarantee Act, 2005
    - National Environmental Policy, 2006
    - National Action Plan on Climate Change, 2008
    - National Water Mission, 2008
    - National Mission for Enhanced Energy Efficiency, 2009
    - National Ambient Air Quality Standards, 2009
    - National Solar Mission, 2010
    - Batteries (Management and Handling) Amendment Rules, 2010
    - Swachh Bharat Mission, 2014
    - India's Nationally Determined Contribution, 2015
    - Green India Mission, 2015
    - Solid Waste Management Rules, 2016
    - Construction and Demolition Waste Management Rules, 2016
    - E-Waste (Management) Rules, 2016
    - Hazardous & Other Wastes (Management & Transboundary Movement) Rules, 2016
    - Electricity (Amendment) Act, 2018
    - National Energy Policy, 2018
    - Plastic Waste Management (Amendment) Rules, 2018
    - Sustainable Public Procurement, 2018

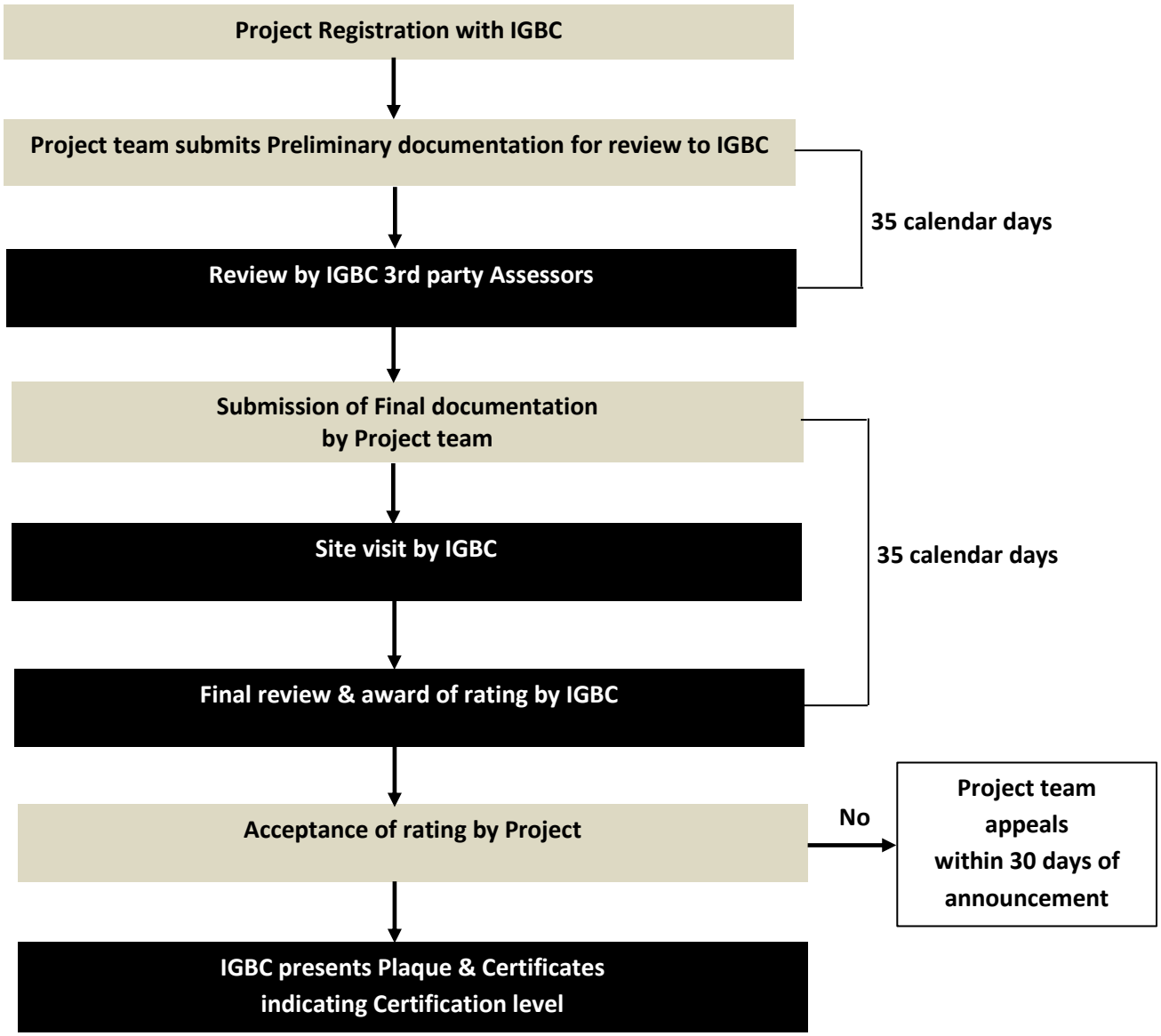
- International Reports, Guidelines, Codes and Standards
    - EN 1398: 2009 Dock Levellers – Safety Requirements, British Standards
    - ASHRAE 90. 1 & 62.1 2013 – Level I & II – Energy Audit Guidelines, American Society for Heating, Refrigerating and Air-conditioning Engineers
    - Intergovernmental Panel on Climate Change (IPCC) – Climate Change 2014, Mitigation of Climate Change - Working Group III, World Meteorological Organisation and United Nations Environment Programme
    - World Resources Institute and World Business Council for Sustainable Development, GHG Protocol: Corporate Accounting and Reporting standard (Revised Edition: 2015)
    - World Bank Logistics Performance Index report, Connecting to Compete 2016
    - Tertiary Packaging, ISO 21067-1:2016, International Organisation for Standardisation
    - Environment labels & Declarations, Type-I/ ISO 14024: 2018, International Organisation for Standardisation
    - ISO standards for GHG Accounting and Inventory, ISO 14064 – 1: 2018, ISO 14064 – 2: 2019, ISO 14064 – 3: 2019, International Organisation for Standardisation

UN SDGs 2030 and IGBC Green Logistics Parks & Warehouses Rating System

The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. SDGs address the global challenges, including those related to climate change, environmental degradation, poverty, inequality, peace and justice. The 17 SDGs are integrated—that is, they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability.

The IGBC Green Logistics Parks & Warehouses rating system is developed aligning the requirements with the UN SDGs. The rating system addresses 14 out of the 17 SDGs directly or indirectly.

Certification Process



D. Precertification

Projects (Tenant-occupied Logistics Parks & Warehouses) by developers can register for Precertification. This is an option provided for projects aspiring to get precertified at the design stage. Precertification also gives the developer a unique advantage to market the project to potential buyers.

The documentation submitted for precertification must detail the project design features which

will be implemented. The rating awarded under precertification is based on the project's intention to conform to the requirements of IGBC Green Logistics Parks & Warehouses rating system. It is important to note that the precertification rating awarded need not necessarily correspond to the final rating.

Those projects which seek precertification need to submit the following documentation:

1. General information about project, including
    a. Project brief stating project type, different type of spaces, occupancy (permanent & transient), number of floors, area statement, warehouse layouts, details of service vehicles & parking etc.,
    b. General drawings (in PDF format only):
        i. Master/ Site plan
        ii. Parking plans
        iii. Floor plans
        iv. Elevations
        v. Sections
    c. Photographs/ Rendered views of the project
2. Narratives and supporting documentation such as drawings, calculations (in excel sheets), declarations/ contract documents, purchase invoices, manufacturer data sheets/ letters/ material test reports, etc., for each mandatory requirement and credit.

IGBC would take 35 days to review the first set of precertification documents. On receiving the clarifications posed in the first review, IGBC would take another 35 days to award the precertification.

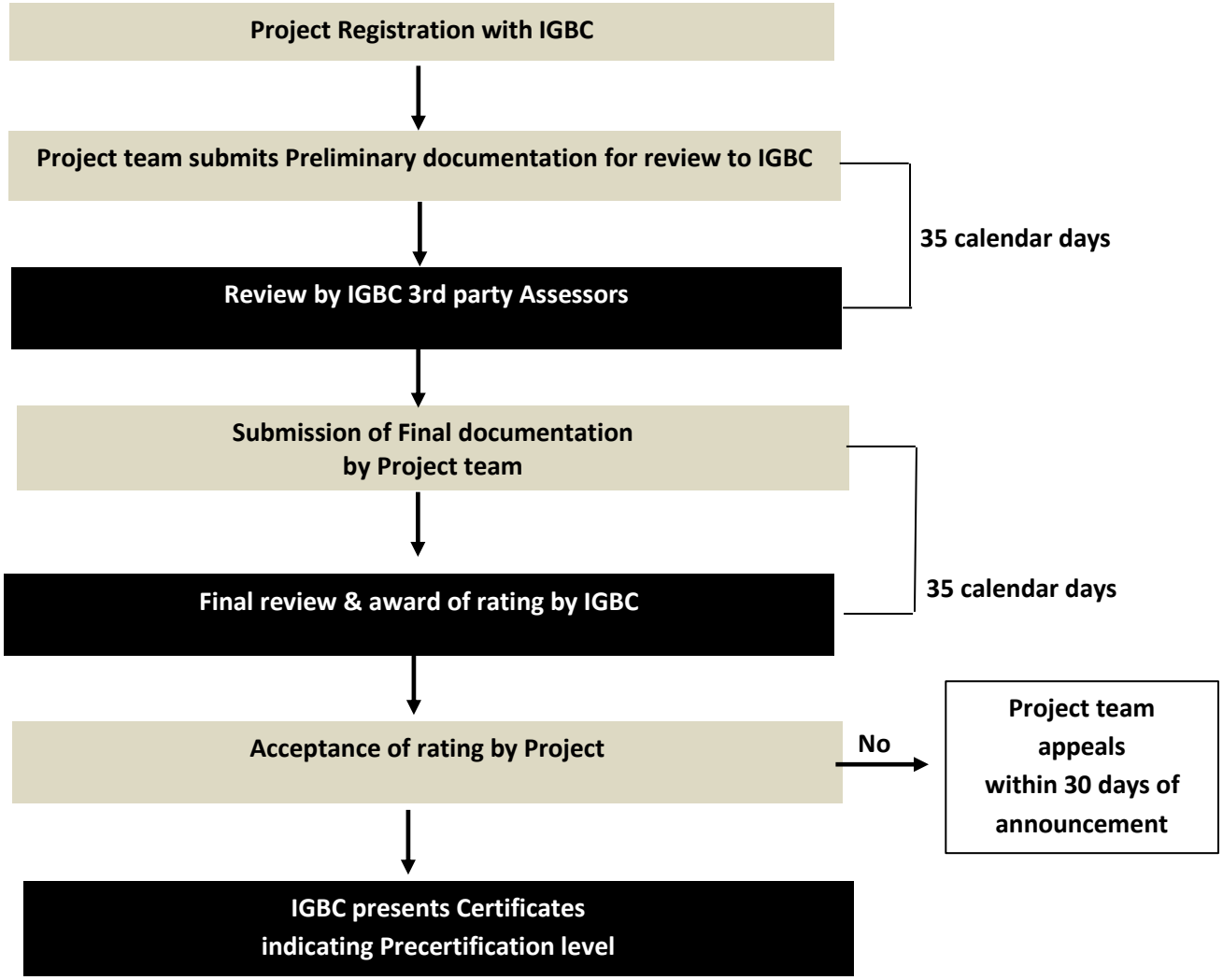
A certificate and a letter are provided to projects on precertification.

The Precertification is valid for 3 years from the date of award. The project teams are requested to submit construction progress reports once in six months from the date of precertification. After a period of 3 years, the project teams are required to apply for the full certification.

Note:

- *Projects (Owner-occupied Logistics Parks and Warehouses) applying for MoEF clearance/ regulatory norms /other incentives can apply for Provisional Certification. The Provisional Certification process will be same as Precertification process.*

Precertification Process



E. Credit Interpretation Ruling (CIR)

In some instances, there is a possibility that the design/ construction/ operations team may encounter certain challenges in applying or interpreting a mandatory requirement or a credit. It can also happen in cases where the project can opt to achieve the same intent through a different compliance route.

To address this, IGBC uses the process of Credit Interpretation Ruling (CIR) to ensure that interpretations are consistent and applicable to other projects as well.

The following are the steps to be followed in case the project team encounters any difficulty:

- Refer the Abridged Reference Guide for description of the credit intent and compliance options.
- Review the intent of the mandatory requirement / credit and self-evaluate whether the project satisfies the intent.
- Review the Credit Interpretation Ruling web page for previous CIR's, if available, on the relevant mandatory requirement or credit. All projects registered under IGBC Green Logistics Parks and Warehouses Rating System will have access to this page.
- If a similar CIR has not been addressed or does not answer the question sufficiently, submit a credit interpretation request. Only registered projects are eligible to post credit interpretation requests. Two CIRs are answered without levying any fee, and for any CIR beyond the first two CIRs, a fee is levied.

F. Appeal

In rare cases, mandatory requirements/ credits get denied due to misinterpretation of the intent. On receipt of the final review, if the project team feels that sufficient grounds exist to appeal a credit denied in the final review, the project has an option to appeal to IGBC for reassessment of the denied mandatory requirements/ credits. The documentation of the mandatory requirements/ credits seeking appeal may be resubmitted to IGBC along with necessary fees. IGBC will take 15 calendar days to review such documentation. If an appeal is pursued, please note that a different review team will be assessing the appeal documentation. The following documentation should be submitted:

The project needs to submit the following:

1. General information about project, including
    a. Project brief stating project type, different type of spaces, occupancy

(permanent & transient), number of floors, area statement, warehouse layouts, details of service vehicles & parking etc.,

b. General drawings (in PDF format only):
   i. Master/ Site plan
   ii. Parking plans
   iii. Floor plans
   iv. Elevations
   v. Sections

c. Photographs taken at various stages of the project

2. Resubmittal and appeal submittal documentation is required for only those mandatory requirements / credits that the project is appealing for. Also, include a narrative for each appealed mandatory requirement / credit describing how the documents address the reviewer's comments and concerns.

G. Fee

Registration and Certification fee details are available on the IGBC website (www.igbc.in) or can be obtained from IGBC (igbc@cii.in).

H. Updates and Addenda

As the rating system continues to improve and evolve, updates, addenda and errata to the abridged reference guide will be made available through the IGBC website. The additions thereof will be suitably incorporated in the next version of the rating system.

CHECKLIST

IGBC Green Logistic Parks Applicable to Logistics Parks with 4 or more warehouses		Points Available			
		Owner Occupied		Tenant Occupied	
		Existing	New	Existing	New
Modules		**100**	**100**	**90**	**90**
Park Planning & Design		**13**	**13**	**13**	**13**
PPD Mandatory Requirement 1	Regulatory Compliance	Required	Required	Required	Required
PPD Mandatory Requirement 2	Erosion and Sedimentation Control	Required	Required	Required	Required
PPD Credit 1	Green Cover	4	4	4	4
PPD Credit 2	Heat Island Effect	4	4	4	4
PPD Credit 3	Access to Public Transport	1	1	1	1
PPD Credit 4	Pedestrian Network	2	2	2	2
PPD Credit 5	Docking Facilities at Warehouses	2	2	2	2
Park Facilities & Operations		**11**	**9**	**12**	**7**
PFO Credit 1	Certified Green Warehouses	NA	NA	4	NA
PFO Credit 2	Tenancy in Green Logistics Park or Warehouses	NA	NA	NA	NA
PFO Credit 3	Security Facilities	2	2	2	2
PFO Credit 4	Electric Vehicles and E-charging Stations	2	2	1	1
PFO Credit 5	Warehouse Management System	2	1	NA	NA
PFO Credit 6	GHG Inventory and Mitigation	3	2	3	2
PFO Credit 7	Green Education	2	2	2	2
Transport Efficiency		**13**	**11**	**4**	**4**
TE Credit 1	Access to Multi-modal Transportation	2	2	2	2
TE Credit 2	Transport Modal Mix	3	3	NA	NA
TE Credit 3	Vehicular Routing	2	2	NA	NA
TE Credit 4	Efficiency & Maintenance of Service Vehicles	4	2	NA	NA
TE Credit 5	Parking for Service Vehicles	2	2	2	2
Energy Efficiency		**20**	**22**	**19**	**21**
EE Mandatory Requirement 1	Minimum Energy Performance	Required	Required	Required	Required
EE Mandatory Requirement 2	Commissioning of Building Equipment & Systems	Required	Required	Required	Required
EE Credit 1	Enhanced Energy Performance	13	15	11	13
EE Credit 2	Renewable Energy	5	5	6	6
EE Credit 3	Energy Metering and Management	2	2	2	2

Water Conservation		**15**	**15**	**16**	**16**
WC Mandatory Requirement 1	Rainwater Harvesting	Required	Required	Required	Required
WC Mandatory Requirement 2	Water Efficient Plumbing Fixtures	Required	Required	Required	Required
WC Credit 1	Rainwater Harvesting	5	5	5	5
WC Credit 2	Water Efficient Plumbing Fixtures	4	4	4	4
WC Credit 3	Water Efficient Irrigation Systems	1	1	1	1
WC Credit 4	Waste Water Treatment and Reuse	4	4	4	4
WC Credit 5	Water Metering	1	1	2	2
Resource Management		**7**	**9**	**5**	**8**
RM Mandatory Requirement 1	Segregation of waste, Post Occupancy	Required	Required	Required	Required
RM Credit 1	Green Packaging	2	1	NA	NA
RM Credit 2	Green Procurement Policy	1	1	1	1
RM Credit 3	Eco-labelled materials, products & Equipment	1	3	1	3
RM Credit 4	Organic Waste Management, Post Occupancy	3	3	3	3
RM Credit 5	Handling of waste Materials, during construction	NA	1	NA	1
Health & Well-being		**7**	**8**	**7**	**8**
HWB Mandatory Requirement 1	No Smoking Premises	Required	Required	Required	Required
HWB Mandatory Requirement 2	Minimum Fresh Air Ventilation	Required	Required	Required	Required
HWB Credit 1	Enhanced Fresh Air Ventilation	2	2	2	2
HWB Credit 2	Daylighting	2	2	2	2
HWB Credit 3	Basic Amenities for Staff & Drivers	3	3	3	3
HWB Credit 4	Basic Facilities for Construction Workforce	NA	1	NA	1
Innovation in Design & Operation		**14**	**13**	**14**	**13**
IDO Credit 1	Innovation in Design Process	4	4	4	4
IDO Credit 2	Green Measures Beyond the Fence	4	4	4	4
IDO Credit 3	Water and Energy Performance	2	1	2	1
IDO Credit 4	Green Measures Cost Analysis	2	2	2	2
IDO Credit 5	Accredited Professionals	2	2	2	2

Certification Level	Logistics Parks				Recognition
	Owner Occupied		Tenant Occupied		
	Existing	New	Existing	New	
Certified	40-49	40-49	36-44	36-44	Best Practices
Silver	50-59	50-59	45-53	45-53	Outstanding Performance
Gold	60-74	60-74	54-62	54-62	National Excellence
Platinum	75-100	75-100	63-90	63-90	Global Leadership

CHECKLIST

IGBC Green Warehouses Applicable for Projects up to 3 warehouses		Points Available			
		Owner Occupied		Tenant Occupied	
		Existing	New	Existing	New
Modules		**100**	**100**	**90**	**90**
Park Planning & Design		**13**	**13**	**13**	**13**
PPD Mandatory Requirement 1	Regulatory Compliance	Required	Required	Required	Required
PPD Mandatory Requirement 2	Erosion and Sedimentation Control	Required	Required	Required	Required
PPD Credit 1	Green Cover	4	4	4	4
PPD Credit 2	Heat Island Effect	4	4	4	4
PPD Credit 3	Access to Public Transport	1	1	1	1
PPD Credit 4	Pedestrian Network	2	2	2	2
PPD Credit 5	Docking Facilities at Warehouses	2	2	2	2
Park Facilities & Operations		**11**	**9**	**12**	**7**
PFO Credit 1	Certified Green Warehouses	NA	NA	4	NA
PFO Credit 2	Tenancy in Green Logistics Park or Warehouses	NA	NA	NA	NA
PFO Credit 3	Security Facilities	2	2	2	2
PFO Credit 4	Electric Vehicles and E-charging Stations	2	2	1	1
PFO Credit 5	Warehouse Management System	2	1	NA	NA
PFO Credit 6	GHG Inventory and Mitigation	3	2	3	2
PFO Credit 7	Green Education	2	2	2	2
Transport Efficiency		**13**	**11**	**4**	**4**
TE Credit 1	Access to Multi-modal Transportation	2	2	2	2
TE Credit 2	Transport Modal Mix	3	3	NA	NA
TE Credit 3	Vehicular Routing	2	2	NA	NA
TE Credit 4	Efficiency & Maintenance of Service Vehicles	4	2	NA	NA
TE Credit 5	Parking for Service Vehicles	2	2	2	2
Energy Efficiency		**20**	**22**	**19**	**21**
EE Mandatory Requirement 1	Minimum Energy Performance	Required	Required	Required	Required
EE Mandatory Requirement 2	Commissioning of Building Equipment & Systems	Required	Required	Required	Required
EE Credit 1	Enhanced Energy Performance	13	15	11	13
EE Credit 2	Renewable Energy	5	5	6	6
EE Credit 3	Energy Metering and Management	2	2	2	2

