Sustainable land ports Policy

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Land Ports Authority of India Ministry of Home Affairs Government of India

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Message from the Chairman

Transforming Land Ports for a sustainable tomorrow

I am proud to present our Sustainable Land Ports Policy, which embodies our commitment to fostering a greener and more resilient future for our nation. Since its inception, LPAI has been at the forefront of innovating, leading, and transforming operations at our ports to facilitate cross-border trade. Recognizing the critical role that land ports play in facilitating trade and economic growth, we also acknowledge our responsibility to protect the environment and promote sustainable practices.

This policy is built upon four core principles: Environmental Stewardship, Operational Excellence, Ecological Balance, and Resilient Design. By committing to environmentally responsible practices, we aim to significantly reduce the ecological footprint of our operations. Through continuous improvement and the integration of innovative technologies, we will enhance operational efficiency while optimizing resource use.

India, as a part of its commitment towards climate action has pledge to reduce the emission intensity per unit GDP by 45 percent by year 2030 and achieve 50 percent of our energy requirements from non-fossil fuel base energy sources. In alignment with India's ambitious climate goals, LPAI shall reduce 30% of its emission from cargo operations per tonne of cargo by 2030 and 50% of energy requirements though renewable sources by 2030. Further, LPAI is committed to becoming a carbon neutral organization by 2035, and net zero by 2047. This commitment underscores our dedication to implementing environmentally responsible practices that significantly reduce our ecological footprint. With this commitment we hope to avoid a global catastrophe and limit global warming to 1.5° C as suggested by the emission gap report of UNEP (2022).

Moreover, we are dedicated to preserving local ecosystems, ensuring that our activities harmoniously coexist with nature. Based on a comprehensive assessment we have arrived on specific areas of focus such as resilient design, use of alternative fuels such as electricity and hydrogen, transition to renewable energy, improving energy efficiency and resource utilization, enhancing biodiversity, imbibing the principles of circularity and Land port masterplans among many others will guide us in developing sustainable land port ecosystem that meets the challenges posed by climate change.

Together with all stakeholders, we will work diligently to implement these principles, striving for a sustainable future that balances economic growth with environmental integrity. This policy marks a significant step forward in our journey toward achieving net-zero and aligning with global sustainability goals. Let us embrace this opportunity to lead by example and create land ports that are not only vital to trade but also champions of sustainability.



The vision

To establish a network of green land ports that facilitate cross-border trade while minimizing environmental impact, promoting resource efficiency, and fostering economic and social well-being for border communities. LPAI envisions sustainable land port operations that contribute to India's climate commitments, advance regional cooperation, and set a benchmark for eco-friendly infrastructure in the logistics sector.

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1 Introduction

1.1 Background

Government of India has laid special emphasis on co-development with its neighboring countries. Indian government is investing in development of infrastructure in Nepal, Bhutan, Bangladesh and Myanmar. Land Ports play an important role in promoting trade and people to people connection with India's neighboring countries. The trade with the neighboring countries has seen an increasing trend over the years and has the potential to double in the coming years. The Government of India is upgrading the trade infrastructure available at border crossing points. At present, land-based trade with neighbors takes place through designated trading points along India's land borders, and the trade infrastructure and facilities at many of these points need improvement.



Land Ports Authority of India, under Ministry of Home Affairs, is taking lead in development of infrastructure at border crossing points. Land Ports Authority of India (LPAI) was established on O1st March 2012 under the LPAI act, 2010, to facilitate and manage the cross-border movement of persons and goods at designated entry and exit points on the international borders of India. The Act provides LPAI to undertake the construction, management and maintenance of Integrated Check Posts (ICPs). ICPs house officials from multiple agencies involved in EXIM trade and cross border movement of passengers.

LPAI's primary focus till now has been on development of infrastructure and streamlining of processes at land ports. LPAI is now progressing to take up issues of efficiency improvement, digitalization, maintenance of land ports, partnership with stakeholders and training among others. One of the critical focus areas for LPAI is sustainability of land port development and operations. LPAI is progressing towards mandating GRIHA-5 ratings for development of all its land ports. LPAI intends to streamline these initiatives through a policy for sustainable land ports.



