Guidelines for the Certification System for Decarbonization Efforts at Port Terminals

2nd Edition

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Ports and Harbours Bureau,

Ministry of Land, Infrastructure, Transport and Tourism

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Introduction. Positioning of Guidelines

These guidelines are designed to offer a comprehensive explanation of the application procedures, examination procedures, and related steps, for the certification system for decarbonization efforts at port terminals (hereinafter referred to as 'this certification system'), established by the Ports and Harbours Bureau of the Ministry of Land, Infrastructure, Transport and Tourism, based on the 'Outline of the Certification System for Decarbonization Efforts at Port Terminals' (hereinafter referred to as 'this outline').

Outline

(Purpose) Article 1. This outline stipulates the necessary matters to ensure the proper operation and dissemination of the "Certification system for decarbonization efforts at port terminals" (hereinafter referred to as 'this certification system'), established by the Ports and Harbours Bureau of the Ministry of Land, Infrastructure, Transport and Tourism.

[Explanation]

The Ports and Harbours Bureau of the Ministry of Land, Infrastructure, Transport and Tourism who has established this certification stipulates the important matters in the Outline to ensure the effective operation and communication of this certification system. These guidelines aim to provide a clear explanation of the procedures for application procedures, examination procedures, and related processes, for practitioners and other stakeholders.

1． Significance of this Certification System in the Formation of Carbon Neutral Port (CNP)

Outline

(Definition of Terms)

Article 2 The definition of terms used in this outline are as follows:

(1) "Certification system for decarbonization efforts at port terminals" refers to a system that objectively evaluates decarbonization efforts at port terminals to promote their implementation.

(2) "CNP Certification (Container Terminal)" refers to the part of the certification system that applies specifically to container terminals.

(Significance of this Certification System)

Article 3 The purposes and significance of this certification system are as follows.

(1) The need to decarbonize port terminals

With the global trend to incorporate decarbonization into business management, domestic and international companies are working to decarbonize their supply chains, and shipping lines and logistics companies need to respond to these shippers' needs. Port terminals, which are the hubs of the maritime supply chain, are also required to respond to these needs by enhancing port functions in consideration of decarbonization (e.g., decarbonization of port facilities). In light of these circumstances, the Ministry of Land, Infrastructure, Transport and Tourism is promoting the development of Carbon Neutral Port (CNP), whereby port functions are enhanced in consideration of decarbonization, under government targets such as 'carbon neutrality by 2050'.

(2) The purpose of this certification system

This certification system aims to promote decarbonization efforts at terminals for the development of CNP by providing transparency and objective evaluation of such efforts. Through decarbonization efforts at port terminals, the system aims to promote the decarbonization of the supply chain as required by shippers and other stakeholders, support the decarbonization efforts of various businesses using the terminals, and contribute to the reduction of carbon emissions from maritime transport by vessels entering and leaving the terminals, as well as hinterland transport by trucks.

(3) The significance of this certification system

① By providing evaluation items and indicators for terminal decarbonization, the path to terminal decarbonization will become more concrete, making it easier to advance with efforts.

② Advanced decarbonization at port terminals will contribute to decarbonization initiatives by shippers, shipping lines and logistics companies, including those using terminals in the supply chain, as well as those in the hinterland transport sector.

③ By promoting the objective evaluation results of decarbonization efforts at port terminals to shippers, shipping lines, port users, related businesses, financial institutions, and society as a whole, the system contribute to form competitive ports chosen by shippers and shipping lines.

④ Contribute to the realization of the 'Green Shipping Corridor,' which promotes the decarbonization of ports and shipping at the global level, led by Japan, by disseminating and expanding the decarbonization of port terminals overseas, using this certification system as an evaluation axis.

[Explanation]

The Ministry of Land, Infrastructure, Transport and Tourism is promoting the development of CNP under government goals, such as "carbon neutrality by 2050," with the aim of enhancing port functions with a focus on decarbonization and developing environments for handling hydrogen, ammonia, etc. This certification system aims to promote decarbonization efforts at terminals for the development of CNP by providing transparency and objective evaluation of such efforts. As the movement to incorporate decarbonization into corporate management progresses globally, domestic and international companies are working to decarbonize their supply chains. Shipping lines and logistics companies must adapt to these evolving shipper needs. Port terminals, as key hubs in the maritime supply chain, are also required to enhance their port functions by implementing decarbonization measures (e.g., decarbonizing port facilities), to meet these demands.