Water Conservation		**15**	**15**	**16**	**16**
WC Mandatory Requirement 1	Rainwater Harvesting	Required	Required	Required	Required
WC Mandatory Requirement 2	Water Efficient Plumbing Fixtures	Required	Required	Required	Required
WC Credit 1	Rainwater Harvesting	5	5	5	5
WC Credit 2	Water Efficient Plumbing Fixtures	4	4	4	4
WC Credit 3	Water Efficient Irrigation Systems	1	1	1	1
WC Credit 4	Waste Water Treatment and Reuse	4	4	4	4
WC Credit 5	Water Metering	1	1	2	2
Resource Management		**7**	**9**	**5**	**8**
RM Mandatory Requirement 1	Segregation of waste, Post Occupancy	Required	Required	Required	Required
RM Credit 1	Green Packaging	2	1	NA	NA
RM Credit 2	Green Procurement Policy	1	1	1	1
RM Credit 3	Eco-labelled materials, products & Equipment	1	3	1	3
RM Credit 4	Organic Waste Management, Post Occupancy	3	3	3	3
RM Credit 5	Handling of waste Materials, during construction	NA	1	NA	1
Health & Well-being		**7**	**8**	**7**	**8**
HWB Mandatory Requirement 1	No Smoking Premises	Required	Required	Required	Required
HWB Mandatory Requirement 2	Minimum Fresh Air Ventilation	Required	Required	Required	Required
HWB Credit 1	Enhanced Fresh Air Ventilation	2	2	2	2
HWB Credit 2	Daylighting	2	2	2	2
HWB Credit 3	Basic Amenities for Staff & Drivers	3	3	3	3
HWB Credit 4	Basic Facilities for Construction Workforce	NA	1	NA	1
Innovation in Design & Operation		**14**	**13**	**14**	**13**
IDO Credit 1	Innovation in Design Process	4	4	4	4
IDO Credit 2	Green Measures Beyond the Fence	4	4	4	4
IDO Credit 3	Water and Energy Performance	2	1	2	1
IDO Credit 4	Green Measures Cost Analysis	2	2	2	2
IDO Credit 5	Accredited Professionals	2	2	2	2

Certification Level	Warehouses				Recognition
	Owner Occupied		Tenant Occupied		
	Existing	New	Existing	New	
Certified	40-49	40-49	36-44	36-44	Best Practices
Silver	50-59	50-59	45-53	45-53	Outstanding Performance
Gold	60-74	60-74	54-62	54-62	National Excellence
Platinum	75-100	75-100	63-90	63-90	Global Leadership

CHECKLIST

IGBC Green Interior Fit-Outs		Points Available	
		Existing	New
Modules		**75**	**75**
Park Planning & Design		**4**	**4**
PPD Mandatory Requirement 1	Regulatory Compliance	Required	Required
PPD Mandatory Requirement 2	Erosion and Sedimentation Control	NA	NA
PPD Credit 1	Green Cover	NA	NA
PPD Credit 2	Heat Island Effect	2	2
PPD Credit 3	Access to Public Transport	1	1
PPD Credit 4	Pedestrian Network	NA	NA
PPD Credit 5	Docking Facilities at Warehouses	1	1
Park Facilities & Operations		**14**	**14**
PFO Credit 1	Certified Green Warehouses	NA	NA
PFO Credit 2	Tenancy in Green Logistics Park or Warehouses	3	5
PFO Credit 3	Security Facilities	2	2
PFO Credit 4	Electric Vehicles and E-charging Stations	2	2
PFO Credit 5	Warehouse Management System	2	1
PFO Credit 6	GHG Inventory and Mitigation	3	2
PFO Credit 7	Green Education	2	2
Transport Efficiency		**13**	**11**
TE Credit 1	Access to Multi-modal Transportation	2	2
TE Credit 2	Transport Modal Mix	3	3
TE Credit 3	Vehicular Routing	2	2
TE Credit 4	Efficiency & Maintenance of Service Vehicles	4	2
TE Credit 5	Parking for Service Vehicles	2	2
Energy Efficiency		**12**	**14**
EE Mandatory Requirement 1	Minimum Energy Performance	Required	Required
EE Mandatory Requirement 2	Commissioning of Building Equipment & Systems	Required	Required
EE Credit 1	Enhanced Energy Performance	7	7
EE Credit 2	Renewable Energy	3	5
EE Credit 3	Energy Metering and Management	2	2

Water Conservation		**7**	**7**
WC Mandatory Requirement 1	Rainwater Harvesting	Required	Required
WC Mandatory Requirement 2	Water Efficient Plumbing Fixtures	Required	Required
WC Credit 1	Rainwater Harvesting	2	2
WC Credit 2	Water Efficient Plumbing Fixtures	4	4
WC Credit 3	Water Efficient Irrigation Systems	NA	NA
WC Credit 4	Waste Water Treatment and Reuse	NA	NA
WC Credit 5	Water Metering	1	1
Resource Management		**6**	**7**
RM Mandatory Requirement 1	Segregation of waste, Post Occupancy	Required	Required
RM Credit 1	Green Packaging	2	1
RM Credit 2	Green Procurement Policy	1	1
RM Credit 3	Eco-labelled materials, products & Equipment	1	3
RM Credit 4	Organic Waste Management, Post Occupancy	2	2
RM Credit 5	Handling of waste Materials, during construction	NA	NA
Health & Well-being		**6**	**6**
HWB Mandatory Requirement 1	No Smoking Premises	Required	Required
HWB Mandatory Requirement 2	Minimum Fresh Air Ventilation	Required	Required
HWB Credit 1	Enhanced Fresh Air Ventilation	2	2
HWB Credit 2	Daylighting	1	1
HWB Credit 3	Basic Amenities for Staff & Drivers	3	3
HWB Credit 4	Basic Facilities for Construction Workforce	NA	NA
Innovation in Design & Operation		**13**	**12**
IDO Credit 1	Innovation in Design Process	3	3
IDO Credit 2	Green Measures Beyond the Fence	4	4
IDO Credit 3	Water and Energy Performance	2	1
IDO Credit 4	Green Measures Cost Analysis	2	2
IDO Credit 5	Accredited Professionals	2	2

Certification Level	Interior Fit-outs		Recognition
	Existing	New	
Certified	30-36	30-36	Best Practices
Silver	37-44	37-44	Outstanding Performance
Gold	45-55	45-55	National Excellence
Platinum	56-75	56-75	Global Leadership

PARK PLANNING AND DESIGN

Regulatory Compliance

PPD Mandatory Requirement 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
MR	MR	MR	MR	MR	MR	MR	MR	MR	MR

MR - Mandatory Requirement

Intent:

Ensure that the project complies with the necessary statutory and regulatory codes.

Compliance Options:

The project shall comply with the following statutory approvals from competent government authorities, as applicable:

- Approved master plan or site plan and/ or warehouse /building plans for construction
- Approved NOC issued by the Fire department
- Occupancy certificate from local authority (OR) Status of completion or Completion certificate signed by Architect

Note:

Based on the built-up area of the Logistics Parks, Warehouses, Cold Storages, etc., as defined in the latest amended MoEF&CC notification, the project shall submit 'Environmental Clearance Certificate' or 'Environmental Impact Assessment (EIA) Study Report', as applicable, approved by Expert Appraisal Committee (EAC) or State Level Environment Impact Assessment Authority (SEIAA) or Technical Expert Committee (TEC) to show compliance for provisional certification/ precertification/ certification.

Erosion and Sedimentation Control

PPD Mandatory Requirement 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
MR	MR	MR	MR	MR	MR	MR	MR	NA	NA

NA – Not Applicable

Intent:

Control soil erosion and sedimentation, thereby, reducing negative impacts to the site and surroundings.

Compliance Options:

Implement the following measures, as applicable:

- Soil erosion control measures taken before, during and after construction (post-occupancy) must conform to the best management practices highlighted in the National Building Code (NBC) of India 2016, Part 10 - Landscape Development, Signs and Outdoor Display Structures, Section 1 - Landscape Planning and Design and Development, Chapter 11 - Protection of Landscape During Construction
- Fertile topsoil (10-20 cm) to be stockpiled prior to construction, for future reuse or donation, as per NBC 2016 guidelines. *(Not applicable for existing logistics parks/ warehouses)*
- Develop appropriate measures to address soil erosion, such as desilting chambers, sediment traps, after occupancy.
    - Install oil and grease traps at petrol stations, bus stations and other buildings, as applicable, to prevent water contamination.

Notes:

- *If the topsoil in the project is not fertile (or) suitable for preservation, then the project shall provide relevant justification.*
- *Donation of substantial quantity of fertile topsoil could be to other projects, nurseries and farmers.*

Green Cover

PPD Credit 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
4	4	4	4	4	4	4	4	NA	NA

Intent:

Minimise disturbances or restore natural topography and green cover on site, so as to promote habitat and biodiversity.

Compliance Options:

Case A: Natural Topography and Green Cover (2 points)

Demonstrate that the site has retained or restored natural topography and / or green cover for atleast 12.5% of the site area.

Points are awarded as below:

Percentage of Site Area with Natural Topography and / or Green Cover	Points
> 12.5%	1
> 15%	2

Notes:

- *Retaining 'Natural Topography' in its broad sense means preserving the natural features of the terrain such as exposed natural rocks, water body, etc.,*
- *Development footprint includes building footprint and other hardscape areas such as parking, footpaths, walkways, roads, grass medians, grass pavers, etc.,*
- *Only native/ adaptive vegetation (both maintained & un-maintained) shall be considered in the areas covered with shrubs and trees, for this credit compliance.*
- *Vegetation/ Soft landscape shall not be designed with monoculture plant species, as such species would not promote habitat and biodiversity.*
- *Vertical Landscaping on the external walls can also be considered for this credit calculation. Plantation of Creepers would not be considered, as creepers are not permanent throughout the year unlike trees/ shrubs.*
- *Partially vegetated areas and disturbed site areas such as grass pavers, grass medians are considered as site disturbances and shall not be considered for credit compliance.*

- *Potted plants shall not be considered as vegetation.*
- *Artificial vegetation shall not be considered.*

(AND/ OR)

Case B: Plantation of Tree Saplings (1 Point)

Option 1: Plantation of Tree Saplings

Plant tree saplings that can mature into grown-up trees with medium to large canopy in the next 5 to 8 years on the project site, as per the criteria given below.

Criteria for Plantation of Tree Saplings

(Including existing and transplanted trees)

Site Area	Number of Tree Saplings (Including Existing and Transplanted Trees)
For every 1 acre	25 or more

Notes:

- *This credit point is applicable only for those projects which have at least 10% of the site area landscaped.*
- *Only native/ adaptive vegetation (both maintained & un-maintained) shall be considered for this credit compliance.*
- *The project team can consider existing and transplanted trees within the project site to demonstrate compliance.*

(Or)

Option 2: Preservation or Transplantation of Existing Trees

Preserve or transplant at least 75% of existing fully grown trees within the site.

Notes:

- *This credit point is applicable only for those projects which have at least 15 existing trees per acre that are fully grown with medium to large canopy.*
- *If the Ministry of Environment & Forest (MoEF) or local authorities prescribe stringent criteria, then the project shall comply with the respective criteria.*
- *Existing fully grown trees do not include those which are meant for harvesting (eg: bamboo trees, eucalyptus trees, etc.,)*

(AND/ OR)

Case C: Turf Design (1 Point)

Limit the use of turf on the site to a maximum of 50% of the landscape area to conserve water.

Note:

This credit is applicable only for those projects which have at least 10% of the site area landscaped.

Exemplary Performance:

The project is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if more than:

- 17.5% of the site area is restored (and/ or) designed with natural topography (and / or) green cover including vertical gardening.

Heat Island Effect

PPD Credit 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
4	4	4	4	4	4	4	4	2	2

Intent:

Minimise heat island effect so as to reduce negative impact on micro-climate.

Compliance Options:

- **Case A: Roof Areas (2 points)**

  Use material with a high solar reflective index (and/ or) vegetation to cover at least 50% of the exposed roof area of Warehouse(s), including all covered parking spaces.

  Note:

  Material with high solar reflectance index (SRI) include white / light coloured broken China mosaic tiles or white cement tiles or other high reflective materials / coatings.

  Minimum Solar Reflective Index (SRI) values for different roof types are provided below:

  Table 1 - Solar Reflective Index (SRI) values for different roof types

Roof Type	Slope	Minimum SRI Value	Maximum SRI Value
Low-sloped roof	≤ 2:12	78	-
Steep-sloped roof	> 2:12	29	64

  Points are awarded as below:

  Logistics Parks & Warehouses

Percentage of roof area covered with High Reflective Material and/ or Vegetation	Points
≥ 50%	1
≥ 75%	2

Interior Fit-outs

Percentage of roof area covered with High Reflective Material and/ or Vegetation	Points
≥ 75%	1
≥ 95%	2

Notes:

- *All roof areas, including podium, covered surface parking for staff & visitor, docking areas / spaces, utility blocks and areas covered with solar photovoltaic & solar water heaters, which are exposed to the sky (at and above ground level) shall be considered for this credit calculation.*
- *Exposed roof area need not include equipment platforms, skylights, driveways, roads, play areas, etc.*
- *Artificial vegetation shall not be considered*
- *For Interior Fit-out projects, the tenant can demonstrate compliance and claim points under Heat Island Effect Roof even if the implementation and maintenance is in the scope of developer.*

(AND/OR)

❖ **Case B: Uncovered Parking Areas (1 point)**

(Not Applicable for Interior Fit-outs)

Provide one or a combination of the following, for at least 30% of all the uncovered parking areas within the project site:

- Shade from existing tree cover/ newly planted saplings that can mature into grown-up trees with medium to large canopy in the next 5 to 8 years
- Shade from existing warehouses / buildings post noon
- Open grid pavers or grass pavers
- Gravel
- Hardscape materials / Light coloured coatings with SRI of at least 29 (and not higher than 64)

Points are awarded as below:

Percentage of Uncovered Parking Areas meeting the credit requirement	Points
≥ 30%	1

Note:

Parking areas include uncovered surface parking areas and driveways.

(AND/OR)

❖ **Case C: Roads and Pathways (1 point)**

(Not Applicable for Interior Fit-outs)

Provide one or combination of the following, for at least 25% of roads and pathways within the project site:

- Shade from existing tree cover/ newly planted saplings that can mature into grown-up trees with medium to large canopy in the next 5 to 8 years.
- Shade from existing warehouses / buildings post noon.
- Pathways with open grid pavers or grass pavers.
- Light coloured coatings with SRI of at least 29 (and not higher than 64)

Points are awarded as below:

Percentage of Roads and Pathways meeting the credit requirement	Points
≥ 25%	1

General Notes:

- *The compliance for SRI value shall be for a newly coated paint.*
- *SRI values of high reflectance materials shall be as per ASTM Standards. Broken China mosaic tiles are exempted from showing SRI value.*
- *SRI materials that are certified by CII under Green Product Certification Programme (GreenPro) can be used by the project.*
- *Trees / Saplings shall be in place at the time of occupancy.*
- *To demonstrate compliance for 'Shade from existing warehouses / buildings, post noon', the project shall provide computer-based shading analysis. The simulation shall be carried out considering clear sky conditions on 21st September at 3 pm.*

Exemplary Performance:

The project is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if more than:

- 95% of the exposed roof area is covered with high reflective material (and/ or) vegetation, for logistics parks & warehouses *(Not applicable for Interior Fit-outs).*

  (Or)

- 60% of the uncovered parking areas are shaded by tree cover, existing warehouses / buildings, post noon (and / or) with open grid pavers / grass pavers (and / or) gravel (and / or) hardscape materials / Light coloured coatings with an SRI of at least 29 (and not higher than 64)

(Or)

- 50% of the Roads and Pathways are shaded by tree cover, existing warehouses / buildings post noon (and / or) with open grid pavers / grass pavers (and / or) Light coloured coatings with an SRI of at least 29 (and not higher than 64).

Access to Public Transport

PPD Credit 3

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
1	1	1	1	1	1	1	1	1	1

Intent:

Encourage use of public transport, so as to reduce negative impacts caused from automobile use.

Compliance Options:

❖ **Option 1: Public Transport**

Locate the park/ warehouse within 1 km walking distance from an intra-city railway station (or) a bus-stop (or) other mode of public transport.

***Note**: For warehouses in logistics parks, the compliance can be shown from the entrance of the park.*

(OR)

❖ **Option 2: Shuttle Service**

The park/ warehouse can operate or have a contract in place for shuttle services (from / to the nearest intra-city railway station or bus-stop), for atleast 50% of the park/ warehouse occupants.

Note:

- *In Tenant-occupied projects, if the provision of shuttle services is in the scope of tenant, then the developer can demonstrate compliance through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of the shuttle services.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Pedestrian Network

PPD Credit 4

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	NA	NA

NA- Not Applicable

Intent:

Encourage safe and comfortable walking experience by providing well designed interconnected pedestrian network.

Compliance Options:

Design pedestrian network in the park/ warehouse between warehouses and basic amenities, with proper shading and adequate illumination levels.

- Provide shade for pedestrian network areas through tree cover or structured cover, for comfortable pedestrian access.

  (AND)

- Provide adequate illumination (Lux levels) for pedestrian network within the park/ warehouse, as per National Building Code of India 2016, Volume – II, Part 8 - Building Services, Section – 1 Lighting and Ventilation, Table - 4 Recommended Values of Illuminance (Point 18 - Services, 18.4.1 - Walkways). The code recommends lux levels in the range 30 to 100.

Notes:

- *Pedestrian network here refers to footpaths and pathways.*
- *Shade from existing warehouses / buildings, post noon, can also be considered to demonstrate compliance for this credit.*
    - *The project shall provide computer-based shading analysis. The simulation shall be carried out considering clear sky conditions on 21st September at 3 pm.*
- *Trees/ Saplings shall be in place at the time of occupancy for shading.*
- *Newly planted tree saplings shall provide shade within 5 to 8 years of planting.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Docking Facilities at Warehouses

PPD Credit 5

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	1	1

Intent:

Ensure adequate number of docking bays with dock levellers so as to optimise material handling and reduce the lead time.

Compliance Options:

Case A: Number of Docking Bays:

(Not Applicable for Interior Fit-outs)
(1 Point for Owner-occupied Logistics Parks / Warehouses)
(2 Points for Tenant-occupied Logistics Parks / Warehouses)

Option 1: Inbound and Outbound Operations

(Not Applicable for Tenant-occupied Logistics Parks / Warehouses)

Demonstrate that the warehouse is designed with adequate number of docking bays to seamlessly handle both in-bound and out-bound logistics. The number of docking bays provided in the warehouse shall meet or exceed the number of docking bays derived from the following formula:

No. of Docking Bays = [(T x H) / W] x Factor of Safety

T = Total number of trucks serviced per annum

H = Time taken in hours to load/unload the truck

W = No. of Work hours per annum

Notes:

- *Number of Work hours per annum W, can be arrived by multiplying no. of days of operation with no. of hours of operation in a day (e.g. W for 300 days of operation and 3 hrs of operation per day; W = 300 x 3 = 900 hours/annum).*
- *For warehouses with multiple service vehicles with varying loading and unloading time (H), the calculations for minimum number of docking bays shall be aggregate of all service vehicles.*
- *Factor of Safety is project specific. The project team may justify Factor of Safety assumed; in case the Factor of Safety is unavailable, the project team may assume a default Factor of Safety of 25%.*

- *Total number of bays shall be designed considering maximum storage capacity and peak operations.*

Option 2: Warehouse Storage Space

Demonstrate that the project has provided adequate number of docking bays in each warehouse(s), as per the criteria given below:

Criteria	Points	Applicability
Minimum 1 docking bay for every 12,000 sq.ft. of the warehousing space (storage)	1	Owner-occupied and Tenant-occupied
Minimum 1 docking bay for every 10,000 sq.ft. of the warehousing space (storage)	2	Tenant-occupied

(AND /OR)

Case B: Dock Leveller Design: (1 Point)

(Not Applicable for Tenant Occupied Logistics Parks / Warehouses)

Ensure that the dock leveller design is consistent with the following specifications outlined in the EN 1398: 2009 - Dock Levellers Safety Requirements or equivalent. The compliance for dock levellers shall be demonstrated in atleast 25% of the docking bays.

- Standard width as wide as the truck bed and a minimum range of 2,000 to 2,300 mm or 700 mm wider than the forklift truck.
- Standard length with a range of 2,500 to 3,000 mm and a maximum slope of 12.5% for slippery limit. The maximum slope for forklifts and electric pallet trucks shall be 8% and 4% respectively.
- Standard height of the dock from the ground level shall be in the range of 900 to 1,400 mm.
- Standard carrying capacity shall be with uniformly distributed load of 15t/ 22t (or point load of 6t / 9t totally concentrated on one axle of forklift truck, divided on two-wheel prints of 150 x 150 mm at 1m distance).
- Anti-tripping yellow-black stripes 50 mm high under the rim of the leveller and of the pit, for the whole length.
- Crossing of the leveller in rest position with full capacity.