1.2 Green land ports

Owing to rising temperatures, Green House Gas (GHG) emissions and disruption of the natural ecosystem, "Climate change" has emerged as an existential threat to the planet. As a result, countries across the globe have adopted an international agreement at United Nations Framework Convention on Climate Change (UNFCC) Conference of the Parties (COP) 21 in 2015, to act against climate change. India has played a prominent role in the climate change negotiations. Under the agreement, countries publicly announced their voluntary actions against climate change, known as "Intended Nationally Determined Contributions (INDCs)". India has emerged as a leader in climate change and has declared its ambitious INDC targets. Some of these targets are as follows:

- Reduce emissions intensity per unit GDP by 33-35% below 2005 levels by 2030;
- Create additional carbon sink of 2.5-3.0 billion tonne of carbon di-oxide through additional tree cover;
- Increase share of non-fossil fuel-based power generation capacity to 40% by 2030.

The urgency for climate action has reached a critical point in this decade, necessitating a 45% reduction in global carbon dioxide emissions to achieve net-zero by mid-century. As a rapidly growing economy and a key player in international trade, India has reaffirmed its commitment to intensifying climate efforts. During COP26, India introduced the "Panchamrit" framework, outlining five key elements of its climate strategy, including a target to reduce the carbon intensity of its economy by 45% by 2030 compared to 2005 levels, and to achieve net zero emissions by 2070.

India's commitment to fight climate change calls for strategic integration of sustainability across sectors, including trade, transport, and logistics. Land ports, being critical nodes in the logistics and transportation network, play a significant role in facilitating trade and commerce.

Land ports are generally located in remote parts of the country outside of the urban habitation and does not have significant environmental impact on its surroundings. Despite this, LPAI is cognisant of the need to reduce the environmental impact of land ports and have issued this Sustainable Land Port policy in this regard.

1.3 Need for Policy

The sustainable modernization of India's land ports is critical to balancing the growth in crossborder trade with pressing environmental goals. Building on the initiatives under India's broader climate and sustainability commitments, this policy aims to offer a structured framework to guide the sustainable transformation of land port operations.

It emphasizes the development of a practical implementation model and incentive structure to encourage stakeholders, including port operators and port authorities, to adopt measures that minimize the environmental impact of land ports.

This policy has been developed to address the environmental and sustainability challenges inherent to land port operations, representing an essential pillar in the Government of India's broader sustainability agenda. This policy shall also help to adhere to the Directive Principles of State Policy enshrined in Article 48A of the Constitution which provides that, "The State shall endeavor to protect and improve the environment and to safeguard the forests and wild life of the country". The document captures the focused areas, measure outcomes, aspects of incentivization and implementation plan for the greening of Land ports.

2 Policy Framework

The aim of this policy is to provide the pathway for sustainable development and operations of land ports. The broad policy framework for sustainable land ports includes identifying the vision and objective and establishing the core principles for sustainability from land ports perspective.

The policy also establishes the focus areas and sets primary targets that LPAI will strive to achieve. The policy acknowledges the need to incentivize adoption of green practices by private sector stakeholders and provides for a broad implementation framework for promotion of sustainability in land ports.

This document also provides an indicative list of potential projects that can be undertaken by land ports for promoting sustainability. This policy is applicable to all the land ports of India under LPAI.

2.1 LPAI's sustainability vision

The vision of LPAI is to establish a network of green land ports that facilitate cross-border trade while minimizing environmental impact, promoting resource efficiency, and fostering economic and social well-being for border communities. LPAI envisions sustainable land port operations that contribute to India's climate commitments, advance regional cooperation, and set a benchmark for eco-friendly infrastructure in the logistics sector.

2.2 Policy objectives



This section provides broad objectives of the policy. Through this policy, LPAI aims to address immediate concerns such as reduction in carbon emissions and improving resource efficiency. These short-term objectives lay the groundwork for long-term aspirations like carbon neutrality and enhanced biodiversity aimed at driving significant progress in sustainability practices within port operations. The objectives form a cohesive strategy that not only mitigates environmental impacts but also promotes collaboration among stakeholders, ultimately fostering a more resilient and sustainable future for land ports in India.