Promoting decarbonization at port terminals is important for the following reasons:

- Decarbonizing port terminals, which are essential nodes in the maritime supply chain, is crucial for achieving overall supply chain decarbonization, as demanded by shippers.
- Decarbonization efforts at port terminals, which are publicly accessible and used by shipping lines, terminal operators, and truck operators, can promote decarbonization efforts among these businesses.
- Establishing facilities to supply low-carbon and decarbonized fuels to ships at ports can contribute to the decarbonization of maritime transport, which accounts for a significant share of CO2 emissions in the supply chain.

A certification system that objectively evaluates the decarbonization efforts at port terminals is considered an effective approach in promoting decarbonization in these facilities. It enables port terminals to appeal their own decarbonization efforts as objectively evaluated results, which can incentivize further initiatives.

The following are potential targets for appealing the objective evaluation results:

- Port users (shippers, shipping lines, logistics companies): These stakeholders are likely

interested in initiatives that support supply chain decarbonization.

- Financial institutions (investors, banks): In the context of ESG finance, the objective evaluation of decarbonization efforts at port terminals provides valuable information that can influence investment and financing decisions for companies involved with these terminals.
- Society as a whole: Increasing focus in Corporate Social Responsibility (CSR) and Sustainable Development Goals (SDGs) makes the decarbonization efforts at port terminals ever more important. (If these efforts can be promoted, it can lead to increased corporate value, such as enhanced trust, improved corporate image, and strengthened the brand.)

Furthermore, The following are the benefits of certification:

- It is possible to appeal the results of their own decarbonization efforts as an objective evaluation by The Ministry of Land, Infrastructure, Transport and Tourism.
- Through the evaluation of terminals, momentum can be created for the development of CNP in the port as a whole, and synergistic effects can be expected, such as the enhancement of the brand power of companies and others involved in CNP and of the port itself.
- The certification system will also contribute to the acquisition of international recognition.

Based on the above perspectives, this certification system is established as contributing to form chosen and competitive ports by shippers and shipping lines. It aims to benefit both entities receiving certification (port terminals) and those utilizing the certification results (shippers, shipping lines, investors, and banks) while, engaging dissemination of this certification utilizing various international cooperation frameworks.

Furthermore, promoting the shift from fossil fuels to non-fossil fuels and electricity through decarbonization efforts not only serves as a mitigation measure for climate change but also helps prevent air pollution by reducing SOx, NOx, and diesel particulate matter (DPM) emissions at the ports, thereby improving the business environment at port terminals.

2． Framework of this Certification System Establishment Outline

2．1　Establisher

Outline

(Establisher, Certification Targets, and Certification Process) Article 4　The establisher, certification targets, applicants, and operational methods of this certification system are as follows: (1) Establisher: This certification system is established by the Ports and Harbours Bureau of the Ministry of Land, Infrastructure, Transport and Tourism.

【Explanation】

This certification system is established by the Ports and Harbours Bureau of the Ministry of Land, Infrastructure, Transport and Tourism. The bureau also be responsible for the administration of the system, including the evaluation process and the issuance of certifications.

2．2　Certification Targets

Outline

（2）Certification Targets: The targets of certification under this certification system are port terminals. Initially, container terminals will be the primary focus.

【Explanation】

Ports have terminals with different characteristics, such as container, bulk, ferry/ Roll-on/Roll-off (RORO), and cruise terminals (Figure 1), but initially this certification will focus on container terminals for the following main reasons:

- As various companies (shippers) and logistics companies (e.g., shipping lines) decarbonize their supply chains, container transport, a key component of the global supply chain, requires decarbonization efforts to maintain international competitiveness.
- Container terminals have a high concentration of cargo handling and transport machinery, as well as electrical and communication equipment, all of which are major energy consumers targeted for decarbonization. Decarbonization efforts, such as the introduction of low-carbon cargo handling machinery and reservation systems to mitigate gate congestion, are already being implemented.
- Container transport follows the ISO standards for size and weight, and containers are handled at ports worldwide, making it easier to standardize the evaluation of

decarbonization efforts compared with bulk terminals, where handling conditions vary by commodity.