Exemplary Performance:

The project is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if:

Owner-occupied projects & Interior fit-outs:

- the projects comply with the dock leveller design in atleast 50% of the docking bays.

Tenant-occupied projects:

- the projects comply with the dock leveller design in atleast 25% of the docking bays.

Note: For Tenant-occupied projects, if the design and installation of dock levellers is in the scope of tenant, then the point for exemplary performance would not be applicable.

PARK FACILTIES AND OPERATIONS

Certified Green Warehouses

PFO Credit 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
NA	NA	4	NA	NA	NA	4	NA	NA	NA

Intent:

Design and construct warehouses with green features to minimise negative environmental impacts resulting from development.

Compliance Options:

Case A: Registered Built-up Area of Green Warehouses

Demonstrate the intent to design and operate individual warehouses in accordance with the IGBC Green Warehouse (Interior Fit-outs) rating system.

Points are awarded as below:

Registered Built-up Area of Green Warehouses (Interior Fit-outs) (sq.m.)	Points
30%	1
60%	2

Case B: Certified Built-up Area of Green Warehouses

Demonstrate that the individual warehouses are designed and operated in accordance with the IGBC Green Warehouse (Interior Fit-out) rating system.

Points are awarded as below:

Certified Built-up Area of Green Warehouses (Interior Fit-outs) (sq.m.)	Points
15%	1
30%	2

Exemplary Performance:

This credit is not eligible for exemplary performance.

Tenancy in Green Logistics Park or Warehouses

PFO Credit 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
NA	NA	NA	NA	NA	NA	NA	NA	3	5

Intent:

Encourage tenants to occupy green logistics park or warehouses, thereby saving on resources and minimising environmental impacts.

Compliance Options:

Demonstrate that the tenant has occupied Interior fit-outs project which is registered (and / or) certified under IGBC Green Logistics Parks or Warehouses rating system.

(AND)

The tenancy of the warehouse shall be for a minimum of 3 years or more.

Exemplary Performance:

This credit is not eligible for exemplary performance.

Security Facilities

PFO Credit 3

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	2	2

Intent:

Provide security facilities, so as to ensure a secure and safe environment for occupants and assets.

Compliance Options:

Case A: Security Facilities (1 Point)

Provide security facilities, including but not limited to, emergency & fire alarm, fence & fence lighting and control room with real-time surveillance system & CCTVs at strategic locations, as per the scope, within the park/ warehouse.

(And/ Or)

Case B: Automated Access Controls for Vehicular Movement (1 Point)

Install automated access controls, including but not limited to, boom barriers, security bollards, RFID based systems and cloud-based applications for vehicular movement, as per the scope, within the park/ warehouse.

Exemplary Performance:

This credit is not eligible for exemplary performance.

Electric Vehicles and E-Charging Stations

PFO Credit 4

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	1	1	2	2	1	1	2	2

Intent:

Encourage the use of non-fossil fuel vehicles, thereby reducing the negative impacts resulting from fossil fuel-based automobiles.

Compliance Options:

Case A: Electric Vehicles for Indoor Material Handling (1 Point)

(Applicable to Owner-occupied Logistics Parks / Warehouses, Interior Fit-outs)

Use electric powered vehicles to cater to 100% of the material handling, excluding hand operated vehicles, in the warehouse(s) for indoor operations. The project shall also install E-charging stations to cater to the electric powered vehicles, with proper ventilation systems to exhaust the emissions.

Note: *The electric powered vehicles can be owned or sourced through a third-party agency on an annual contract.*

(And/Or)

Case B: Electric Vehicles / E-charging Stations for Occupants (1 Point)

(Applicable to Owner & Tenant-occupied Logistics Parks/ Warehouses, Interior Fit-outs)

Option 1: Electric Vehicles

Use electric powered vehicles within the park/ warehouse to cater to the occupants. Also, designate preferred parking spaces for such vehicles within the park/ warehouse. Additionally, the project shall install E-charging stations to cater the electric powered vehicles, with proper ventilation systems to exhaust the emissions.

Points are awarded as below:

Park/ Warehouse Typology	Requirement	Points
Owner Occupied and Interior Fit-outs	atleast 5% of the occupants (excluding visitors)	1
Tenant Occupied	atleast 50% of the occupants (excluding tenants and visitors)	1

Note: *Park/ Warehouses which use CNG powered vehicles or vehicles operated on Bio-diesels can also be considered to demonstrate compliance.*

(Or)

Option 2: E-charging Stations

Provide E-charging stations for electric powered vehicles within the park/ warehouse, to cater to atleast 20% of the combined parking capacity of four and two wheelers (excluding visitor parking).

Notes:

- *Preferred parking spaces refer to the spaces that are easily accessible to the park/ warehouse entrance.*
- *The E-charging stations shall comply with the Model Building Bye-laws (2016) for Electric Charging Infrastructure, including the revised guidelines and standards of Ministry of Power - Charging Infrastructure for Electric Vehicles (Notification number 12/2/2018-EV; dated 1st October 2019).*
- *E-charging stations can be arranged through a third-party service provider.*
- *For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for E-charging Stations even if the implementation and maintenance is in the scope of developer.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Warehouse Management System

PFO Credit 5

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	1	NA	NA	2	1	NA	NA	2	1

Intent:

Encourage the use of Warehouse Management System (WMS) to optimise space and equipment utilization thereby enhancing the warehouse operations.

Compliance Options:

Option 1 – Warehouse Management System (WMS) (1 Point)

(Not Applicable for New Logistics Parks/ Warehouses and Interior Fit-outs)

- Demonstrate that a Warehouse Management System (WMS) is in place to monitor and track the following operations, but not limited to:
  - Order fulfilment
  - Inventory tracking
  - Shipping and receiving
  - Space utilisation
  - Material handling equipment
  - Labour management
  - Sequence of picking
  - Sequence of operations

(OR)

Option 2 – WMS integrated with ERP & TMS

(2 points for Existing Logistics Parks & Warehouses, Interior-Fit outs)

(1 point for New Logistics Parks & Warehouses)

- Comply with Option 1 Warehouse Management System (WMS) requirements.

  (AND)

- Demonstrate that a Warehouse Management System (WMS) is in place and integrated with Enterprise Resource Planning (ERP) software and Transport Management System (TMS).

Exemplary Performance:

This credit is not eligible for exemplary performance.

GHG Inventory and Mitigation

PFO Credit 6

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
3	2	3	2	3	2	3	2	3	2

Intent:

Encourage Greenhouse Gas (GHG) study to account the GHG emissions generated and implement mitigation measures, thereby reducing the associated impacts of GHG emissions.

Compliance Options:

Existing Logistics Parks & Warehouses

Case A: GHG Accounting and Management (1 Point)

Option 1: GHG Accounting and Verification as per ISO Standards:
Perform GHG Accounting and inventory in consistence with one of the following ISO standards, as applicable:

- **ISO 14064-1:2018:** Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
- **ISO 14064-2:2019:** Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements
- **ISO 14064-3:2019:** Specification with guidance for the validation and verification of greenhouse gas statements

Option 2: GHG Accounting as per WBCSD's GHG Protocol: Corporate Accounting and Reporting standard
Perform GHG Accounting and inventory in consistence with World Business Council for Sustainable Development (WBCSD) GHG Protocol: Corporate Accounting & Reporting standard (Revised Edition: 2015) and GHG Protocol: Corporate Value Chain (Scope 3) Accounting & Reporting Standard (2011), at organisation level or project level, as applicable.

Option 3: Perform GHG Study of the Logistics Park / Warehouse
Account GHG emissions within the operational boundary of the Logistics Parks / Warehouses accounting to direct (Scope 1) and indirect (Scope 2 & Scope 3) emissions.

Case B: Mitigations Measures and Action Plan (2 Points)

- Organisation policy on GHG mitigation measures with clearly specified short (3-5 years) & long-term targets (5-10 years).

- Demonstrate reduction in emission intensity (e.g. kg CO_2/ tonne of material handled, kg CO_2 / revenue generated) in the last one year (financial / calendar year) for scope 1, 2 & 3* emissions vis-à-vis various mitigation actions.

  The mitigation measures shall include, but not limited to, operational improvement, resource efficiency, mode of transport, switch to cleaner fuel, on-site renewable energy, fleet optimization, technology upgradation, carbon offsets etc, as applicable.

  Points are awarded as below:

Annual Reduction in Emission Intensity (Scope 1, 2 & 3*)	Points
2.5%	1
5%	2

*Scope 3 emissions is optional.

(AND)

- Provide a detailed action plan with strategies to reduce the GHG emission intensity (e.g. kgCo_2/ tonne of material handled, kg CO_2 / revenue generated) scope 1, 2 & 3* emissions by atleast 5% from the present year in-lieu of various mitigation actions, over the next one year (financial / calendar year). *Scope 3 emissions is optional.

New Logistics Parks & Warehouses

Case A: GHG Accounting and Inventory (1 Point)

Option 1: GHG Accounting as per ISO Standards:

Perform GHG Accounting and inventory in consistence with one of the following ISO standards, as applicable:

- **ISO 14064-1: 2018:** Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
- **ISO 14064 2:2019:** Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements

Option 2: GHG Accounting as per WBCSD's GHG Protocol: Corporate Accounting and Reporting standard

Perform GHG Accounting and inventory in consistence with World Business Council for Sustainable Development (WBCSD) GHG Protocol: Corporate Accounting and Reporting

standard (Revised Edition: 2015) and GHG Protocol: Corporate Value Chain (Scope 3) Accounting & Reporting Standard (2011), at organisation level or project level, as applicable.

Option 3: Perform GHG Study of the Logistics Park / Warehouse
Account GHG emissions within the operational boundary of the Logistics Parks / Warehouses accounting to direct (Scope 1) and indirect (Scope 2 & Scope 3) emissions.

Case B: Action Plan for Mitigation Measures (1 Point)

- Organisation policy on GHG mitigation measures with clearly specified short (3-5 years) & long-term targets (5-10 years).

  (And)

- Provide a detailed action plan with strategies to reduce the GHG emission intensity (e.g. $kgCo_2$/ tonne of material handled, kg CO_2 / revenue generated) scope 1, 2 & 3* emissions by atleast 5% from the present year in-lieu of various mitigation measures, over the next one year (financial / calendar year). *Scope 3 emissions is optional.

  The mitigation measures shall include, but not limited to, operational improvement, resource efficiency, mode of transport, switch to cleaner fuel, on-site renewable energy, fleet optimization, technology upgradation, carbon offsets etc, as applicable.

Exemplary Performance:

This credit is not eligible for exemplary performance.

Green Education

PFO Credit 7

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	2	2

Intent:

Promote green education by involving warehouse/ building occupants, facilities team and visitors through outreach programmes & descriptive guidelines to create awareness and enable them to adopt, implement & maintain green features.

Compliance Options:

Green Education Activities

- Constitute a formal sustainability committee/ team within the organisation/ project team, to identify and implement green initiatives within and/or outside the project.
- Demonstrate compliance through atleast two of the following green education activities/ programmes, to increase awareness on eco-friendly practices to the warehouse/ building occupants and visitors:
  - Develop promotional materials (posters, brochures, etc.,) and information on organisation portal with green concepts
  - Install permanent educational signage in common areas of the park/ warehouse with green concepts such as Go Green, Save Earth; Water is Precious, Save it; Turn off Lights, when not in use; Say no to Mixed Waste; Plant a Tree, Save the Environment, etc.
  - Organise atleast two outreach/ educational programmes in a year on eco-friendly practices/ green initiatives.

    The outreach/ educational programmes can include, but not limited to, clean & green, water conservation, energy conservation, waste segregation & recycling, use bio-degradable plastic/ avoid single use plastic, air pollution, world green building week and earth hour.

(AND)

Green Education Guidelines

- Develop project specific green guidelines providing information that helps warehouse occupants & tenants to implement and utilise the green features, post occupancy. *(Refer Table 2)*
  - In Tenant-occupied logistics parks & warehouses, the project team shall develop and provide guidelines to the tenants on adopting IGBC Green Warehouse rating system for Interior Fit-outs.

    The guidelines shall include information about IGBC, green measures implemented in the Logistics Park/ Warehouse, details of IGBC Green Warehouses for Interior Fit-outs along with the checklist.
- Develop project specific green renovation guidelines providing information that helps facilities team to implement green features, during the park/ warehouse renovation process.
  (Refer Table 2)

Table 2: List of Credits applicable for Green Logistics Park/ Warehouse Guidelines

Erosion and Sedimentation Control	Water Efficient Plumbing Fixtures and Irrigation Systems
Green Cover	Waste Water Treatment and Reuse
Heat Island Effect	Water Metering
Access to Public Transport	Segregation of waste, Post Occupancy
Security Facilities	Green Packaging
Electric Vehicles and E-charging Stations	Green Procurement Policy
Docking Facilities at Warehouses	Eco-labelled materials, products & Equipment
Warehouse Management System	Organic Waste Management, Post Occupancy
GHG Inventory and Mitigation Measures	Handling of waste Materials, during construction
Optimal Vehicular Routing	No Smoking Premises
Efficiency & Maintenance of Service Vehicles	Fresh Air Ventilation
Parking for Service Vehicles	Daylighting
Commissioning of Building Equipment & Systems	Basic Amenities
Energy Efficiency Systems	Green Measures Beyond the Fence
Renewable Energy Systems	Water and Energy Performance
Energy Metering and Management Systems	Green Measures Cost Analysis
Rainwater Harvesting	

Note: The list is illustrative only.

Exemplary Performance:
This credit is not eligible for exemplary performance.

TRANSPORT EFFICIENCY

Access to Multi-modal Transportation

TE Credit 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	2	2

Intent:

Ensure that the location of the project has access to multi-modal transportation, thereby reducing the negative impacts resulting from vehicular emissions.

Compliance Options:

Demonstrate that the logistics park / warehouse is located with an access to atleast one of the following modes of transportation:

(Maximum 2 Points; 1 Point for each measure)

- **Access to National / State Highway**

  Locate the Logistics Park / Warehouse within 25 km travel distance from a national/ state highway.

- **Access to Railway Siding**

  Locate the Logistics Park / Warehouse within 50 km travel distance from a railway siding.

- **Access to Sea Port/ Container Freight Station (CFS) / In-land Container Depot (ICD) / Airport / Sector-specific Manufacturing Hub**

  Locate the Logistics Park / Warehouse within 100 km travel distance from a Sea Port/ Container Freight Station (CFS) / In-land Container Depot (ICD) / Airport / Sector-specific Manufacturing Hub

Exemplary Performance:

This credit is not eligible for exemplary performance.

Transport Modal Mix

TE Credit 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
3	3	NA	NA	3	3	NA	NA	3	3

Intent:

Optimise the transport modal mix for inbound and outbound operations thereby reducing the associated vehicular emissions.

Compliance Options:

- **Case A: Optimal Multi-modal Mix** (1 point)

  Demonstrate that the project has optimised the overall multi-modal mix for both inbound and outbound operations, as applicable. Ensure that the Tonne-kilometre of the modal mix adheres to the following criteria:

  $(tkm)_{Waterways} > (tkm)_{Railways} > (tkm)_{Roadways} > (tkm)_{Airways}$

  (And / Or)

- **Case B: Sector-specific Optimal Modal Mix** (1 Point each, Max 2 points)

  Demonstrate that the project has optimised the sector-specific modal mix for both inbound and outbound operations, as applicable. Ensure that the Tonne-kilometre of the modal mix adheres to atleast one of the following criteria:

  - **Waterways**

    $(tkm)_{Ocean\ Container\ Ship} > (tkm)_{Coastal\ Container\ Ship} > (tkm)_{Roll\ on\ Roll\ off\ ferry}$

  - **Railways**

    $(tkm)_{Electric} > (tkm)_{Heavy\ Duty\ Diesel} > (tkm)_{Light\ Duty\ Diesel}$

  - **Roadways**

    $(tkm)_{Heavy\ Duty\ Vehicle,\ Large} > (tkm)_{Light\ Duty\ Vehicle,\ Large} > (tkm)_{Light\ Duty\ Vehicle,\ small}$

  - **Airways**

    $(tkm)_{Long\ Haul\ Cargo\ Flight} > (tkm)_{Long\ Haul\ Belly\text{-}hold\ passenger\ flight} > (tkm)_{Short\ Haul\ Cargo\ Flight}$

Notes:

- *Credit Reference: Intergovernmental Panel on Climate Change (IPCC) – Climate Change 2014, Mitigation of Climate Change - Working Group III Contribution to the Fifth Assessment Report.*
- *A tonne-kilometre, abbreviated as tkm, is a unit of measure of freight transport which represents the transport of one tonne of goods for one kilometre by a given transport mode (Water, Rail, Road, Air).*
- *Tonne-kilometre data for existing projects shall be provided for the past one year and for new projects the data shall be projected for the next one year.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Vehicular Routing

TE Credit 3

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	NA	NA	2	2	NA	NA	2	2

Intent:

Optimise vehicular routing for inbound and outbound operations thereby reducing the transportation lead time and associated negative impacts of excessive automobile use.

Compliance Options:

Existing Logistics Parks & Warehouses (2 Points)

By adopting vehicular routing strategies, demonstrate atleast 5% reduction in transportation lead time for inbound and outbound operations by using vehicular routing software vis-à-vis in the last one year.

The vehicle routing strategies may include, but not limited to maximising fleet utilization, vehicle fill, reduced empty runs, just in time delivery, optimal route search, optimal modal mix, etc.

New Logistics Parks & Warehouses (2 Points)

(1 Point for each measure)

Case A: Vehicle Routing Strategies and Action Plan

Demonstrate that the project has adopted vehicle routing strategies and action plan for the next 2-3 years.

The vehicle routing strategies may include, but not limited to maximising fleet utilization, vehicle fill, reduced empty runs, just in time delivery, optimal route search, optimal modal mix, etc.

(And/ Or)

Case B: Vehicle Routing Software

Demonstrate that the project has a vehicle routing software integrated with the Transport Management System (TMS) to optimise the vehicular routes and maximise the fleet utilization.

Exemplary Performance:
This credit is not eligible for exemplary performance.

Efficiency & Maintenance of Service Vehicles

TE Credit 4

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
4	2	NA	NA	4	2	NA	NA	4	2

Intent:

Enhance the efficiency of service vehicles thereby reducing the associated negative impacts of vehicular emissions.

Compliance Options:

Existing Logistics Parks & Warehouses (4 Points)

- **Case A: Use of Cleaner fuel for Service Vehicles**

  (max 2 points; 1 point for each measure)

  Demonstrate compliance with one or a combination of the following criteria, at project level or organisation level:

  - **Electric Vehicles**

    Use electric vehicles catering to atleast 5% of the fleet, for short haul logistics operations or last mile (within 50 km) during the last one year. The project shall also install E-charging stations to cater to the electric vehicles.

  - **Biofuels**

    Use vehicles, which are compatible to run on biofuels, catering to atleast 5% of the fleet, for short haul logistics operations or last mile (within 50 km) during the last one year.

    Note:

    As per National Policy on Biofuels 2018 by Govt. of India, 'Biofuels' are fuels produced from renewable resources and used in place of or in blend with, diesel, petrol or other fossil fuels for transport, stationary, portable and other applications

- **Cleaner Fossil Fuels**

  Use vehicles, which are compatible to run on CNG/ LPG/ LNG, catering to atleast 5% of the fleet, for short haul logistics operations or last mile (within 50 km) during the last one year.

(AND/OR)

❖ **Case B: Emission Norms (1 Point)**

Ensure that atleast 75 % of the overall road fleet complies with BS IV or latest emissions norms.

(AND/OR)

❖ **Case C: Periodic Vehicle Servicing and Awareness Programmes for Drivers (1 Point)**

- **Periodic Vehicle Servicing**

  Demonstrate that the entire fleet (road fleet) is periodically serviced to ensure efficient vehicle performance.

  (And)

- **Awareness Programmes for Drivers**

  Demonstrate that awareness programmes are organised periodically, by the service provider, to train the drivers on vehicle maintenance and driving etiquette. Posters with education material for drivers can be placed in drivers' dormitories and resting areas.

New Logistics Parks & Warehouses (2 Points)

❖ **Case A: Use of Cleaner fuel for Service Vehicles (1 point)**

Demonstrate compliance with one or a combination of the following criteria, at project level or organisation level:

- **Electric Vehicles**

  Use electric vehicles catering to atleast 5% of the fleet, for short haul logistics operations or last mile (within 50 km). The project shall also install E-charging stations to cater to the electric vehicles.

- **Biofuels**

  Use vehicles, which are compatible to run on biofuels, catering to atleast 5% of the fleet, for short haul logistics operations or last mile (within 50 km).

  Note:

  As per National Policy on Biofuels 2018 by Govt. of India, 'Biofuels' are fuels produced from renewable resources and used in place of or in blend with, diesel,

petrol or other fossil fuels for transport, stationary, portable and other applications

- **Cleaner Fossil Fuels**

  Use vehicles, which are compatible to run on CNG, catering to atleast 5% of the fleet, for short haul logistics operations or last mile (within 50 km).

(AND/OR)

- **Case B: Emission Norms, Periodic Vehicle Servicing and Awareness Programmes (1 Point)**

  - **Emission Norms:**

    Ensure that atleast 75 % of the fleet (road fleet) complies with BS IV or latest emissions norms.