The short-term objectives of this policy are as follows:

- 1. **Reduce Carbon Emissions:** Implement measures to significantly lower carbon emissions from port operations.
- 2. Enhance Energy Efficiency: Adopt energy-efficient practices to optimize energy consumption across all activities.
- 3. Increase Renewable Energy Use: Integrate renewable energy sources into the port's energy mix.
- 4. **Optimize Resource Use:** Continuously improve resource efficiency in operational practices.
- 5. **Implement Waste Management Systems**: Establish comprehensive waste management protocols to minimize landfill waste.
- 6. **Engage Stakeholders**: Facilitate regular stakeholder engagement to promote collaboration on sustainability initiatives.
- 7. **Improve Water Quality Management**: Develop strategies to monitor and reduce water pollution from port activities.
- 8. Adopt Green Transportation Practices: Encourage the use of low-emission vehicles and alternative fuels for transportation within the port.
- 9. **Implement Smart Technologies**: Utilize smart technologies for real-time monitoring of energy consumption and emissions.
- 10.**Conduct Environmental Impact Assessments**: Regularly assess the environmental impact of port operations and adjust practices accordingly.
- 11.**Stakeholder capacity building:** Provide training for staff on sustainability practices and energy management.

The Long-Term Objectives of this policy are as follows:

- 1. Achieve Carbon Neutrality: Work towards achieving carbon neutrality in all port operations.
- 2. **Expand Green Infrastructure**: Develop green infrastructure projects to enhance environmental quality around the port.
- 3. **Promote Biodiversity**: Initiate programs aimed at preserving and enhancing local biodiversity.
- 4. **Foster Sustainable Procurement**: Prioritize sustainable products and services in procurement processes.
- 5. **Invest in Research and Development:** Support R&D initiatives focused on innovative sustainable technologies for ports.
- 6. **Create a Circular Economy Framework:** Establish practices that promote recycling and reuse of materials within port operations.
- 7. Enhance Community Engagement Programs: Develop outreach programs to educate local communities about sustainability efforts and benefits.
- 8. **Implement Climate Resilience Strategies:** Prepare for climate change impacts by developing strategies that enhance the resilience of port infrastructure.

2.3 Core principles for sustainability.

In the pursuit of sustainable land ports, four core principles emerge as essential pillars guiding our approach to environmental responsibility and operational efficiency.

- 1) **Principle of Environmental Stewardship:** Commit to implementing environmentally responsible practices that reduce the ecological footprint of land port operations.
- 2) **Principle of Operational Excellence:** Strive for continuous improvement in operational efficiency by integrating innovative technologies and processes that optimize resource use.
- 3) **Principle of Ecological Balance:** Promote practices that ensure the preservation and enhancement of local ecosystems surrounding land ports, fostering a harmonious coexistence between port activities and the natural environment.
- 4) **Principle of Resilient Design:** Prioritize sustainable infrastructure development at land ports by incorporating green building standards and resilience measures to climate change, ensuring long-term viability and minimal environmental impact.

3 Focus areas and primary targets

The focus area for this policy is the environment sustainability of land port operations. LPAI undertook a study to identify the key areas for environmental sustainability. The study identified that following areas have the most impact on environment sustainability at land ports:

- 1. Vehicular emissions- Cargo operations and other vehicles
- 2. Energy consumption at land ports
- 3. Renewable Energy
- 4. Biodiversity at land ports
- 5. Utility management
- 6. Training and development
- 7. Port development

LPAI shall target to achieve 30% reduction of emission per unit tonne of cargo by 2030, carbon neutrality across scope 1 and scope 2 emissions, from the current levels (Baseline FY 2022-23), by 2035 and reaching net-zero emissions across all scopes by 2047.

- Carbon Neutrality by 2035: Achieving carbon neutrality involves balancing out Scope 1 and Scope 2 emissions (direct emissions from owned or controlled sources and indirect emissions from purchased energy) through reduction strategies and carbon offsets.
- Net-Zero Emissions by 2047: Achieving net zero involves eliminating or offsetting all emissions across Scopes 1, 2, and 3 (including indirect emissions from the entire value chain, such as supply chain and product lifecycle emissions).

The focus areas with the potential to enhance the sustainability of the port ecosystem are summarized in subsequent sections and LPAI shall aim to fulfill its environmental sustainability commitments through these broad-level initiatives. The following targeted outcomes have been identified with respect to the specified focus areas for the land ports.

3.1 Vehicular emissions

Land ports experience high volumes of traffic from cargo transport and operational vehicles, leading to elevated levels of air pollution. Emissions due to fuel consumption by idling of trucks contribute approx. 76% of the port emissions. Further, a significant portion of emissions comes from the vehicles operated directly by the ports for cargo handling, logistics, and internal transport. Managing these emissions is critical to reducing the environmental impact of port activities. To achieve a reduction in GHG emissions from vehicles and equipment, the following aspects of decarbonization shall be prioritized.

 Efforts to Regulate the idling time for cargo trucks based on tokenized systems for slotting, shall be taken. By assigning trucks to specific parking bays scientifically, ports can minimize waiting times and reduce congestion.



- 2) Efforts for Electrification of internal Vehicles/ cargo handling equipment shall be made; targeting more than 50 percent electrification by the Year 2030 which is to be further increased to more than 90 percent by the year 2035.
- Retro-fitment / conversion of Diesel-powered equipment / cranes / forklift / pay loader / vehicles etc. to electrically powered shall be implemented in a phased manner by making suitable plans.
- 4) LPAI will develop specific programs for incentivization to promote operators, transporters, agents and other stake holders that are using cleaner fuel or efficient operations which shall be fiscal and/ or non-fiscal in nature and shall be detailed out in program.
- 5) All future procurements of Port vehicles and cargo handling & other equipment shall preferably be electrically driven / electrically powered or should be compatible with low carbon greener fuels viz., CNG, Methanol, Ethanol, Ammonia, Hydrogen Fuel Cell etc.
- 6) External vehicles accessing land ports as a part of cross border trade shall be nudged to transition towards zero emission technologies such as battery electric vehicle and hydrogen fuel vehicles wherever feasible. Other alternative fuels such as low carbon greener fuels

viz., CNG, Methanol, Ethanol etc. shall also be considered as a transitionary technology where ZEVs aren't a feasible option. LPAI, at the organization level shall adopt a target of 15% ZEV based total truck movements by 2030, more than 25% ZEV based total truck movements by 2035, and more than 75% ZEV based total truck movements by 2047. To facilitate this transition LPAI shall develop adequate number of charging infrastcuture and other supporting facilities at all of the land ports based on a tehcno-commercial assessment.



3.2 Energy consumption at land ports

At present, major Land ports have replaced halogen with LED light fixtures leading to lower running loads by 150 - 250 Kwh thereby reducing the fixed charges and use based tariffs. Detailed electric equipment asset registry is under process by LPAI.

- 1) Equipment class wise assessment shall be taken up at each Land Port based on the detailed running load assessment.
- 2) All the Land ports shall use energy efficient equipment and materials for all the purposes such as HVAC (Heating Ventilation and air conditioning), Lighting, storage and other cargo

operations, and electronic controls among others to reduce the energy consumption demand.

- 3) Encourage the adoption of energy-efficient technologies in cargo handling and port operations.
- 4) No vehicles to be permitted inside the port area without PUC certificate.
- 5) The Land Ports shall use the digital infrastructure i.e. LPMS, E-Subidha, RFID etc. to increase the efficiency of operation and in turn reduce the carbon footprint. Relevant systems shall be deployed at all the land ports by 2030
- 6) All Land Ports shall achieve more than 25 percent reduction in energy consumption / vehicle or ton of cargo by year 2035 as compared to the baseline year of 2024. The energy efficiency shall be enhanced to meet the targets though a detailed assessment of the running loads and energy consumption at each of the land ports where specific processes and activities shall be identified which have maximum energy consumption. The assessment shall include requirements for power back-up and cargo related operations among others.
- 7) Implement smart technologies for monitoring and optimizing energy consumption across port facilities.
- 8) Diesel generators convert diesel fuel into electrical energy through combustion, serving as backup power sources but emit harmful pollutants. Efforts shall be made to retrofit existing DGs with emission control devices to significantly reduce pollutants, and interventions such as battery storage systems for low emission power backup (BESS) as replacement for traditional DGs, along with the use of biofuels or alternative fuels in existing facility, shall be explored. The adoption of BESS or other alternative fuels shall be taken up in line with the targets for carbon neutrality and net zero mentioned in this policy.