    (And)

  - **Plan for Periodic Vehicle Servicing**

    Demonstrate that the entire fleet (road fleet) of the service provider will be periodically serviced to ensure efficient vehicle performance.

    (And)

  - **Awareness Programmes for Drivers**

    Demonstrate that awareness programmes will be organised periodically, by the service provider, to train the drivers on vehicle maintenance and driving etiquette. Posters with education material for drivers shall be placed in drivers' dormitories or resting areas.

Exemplary Performance:

This credit is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if the project demonstrates compliance for atleast 10% use of cleaner fuel for service vehicles.

Parking for Service Vehicles

TE Credit 5

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	2	2

Intent:

Provide adequate parking facilities for service vehicles within the site, to minimise disturbance caused due to parking on public roads, thereby enhancing the quality of civic life and reducing transportation lead time.

Compliance Options:

Case A: Parking for Service Vehicles

(1 Point for Owner-occupied Logistics Parks/ Warehouses, Interior Fit-outs)
(2 Points for Tenant-occupied Logistics Parks/ Warehouses)

Option 1: Parking Area

(Not Applicable for Interior Fit-outs)

Demonstrate that the logistics park / warehouse has a dedicated service parking zone. The service parking zone should be atleast 10% of the total site area.

Notes:

- *Service vehicles include trailers and trucks.*
- *The project team can also account the docking bays to show compliance.*

(Or)

Option 2: Parking Spaces

Demonstrate that the logistics park / warehouse has provided adequate number of dedicated service vehicle parking spaces to cater to the total number of trucks being serviced per day.

Adequate service vehicle parking here refers to the highest number of trailers/ trucks serviced per day in the logistics park / warehouse.

Notes:

- *The project team can also account the docking bays to show compliance.*
- *For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Parking Spaces even if the provision and maintenance is in the scope of developer.*

(And/Or)

Case B: Vehicle Service Zone (1 Point)

(Not Applicable for Tenant-occupied Logistics Parks/ Warehouses)

Option 1: Dedicated Vehicle Service Zone

(Not Applicable for Interior Fit-outs)

Provide a dedicated vehicle service zone capable of servicing atleast 1 large heavy-duty truck /day.

Note:

The infrastructure for vehicle service zone shall be owned and / or operated by the owner (or) can be arranged through a third-party service provider.

(Or)

Option 2: Third-party Service Agency

The owner / tenant of the logistics park / warehouse shall appoint a third-party service agency for vehicle servicing.

Exemplary Performance:

This credit is not eligible for exemplary performance.

ENERGY EFFICIENCY

Minimum Energy Efficiency

EE Mandatory Requirement 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
MR	MR	MR	MR	MR	MR	MR	MR	MR	MR

Intent:

Enhance energy efficiency of the equipment & systems, to reduce negative environmental impacts from excessive energy use.

Compliance Options:

The project can choose any one of the following options, as applicable, to demonstrate compliance:

- Option 1 - Prescriptive Approach
- Option 2 - Simulation Approach
- Option 3 - Specific Energy Consumption (Measurement Approach)

Summary of Compliance Options for New & Existing Logistics Parks, Warehouses and Interior Fit-outs

Applicability	Type of Warehouse (Naturally Ventilated/ Air-conditioned)	Percentage of Built-up Area (BUA) as Air-conditioned Space	Compliance Option for Mandatory Requirement	Compliance Option for Credit Requirement
New & Existing	Naturally Ventilated	NA	NA	Prescriptive Approach with IGBC baselines
New & Existing	Air-conditioned	≥ 50% BUA is Air-conditioned	Simulation Approach with ECBC 2017/ ASHRAE 90.1 2013 baselines	Simulation Approach with ECBC 2017/ ASHRAE 90.1 2013 baselines

Applicability	Type of Warehouse (Naturally Ventilated/ Air-conditioned)	Percentage of Built-up Area (BUA) as Air-conditioned Space	Compliance Option for Mandatory Requirement	Compliance Option for Credit Requirement
New & Existing	Naturally Ventilated and Air-conditioned	≥ 50% BUA is Air-conditioned	Simulation Approach with ECBC 2017/ ASHRAE 90.1 2013 baselines	Simulation Approach with ECBC 2017/ ASHRAE 90.1 2013 baselines
New & Existing	Park level: Combination of Naturally Ventilated and Air-conditioned warehouses	≥ 50% BUA is Air-conditioned	Simulation Approach with ECBC 2017/ ASHRAE 90.1 2013 baselines	Simulation Approach with ECBC 2017/ ASHRAE 90.1 2013 baselines
Existing (3 years or more)	Naturally Ventilated and/ or Air-conditioned	NA	Specific Energy Consumption	Specific Energy Consumption

❖ **Option 1 - Prescriptive Approach:**

The project shall meet or exceed the following prescriptive measures, as applicable:

Note:

- *Project with multiple warehouses / buildings must independently meet the Minimum Energy Performance criteria, as applicable.*

1) Lighting:

(Applicable to all New & Existing Logistics Parks/ Warehouses/ Interior Fit-outs)

➢ **Lighting Power Density:**

The Lighting Power Density (LPD) in the park/ warehouse exterior & parking areas and interior areas shall be reduced by minimum 10% over ECBC 2017 (Section 6, ECBC Building) or ASHRAE Standard 90.1 – 2013 (Section 9) base case.

Notes:

- *Only exterior areas that require illumination from lighting should be considered for lighting power density calculations.*
- *The LPD should include power consumption of complete fixture, including lamps and ballasts.*

2) Air-conditioning Systems:

(Applicable only if air-conditioned spaces are at least 10% of the warehouse and office area)

For projects having air-conditioners, compliance shall be demonstrated as per the ECBC 2017 (ECBC Building) or ASHRAE Standard 90.1 - 2013 base case criteria.

Notes:

- *For details of ECBC 2017 (ECBC Building) or ASHRAE Standard 90.1 - 2013 refer Appendix III.*
- *Energy efficient materials, products and equipment that are certified by CII under Green Product Certification Programme (GreenPro) can be used by the project.*

(OR)

❖ **Option 2: Simulation Approach**

(Applicable only if air-conditioned spaces are at least 50% of the warehouse and office area)

Design the warehouses / buildings to be compliant with Energy Conservation Building Code 2017 (ECBC Code Compliant Building requirements) or ASHRAE Standard 90.1-2013,
Appendix - G through Whole building simulation. Simulation is to be carried out at comfort temperatures of 26 ± 2 deg C.

The total annual energy consumption of the building should not exceed the total base case energy consumption computed.

Notes:

- ***Project with multiple warehouses / buildings must independently meet the Minimum Energy Performance criteria.***
- ***For mandatory requirement, projects that use on-site renewable energy sources (such as solar energy, wind power, biomass, etc.,) shall demonstrate compliance without considering renewable energy.***
- *Existing warehouses/ buildings shall demonstrate compliance through Calibrated Simulation Approach by considering schedules and equipment loads as per actuals in both base case & proposed case. All the other parameters shall be as per the protocol defined in the Standard/ Code.*
- *Projects that use solar hot water systems can model the systems in the proposed case, as compared to electrical heaters in the base case, to show energy savings.*
- *Projects which have process loads (including cooling/ heating, lighting) not related to warehousing/ building operations should be considered during simulation. While reporting, such process loads can be excluded from the base case and proposed case annual energy consumption. The process loads which are excluded shall be justified with a narrative.*

- *For Cold storages, the refrigeration loads can be excluded from the base case and proposed case annual energy consumption while reporting energy savings.*
- *For light manufacturing units, the process loads (including cooling/ heating, lighting) not related to warehousing/ building operations should be considered during simulation. While reporting, such process loads can be excluded from the base case and proposed case annual energy consumption. The process loads which are excluded shall be justified with a narrative.*

- *The default process energy is 25% of the total energy for the baseline warehouse/ building. If the warehouse's/ building's process energy is less than 25% of the baseline warehouse/ building energy, the submittal must include documentation substantiating such process energy inputs are appropriate.*
- *Energy efficient materials, products and equipment that are certified by CII under Green Product Certification Programme (GreenPro) can be used by the.*

(OR)

❖ **Option 3 – Specific Energy Consumption (Measurement Approach)**

(Applicable only for Existing Owner-occupied Logistics Parks/ Warehouses and Interior Fit-outs)

Demonstrate that the project has maintained or reduced the Specific Energy Consumption (SEC) from the defined baseline year (three years earlier) to the reporting year (present year).

Notes:

- *The Specific Energy Consumption (SEC) of a warehouse/ building is its annual energy consumption in kilowatt-hours per cubic meter of the warehouse/ building. While calculating the SEC of a warehouse/ building, the area of basements for parking (if provided) shall not be included.*
- *SEC can be determined by:*

  SEC = annual energy consumption in kWh / total volumetric area (m^3)
- *Annual energy consumption shall include energy generated from DG Sets & wheeled off-site renewable energy and shall exclude on-site renewable energy.*
- *Specific Energy Consumption (Measurement Approach) is not applicable for tenant-occupied logistics parks / warehouses and for those projects which have different hours of operation 3 years earlier and in the base year.*
- *The project team shall include or exclude the process loads consistently.*

Commissioning of Building Equipment & Systems

EE Mandatory Requirement 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
NA	MR	NA	MR	NA	MR	NA	MR	NA	MR

Intent:

Verify and ensure that the project's equipment & systems are commissioned to achieve performance as envisaged during the design stage.

Compliance Options:

(Applicable only for new projects with atleast 50% built-up area as air-conditioned in the scope of owner/ developer/ tenant)

The project shall comply with the following requirements as per the scope:

- Demonstrate that the project owner/ developer/ tenant has signed an agreement with a third-party commissioning authority, not involved in the design, for pre-occupancy and post-occupancy commissioning for a period of one year.

  The commissioning authority is required to have at least 3 years prior experience in equipment & systems and should be an ISHRAE Certified Professional to evaluate & validate the performance of HVAC systems.

(AND)

- Document the owners brief in terms of performance expectations from the warehouse/ building.
- Commissioning plan to evaluate the warehouse/ building for its green warehouse/ building performance after occupancy, with regard to the following:
  - HVAC systems - chiller, VRV systems, primary & secondary water pumps, cooling tower, AHU fans, fresh air fans and flow settings, fresh air treatment units, heat recovery wheel, VFDs and Temperature & RH measurements in individual spaces

    Note: *The Commissioning for HVAC Systems shall be in accordance with ISHRAE Standard: 10003-2020.*
  - Pumps & motors
  - Lighting systems

- Renewable energy systems
- CO_2 monitoring system
- Energy & Water metering
- Energy management system
- DG sets or Back-up systems
- Sewage treatment plant – Pumps and Motors
- Any other energy consuming equipment and systems (Non-process)

❖ Design & construction review report with specific observations and variations identified by commissioning authority to the project owner, for each equipment & system, with respect to commissioning plan and how they were addressed.

❖ Commissioning report on green warehouse/ building performance of the equipment & systems listed in commissioning plan. The report for each of the equipment & systems should cover the following:

- Equipment specifications
- Test results with specific comments from the Commissioning Authority, at the time of commissioning
- Key monitoring aspects to sustain performance
- Estimated energy & water consumption
- Scope for performance enhancement in future, and savings thereof

Enhanced Energy Efficiency

EE Credit 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
13	15	11	13	13	15	11	13	7	7

Intent:

Enhance energy efficiency of the equipment & systems, to reduce negative environmental impacts from excessive energy use.

Compliance Options:

The project can choose any one of the following options, as applicable, to demonstrate compliance:

- Option 1 - Prescriptive Approach
- Option 2 - Simulation Approach
- Option 3 - Specific Energy Consumption (Measurement Approach)

❖ **Option 1 - Prescriptive Approach:**

The project shall meet or exceed the following prescriptive measures, as applicable:

Points are awarded as below:

S.No	Measures	Owner-occupied Logistics Parks/ Warehouses	Tenant-occupied Logistics Parks/ Warehouses	Interior Fit-outs
1	Warehouse/ Building Envelope	5	5	-
2	Interior LPD	2	2	3
3	Exterior LPD	2	2	-
4	Lighting Controls	1	1	1
5	Air-conditioning Systems	2	2	2
6	Pre-cooling or Low Energy Mechanical Cooling Techniques	2	2	2

S.No	Measures	Owner-occupied Logistics Parks/ Warehouses		Tenant-occupied Logistics Parks/ Warehouses		Interior Fit-outs
7	HVLS Fans	2		2		2
8	Pumps & Motors	2		2		-
9	DG Sets	2		2		2
10	Distribution Transformers	1		1		-
11	Appliances	-		-		1
	Total Applicable Points	**20**		**20**		**12**
		Existing	**New**	**Existing**	**New**	**New & Existing**
	Total Possible Points	**13**	**15**	**11**	**13**	**7**

1) **Warehouse/ Building Envelope:** ***(5 Points)***
(Applicable for Naturally Ventilated Logistics Parks / Warehouses only)

The project shall ensure to comply with the following warehouse/ building envelope measures as outlined in Appendix - II.

Points are awarded as below:

Measures	Points
Fixed Glazing Solar Heat Gain Coefficient (SHGC)	1
Skylights SHGC	1
Overall Roof Assembly U-value	2
Overall Wall Assembly U-value	2

Note: *For Climatic Zones of India, please refer Appendix - I.*

2) **Lighting:**

- **Lighting Power Density: (*4 Points*)**

(4 Points for Owner-occupied and Tenant-occupied Logistics Parks/ Warehouses)
(3 Points for Interior Fit-outs)

The Lighting Power Density (LPD) in the park/ warehouse exterior & parking areas and interior areas shall be reduced, as prescribed in the table given below, over ECBC 2017 (Section 6, ECBC Building) or ASHRAE Standard 90.1 – 2013 (Section 9) base case.

Points are awarded as below:

Exterior and Parking areas:

(Not applicable for Interior Fit-outs)

Reduction in Lighting Power Density	Points for Owner-occupied and Tenant-occupied Logistics Parks & Warehouses
≥ 40 %	1
≥ 50 %	2

Interior areas:

Reduction in Lighting Power Density	Points for Owner-occupied and Tenant-occupied Logistics Parks & Warehouses	Points for Interior Fit-outs
≥ 20 %	1	1
≥ 25 %	-	2
≥ 30 %	2	3

Notes:

- *Only exterior areas that require artificial illumination should be considered for lighting power density calculations.*
- *The LPD should include power consumption of the complete fixture, including lamps and ballasts.*

➢ **Lighting Controls: *(1 point)***

Lighting of all non-emergency exterior & interior areas such as warehouses, staircases, corridors, façade, pathways, landscaping, surface and covered parking, driveways, street lighting, should have at least one of the following lighting controls, as applicable:

- Timers / Dimmer
- Occupancy / Motion sensor
- Daylight sensor

3) Air-conditioning Systems: (2 Points)

(Applicable only if air-conditioned spaces are at least 10% of the warehouse and office area)

For projects having air-conditioners with one or combination of the following systems, the points would be awarded as below:

- **Unitary Air-conditioners:**

BEE Star Rating/ equivalent	No of Points
4-star rated	1
5-star rated	2

- **Variable Refrigerant Flow:**

Efficiency of VRF systems over ECBC 2017 (ECBC Building) / ASHRAE 90.1 2013 baseline	No of Points
≥ 2.5%	1
≥ 5%	2

- **Water Cooled and Air-Cooled Chillers:**

Efficiency of Chillers systems over ECBC 2017 (ECBC Building) / ASHRAE 90.1 2013 baseline	No of Points
≥ 2.5%	1
≥ 5%	2

Note: *For details of ECBC 2017 (ECBC Building) or ASHRAE Standard 90.1 - 2013 refer Appendix III.*

4) Pre-cooling or Low Energy Mechanical Cooling Techniques: ***(2 Points)***

Atleast 25% of the warehouse and office spaces shall comply with minimum one Pre-cooling or Low Energy Mechanical Cooling Technique or in a combination, as prescribed in National Building Code 2016, Part 11- Approach to Sustainability, Section 11.6 & 11.7.

The Pre-cooling or Low Energy Mechanical Cooling Techniques include, but not limited to, Demand Control Ventilation, Heat Recovery, Economizer cycles, Evaporative cooling (Direct or Indirect, Passive down draft evaporative cooling system), Desiccant De-humidification/ cooling systems, Geo-thermal cooling, Earth Air Tunnel systems and Radiant cooling or thermally active warehouse/ building systems.

5) HVLS Fans: ***(2 Points)***

- Install High Volume Low Speed (HVLS) fans for atleast 50% of the warehouse area.

Points are awarded as below:

Percentage of Warehouse area catered with HVLS Fans	Points
≥50%	1
≥75%	2

6) Pumps & Motors: *(2 Points)*

- Pumps (1 Point): Install BEE 5-star rated Pumps (or) IE 3 class (or) Minimum 70% efficiency.
- Motors (1 Point): Install BEE 5-star rated (or) IE 3 class (or) Minimum 85% efficiency.

Note:

- *Pumps & motors which are installed only for domestic and sewage water supply should be considered.*

7) DG Sets: *(2 Points)*

- Install Diesel Generator sets with a minimum of BEE 3-Star rating or having Specific Fuel Consumption (SFC) less than 272 g/kWh. (1 Point)
- Install Diesel Generator sets with a minimum of BEE 5-Star rating or having Specific Fuel Consumption (SFC) less than 220 g/kWh. (2 Points)

8) Distribution Transformers: *(1 Point)*

- Install Distribution transformers of proper ratings and design must be selected to comply with the minimum acceptable efficiency at 50% and full load rating as defined in ECBC 2017. The permissible loss shall not exceed to values listed in ECBC 2017 (ECBC Building) Table 7-1 for dry type transformers and Table 7-2 for oil type transformers.

9) Energy Saving Appliances: *(1 Point)*

- Demonstrate that the interior fit-outs use minimum BEE 3 star rated or equivalent appliances for atleast 50% of the total rated power. The appliances, as applicable, to be considered are as below:
  - Air purifiers
  - Coffee Brewers
  - Desert Coolers
  - Electric Geysers

- Oven
- Printers
- Projectors
- Refrigerator
- Television
- Vending machines
- Water Dispenser
- Any other rated appliances

Notes:

- *In tenant-occupied projects, if the Energy Conservation Measures (ECMs) such as lighting controls, HVAC systems, HVLS fans, DG sets, energy saving appliances are in the tenant scope, then the developer can demonstrate compliance through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of such ECMs. Credit points for such ECMs can be attempted by the developer, when either the developer or the tenants comply with atleast 50% of the built-up area in the park/ warehouses.*
- *In tenant-occupied projects, the reduction in interior LPD would be allowed up to a maximum of 30%, for a mandatory clause on interior LPD through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of the interior LPD; else, the project can consider a maximum of 10% interior LPD reduction.*
- *For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for HVAC systems, Precooling or Low Energy Mechanical Cooling Techniques, HVLS Fans, DG Sets (as applicable), even if the installation and maintenance is in the scope of developer.*
- *Energy efficient materials, products and equipment that are certified by CII under Green Product Certification Programme (GreenPro) can be used by the project.*

(OR)

❖ **Option 2: Simulation Approach**

(Applicable only if air-conditioned spaces are at least 50% of the warehouse and office area)

Design the building to be compliant with Energy Conservation Building Code 2017 (ECBC Building) or ASHRAE Standard 90.1-2013, Appendix - G through Whole building simulation. The simulation is to be carried out at comfort temperatures of 26 ± 2 deg C.

Notes:

- *In tenant-occupied projects, if the Energy Conservation Measures (ECMs) such as lighting controls, HVAC systems, HVLS fans, DG sets, energy saving appliances are in the scope of tenant, then the developer can demonstrate compliance through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of such ECMs. Credit*

points for such ECMs can be attempted by the developer, when either the developer or the tenants comply with atleast 50% of the built-up area in the park/ warehouses.