3.3 Renewable Energy



The substantial energy demands of land port operations typically rely on non-renewable energy sources, contributing to carbon emissions and environmental degradation. Emissions due to the consumption of electricity is approximately 22% of the total emissions due to cargo operations at the land ports.

1) Efforts shall be made to achieve the target of renewable energy at Land Ports and the same should exceed 50 percent by the year 2030, 75 percent by the Year 2035 and 90 percent by year 2047.

2) LPAI shall invest in on-site renewable energy sources such as solar panels on rooftops and land spaces. Feasibility studies shall be initiated at ports, wherever required, to evaluate the potential for solar, and other renewable projects; energy Assessing factors such as site suitability, energy demand, and integration with existing systems.

- 3) Upgrade / augment infrastructure to support solar, and other renewable energy projects. This may include reinforcing rooftops/ integrating Green Roofs for solar installations, integrating smart grid solutions involving Battery energy storage systems to maximize selfsufficiency from renewables.
- 4) Develop battery storage and microgrid systems to store excess renewable energy and ensure a stable power supply. This enables greater energy resilience and reduces reliance on conventional energy during peak hours.
- 5) Establish agreements to purchase green energy from external renewable sources, further supporting the transition goal for renewable energy and reducing overall carbon emissions.
- 6) Measures for regular maintenance of solar panels and other renewable energy infrastructure shall be undertaken to ensure optimal performance and longevity.



7) Incorporate other clean fuel technologies such as Hydrogen fuel cell-based energy generators among others based on the suitability and technological maturity.

3.4 Biodiversity at Land ports

- 1. Establish a biodiversity preservation goal at each land port with targets for increasing green cover and protecting native species in and around port areas by 2030 and beyond, aiming to develop Land port spaces that are ecologically balanced and resilient.
- 2. Green area cover at all Land ports shall be increased to capture the fugitive emissions and attenuate the noise generated in the Port surroundings by carrying out effective plantation, developing landscapes etc. The green belt area shall be increased by more than 20 percent by year 2030 and 33 percent by 2047 of the port area. Such green spaces will boost recharge of groundwater and act as carbon sinks, contributing to a lower carbon footprint of the land ports.

- 3. Take initiatives to restore and conserve natural habitats at all land ports. By fostering native ecosystems, Land ports can help retain soil moisture and improve soil health, contributing to better erosion control.
- 4. Collaborate with local environmental organizations, communities, and port tenants to support biodiversity initiatives. Offer training and educational programs to raise awareness about the importance of biodiversity conservation.
- 5. The carbon sinks though green cover and bio diversity should be designed in order to become Carbon neutral by 2035, and net zero by 2047.

3.5 Utility Management

Sustainable utility management involves optimizing the use of resources to reduce waste, conserve natural reserves, and promote a circular economy. It is imperative to increase the efficiency of waste disposal processes. Additionally, the reliance on ground water resource and the overall water footprint needs to be reduced. It is essential to consider efficient utility management practices, which include maximizing the reuse of resources to reduce waste, conserve natural resources, and support a circular economy.