- *In tenant-occupied projects, the reduction in interior LPD would be allowed up to a maximum of 30%, for a mandatory clause on interior LPD through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of the interior LPD; else, the project can consider a maximum of 10% interior LPD reduction.*
- *For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for HVAC systems, Precooling or Low Energy Mechanical Cooling Techniques, HVLS Fans, DG Sets (as applicable), even if the installation and maintenance is in the scope of developer.*
- *Projects that use on-site renewable energy sources (such as solar energy, wind power, biomass, etc.,) can deduct renewable energy generated from the total annual energy consumption of the proposed case, to show energy savings.*

Points are awarded based on energy cost percentage savings as detailed below:

New Logistics Parks/ Warehouses/ Interior Fit-outs:

Percentage of Energy Cost Savings over Energy Conservation Building Code 2017 or ASHRAE Standard 90.1-2013 Appendix G Base case			
Owner-occupied Logistics Parks / Warehouses	**Tenant-occupied Logistics Parks / Warehouses**	**Interior Fit-outs**	**Points**
8%	8%	8%	1
10%	10%	10%	2
12%	12%	12%	3
14%	14%	14%	4
16%	16%	16%	5
18%	18%	18%	6
20%	20%	20%	7
22%	22%	-	8
24%	24%	-	9
26%	26%	-	10
28%	28%	-	11
30%	30%	-	12
32%	32%	-	13
34%	-	-	14
36%	-	-	15

Existing Logistics Parks/ Warehouses/ Interior Fit-outs:

Percentage of Energy Cost Savings over Energy Conservation Building Code 2017 or ASHRAE Standard 90.1-2013 Appendix G Base case			
Owner-occupied Logistics Parks / Warehouses (Including major renovations)	**Tenant-occupied Logistics Parks / Warehouses (Including major renovations)**	**Interior Fit-outs (Including major renovations)**	**Points**
6%	6%	6%	1
8%	8%	8%	2
10%	10%	10%	3
12%	12%	12%	4
14%	14%	14%	5
16%	16%	16%	6
18%	18%	18%	7
20%	20%	-	8
22%	22%	-	9
24%	24%	-	10
26%	26%	-	11
28%	-	-	12
30%	-	-	13

Notes:

- *Existing Warehouse/ Buildings: To demonstrate compliance, projects should be in operation for atleast one year.*
- *Major Renovation: Includes, but not limited to, major renovation of external façade (wall & glazing), lighting and HVAC systems.*

(OR)

❖ **Option 3: Specific Energy Consumption (Measurement Approach)**

(Applicable only for Existing Owner-occupied Logistics Parks/ Warehouses and Interior Fit-outs)

Demonstrate that the project has reduced the Specific Energy Consumption (SEC) from the defined baseline year (three years earlier) to the reporting year (present year), as per the criteria given below:

Percentage reduction in SEC in the last 3 years from the base year	Points for Existing Owner-occupied Logistics Parks/ Warehouses (Including major renovations)	Points for Existing Tenant-occupied Logistics Parks/ Warehouses (Including major renovations)	Points for Existing Interior Fit-outs (Including major renovations)
6%	1	1	1
8%	2	2	2
10%	3	3	3
12%	4	4	4
14%	5	5	5
16%	6	6	6
18%	7	7	7
20%	8	8	-
22%	9	9	-
24%	10	10	-
26%	11	11	-
28%	12	-	-
30%	13	-	-

Note:

- *Specific Energy Consumption (Measurement Approach) is not applicable for tenant-occupied logistics parks / warehouses and for those projects which have different hours of operation 3 years earlier and in the base year.*
- *The project team shall include or exclude the process loads consistently.*

Exemplary Performance:

This credit is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if:

Option 1: Prescriptive Approach

- Lighting Power Density:
    - Owner-occupied: Lighting Power Density (LPD) shall be reduced by atleast 40% for interior areas and 60% for exterior areas over ECBC 2017 or ASHRAE Standard 90.1-2013 baseline.
    - Tenant-occupied: Lighting Power Density (LPD) shall be reduced by atleast 60% for exterior areas over ECBC 2017 or ASHRAE Standard 90.1-2013 baseline.

- Interior Fit-outs: Lighting Power Density (LPD) shall be reduced by atleast 35% for interior areas over ECBC 2017 or ASHRAE Standard 90.1-2013 baseline.

- COP/ IPLV of Air-conditioning systems (VRF/Chillers) is atleast 7.5% over ECBC 2017 or ASHRAE Standard 90.1-2013 baseline.

Option 2: Simulation Approach

- New & existing Logistics Parks/ Warehouses/ Interior Fit-outs:

Percentage of Energy Cost Savings over Energy Conservation Building Code 2017 or ASHRAE Standard 90.1-2013 Appendix G Base case			
New Logistics Parks / Warehouses	**Existing Logistics Parks / Warehouses (Including Major Renovations)**	**New Interior Fit-out Warehouses**	**Existing Interior Fit-outs (Including Major Renovations)**
38%	32%	22%	20%

Option 3: Specific Energy Consumption (Measurement Approach)

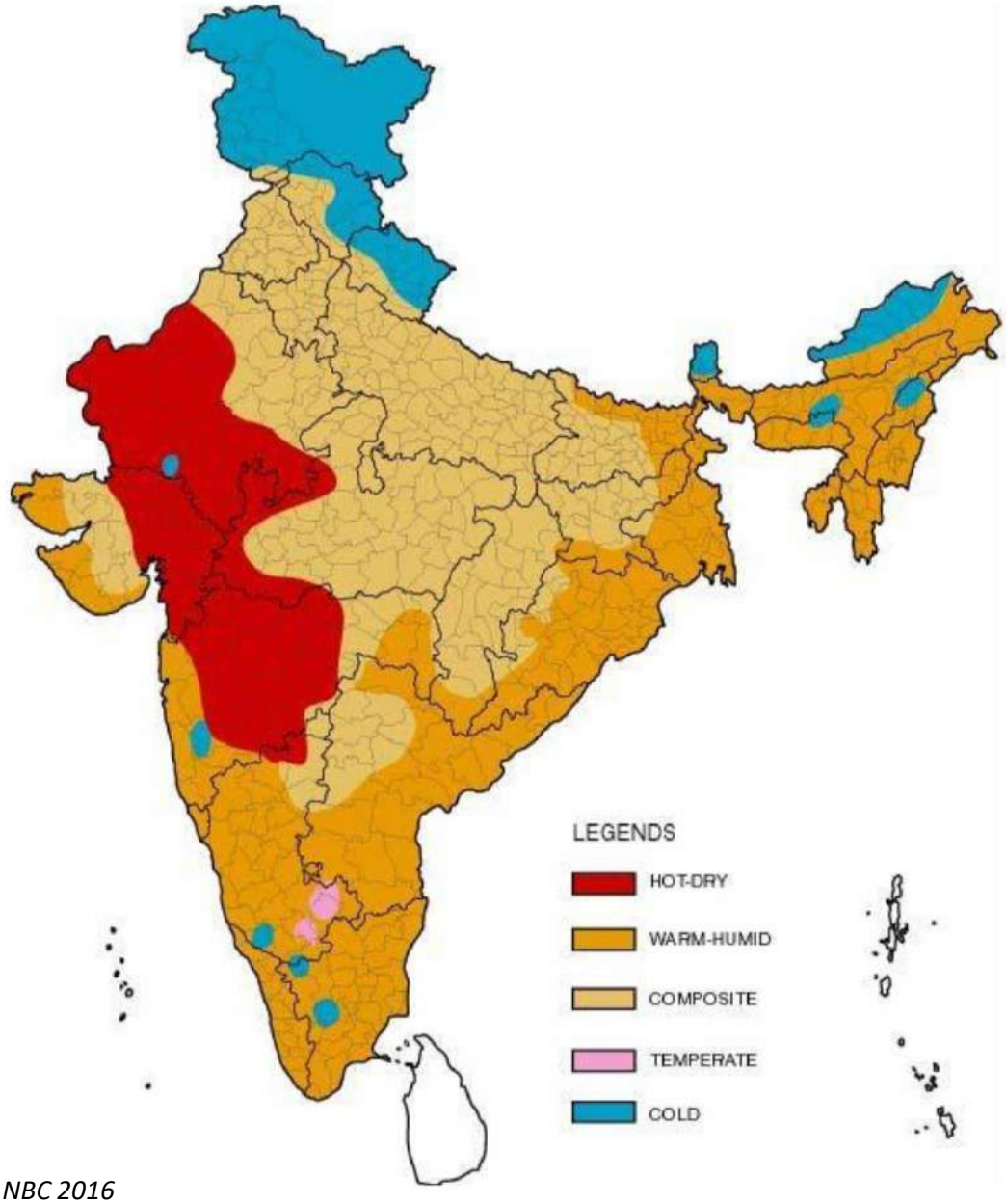
- Reduction in Specific Energy Consumption (SEC) from the defined baseline year (three years earlier) to the reporting year (present year)

Percentage reduction in SEC (Existing Owner-occupied Logistics Parks/ Warehouses)	**Percentage reduction in SEC (Existing Tenant-occupied Logistics Parks/ Warehouses)**	**Percentage reduction in SEC (Existing Interior Fit-outs)**
32%	28%	20%

Note:

- *For tenant-occupied projects, if the interior lighting and air-conditioning systems are in the scope of tenants for more than 50% of the built-up area, then the points for exemplary performance would not be applicable.*

Appendix - I: Climate Zone Map of India



Source: NBC 2016

Appendix - II: EE Credit 1 - Enhanced Energy Performance
Baseline Criteria for Building Envelope Measures
under Option 1: Prescriptive Approach
(Applicable for Naturally & Mechanically Ventilated Logistics Parks / Warehouses)

1) Envelope Measures:
(* For Climatic Zones of India, please refer Appendix - I)

- **Fixed Glazing - SHGC value**

Climate Zone	Maximum SHGC Value
Hot and Dry	0.42
Warm and Humid	0.42
Composite	0.42
Temperate	0.5
Cold	0.8

- **Skylights SHGC Value**

Climate Zone	Maximum SHGC Value
Hot and Dry	0.5
Warm and Humid	0.5
Composite	0.5
Temperate	0.5
Cold	0.5

- **Wall Assembly U - value**

Climate Zone	Maximum U-value of the overall wall assembly (W/m2K)	Maximum U-value of the overall wall assembly (W/m2K)
	(1 Point)	***(2 Points)***
Hot and Dry	1.8	1.2
Warm and Humid	1.8	1.2
Composite	1.8	1.2
Temperate	1.8	1.2
Cold	1.5	1

- **Roof Assembly U - value**

Climate Zone	Maximum U-value of the overall roof assembly (W/m2K)	Maximum U-value of the overall roof assembly (W/m2K)
	(1 Point)	***(2 Points)***
Hot and Dry	0.8	0.5
Warm and Humid	0.8	0.5
Composite	0.8	0.5
Temperate	0.8	0.5
Cold	0.8	0.5

Appendix - III: EE Mandatory Requirement 1 - Minimum Energy Performance & EE Credit 1 - Enhanced Energy Performance under Option 1: Prescriptive Approach

Reference sections and tables for Air-conditioning systems as per ECBC 2017 & ASHRAE 90.1, 2013

- **Unitary/ Split/ Packaged Air-conditioners:**
  - ECBC 2017

    Chapter 5 - Comfort Systems and Controls, Section 5.2.2.2 - Minimum Space Conditioning Equipment Efficiencies, Table 5.3 Minimum Requirements for Unitary, Split, Packaged Air Conditioners in ECBC Building.

  - ASHRAE 90.1, 2013

    TABLE 6.8.1-1 Electronically Operated Unitary Air Conditioners and Condensing Units - Minimum Efficiency Requirements.

- **Variable Refrigerant Flow:**
  - ECBC 2017

    Table 5-6 as per the ANSI/AHRI Standard 1230 while the Indian Standard on VRF is being developed. BEE Standards and Labelling requirements for VRF shall take precedence over the current minimum requirement.

    ** The revised EER and IEER values as per Indian Standard for VRF corresponding to values in this table will supersede as and when the revised standards are published.*

  - ASHRAE 90.1, 2013

    TABLE 6.8.11 Electrically Operated Variable Refrigerant Flow Air Conditioners Minimum Efficiency Requirements.

- **Water Cooled and Air-Cooled Chillers:**
  - ECBC 2017

    Chapter 5 - Comfort Systems and Controls, Section 5.2.2.1 - Minimum Space Conditioning Equipment Efficiencies, Table 5.1 & 5.2 Minimum Energy Efficiency Requirements for Water-cooled and Air-cooled chillers in ECBC Building.

  - ASHRAE 90.1, 2013

    TABLE 6.8.1-3 Water Chilling Packages-Efficiency Requirements

Renewable Energy (On-site & Off-site)

EE Credit 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
5	5	6	6	5	5	6	6	3	5

Intent:

Encourage the use of renewable technologies, to minimise the environmental impacts associated with the use of fossil fuel energy.

Compliance Options:

- **Case A: On-site Renewable Energy (5 Points)**

  Owner-occupied Logistics Park/ Warehouses:

  Demonstrate on-site renewable energy generation for at least 5% of total annual energy consumption of the park/ warehouse (including HVAC, Interior & Exterior Lighting, pumps & motors and excluding process loads).

  Points are awarded as below:

Percentage of On-site Renewable Energy Generated to the Total Annual Energy Consumption of the Park/ Warehouse	Points
≥ 5 %	1
≥ 10 %	2
≥ 15 %	3
≥ 20 %	4
≥ 25 %	5

  Note:

  - *Process load includes, but not limited to, conveyors, fork lifts etc.*

Tenant-occupied Logistics Park/ Warehouses:

Demonstrate on-site renewable energy generation for at least 25% of total annual infrastructural and exterior lighting energy consumption of the park/ warehouse.

Points are awarded as below:

Percentage of On-site Renewable Energy Generated to the Total Annual Infrastructural and Exterior Lighting Energy Consumption of the Park/ Warehouse	Points
≥ 25 %	1
≥ 40 %	2
≥ 55 %	3
≥ 70 %	4
≥ 85 %	5
≥ 100 %	6

Note:

- *Infrastructural equipment includes all pumps & motors of domestic water, STP, OWC and exterior lighting for roads, landscape and façade.*

Interior Fit-outs:

Demonstrate on-site renewable energy generation for at least 5% of total annual energy consumption of the warehouse (including Interior lighting, HVAC, HVLS fans & appliances, and excluding process loads for warehouse operations).

Points are awarded as below:

Percentage of On-site Renewable Energy Generated to the Total Annual Energy Consumption of the Warehouse	Points for Existing Interior Fit-outs	Points for New Interior Fit-outs
≥ 5 %	1	1
≥ 10 %	2	2
≥ 15 %	3	3
≥ 20 %	-	4
≥ 25 %	-	5

Note:

- *Process load includes, but not limited to, conveyors, fork lifts etc.*

(And/Or)

❖ **Case B: Off-site Renewable Energy (3 Points)**

Owner-occupied Logistics Park/ Warehouses:

Demonstrate that the project has invested in off-site renewable energy equivalent to at least 50% of total annual energy consumption of the park/ warehouse (including HVAC, Interior & Exterior Lighting, pumps & motors and excluding process loads).

Points are awarded as below:

Percentage of Off-site Renewable Energy Generated to the Total Annual Energy Consumption of the Park/ Warehouse	Points
≥ 50 %	1
≥ 100 %	2
≥ 150 %	3

Note:

Process load includes, but not limited to, conveyors, fork lifts etc.

Tenant-occupied Logistics Park/ Warehouses:

Demonstrate that the project has invested in off-site renewable energy equivalent to at least 150% of total annual infrastructural and exterior lighting energy consumption of the park/ warehouse.

Points are awarded as below:

Percentage of Off-site Renewable Energy Generated to the Total Annual Infrastructural and Exterior Lighting Energy Consumption of the Park/ Warehouse	Points
≥ 150 %	1
≥ 200 %	2
≥ 250 %	3

Note:

- *Infrastructural equipment includes all pumps & motors of domestic water, STP, OWC and exterior lighting for roads, landscape and façade.*

Interior Fit-outs:

Demonstrate that the project has invested in off-site renewable energy equivalent to at least 50% of total annual energy consumption of the warehouse (including Interior lighting, HVAC, HVLS fans & appliances, and excluding process loads for warehouse operations).

Points are awarded as below:

Percentage of Off-site Renewable Energy Generated to the Total Annual Energy Consumption of the Warehouse	Points
≥ 50 %	1
≥ 100 %	2
≥ 150 %	3

Note:

- *Process load includes, but not limited to, conveyors, fork lifts etc.*

General Notes:

- *Renewable energy sources include solar energy, wind power, biomass, etc.*
- *Solar hot water systems cannot be considered as power generation source and cannot be subtracted from the total annual energy consumption of the proposed case.*
- *Projects shall estimate the total annual energy consumption based on the number of hours of operation per day, for each system.*
- *Type of renewable energy source shall be in compliance with the Ministry of New and Renewable Energy (MNRE), Government of India and respective State Regulatory Commissions.*
- *Off-site renewable energy so generated shall be counted only once for any project and double counting should be avoided.*
- *The contract with the off-site renewable energy developer to generate energy shall be for a minimum period of five years.*

Exemplary Performance:

This credit is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, as per the criteria given below:

On-site Renewable Energy

Typology	Percentage of On-site Renewable Energy
Owner-occupied Logistics Park/ Warehouses	30%
Tenant-occupied Logistics Park/ Warehouses	150%
Interior Fit-outs	30%

(Or)

Off-site Renewable Energy

Typology	Percentage of Off-site Renewable Energy
Owner-occupied Logistics Park/ Warehouses	200%
Tenant-occupied Logistics Park/ Warehouses	300%
Interior Fit-outs	200%

Energy Metering and Management

EE Credit 3

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	2	2

Intent:

Encourage sub-metering and continuous monitoring to identify improvement opportunities in the projects' energy performance, thereby reducing energy consumption.

Compliance Options:

Case A: Energy Metering (1 Point)

<u>Logistics Parks and Warehouses:</u>

Demonstrate compliance for the following measures:

- Separate energy meter for each warehouse
- Separate energy meter for process loads *(Applicable for owner-occupied)*
- Sub-metering for at least four of the following major energy use applications, as applicable:
    - Exterior & common area lighting
    - Interior area lighting
    - Municipal water pumping
    - Ground water pumping
    - Treated waste water pumping
    - Renewable energy generation
    - Power backup systems (Generators sets, Gas turbines, etc.,)
    - Energy consumption for air-conditioning systems
    - Any other energy consuming equipment and systems

Note: *In tenant-occupied projects, if sub-metering is not in the developer scope, then this credit cannot be attempted.*

Interior Fit-outs:

Demonstrate compliance for the following measures:

- Separate energy meter for each of the warehouse, as applicable
- Separate energy meter for process loads
- Sub-metering for atleast two of the following energy use applications, as applicable:
  - Interior area lighting
  - Renewable energy generation
  - Energy consumption for air-conditioning systems
  - Power backup systems (Generators sets, Gas turbines, etc.,)
  - Process loads
  - Any other energy consuming equipment and systems

(AND/ OR)

Case B: Energy Management System (1 Point)

- Demonstrate that the energy management system is in place to monitor and control the following systems, as applicable:
  - Air-conditioning management system
  - Lighting management system
  - Fresh air monitoring system
  - CO_2 control and monitoring system
  - Renewable energy management system

  (AND)
- Commit to provide the annual total building energy consumption data to IGBC. The energy data shall include all the major energy consuming equipment and systems.

Exemplary Performance:

This credit is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if the energy management system is integrated with data loggers.

WATER CONSERVATION

Rainwater Harvesting

WC Mandatory Requirement 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
MR	MR	MR	MR	MR	MR	MR	MR	NA	NA

Intent:

Enhance ground water table and reduce municipal water demand through effective rainwater management.

Compliance Options:

❖ **Case A: Rainwater Harvesting**

Design rainwater harvesting system to capture at least 'one-day rainfall*' runoff volume from roof areas (and / or) non-roof areas

** One-day rainfall can be derived from 'percentage of average peak month rainfall' given in Table - 4.*

Rainfall Information:

- *For rainfall information, refer India Meteorological Department data → Customized Rainfall Information System (CRIS) → Rainfall Statistics → District Wise Rainfall Last 5 years*

  http://hydro.imd.gov.in/hydrometweb/(S(vcenta45dxa4dpbpffd3ud3q))/DistrictRaifall.aspx

  - *Choose the state and district from the dropdown boxes, to populate the rainfall data of the district (project's location)*
  - *To arrive at average peak month rainfall, consider an average of minimum last*
    5 years peak month rainfall (of the respective year).

Table 4 - Criteria to arrive at 'One-day Rainfall'

S No	Average Peak Month Rainfall (in mm)	One-day Rainfall (% of Average Peak Month Rainfall)
1	Upto 250	9%
2	251 – 350	7.5%
3	351 – 500	6%
4	501 – 700	4.5%
5	701 & above	3%

Mandatory Criteria:

Type of Surface	Rainwater Harvesting System to Capture / Recharge
Roof areas (And/ Or) Non-roof areas	≥ 15% run-off volume from roof areas (And/ Or) ≥ 20% run-off volume from non-roof areas

❖ **Case B: High Ground Water Table**

In areas where the Central / State Ground Water Board does not recommend artificial rainwater recharge (or) if the groundwater table is less than 8 meters, then the project shall provide justification to exempt from implementing rainwater harvesting system.

Notes:

- *Consider Rainwater Harvesting Guidelines from the National Building Code (NBC) of India 2016, Part 11 - Approach to Sustainability, Section 7.2 - Rainwater Harvesting-Surface Runoff.*
- *In areas where the water percolation is limited, collection tanks may be provided to meet the above requirement.*
- *Filtering of suspended solids/ sediments shall be ensured by providing suitable filtering media before letting the water into the collection tanks, water bodies, municipal storm water drains.*

Run-off co-efficient for typical surface types are listed below:

Table 5 - Run-off co-efficient for Typical Surface Types (Roof and Non-roof areas)

S No	Surface Type	Run-off Co-efficient
1	Cemented / Tiled Roof	0.95
2	Corrugated GI Sheets	0.95
3	Roof Garden	0.5
4	Turf	0.35
5	Vegetation	0.25
6	Concrete Pavement	0.95
7	Gravel Pavement	0.75
8	Rammed Earth	0.75
8	Open-grid Concrete Pavers	0.75
9	Open-grid Grass Pavers	0.5
10	Water Bodies (un-lined) Ex: Water Pond	0

Water Efficient Plumbing Fixtures

WC Mandatory Requirement 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
MR	MR	MR	MR	MR	MR	MR	MR	MR	MR

Intent:

Enhance efficiency of plumbing fixtures, thereby minimise the potable water use.