- 1. Establish a baseline for existing water and waste management practices, which shall further assist in developing effective management strategies and goals.
- 2. Introduce a zero-waste goal aimed at up to 85% reduction of waste disposal to landfill by 2027 and 100% reduction by 2030.
- 3. Enact strict measures for waste segregation throughout the value chain and ensure 100% collection of segregated waste by 2027.
- 4. Provision of on-site waste storage and segregation facility for enabling further transportation/processing of waste.
- 5. Implement on-site processing of segregated wet waste.
- 6. Adopt appropriate practice for managing biohazardous waste, whether through on-site treatment (incineration) or by outsourcing to a specialized third-party facility.
- 7. Adopt the 5R framework: Reduce, Reuse, Recycle, Reprocess, and Recover to minimize solid waste generation and enhance resource efficiency throughout port operations.
- 8. Collaboration between port tenants and local businesses/ authorized recyclers for joint waste management initiatives.
- 9. Conduct periodic waste audits to assess the types and quantities of waste generated. This shall help in formulating future strategies for efficient waste management.
- 10.All Land ports shall achieve more than 10% reduction in dependency on freshwater consumption by 2030.
- 11.Promote at least 90% reuse of treated wastewater for non-potable purposes to conserve freshwater resources.
- 12.Establish efficient water quality monitoring systems to detect contamination early and implement corrective measures promptly. Efforts shall be made to augment existing water treatment plant or install new treatment plants to ensure availability of safe drinking water at all ports.

- 13.Promote water conservation strategies such as rainwater harvesting, which can reduce dependency on ground water.
- 14.Implement water-saving technologies and practices throughout port operations, alongside regular monitoring and reporting to track progress.
- 15.Incorporate low-impact design (LID) strategies and nature-based solutions to manage water runoff effectively and prevent pollution of adjacent water bodies.
- 16.Implement comprehensive capacity-building programs, for port staff, focusing on effective utility management/ sustainable port management practices.

3.6 Training and development

1. Training and development initiatives for sustainability in human resources are essential for fostering a workforce that is knowledgeable and proactive about sustainable practices.



3.7 Port development

- 1. All new buildings shall be built by adopting "Green Building" concept confirming to 4+ star rating in GRIHA or Gold / Platinum certification in LEEDS.
- 2. The Land Ports shall be designed based on the Life cycle assessment approach for energy, resource footprint and carbon footprint.
 - a. Each Land port shall have a masterplan with areas earmarked for each of the land use with a green cover of 33%.
 - b. Design new port infrastructure with a focus on sustainability, ensuring that it is adaptable to future energy needs.
 - c. Utilize eco-friendly construction materials and practices to minimize environmental impact during development
- 3. Each greenfield land port shall prepare a blue green infrastructure masterplan that shall help in adapting sustainable management practices.



4 Incentives for promotion of green land ports

To promote sustainability, operators, transporters, agents, and other stakeholders who are using cleaner fuel or efficient operations, above certain parameters as compared to conventional practice shall be incentivized. These incentivization shall be based on specific programs developed by LPAI.

The incentive programs shall be based on a detailed study covering the following:

- A needs assessment through surveys and focus groups helps identify the specific motivations of the target audience.
- A literature review of existing incentive programs provides insights into successful models and common challenges. Additionally, analyzing current programs through meta-analysis can reveal effective strategies.
- Incorporating principles from behavioral studies enhances understanding of how different incentives influence motivation.
- LPAI shall come up with green vehicle incentive for Zero Emission Vehicle for enabling transition in line with the net-zero targets this shall include lower fees and charges for zero / low emission vehicles, and green channel for faster vehicle turn arounds among others.
- LPAI shall allocate a sufficient green budget each financial year to support the sustainability transition, in alignment with the identified greening initiatives.
- Implementing pilot testing allows for real-world evaluation of proposed incentives, while longitudinal studies assess long-term impacts. Engaging stakeholders through interviews ensures diverse perspectives are considered.
- An economic impact analysis and viability gap assessment to evaluate the costeffectiveness of the program, and attention to regulatory and ethical considerations to ensure compliance and fairness.

LPAI shall ensure that the Green and Sustainability aspects are suitably incorporated in the DPR (Detailed Project Report) while formulating PPP (Public Private Partnership) projects or other contract arrangements including all the services.

All agencies involved in land port activities shall be required to adhere to stringent sustainability standards concerning the services they provide to the land ports. This compliance is essential to ensure the effective implementation of this policy at every level.

For the existing PPP Concessionaire / lessee, LPAI shall devise suitable mechanism(s) to incentivize the parties to adopt greener and carbon neutral designs / technologies / procedures in line with the spirit of this policy.



5 Implementation plan

All Land Ports shall have an action plan for developing a monitoring system in reference to environmental performance indicators listed in Annexures.