Compliance Options:

Use water efficient plumbing fixtures (as applicable) whose flush & flow rates meet the baseline criteria in aggregate. The total annual water consumption of the warehouse/ building should not exceed the total base case water consumption computed.

Note:

Use of treated wastewater/ captured rain water shall not be considered to show water savings for this mandatory requirement and base credit.

The baseline criteria is as below:

Table 6 - Baseline Flush & Flow Rates / Consumption for Plumbing Fixtures

Fixture Type	Maximum Flow Rate/ Consumption	Duration	Estimated Daily Uses per FTE **
Water Closets (Full-flush)	6 LPF	1 flush	1 for male; 1 for female
Water Closets (Half-flush)	3 LPF	1 flush	2 for female
Urinals	4 LPF	1 flush	2 for male
Faucets / Taps*	6 LPM	15 seconds	4
Health Faucet*	6 LPM	15 seconds	1
Showerhead / Handheld Spray*	10 LPM	8 minutes	0.1

Source: Uniform Plumbing Code – India

* *Reporting pressure for these fixtures shall be at 3 bar.*

** *Full Time Equivalent (FTE) represents a regular warehouse/ building occupant who spends 8 hours per day in the warehouse/ building. Part-time or overtime occupants have FTE values based on their hours per day divided by 8.*

Notes:

- *Water fixtures do not include irrigation systems.*
- *Faucets / Taps installed for hand wash in rest rooms and canteen shall be considered; whereas, faucets / taps installed for dish washing and other process requirements need not be considered.*
- *In existing warehouses/ buildings, flow rates of the water fixtures can be measured on-site through weighted average approach and reported at a flowing water pressure of 3 bar.*
- *In Tenant-occupied Logistics Park & Warehouses, if the installation of plumbing fixtures is in the scope of tenant, then the developer can demonstrate compliance for this mandatory requirement and base credit WC Credit 2 by providing the information on flush & flow rates of the water efficient plumbing fixtures through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects), as per the IGBC rating system requirements.*

  To claim credit points, the reduction in potable water use would be allowed up to a maximum of 25%; else, the project can consider a maximum of 5% reduction.

  Also, while calculating the wastewater generation from tenant-occupied warehouses to the STP, the project shall consider the flow rates as indicated in the declarations or signed lease agreements with the tenants or based on the actual data.
- *For Interior Fit-out projects, the tenant can demonstrate compliance for mandatory requirement and claim credit points for Water Efficient Plumbing Fixtures even if the installation and maintenance is in the scope of developer.*
- *The baseline flows can be demonstrated at a flowing water pressure of 3 bar. Flowing water pressure of 3 bar does not mean that the water supply in the warehouse/ building is at 3 bar. The warehouse/ building fixtures can operate at lower pressures; however, to show compliance under this credit, the design flow rates are to be submitted at 3 bar.*
- *Default occupancy shall be considered as 50% for male & female; else, the project can define the occupancy ratio for male & female and justify the ratio considered.*
- *FTE occupancy shall be considered in the calculation, including visitors, and not regular occupancy.*
- *Plumbing fixtures that are certified by CII under Green Product Certification Programme (GreenPro) can be used by the project.*

Rainwater Harvesting

WC Credit 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
5	5	5	5	5	5	5	5	2	2

Intent:

Enhance ground water table and reduce municipal water demand through effective rainwater management.

Compliance Options:

- **Rainwater Harvesting System**
  - **Case A: Rainwater Harvesting**

    Design rainwater harvesting system to capture at least 'one-day rainfall' runoff volume from roof (and/ or) non-roof areas.

    Points are awarded as below:

Applicability	Type of Surface	Rainwater Harvesting System to Capture / Recharge	Points
Logistics Parks /Warehouses / Interior Fit-outs	Roof areas	≥ 30% run-off volume from roof areas	2
Logistics Parks /Warehouses	Non roof areas	≥ 40% run-off volume from non-roof areas	2

Note: *For Interior Fit-out projects, the tenant can demonstrate compliance and claim credit points for Rain Water Harvesting (Roof), even if the installation and maintenance of rain water harvesting system is in the scope of developer.*

  - **Case B: High Ground Water Table**

    Design rainwater harvesting system to capture at least 'one-day rainfall*' runoff volume from roof (and/ or) non-roof areas.

** One-day rainfall can be derived from 'percentage of average peak month rainfall' given in Table - 4.*

Rainfall Information:

- *For rainfall information, refer India Meteorological Department data → Customized Rainfall Information System (CRIS) → Rainfall Statistics → District Wise Rainfall Last 5 years*

  http://hydro.imd.gov.in/hydrometweb/(S(vcenta45dxa4dpbpffd3ud3q))/DistrictRaifall.aspx

  - *Choose the state and district from the dropdown boxes, to populate the rainfall data of the district (project's location)*
  - *To arrive at average peak month rainfall, consider an average of minimum last 5 years peak month rainfall (of the respective year).*

Table 4 - Criteria to arrive at 'One-day Rainfall'

S No	Average Peak Month Rainfall (in mm)	One-day Rainfall (% of Average Peak Month Rainfall)
1	Upto 250	9%
2	251 – 350	7.5%
3	351 – 500	6%
4	501 – 700	4.5%
5	701 & above	3%

Points are awarded as below:

Applicability	Type of Surface	Rainwater Harvesting System to Capture / Recharge	Points
Logistics Parks /Warehouses / Interior Fit-outs	Roof areas	≥ 15% run-off volume from roof areas	2
Logistics Parks /Warehouses	Non roof areas	≥ 20% run-off volume from non-roof areas	2

Notes:

- *Consider Rainwater Harvesting Guidelines from the National Building Code (NBC) of India 2016, Part 11 - Approach to Sustainability, Section 7.2 - Rainwater Harvesting-Surface Runoff.*
- *In areas where the water percolation is limited, collection tanks may be provided to meet the above requirement.*
- *Filtering of suspended solids/ sediments shall be ensured by providing suitable filtering media before letting the water into the collection tanks, water bodies, municipal storm water drains.*
- *For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Rain Water Harvesting (Roof), even if the installation and maintenance is in the scope of developer.*

(And/Or)

❖ **Connection to External Storm Water Drain (1 point)**

Design a storm water drain network with a filtration system to capture the sediments and divert the excess rain water into municipal storm water drain / downstream.

Exemplary Performance:

This credit is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if rainwater runoff from roof (or) non-roof areas is captured and / or recharged, as listed below:

Requirement	Applicability	Type of Surface	Rainwater Harvesting System to Capture / Recharge
Case A: Rainwater Harvesting System	Logistics Parks /Warehouses / Interior Fit-outs	Roof Areas	≥ 45% from roof areas
	Logistics Parks /Warehouses	Non-roof Areas	≥ 60% from non-roof areas
Case B: High Ground Water Table	Logistics Parks /Warehouses / Interior Fit-outs	Roof Areas	≥ 30% from roof areas
	Logistics Parks /Warehouses	Non-roof Areas	≥ 40% from non-roof areas

Note: *For Interior Fit-out projects, if the installation of RWH systems is in the scope of developer, then the points for exemplary performance would not be applicable.*

Water Efficient Plumbing Fixtures

WC Credit 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
4	4	4	4	4	4	4	4	4	4

Intent:

Enhance efficiency of plumbing fixtures, thereby minimise the potable water use.

Compliance Options:

Use water efficient plumbing fixtures (as applicable) whose flush & flow rates are at least 10% less than the baseline criteria given in Table - 6, in aggregate.

Note:

Use of treated wastewater/ captured rain water shall not be considered to show water savings for the mandatory requirement and base credit.

The baseline criteria is as below:

Table 6 - Baseline Flush & Flow Rates / Consumption for Plumbing Fixtures

Fixture Type	Maximum Flow Rate/ Consumption	Duration	Estimated Daily Uses per FTE **
Water Closets (Full-flush)	6 LPF	1 flush	1 for male; 1 for female
Water Closets (Half-flush)	3 LPF	1 flush	2 for female
Urinals	4 LPF	1 flush	2 for male
Faucets / Taps*	6 LPM	15 seconds	4
Health Faucet*	6 LPM	15 seconds	1
Showerhead / Handheld Spray*	10 LPM	8 minutes	0.1

Source: Uniform Plumbing Code – India

* *Reporting pressure for these fixtures shall be at 3 bar.*

** *Full Time Equivalent (FTE) represents a regular building occupant who spends 8 hours per day in the building. Part-time or overtime occupants have FTE values based on their hours per day divided by 8.*

Points are awarded as below:

Water Efficient Plumbing Fixtures (Individually or in aggregate)	**Points**
10% less than baseline criteria	1
15% less than baseline criteria	2
20% less than baseline criteria	3
25% less than baseline criteria	4

Notes:

- *Water fixtures do not include irrigation systems.*
- *Faucets / Taps installed for hand wash in rest rooms and canteen shall be considered; whereas, faucets / taps installed for dish washing and other process requirements need not be considered.*
- *In existing buildings / warehouses, flow rates of the water fixtures can be measured on-site through weighted average approach and report the flow rates.*
- *In Tenant-occupied Logistics Park & Warehouses, if the installation of plumbing fixtures is in the scope of tenant, then the developer can demonstrate compliance for this mandatory requirement and base credit WC Credit 2 by providing the information on flush & flow rates of the water efficient plumbing fixtures through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects), as per the IGBC rating system requirements.*

  To claim credit points, the reduction in potable water use would be allowed up to a maximum of 25%; else, the project can consider a maximum of 5% reduction.

  Also, while calculating the wastewater generation from tenant-occupied warehouses to the STP, the project shall consider the flow rates as indicated in the declarations or signed lease agreements with the tenants or based on the actual data.
- *For Interior Fit-out projects, the tenant can demonstrate compliance for mandatory requirement and claim credit points for Water Efficient Plumbing Fixtures even if the installation and maintenance is in the scope of developer.*
- *The baseline flows can be demonstrated at a flowing water pressure of 3 bar. Flowing water pressure of 3 bar does not mean that the water supply in the warehouse/ building is at 3 bar. The warehouse/ building fixtures can operate at lower pressures; however, to show compliance under this credit, the design flow rates are to be submitted at 3 bar.*
- *Default occupancy shall be considered as 50% for male & female; else, the project can define the occupancy ratio for male & female and justify the ratio considered.*

- *FTE occupancy shall be considered in the calculation, including visitors, and not regular occupancy.*
- *Plumbing fixtures that are certified by CII under Green Product Certification Programme (GreenPro) can be used by the project.*

Exemplary Performance:

This credit is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if water consumption is 30% lesser than the baseline criteria.

Notes:

- *For tenant-occupied projects, if the installation of water fixtures is in the scope of tenants for more than 50% of the total built-up area, then the points for exemplary performance would not be applicable.*
- *For Interior Fit-out projects, if the installation of water fixtures is in the scope of developer, then the points for exemplary performance would not be applicable.*

Water Efficient Irrigation System

WC Credit 3

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
1	1	1	1	1	1	1	1	NA	NA

Intent:

Reduce potable water demand for irrigation through water efficient management systems and techniques.

Compliance Options:

Install highly efficient irrigation systems incorporating the features mentioned below:

(Minimum four features)

- Central shut-off valve
- Soil moisture sensors integrated with irrigation systems
- At least 75% of landscape planting beds shall have a drip irrigation system
- At least 75% of turf area shall have a sprinkler irrigation system
- Time based controller for the valves such that evaporation loss is minimised and plant health is ensured
- Pressure regulating device(s) to maintain optimal pressure to prevent water loss
- Any other innovative methods of irrigation

Notes:

- *This credit is applicable only for those projects which have at least 10% of the site area landscaped.*
- *Use of treated wastewater for landscaping shall not be considered to demonstrate compliance under 'other innovative methods of irrigation' and the same is addressed under WC Cr 4: Wastewater Treatment & Reuse.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Wastewater Treatment and Reuse

WC Credit 4

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
4	4	4	4	4	4	4	4	NA	NA

Intent:

Treat wastewater generated on-site, so as to avoid polluting the receiving streams by safe disposal. Use treated wastewater for non-potable applications, thereby reducing dependence on potable water.

Compliance Options:

- **Wastewater Treatment: (2 Points)**

  Have an on-site treatment system to handle 100% of wastewater generated in the warehouse/ building, conforming to the quality standards suitable for reuse, as prescribed by Central (or) State Pollution Control Board, as applicable.

  (And/Or)

- **Wastewater Reuse: (2 Points)**

  Use treated wastewater for at least 25% of the total water required for landscaping, flushing and cooling tower make-up water (if the project uses water-cooled chillers).

  Points are awarded as below:

Application (in aggregate)	Percentage of Total Water Catered through Treated Wastewater	Points
Landscaping, Flushing, and Cooling tower make-up	≥ 25%	1
	≥ 50%	2

Notes:

- *Wastewater here refers to both grey and black water.*
- *In case the local authorities mandate the project to divert wastewater to a centralised / common wastewater treatment plant, then the project can show compliance by diverting and reusing treated wastewater from the centralised / common wastewater treatment plant.*

- *Treated wastewater sourced from other sites / local authorities through permanent piped connections can also be considered to show compliance for 'wastewater reuse'.*
- *Water from sources such as bore wells, natural wells, and municipal water systems is considered as potable water.*
- *Captured rain water can also be considered to show compliance.*
- *The water requirement and average number of watering days for landscaping shall be considered as 6 liters / sq.m. / day for a minimum of 300 days, (or) Justify if the water requirement and the average number of watering days for landscaping is less than the above requirement.*
- *Potted plants shall not be considered under vegetation.*

Exemplary Performance:

This credit is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if treated wastewater is used for at least 75% of the total water required for landscaping, flushing and cooling make-up water (if the project uses water-cooled chillers).

Water Metering

WC Credit 5

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
1	1	2	2	1	1	2	2	1	1

Intent:

Encourage sub-metering and continuous monitoring to identify improvement opportunities in the projects' water performance, thereby reducing potable and non-potable water consumption.

Compliance Options:

- **Logistics Parks and Warehouses:**

  (Applicable to Owner & Tenant occupied Logistics Parks and Warehouses)

  (2 Points for Tenant occupied Logistics Parks and Warehouses)
  (1 Point for Owner occupied Logistics Parks and Warehouses)

  Park-level:

  (1 Point for Owner-occupied & Tenant-occupied Logistics Parks and Warehouses)

  Demonstrate compliance for the following measures:

  - Separate water meter for each warehouse
  - Sub-metering for at least three of the following major water use applications, as applicable:
    - Municipal water supply
    - Bore water consumption
    - Tanker water consumption
    - Treated wastewater consumption
    - Water consumption for landscape requirements
    - Water consumption for flushing
    - Water consumption for air-conditioning cooling tower makeup
    - Any other major source of water consumption

Warehouse Level:

(Applicable to Tenant Occupied Logistics Parks / Warehouses only)
(1 Point for Tenant occupied Logistics Parks and Warehouses)

Demonstrate sub-metering for atleast two of the following water use applications, as applicable:

- Municipal water supply / Water consumption through bore-well (Potable water)
- Water consumption for flushing (Non-potable water)
- Separate water meter for process requirements
- Any other major source of water consumption

Note: *In tenant-occupied projects, if sub-metering for warehouse level is in the scope of tenant, then the developer can demonstrate compliance through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of the water meters. Credit point for warehouse level can be attempted by the developer, when either the developer or the tenants comply with atleast 50% of the built-up area in the park/ warehouses.*

❖ **Interior Fit-outs: (1 point)**

Demonstrate sub-metering for atleast two of the following water use applications, as applicable:

- Municipal water supply (Potable water)
- Water consumption for flushing (Non-potable water)
- Separate water meter for process requirements
- Any other major source of water consumption

Exemplary Performance:

This credit is not eligible for exemplary performance.

RESOURCE MANAGEMENT

Segregation of Waste, Post-occupancy

RM Mandatory Requirement 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
MR	MR	MR	MR	MR	MR	MR	MR	MR	MR

Intent:

Facilitate segregation of waste at source to encourage reuse or recycling of materials, thereby avoiding waste being sent to landfills.

Compliance Options:

Owner-occupied Logistics Park and Warehouses:

❖ Provide separate bins to collect dry waste (paper, plastic, metals, glass, etc.,) and wet waste (organic), at all the floors and common areas of the park/ warehouse/ building, as applicable. Divert the collected waste to a centralised facility, which is easily accessible for hauling.

(AND)

❖ In addition to dry and wet waste bins, provide separate bins for safe disposal of the following hazardous waste, at the centralised facility:

- Plastic
- Batteries
- 'e' waste
- Lamps
- Medical waste, if any

The waste shall be sold/ handed over to the identified / authorised vendors.

Tenant-occupied Logistics Park and Warehouses:

❖ Provide separate bins to collect dry waste (paper, plastic, metals, glass, etc.,), from the common areas and wet waste from common areas as well as the park/ warehouses/ building, as applicable. Divert the collected waste to a centralised facility, which is easily accessible for hauling.

The dry waste generated within the warehouses shall be handled by the tenants.

(AND)

- In addition to dry and wet waste bins, provide separate bins for safe disposal of the following hazardous waste at the centralised facility, catering to the waste generated in the common areas:
  - Plastic
  - Batteries
  - 'e' waste
  - Lamps
  - Medical waste, if any

  The waste shall be sold/ handed over to the identified / authorised vendors.

Interior Fit-outs:

- Provide separate bins to collect dry waste (paper, plastic, metals, glass, etc.,), wet waste and hazardous waste from the warehouses. Divert the collected waste to a centralised facility within the park/ warehouse, which is easily accessible for hauling. The waste shall be sold/ handed over to the identified / authorised vendors.

  Hazardous waste includes, but not limited to, batteries, e-waste, lamps and medical waste.

Note:

For hazardous waste, the project must follow the Hazardous Waste Management Rules 2016, as prescribed by the Ministry of Environment & Forest (MoEF), Government of India.

Green Packaging

RM Credit 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	1	NA	NA	2	1	NA	NA	2	1

Intent:

Encourage green packaging so as to reduce the consumption of natural resources.

Compliance Options:

Existing Logistics Park and Warehouses: (2 Points)

Green Packaging Policy:

Demonstrate that the organisation has a green packaging policy or green procurement policy.

The policy shall emphasise reduction in tertiary packaging material by optimising specific consumption, substitution and use of certified packaging material, with clearly specified short-term (1 to 3 years) & long-term (more than 3 years) targets.

(AND)

Case A: Reduction in Packaging Material (1 Point)

Demonstrate a minimum of 10% reduction in tertiary packaging material intensity in the warehouse(s) in the last one year vis-à-vis various packaging reduction strategies. The strategies shall include, but not limited to, reusable packaging, minimal packaging, packaging improvements, alternative packaging and automation in packaging.

(And/ Or)

Case B: Certified/ Rapidly Renewable/ Recycled Content/ Biodegradable Packaging Material
(1 Point)

Demonstrate that the warehouse(s) use any one or combination of the following:

- Option 1 - Certified Packaging Material:

  Use packaging materials which are certified by CII-GreenPro Eco-label (or) any other Eco-label (Type-I/ ISO 14024 tested & verified) (or) FSC (or) equivalent such that the

cost of total certified packaging materials is at least 10% of the total cost of packaging materials per year.

Note: *The list of GreenPro certified products can be accessed at https://ciigreenpro.com/*

- Option 2 – Rapidly Renewable Packaging Material:

  Use packaging materials which are processed from rapidly renewable material such that the cost of total rapidly renewable packaging materials is at least 10% of the total cost of packaging materials per year.

  Note: *Rapidly renewable materials are agriculture-based products that take 10 years or less to harvest or replenish.*

- Option 3 – Packaging Material with Recycled Content:

  Use packaging materials with recycled content such that the cost of total recycled content constitutes at least 10% of the total cost of packaging materials per year.

  Note: *The cost of recycled content shall be considered equivalent to that of virgin material.*

- Option 4 – Packaging with Biodegradable Material:

  Use packaging materials which are biodegradable such that the cost of total biodegradable packaging materials is at least 10% of the total cost of packaging materials per year. The biodegradable packaging material shall conform to ASTM D6868 2019.

General Notes:

- *As per ISO 21067-1:2016, tertiary packaging is designed to contain one or more articles (item or commodity) or packages (and its contents), or bulk material, for the purpose of transport, handling and/or distribution.*
- *ASTM D6868 2019: Standard Specification for Labelling of End Items that Incorporate Plastics and Polymers as Coatings or Additives with Paper and Other Substrates Designed to be Aerobically Composted in Municipal or Industrial Facilities*
- *The packaging material shall eliminate the use of non-hazardous packaging material and chlorine & halogenated bleaching agents, and avoid the use of optical brighteners.*

New Logistics Park and Warehouses: (1 Point)

Demonstrate that the organisation has a green packaging policy or green procurement policy.

The policy shall emphasise reduction in tertiary packaging material by optimising specific consumption, substitution and use of certified packaging material, with clearly specified short-term (1 to 3 years) & long-term (more than 3 years) targets.

Exemplary Performance:

This credit is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if the reduction in packaging material (or) certified/ rapidly renewable/ recycled content/ biodegradable packaging material is atleast by 15%.

Green Procurement Policy

RM Credit 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
1	1	1	1	1	1	1	1	1	1

Intent:

Encourage projects to source products which have low environmental impact.

Compliance Options:

Have a policy and procurement guidelines in place to source warehouse/ building products & materials, which have lower impact on the environment. The following aspects are to be addressed while purchasing the products & materials, as applicable:

- Higher recycled content
- Local materials
- Products with enhanced energy efficiency
- Eco-friendly refrigerants
- Products with less water consumption
- Materials emitting fewer toxic substances during installation or use and upon disposal

  (E.g. Low VOC materials, Eco-friendly housekeeping chemicals)
- Avoid single use plastic for regular operations
- Alternate wood-based material

  (E.g. Salvaged wood, Composite wood free from added urea formaldehyde, Rapidly renewable wood, Certified wood)

The Green Procurement Policy shall be valid for a period of three years or more at the time of Precertification/ Certification.

Exemplary Performance:

This credit is not eligible for exemplary performance.

Eco-labelled Materials, Products & Equipment

RM Credit 3

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
1	3	1	3	1	3	1	3	1	3

Intent:

Encourage use of eco-labelled materials, products, and equipment, so as to reduce dependence on materials that have associated negative environmental impacts.

Compliance Options:

Existing Logistics Parks / Warehouses:

Have an organisational policy in place which mandates the adoption of passive or active green building materials, products, and equipment that are CII-GreenPro eco-labelled (or) any other Eco-labelled (Type-I/ ISO 14024 tested & verified). The policy shall be applicable for retrofits or major renovation in the logistics parks / warehouses.

New Logistics Parks / Warehouses:

Ensure that the project sources CII-GreenPro eco-labelled (or) any other Eco-labelled (Type-I/ ISO 14024 tested & verified) products, materials & equipment for warehouse/ building construction and operations. The eco-labelled products shall be used for a minimum of 3 applications and atleast 5% of the total cost of products, materials & equipment.

Points are awarded as below:

Minimum number of Applications	% of Eco-labelled products & materials used	Points
3	5%	1
4	10%	2
5	15%	3

Notes:

- *Passive Products & Materials include glazing, insulation, paints & coatings, adhesives & sealants, flyash blocks, cement, concrete, wood-based products, housekeeping chemicals, false ceiling materials, flooring materials, furniture, gypsum-based products, high reflective materials & coatings, etc.,*
- *Active Products include Electrical systems (Lighting Systems & Controls, Pumps & Motors, etc.,), Mechanical systems (unitary air conditioners, etc.,), Plumbing Fixtures (faucets, showers, etc.,)*
- *The project shall not consider the same Eco-labelled product for different applications to demonstrate compliance. (e.g. Same adhesive used for both tiles and flooring cannot be shown as two different applications)*
- *The list of GreenPro certified products can be accessed at https://ciigreenpro.com/*
- *In tenant-occupied projects, if the use of Eco-labelled materials, products & equipment is not in the scope of developer, then this credit cannot be attempted.*
- *For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Eco-labelled materials, products & equipment, even if the installation and maintenance is in the scope of developer.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Organic Waste Management, Post Occupancy

RM Credit 4

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
3	3	3	3	3	3	3	3	2	2

Intent:

Ensure effective organic waste management, so as to avoid waste being sent to landfills and improve health & hygiene.

Compliance Options:

Install an on-site waste treatment system for handling organic (food and garden) waste generated in the park, including warehouses. The processed manure or bio-gas shall be utilised as appropriate.

Points are awarded as below:

Logistics Parks and Warehouses

Organic Waste	Percentage of Waste Treated	Points
Food waste	≥ 50%	1
	≥ 95%	2
Garden waste	≥ 25%	1

Interior Fit-outs

Organic Waste	Percentage of Waste Treated	Points
Food waste	≥ 50%	1
	≥ 95%	2

Notes:

- *For calculation, food waste can be considered as 0.25 kg/ day for Logistics Park/ Warehouses with kitchen; else, 0.1 kg/ day or as prescribed by the local byelaw, whichever is more stringent.*
- *Garden waste can be considered as 0.2 kg/ sq.m/ day.*
- *In tenant-occupied projects, food waste from all the warehouses shall be considered to demonstrate compliance.*
- *In tenant-occupied projects, if the on-site organic waste treatment system (for food waste) is in the scope of tenant, then the developer can demonstrate compliance for those warehouses through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of the on-site treatment system for food waste.*
- *For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for on-site treatment system of food waste, even if the installation and maintenance is in the scope of developer.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Handling of Waste Materials, During Construction
RM Credit 5

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
NA	1	NA	1	NA	1	NA	1	NA	NA

Intent:

Facilitate segregation of construction and demolition waste at source to encourage reuse or recycling of materials, thereby avoiding waste being sent to landfills.

Compliance Options:

Demonstrate that at least 75% of waste generated during construction & demolition is diverted from landfills, for reuse or recycling. Use consistent metrics, either weight or volume, to show compliance.

Points are awarded as below:

Percentage of construction & demolition waste diverted to the total quantity of construction & demolition waste generated	Points
≥ 75%	1

Notes:

- *Construction & demolition waste here refers to civil & interior building waste.*
- *Excavated earth & stones should not be considered under this credit, as these are natural resources.*
- *Temporary materials such as materials used for formwork, scaffolding, etc., shall not be considered for this credit calculation.*

Exemplary Performance

This credit is not eligible for exemplary performance.

HEALTH AND WELL-BEING

No Smoking Premises

HWB Mandatory Requirement 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
MR	MR	MR	MR	MR	MR	MR	MR	MR	MR

Intent:

Minimise exposure of non-smokers to the adverse health impacts arising due to passive smoking.

Compliance Options:

- **Option 1: No Smoking:**

  Demonstrate that smoking is prohibited in the premises.

  (OR)

- **Option 2: Outdoor Smoking Areas:**

  In case the premises have outdoor smoking areas, such areas shall be located at a minimum of 7.6 meters away from all outdoor air intakes (such as entrance doors, docking bays, window openings etc).

  Note: *The compliance for Option 2: Outdoor Smoking Areas shall be in accordance with the regulations of Ministry of Health & Family Welfare, Government of India.*

Minimum Fresh Air Ventilation

HWB Mandatory Requirement 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
MR	MR	MR	MR	MR	MR	MR	MR	MR	MR

Intent:

Ensure adequate and acceptable outdoor air ventilation, so as to improve occupant well-being.

Compliance Options:

Demonstrate that the fresh air ventilation in all regularly occupied spaces of warehouses and offices meet or exceed one of the following requirements:

Case A: Naturally Ventilated Spaces

- **Opening to Floor Area Ratio**

  Demonstrate that the warehouse/ office spaces are designed with a minimum of 4% openings to floor area, with openings spread across various facades, to enhance cross-ventilation and increase CO_2 evacuation.

  Note: *The gap between the window/ door/ docking bay and the louvers shall be atleast two meters.*

  (And/ Or)

- **Air Changes per Hour**

  Demonstrate that the warehouse is designed to operate with a minimum of 3 air changes per hour either through prescriptive approach or CFD analysis.

  Note: *For CFD analysis, all warehouses/ buildings (representative wind blocks) & contours within 200 meters and weather file specific to the region with wind data shall be considered.*

(AND/ OR)

Case B: Mechanically Ventilated Spaces

- **Ventilation Rates**

  Demonstrate that the fresh air ventilation in all regularly occupied areas of warehouse/ office meet the minimum ventilation rates, as prescribed in ASHRAE Standard 62.1 - 2013, Section 6.2.

  (And/ Or)

- **Air Changes per Hour**

  Demonstrate that the warehouse is designed to operate with a minimum of 3 air changes per hour either through prescriptive approach or CFD analysis.

Notes:

- *The project can calculate air changes per hour (ACH) through prescriptive approach considering a combination of ventilation strategies such as cross-ventilated louvers, ridge ventilators, turbo ventilators, HVLS fans, etc.*
- *For design details of ventilation, the project can refer National Building Code 2016, Part 8, Section 5 – Ventilation.*
- *In Tenant-occupied Logistics Park & Warehouses, if the installation of ventilation systems is in the scope of tenant, then the developer can demonstrate compliance for this mandatory requirement and credit HWB CR 1 by providing the information on ventilation systems i.e. Ventilation Rates or Air Changes per Hour through declarations (for precertification projects) and signed lease agreements with the tenants (for certification projects), as per the IGBC rating system requirements.*
- *For Interior Fit-out projects, the tenant can demonstrate compliance for Minimum Fresh air ventilation, even if the installation and maintenance is in the scope of developer.*

Enhanced Fresh Air Ventilation

HWB Credit 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	2	2

Intent:

Ensure enhanced outdoor air ventilation, so as to improve occupant well-being.

Compliance Options:

Demonstrate that the fresh air ventilation in all regularly occupied spaces of warehouses and offices meet or exceed one or combination of the following requirements:

Case A: Naturally Ventilated Spaces (2 Points)

- **Opening to Floor Area Ratio**

  Demonstrate that the warehouse/ office spaces are designed with a minimum of 8% openings to floor area, with openings spread across various facades, to enhance cross-ventilation and increase CO_2 evacuation.

  Note: *The gap between the window/ door/ docking bay and the louvers shall be atleast two meters.*

  (And/ Or)

- **Air Changes per Hour**

  Demonstrate that the warehouse is designed to operate with a minimum of 6 air changes per hour either through prescriptive approach or CFD analysis.

  Note: *For CFD analysis, all warehouses/ buildings (representative wind blocks) & contours within 200 meters and weather file specific to the region with wind data shall be considered.*

(AND/ OR)

Case B: Mechanically Ventilated Spaces (2 Points)

- **Ventilation Rates**

  Demonstrate that the fresh air ventilation in all regularly occupied areas of warehouse/ office shall exceed the minimum ventilation rates by 10%, as prescribed in
  ASHRAE Standard 62.1 - 2013, Section 6.2.

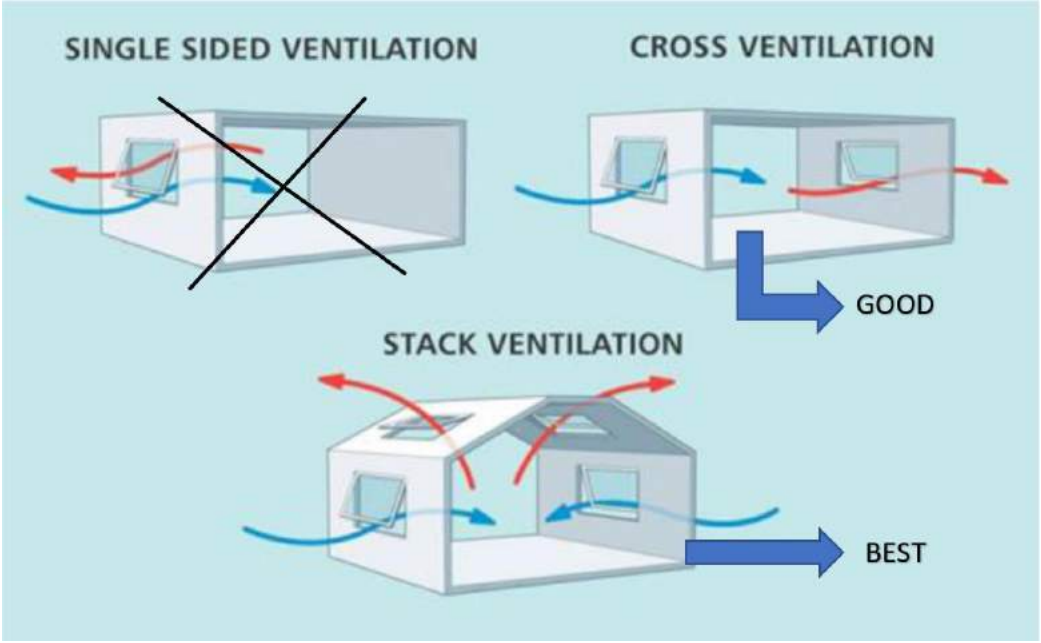
  (And/ Or)

- **Air Changes per Hour**

  Demonstrate that the warehouse is designed to operate with a minimum of 6 air changes per hour either through prescriptive approach or CFD analysis.

Notes:

- *The project can calculate air changes per hour (ACH) through prescriptive approach considering a combination of ventilation strategies such as cross-ventilated louvers, ridge ventilators, turbo ventilators, HVLS fans, etc.*
- *For design details of ventilation, the project can refer National Building Code 2016, Part 8, Section 5 – Ventilation.*
- *In Tenant-occupied Logistics Park & Warehouses, if the installation of ventilation systems is in the scope of tenant, then the developer can demonstrate compliance for this credit and mandatory requirement HWB MR 2 by providing the information on ventilation systems i.e. Ventilation Rates or Air Changes per Hour through declarations (for precertification projects) and signed lease agreements with the tenants (for certification projects), as per the IGBC rating system requirements.*
- *For Interior Fit-out projects, the tenant can demonstrate compliance for mandatory requirement and claim credit points for Enhanced Fresh air ventilation, even if the installation and maintenance is in the scope of developer.*



Representational Image: Types of Ventilation

Exemplary Performance:

This credit is not eligible for exemplary performance.

Daylighting

HWB Credit 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	1	1

Intent:

Ensure connectivity between the interior and the exterior environment, by providing adequate daylighting.

Compliance Options:

The project can choose any one of the following options or a combination, to show compliance:

- Option 1 - Simulation Approach
- Option 2 - Measurement Approach

Option 1: Simulation Approach

Demonstrate through computer simulation that 50% of the regularly occupied spaces in the warehouse/ building achieve daylight illuminance levels of a minimum of 110 Lux (and a maximum of 2,200 Lux) in a clear sky condition on 21st September at 12 noon, at working plane. Areas with 2,200 Lux or more daylight illumination levels should not be considered.

(OR)

Option 2: Measurement Approach

Demonstrate through daylight illuminance measurement that at least 50% of the regularly occupied spaces in the warehouse/ building achieve daylight illuminance levels of a minimum of 110 Lux. Areas with 2,200 Lux or more daylight illumination levels shall be not considered.

Measurements shall be taken after installation of furniture, equipment & systems at work plane height at 9 am, 12 pm, and 3 pm, on a 10-foot square grid. To show compliance, consider the average of the measurements taken at 9 am, 12 pm and 3 pm. The daylight measurement shall be taken using a lux meter.

Points are awarded as below:

Applicability	Percentage of Regularly Occupied Areas with Daylighting	Points
Logistics Parks/ Warehouses	≥ 50%	1
	≥ 75%	2
Interior Fit-outs	≥ 50%	1

Notes:

- ***Projects with multiple warehouses/ buildings must independently meet the daylighting criteria for each warehouse/ building.***
- *Regularly occupied areas are those where people sit or stand as they work, irrespective of the number of days occupied in a year. Regularly occupied areas shall include only enclosed spaces.*
- *Regularly occupied areas include warehouses, workstations, cabins, meeting rooms, etc.; whereas, areas with audio-visual facilities such as conference rooms, etc., can be excluded from this credit calculation, with justification and supporting documents.*
- *Non-regularly occupied areas include toilets, staircases, etc.*
- *Non enclosed spaces shall be considered as Non-regularly occupied spaces.*
- *Regularly occupied areas which are used for multi-purposes, such as cafeteria-cum-meeting room, can be considered as separate spaces based on the function. The room boundary need not be a physical boundary.*
- *Rack aisle can be designed in such a way that the skylights can lit up aisle areas and not rack areas.*

Exemplary Performance:

The project is eligible for exemplary performance under IDO Credit 1 - Innovation in Design Process, if the regularly occupied spaces in the warehouse/ building achieve daylight illuminance levels of a minimum of 110 Lux (and a maximum of 2,200 Lux) as per the criteria given below

Applicability	Percentage of Regularly Occupied Areas with Daylighting
Logistics Parks/ Warehouses	≥ 95%
Interior Fit-out	≥ 75%

Basic Amenities for Staff & Drivers

HWB Credit 3

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
3	3	3	3	3	3	3	3	3	3

Intent:

Ensure access to basic amenities, so as to improve health & hygiene of occupants and drivers.

Compliance Options:

Provide the following basic amenities within the park/ warehouse(s) which are easily accessible to all the staff and workers / drivers in a common area.

Points are awarded as below:

Basic Amenities	Points for each amenity
Health Care / Medical Room with first-aid	1
Clean Drinking Water facilities & Canteen	1
Clean Toilets & Bathrooms	2
Dormitory/ Rest room for drivers	2

Notes:

- *The basic amenities shall be functional at the time of project completion.*
- *Drinking water shall cater to all the occupants & visitors and comply with the drinking water specifications as per IS 10500-2012 'Drinking Water- Specification Standard'.*
- *Toilets & Bathrooms: Provide at least 1 bathroom, toilet seat & urinal each for every 15 drivers to demonstrate compliance. The number of drivers shall be considered based on the number of service parking spaces including docking bays.*

- *Dormitory: Provide at least 1 resting space in dormitory for every 15 drivers to demonstrate compliance. The number of drivers shall be considered based on the number of service parking spaces including docking bays.*
- *In tenant-occupied projects, if the provision of basic amenities is not in the scope of developer or yet to be provided, then this credit cannot be attempted.*
- *For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Basic Amenities for Staff & Drivers, even if the implementation and maintenance is in the scope of developer.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Basic Facilities for Construction Workforce

HWB Credit 4

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
NA	1	NA	1	NA	1	NA	1	NA	NA

Intent:

Promote welfare of the construction workforce by providing safe and healthy work conditions.

Compliance Options:

Provide basic facilities for construction workforce to meet or exceed the guidelines of 'The Building and other Construction Workers Act, 1996 & Rules, 1998'.

- Adequate housing as per local / labour byelaw requirement.
- Sanitary facilities as per local / labour byelaw requirement (or) Provide at least 3 toilet seats & 3 urinals for the first 100 workers and one additional toilet seat & urinal for every 100 workers thereafter.

  (The sanitary measures should be provided separately for men and women).
- First-aid and emergency facilities.
- Adequate drinking water facilities.
- Personal protective equipment (by owner / contractor).
- Dust suppression measures.
- Adequate illumination levels in construction work areas.
- Site emergency alarm.
- Day care/ crèche facility for workers' children.

  (Only if, more than 50 female building workers are employed full time)

Exemplary Performance:

This credit is not eligible for exemplary performance.

INNOVATION IN DESIGN & OPERATION

Innovation in Design Process

IDO Credit 1

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
4	4	4	4	4	4	4	4	3	3

Intent:

Encourage project design, construction and facility teams to showcase innovative concepts in green logistics parks/ warehouses categories, not specifically addressed in the IGBC Green Logistics Parks and Warehouses rating system, and exemplary performance above the rating system requirements.

Compliance Options:

- **Case A: Innovation (1 Point for each measure; maximum 2 points)**

  Identify the intent of proposed innovation credit, proposed requirement for compliance, and proposed documentation to demonstrate compliance, and the design approach used to meet the required measures.

  Few examples for reference: Reverse Logistics, Vertical Warehousing, CO_2 monitoring in warehouses & office spaces, etc.

  (AND/ OR)

- **Case B: Exemplary Performance (1 Point for each measure; maximum 2 points)**

  The project is eligible for exemplary performance, if the design and / or construction measures greatly exceed the credit requirements of the IGBC Green Logistics Parks and Warehouses rating system.