With reference to the EPIs, all Land Ports shall make suitable efforts to develop the real time Continuous Ambient Air Quality Monitoring Stations (CAAQMS) as per applicable MoEF&CC/CPCB guidelines with digital dashboard and, the same to be calibrated with the approved lab showing the real time value with reference to the permissible limit.

A baseline study shall be prepared for all Land Ports, within a period of 2 months from the date of launch of the policy, by engaging an expert agency which uses internationally/nationally accepted protocols/methods. Further, LPAI shall develop an Action plan in reference to the same and in line with the targets within a period of 4 months from the date of launch of the policy.

Additionally, a set of standard operating procedures shall be developed for each processes having a significant impact on the sustainability parameters. This shall be developed for both operational and upcoming land ports.

LPAI shall enhance sustainability practices within land ports through a comprehensive scoring mechanism which shall commence from FY 2026. This initiative evaluates ports based on key areas such as waste management, energy consumption, green cover, etc. considering the overall environmental impact. Quantification of these sustainability efforts shall be done to promote innovative operational practices, ensure transparency in performance assessment, and foster a culture of environmental stewardship across all land ports.

Under this mechanism, each land port shall be assessed annually, with scores determining their rank and recognition for exceptional sustainability commitment. Land Ports are to undergo an assessment based on predefined criteria, with each category assigned specific point values. The total score will determine their rank, with additional points awarded for best practices, such as recycling facilities, energy-efficient technologies, and green building certifications.

The implementation of such a sustainability ranking will foster a competitive environment among land ports, motivating them to enhance their environmental performance. Ports that achieve high scores shall receive formal recognition via certificates and awards, promoting their commitment to sustainability and attracting potential partnerships and investments. The rankings may also be provided based on categorization of the land ports based on passenger and cargo movements. The draft for a comprehensive scoring mechanism for land ports across various domains of sustainability is provided in Annexure 2. The parameters and their respective weightage mentioned in the scoring framework is indicative and shall be revised based on the requirements.

6 Review of Policy guidelines:

Land Ports Authority of India may renew / amend / modify the provisions of these guidelines from time to time.

LPAI shall make all efforts to adopt the Green Reporting Initiative (GRI), a global standard for reporting to communicate and demonstrate accountability for their impacts on the environment, economy and people.





Annexure 1: Environmental Performance Indicators

Following are the EPI groups and their respective parameters.

Air
SO2 (Sulphur dioxide)
NO2(Nitrogen dioxide)
PM10 (Particulate Matter-10)
PM2.5 (Particulate Matter-10
O3 (Ozone)
Pb(Lead)
CO(Carbon Mono Oxide)
NH3(Ammonia)
Benzene(C6H6)
Benzo(a) pyrine (BaP)
Arsenic(As)
Nickel(Ni)
Water
Ph (Alkalinity)
Dissolved oxygen
Fecal Coliform
Biochemical Oxygen Demand (BOD)
Oxygen Demand (COD)
Hg (Mercury)
Pb(Lead)
temperature
Total Dissolved Solids (TDS)
Conductivity
Nitrate
Turbidity
Salinity
Noise Level
LAeq (Continuous Noise Level for a particular period)
LAmax(Maximum Noise Level)
Noise Level DG set
Effluent Discharge (STP)
Ph
COD
BOD
Total Suspended Solids
Nitrate
Ammonia
Fecal Coliform

Annexure 2: Criteria for green rating and scoring of Land Ports

Table: Scoring for Green Cover

Green Cover		
Particulars	Scoring Criteria	Points Allotted
Percentage of Green Cover relative to Land	33% or more	5
port area (%)	15% to 33%	3
	Less than 15%	Nil
Percentage of local plants coverage in green	50% or more	5
area (%)	Less than 50%	Nil
Additional Remarks		
Number of Trees in the Port Area		
Number of Potted plants in the Port Area		
	Max. Allocation	10 Points

Table: Scoring for Energy Consumption

Energy Consumption				
Particulars	Scoring Criteria	Points Allotted		
Total Energy Consumption (kWh per tonne of cargo)				
Percentage of reduction in energy consumption	20% or more	10		
per tonne of cargo (compared to 2023 levels)	10% to 20%	7		
	5% to 10%	3		
	Below 5%	Nil		
Remarks on Best Practices in Energy consumption				
Status of power meter for electricity reading				
Category wise status of energy efficient appliances installed				
	Max. Allocation	10 Points		

Table: Scoring for emissions from vehicle and equipment

Vehicles and Equipment

Particulars		Scoring Criteria	Points Allotted
GHG emissions (per ton of cargo)	Trucks		
	Internal vehicles		
	Cargo handling equipment		

Percentage of electrification of Port vehicles/	90% or more	10
Cargo handling equipment	50% to 90%	7
	20% to 50%	3
	Below 20%	Nil
Percentage of power back up through BESS	90% or more	10
	50-90%	5
	20 -50%	2
	Below 20%	Nil
Percentage share of (Carrying EXIM cargo)	20% or more	20
electric trucks of total truck volume (volumes of truck to / from Indian hinterland only to be considered)	12 -20%	15
	5-12%	10
	Less than 5%	Nil
Number of fast charging (> 50 Kw/gun)	2 or more	5
infrastructure per 10 EXIM Electric trucks	1 - 2	3
	At least one	1
Average truck idling time		
	Max. Allocation	45 Points

Table: Scoring for Waste management

Waste Management				
Particulars		Scoring Criteria	Points Allotted	
Waste generated at the land port		0 to 0.1 tonnes	4	
(Annual Qty per tonne of cargo)		0.1 to 0.3 tonnes	3	
		0.3 to 0.5 tonnes	1	
		0.5 or more	Nil	
Category Qty per tonne of cargo	Wet waste			
	Dry (non- recyclable) waste			
	Recyclable waste			
Best Practices in waste manag	ement			
Adequate provision of dustbins at the	No. per 200	More than 1	1	
land port	square meter of Port area	1	0.5	
		Less than 1	Nil	

On-site waste segregation facility	No. of	3	1
	segregation categories	2	0.5
		NA	Nil
Percentage of Recyclable waste recycled		80% or more	2
		50% to 80%	1
		Less than 50%	Nil
Status on Waste incineration facility at land port			

Max. Allocation	8 Points

Table: Scoring for water management

Water Management				
Particulars	Scoring Criteria	Points Allotted		
Fresh water consumption (in KLD)				
Percentage of reduction in freshwater	20% or more	3		
consumption (compared to 2023 levels)	10% to 20%	2		
	5% to 10%	1		
	Below 5%	Nil		
Qty of wastewater (in KLD)				
Percentage of treated wastewater (%)				
Percentage of Wastewater recycled and reused	80% or more	2		
(%)	50 to 80%	1		
	Below 50%	Nil		
Best Practices in water management				
Status of Wastewater treatment facility & Capacity				
Status of Rainwater harvesting/ Floodwater management at land port				
	Max. Allocation	5 Points		

Table: Scoring for Renewable energy adoption

Renewable Energy		
Particulars	Scoring Criteria	Points Allotted
Percentage of Total Energy sourced from	60% or more	10
Renewables	40% to 60%	5
	20% to 40%	3

	Below 20%	Nil
Solar panel efficiency status		
	Max. Allocation	10 Points

Table: Scoring for Port Development

Port Development					
Particulars	Scoring Criteria	Points Allotted			
GRIHA Rating	5	7			
	4	5			
	3	3			
	Max. Allocation	7 Points			

The maximum Cumulative Score is 100 and the ports shall be evaluated based on their accomplishments under each parameter.

sustainability.					
Priority groups (Emission Reduction)	Power	Transport	Water, wastewater and SWM	Infrastructure development	
Indicative project areas	Renewable energy, BESS power backup, Energy efficient appliances, energy management systems	Transhipment trucks and Charging infrastructure	Rainwater harvesting, Water Treatment Plant installation, Dry waste storage and segregation, wet waste composting	GRIHA certifications, CO2 sequestration by plantation, sustainable procurement	
Timeline	RE and BESS 6 - 12 months	6 Months	Varied: 2 months - 12 months	Project dependent CO2 Sequestration over 15 yrs.	

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