  Notes:

  - *Refer Table – 7 for list of base credits eligible for exemplary performance.*
  - *If the green measures are documented through declarations or tenant lease agreements, then the points for exemplary performance would not be applicable.*

Table 7 - List of Base Credits eligible for Exemplary Performance	
Credit	**Requirement**
Park Planning and Design	
PPD Credit 3: Green Cover	• ≥ 17.5% of site area is restored and/ or designed with natural topography and / or green cover including vertical gardening
PPD Credit 4: Heat Island Reduction	• ≥ 95% of the exposed roof area is covered with high reflective material (and/ or) vegetation *(Not applicable for Interior Fit-outs)* (Or) • ≥ 60% of the uncovered parking areas are shaded from tree cover, existing warehouses / buildings post noon (and / or) with open grid pavers / grass pavers (and / or) gravel (and / or) hardscape materials with an SRI of at least 29 (and not higher than 64) (Or) • ≥ 50% of the Roads and Pathways are shaded by tree cover, existing warehouses / buildings post noon (and / or) with open grid pavers / grass pavers (and / or) light coloured coatings with an SRI of at least 29 (and not higher than 64).
Transport Efficiency	
TE Credit 4: Efficiency & Maintenance of Service Vehicles	• ≥ 10% use of cleaner fuel for service vehicles
Energy Efficiency	

EE Credit 1: Enhanced Energy Efficiency	<u>Option 1: Prescriptive Approach</u>
	• Lighting Power Density:
	  ○ Owner-occupied: ≥ 40% for interior areas and 60% for exterior areas reduction over ASHRAE Standard 90.1-2013 or ECBC 2017 baseline.
	  ○ Tenant-occupied: ≥ 60% for exterior areas reduction over ASHRAE Standard 90.1-2013 or ECBC 2017 baseline.
	  ○ Interior Fit-outs: ≥ 35% for interior areas reduction over ASHRAE Standard 90.1-2013 or ECBC 2017 baseline.
	• COP/ IPLV of Centralised Air-conditioning systems (VRF/Chillers): ≥ 7.5% over ASHRAE Standard 90.1-2013 or ECBC 2017 baseline

	(Or) <u>Option 2: Simulation Approach</u> • New Logistics Parks / Warehouses: ≥ 38% • Existing Logistics Parks / Warehouses (Including Major Renovations): ≥ 32% • New Interior Fit-outs: ≥ 22% • Existing Interior Fit-outs: ≥ 20% (Or) <u>Option 3: Specific Energy Consumption (Measurement Approach)</u> • Existing Owner-occupied Logistics Parks/ Warehouses: ≥ 32% • Existing Tenant-occupied Logistics Parks/ Warehouses: ≥ 28% • Existing Interior Fit-outs: ≥ 20%
EE Credit 2: Renewable Energy (On-site & Off-site)	<u>Case A: On-site Renewable Energy</u> • Owner-occupied ≥ 30% • Tenant-occupied: ≥ 150% • Interior Fit-outs: ≥ 30% (Or) <u>Case B: Off-site Renewable Energy</u> • Owner-occupied: ≥ 200% • Tenant-occupied: ≥ 300% • Interior Fit-outs: ≥ 200%
EE Credit 3: Energy Metering and Management	Energy management system is integrated with data loggers
Water Conservation	
WC Credit 1: Rainwater Harvesting	<u>Option 1:</u> Roof Areas: ≥ 45% (or) Non-roof Areas: ≥ 60% *(Not Applicable to Interior Fit-Outs)* (Or) <u>Option 2:</u> Roof Areas: ≥ 30% (or) Non-roof Areas: ≥ 40% *(Not Applicable to Interior Fit-Outs)*

WC Credit 2: Water Efficient Plumbing Fixtures	≥ 30% reduction in potable water use
WC Credit 4: Waste Water Treatment and Reuse	≥ 75% of the total water required for landscaping, flushing and cooling make-up water.
Resource Management	
Green Packaging	atleast 15% reduction in packaging material (or) use atleast 15% certified/ rapidly renewable/ recycled content/ biodegradable packaging material
Health and Well-being	
HWB Credit 2: Daylight	• ≥ 95 % of the regularly occupied spaces (Logistics Parks/ Warehouses) • ≥ 75 % of the regularly occupied spaces (Interior Fit-outs)

Green Measures Beyond the Fence

IDO Credit 2

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
4	4	4	4	4	4	4	4	4	4

Intent:

Encourage green measures beyond the fence for social well-being of occupants in nearby communities and villages, thereby improving the standard of living and reducing the associated negative environmental impacts.

Compliance Options:

Demonstrate that the project/ organisation has implemented at least one of the following green measures beyond the fence within 50 km radial distance from the project site. *(2 points for each measure, Maximum 4 points)*

- **Rainwater Harvesting**

  Install rainwater harvesting system(s) in any public building(s) such as government school/ college, community centre, etc. to capture 100% of the runoff from roof areas of the respective building, for recharge and/ or reuse. The roof areas of the building(s) should be atleast 2,000 sq.m. in aggregate.

  Note: The approach and methodology to demonstrate compliance shall be followed as defined in WC MR1: Rainwater Harvesting.

- **Sewage Treatment Plant**

  Install a sewage treatment plant and maintain for a period of atleast one year in any public building(s) such as government school/ college, community centre, etc. to treat 100% of the waste water generated in the respective building(s). The capacity of the STP should be atleast 10 KLD with secondary/ tertiary level treatment.

- **Water Body**

  Develop/ Adopt and maintain a water body for a period of atleast three years. The holding capacity of the water body should be atleast 1,500 cu.m.

❖ **Public Parks/Avenues**

Develop/ Adopt and maintain public parks or avenues for a period of atleast three years. The area of park/ avenue should be atleast 1 acre.

❖ **Mass Plantation**

Organise or be a part of plantation drive to plant at least 10,000 tree saplings in one year, for a period of three years.

Notes:

- *The saplings should not be monocultured species.*
- *The plantation should not be for commercial purpose.*

❖ **Renewable Energy**

Install renewable energy systems such as solar PVs, wind turbines, biogas plant, etc. for street lighting/ in any public building such as government school/ college, community centre, etc. The RE system should generate atleast 15,000 units per annum.

❖ **Basic Facilities**

Provide atleast four of the following basic amenities at any public buildings such as government school/ college, community centre and maintain for a period of at least one year:

- Bus shelters
- Street lighting
- Public toilets
- Play area and sports kit
- Tot-lot
- Drinking water ATM or equivalent
- Organic waste management
- Other basic facilities

❖ **Other Green Measures**

Identify the intent & requirements of other green measures which are similar to the green measures listed in this credit and provide documentation to demonstrate compliance.

The green measure identified by the project team has to be approved by IGBC before applying for certification.

Notes:

- *The green measures can be aligned with UN Sustainability Development Goals/ Central/ State Government initiatives; in case such initiatives are mandatory to be*

adopted, then the implemented measures should be over and above the mandatory clauses.

- *To demonstrate compliance for this credit, the green measures considered for one project cannot be shown for another project, unless the measures/ impacts are significantly higher than the credit requirement.*

  In case the project/ organisation has already implemented green measures, document only those measures which have been implemented in the last 3 years from the date of project registration with IGBC.

Water and Energy Performance

IDO Credit 3

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	1	2	1	2	1	2	1	2	1

Intent:

Enhance energy and water performance in the project, so as to reduce the associated negative environmental impacts.

Compliance Options:

<u>Existing Logistics Parks & Warehouses</u>

Case A: Energy & Water Audit Plan: (1 Point)

- Conduct a third-party energy & water audit plan to evaluate efficiency opportunities. The audit plan must include the following:
  - Audit team members and their roles & responsibilities. BEE Certified / Third-party Energy Auditor should conduct the energy audit.
  - Description of approach for identifying and analysing Energy & Water Conservation Measures.
  - Action plan and schedule for implementation of No cost/Low cost, Medium Cost and Capital Investment.
  - Implement a Measurement & Verification plan to establish baseline for implementation of Energy & Water Conservation Measures.

Case B: Performance Based Energy & Water Reduction: (1 Point)

(Applicable only if Case A: Energy & Water Audit Plan is attempted)

- Have established benchmarks to evaluate the energy & water saving measures and implemented No cost, Low cost and Medium cost measures in the last one year.
- Demonstrate that the project has reduced atleast 5% of the energy & water consumption from the defined baseline year (one year earlier) vis-à-vis the reporting year (present year).
  - The measures shall include, but not limited to, high-performance glass, lighting, HVAC, pumps & motors, appliances, building automation, renewable energy systems, rainwater harvesting, water fixtures, wastewater treatment, energy and water meters, irrigation systems, improvements in process operations, etc.

(And)

- ❖ Commit to provide the annual total water and energy consumption data of the project to IGBC for a period of 3 to 5 years.

New Logistics Parks & Warehouses

- ❖ Develop a comprehensive audit plan to enhance the performance of energy and water consuming systems in the project, in the next 3 to 5 years.
    - The measures shall include, but not limited to, high-performance glass, lighting, HVAC, pumps & motors, appliances, building automation, renewable energy systems, rainwater harvesting, water fixtures, wastewater treatment, energy and water meters, irrigation systems, improvements in process operations, etc.
    - The plan shall address existing & proposed energy and water consuming systems.

Note:

Energy audit shall be carried out preferably as per ASHRAE Level 1 and 2 to evaluate efficiency opportunities. Third-party BEE Certified Energy Auditor shall be engaged to conduct the energy audit.

(AND)

- ❖ Commit to provide the annual total water and energy consumption data of the project to IGBC for a period of 3 to 5 years.

Green Measures Cost Analysis

IDO Credit 4

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	2	2

Intent:

Optimise design, construction and operational efficiency of green features in the project, so as to analyse the incremental/ decremental cost and the return on investment.

Compliance Options:

Develop a matrix to compute incremental/ decremental cost of the project for the green features implemented.

The matrix shall include green features, conventional cost, incremental/ decremental cost, tentative benefits/ estimated savings and return on investment.

***Notes*:**

- *The cost for the green features implemented beyond the fence shall not be considered for this credit calculation. The project shall consider only green features implemented within the site for this credit calculation.*
- *For Existing logistics parks and warehouses, the projects can consider the cost of retrofits for green measures during the last three years of operations as well.*

Accredited Professionals

IDO Credit 5

Applicability and Points									
Logistics Parks				Warehouses				Interior Fit-outs	
Owner-occupied		Tenant-occupied		Owner-occupied		Tenant-occupied			
Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
2	2	2	2	2	2	2	2	2	2

Intent:

Encourage involvement of Accredited Professionals in the project, so as to integrate sustainable concepts in design, construction & operational measures.

Compliance Options:

The project team shall have atleast one principal participant with the following Accreditations:

- CII-IGBC Accredited Professional (1 Point)
- CII-IL* Supply Chain Management Professional (and/or) Warehousing Management Professional (1 Point)

  **Confederation of Indian Industry – Institute of Logistics (www.ciilogistics.com)*

ANNEXURE I

Annexure I:
Alternative Compliance Strategies/Paths for Tenant Occupied and Interior Fit-out projects

Credit Name	Options	Alternate Requirements	Applicability
Heat Island Effect	Roof Areas	For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Heat Island Effect Roof even if the implementation and maintenance is in the scope of developer.	Tenant
Access to Public Transport	Shuttle Services	In Tenant-occupied projects, if the provision of shuttle services is in the scope of tenant, then the developer can demonstrate compliance through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of the shuttle services.	Developer
Electric Vehicles and E-charging Stations	Electric Vehicles for Indoor Material Handling	The electric powered vehicles can be owned or sourced through a third-party agency on an annual contract.	Tenant
	Electric Vehicles for Occupants	Electric vehicles sourced on contract by the developer/ owner/ tenant for park/ warehouse occupants can also be considered to show credit compliance.	Developer/ Owner/ Tenant
	E-charging Stations	E-charging stations can be arranged through a third-party service provider.	Developer/ Owner/ Tenant
		For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for E-charging Stations even if the implementation and maintenance is in the scope of developer.	Tenant
Parking for Service Vehicles	Parking for Service Vehicles, Parking Spaces	For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Parking Spaces even if the provision and maintenance is in the scope of developer.	Tenant
	Vehicle Service Zone, Dedicated Vehicle Service Zone	The infrastructure for vehicle service zone shall be owned and / or operated by the developer / owner (or) can be arranged through a third-party service provider.	Developer/ Owner
	Vehicle Service Zone, Third-party Service Agency	The developer / owner / tenant of the logistics park / warehouse shall appoint a third-party service agency accessible within 25 km for vehicle servicing.	Developer/ Owner/ Tenant

Credit Name	Options	Alternate Requirements	Applicability
Minimum Energy Performance & Enhanced Energy Performance	Prescriptive	1. In tenant-occupied projects, if the Energy Conservation Measures (ECMs) such as lighting controls, HVAC systems, HVLS fans, DG sets, energy saving appliances are in the tenant scope, then the developer can demonstrate compliance through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of such ECMs. Credit points for such ECMs can be attempted only if the developer or tenants comply with atleast 50% of the built-up area in the park/ warehouses. 2. In tenant-occupied projects, the reduction in interior LPD would be allowed up to a maximum of 30%, for warehouses with mandatory clause on interior LPD through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of the interior LPD; else, the project shall consider the interior LPD with a default 10% reduction. 3. For tenant-occupied projects, if the interior lighting and centralised air-conditioning systems are in the scope of tenants for more than 50% of the built-up area, then the points for exemplary performance would not be applicable.	Developer
	Simulation	In tenant-occupied projects, the reduction in interior LPD would be allowed up to a maximum of 30%, for warehouses with mandatory clause on interior LPD through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of the interior LPD; else, the project shall consider the interior LPD with a default 10% reduction.	Developer
	Prescriptive/ Simulation	For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for HVAC systems, Precooling or Low Energy Mechanical Cooling Techniques, HVLS Fans, DG Sets (as applicable) even if the installation and maintenance is in the scope of developer.	Tenant
Energy Metering and Management	Energy Metering	In tenant-occupied projects, if sub-metering is not in the developer scope, then this credit cannot be attempted.	Developer
Rain Water Harvesting		For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Rain Water Harvesting (Roof) even if the installation and maintenance is in the scope of developer.	Tenant

Credit Name	Options	Alternate Requirements	Applicability
Water Efficient Plumbing Fixtures		1. In Tenant-occupied Logistics Park & Warehouses, if the installation of plumbing fixtures is in the scope of tenant, then the developer can demonstrate compliance for this credit and mandatory requirement WC MR 2 by providing the information on water efficient plumbing fixtures through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects), as per the IGBC rating system requirements. If the installation of plumbing fixtures is in the scope of tenant, the reduction in potable water use would be allowed up to a maximum of 25%, for warehouses with mandatory clause on water fixtures through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual flow & flush rates of the water fixtures; else, the project shall consider a default 5% reduction. Also, while calculating the waste water generation from tenant-occupied warehouses to the STP, the project shall consider the flow rates as indicated in the declarations or signed lease agreements with the tenants or based on the actual data. 2. For tenant-occupied projects, if the installation of water fixtures is in the scope of tenants for more than 50% of the built-up area, then the points for exemplary performance would not be applicable.	Developer
		For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Water Efficient Plumbing Fixtures even if the installation and maintenance is in the scope of developer.	Tenant
Water Metering	Warehouse-level Metering	In tenant-occupied projects, if sub-metering for warehouse-level metering is in the scope of tenant, then the developer can demonstrate compliance through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of the water meters. Credit point for warehouse-level water metering can be attempted only if the developer or tenants comply with atleast 50% of the built-up area in the park/ warehouses.	Developer

Credit Name	Options	Alternate Requirements	Applicability
Eco-labelled materials, products & Equipment		In tenant-occupied projects, if the use of eco-labelled products is not in the developer scope, then this credit cannot be attempted.	Developer
		For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Eco-labelled materials, products & Equipment even if the provision and maintenance is in the scope of developer.	Tenant
Organic Waste Management, Post Occupancy	Food Waste	In tenant-occupied projects, if the on-site treatment system for food waste is in the scope of tenant, then the developer can demonstrate compliance for those warehouses through declaration (for precertification projects) and signed lease agreements with the tenants (for certification projects) or based on the actual details of the on-site treatment system for food waste.	Developer
		For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for on-site treatment system of food waste even if the installation and maintenance is in the scope of developer.	Tenant
Minimum Fresh Air Ventilation & Enhanced Fresh Air Ventilation	Mechanically Ventilated Spaces	In Tenant-occupied Logistics Park & Warehouses, if the installation of ventilation systems is in the scope of tenant, then the developer can demonstrate compliance for this credit and mandatory requirement HWB MR 2 by providing the information on ventilation systems i.e. Ventilation Rates or Air Changes per Hour through declarations (for precertification projects) and signed lease agreements with the tenants (for certification projects), as per the IGBC rating system requirements.	Developer
		For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Fresh air ventilation even if the installation and maintenance is in the scope of developer.	Tenant
Basic Amenities for Staff & Drivers		In tenant-occupied projects, if the provision of basic amenities is not in the developer scope or yet to be provided, then this credit cannot be attempted.	Developer
		For Interior Fit-out projects, the tenant can demonstrate compliance and claim points for Basic Amenities for Staff & Drivers even if the implementation and maintenance is in the scope of developer.	Tenant

ANNEXURE II

Annexure II: Summary of Credits with the defined baseline year vis-à-vis the reporting year

Credits	Compliance Options	Requirements
GHG Inventory and Mitigation Measures	Existing Parks/ Warehouses: Mitigations Measures	Demonstrate reduction in emission intensity (e.g. kg CO2/ tonne of material handled, kg CO2 / revenue generated) in the last one year (financial / calendar year) for scope 1, 2 & 3* emissions vis-à-vis various mitigation actions. *Scope 3 emissions is optional. Provide a detailed action plan with strategies to reduce the GHG emission intensity (e.g. kgCo2/ tonne of material handled, kg CO2 / revenue generated) scope 1, 2 & 3* emissions by atleast 5% from the present year in-lieu of various mitigation actions, over the next one year (financial / calendar year). *Scope 3 emissions is optional.
	New Parks/ Warehouses: Action Plan for Mitigation Measures	Provide a detailed action plan with strategies to reduce the GHG emission intensity (e.g. kgCo2/ tonne of material handled, kg CO2 / revenue generated) scope 1, 2 & 3* emissions by atleast 5% from the present year in-lieu of various mitigation measures, over the next one year (financial / calendar year). *Scope 3 emissions is optional.
Vehicular Routing	Existing Logistics Parks & Warehouses	By adopting vehicular routing strategies, demonstrate atleast 5% reduction in transportation lead time by using vehicular routing software vis-à-vis in the last one year.
Minimum Energy Performance	Specific Energy Consumption (Measurement Approach)	Demonstrate that the project has maintained or reduced the Specific Energy Consumption (SEC) from the defined baseline year (three years earlier) to the reporting year (present year).
Enhanced Energy Performance	Specific Energy Consumption (Measurement Approach)	Demonstrate that the project has reduced the Specific Energy Consumption (SEC) from the defined baseline year (three years earlier) to the reporting year (present year).
Green Packaging	Existing Logistics Park and Warehouses: Reduction in Packaging Material	Demonstrate a minimum of 10% reduction in tertiary packaging material intensity in the warehouse(s) in the last one year vis-à-vis various packaging reduction strategies.
Water and Energy Performance	Existing Logistics Parks & Warehouses: Performance Based Energy & Water Reduction	Have established benchmark to evaluate the energy & water saving measures and implemented No cost, Low cost and Medium cost measures in the last one year. Demonstrate that the project has reduced atleast 5% in energy & water consumption vis-à-vis the last one year.

About CII Sohrabji Godrej Green Business Centre, Hyderabad

CII-Sohrabji Godrej Green Business Centre (CII-Godrej GBC) was established in the year 2004, as CII's Developmental Institute on Green Practices & Businesses, aimed at offering world class advisory services on conservation of natural resources.

The Green Business Centre in Hyderabad is housed in one of the greenest buildings in the world and through Indian Green Building Council (IGBC) is spearheading the Green Building movement in the country. The Green Business Centre was inaugurated by His Excellency Dr. A. P. J. Abdul Kalam, the then President of India on 14 July 2004.

The Services of Green Business Centre include- Energy Management, Green Buildings, Green Companies, Renewable Energy, GHG Inventorization, Green Product Certification, Waste Management and Cleaner Production Process. CII-Godrej GBC works closely with the stakeholders in facilitating India emerge as one of the global leaders in Green Business by the year 2022.

www.greenbusinesscentre.com

About CII - Institute of Logistics, Chennai

To address the growing need of sharpening India Inc's competitive edge through better Logistics and Supply Chain practices, CII Institute of Logistics (CIL) was established in 2004 by the Confederation of Indian Industry as a Centre of Excellence in Logistics and Supply Chain.

The vision of the CII Institute of Logistics is to become an International Centre of Excellence in Logistics and SCM and to facilitate Indian industry to be referred in Global Business for its Best Practices in SCM and Logistics.

With a relentless aspiration to enhance logistics competitiveness in the industry, CIL provides a complete range of services such as: Supply Chain Consultancy, Corporate Training, Research, Warehouse Certification - WAREX (for risk management and processes) and Supply Chain Transformation.

www.ciilogistics.com

About CII
(Confederation of Indian Industry)

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society through working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry.

Founded in 1895 and celebrating 125 years in 2020, India's premier business association has more than 9,100 members, from the private as well as public sectors, and an indirect membership of over 300,000 enterprises from around 291 national and regional sectoral industry bodies.

With 68 offices, including 9 Centres of Excellence in India, and 11 overseas offices in Australia, China, Egypt, France, Germany, Indonesia, Singapore, South Africa, UAE, UK and USA, as well as institutional partnerships with 394 counterpart organizations in 133 countries, CII serves as a reference point for Indian Industry and the international business community.

About IGBC
(Indian Green Building Council)

The Indian Green Building Council (IGBC), part of the Confederation of Indian Industry (CII) was formed in the year 2001. The vision of the council is, "To enable a sustainable built environment for all and facilitate India to be one of the global leaders in the sustainable built environment by 2025".

The council offers a wide array of services which include developing new green building rating programmes, certification services and green building training programmes. The council also organises Green Building Congress, its annual flagship event on green buildings.

The council is committee-based, member-driven and consensus-focused. All the stakeholders of construction industry comprising of architects, developers, product manufacturers, corporate, Government, academia and nodal agencies participate in the council activities through local chapters. The council also closely works with several State Governments, Central Government, World Green Building Council, bilateral multi-lateral agencies in promoting green building concepts in the country.

IGBC

Confederation of Indian Industry
125 Years: 1895-2020

Confederation of Indian Industry
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