Container Terminal	Main Facility	Bulk Terminal	Main Facility
	● Civil Engineering Facility (Quay/Pier) ● Cargo Handling Equipment (STS crane/RTG/Top lifter/ Forklift/Yard tractor, etc.) ● Electrical Equipment (Reefer plug/Gate/Lighting/ Surveillance cameras/Fence sensors, etc.) ● Building Facility (Administration building /Extra-high voltage power substation/Maintenance shop, etc.)		● Civil Engineering Facility (Quay/Pier) ● Cargo Handling Equipment (Unloader/Loading arm etc.) ● Electrical Equipment (Lighting/Surveillance cameras/Fence sensors, etc.)
Ferry/ RORO Terminal	**Main Facility**	**Passenger Ship/ Cruise Terminal**	**Main Facility**
	● Civil Engineering Facility (Quay/Pier) ● Cargo Handling Equipment (Rampway etc.) ● Electrical Equipment (Lighting/Surveillance cameras/Fence sensors, etc.)		● Civil Engineering Facility (Quay/Pier) ● Civil Engineering Facility (Boarding bridge, etc.) ● Electrical Equipment (Lighting/Surveillance cameras/Fence sensors, etc.) ● Building Facility (Passenger terminal etc.)

Figure 1. Types of Port Terminal and Main Facilities

2．3　Certification Bodies, Applicants, and Operation Methods

Outline

(3) Applicants: Applications for this certification system will be submitted on a terminal-unit basis. The applicants will be port management bodies for public terminals operated by port management bodies and lessees or terminal operators for public terminals operated by private businesses. If there are terminal operators or owners of facilities subject to evaluation other than the applicant, the application must be made with their consent.

(4) Operation Methods: Applicants wishing to obtain certification under this system must apply to the establisher, which also functions as the certification body in accordance with this outline. The certification body will conduct an evaluation and grant certification if the application meets the certification requirements. The certification validity period is three years.

【Explanation】

Applicants will submit their applications to the establishing body which will conduct the evaluation.

Certification applications will be submitted on a terminal-unit basis, provided that the terminal is operated as an integrated entity. Applicants will be port management bodies for public

terminals operated by port management bodies and lessees or terminal operators for public terminals operated by private businesses. If there are terminal operators or facility owners other than the applicant who are subject to evaluation, the application must be submitted with their consent.

For certification applications, the certification body will assess compliance with the criteria outlined in this document by reviewing the application documents and conducting hearings as necessary, and will grant certification based on the examination results.

- The certification shall be revoked if the application is found to not meet the requirements.
- For detailed application procedures, refer to “4. Procedures Related to this Certification System.”

3． Evaluation Items for Certification

3．1　Evaluation Items for Certification

Outline

(Evaluation Items for Certification)
Article 5
(1) This certification system will conduct multi-level evaluations based on the implementation status of the following efforts, with the ultimate goal of achieving decarbonization at the terminals:
　① Decarbonization efforts related to cargo handling at terminals.
　② Efforts contributing to the decarbonization of vessels and vehicles using the terminals.
(2) The specific evaluation items and indicators of this certification system are shown in Appendix 1 and Appendix 2. The performance requirements for decarbonization efforts evaluated under this certification system are detailed in Appendix 3.
(3) In Appendix 1 and Appendix 2, evaluation indicators are set for each evaluation item, and the efforts required to obtain certification at each level (from Level 1 to Level 5) are defined as “requirements.” Efforts other than the requirements, which are encouraged under this certification system, are defined as “recommendations.”

【Explanation】
The efforts to be evaluated for this certification system are as follows:

Main Efforts Related to Article 5, Paragraph (1) ①
The evaluation will focus on efforts related to cargo handling at terminals, particularly targeting major sources of CO2 emissions. Specifically, the evaluation items will include cargo handling equipment and various facilities within the terminal as shown in Table 1.

Table 1. Major Facilities Subject to Evaluation at Container Terminals

● Considering the share of CO2 emissions from container terminals, the evaluation will focus on decarbonization efforts for cargo-handling equipment and reefer facilities within the terminal (highlighted in yellow in the table below).

（1）The evaluation will target GHG categories Scope 1 and Scope 2, related to fuel consumption and electricity use within the terminal, excluding Scope 3 (highlighted in gray in the table below).

● The evaluation will not include hinterland transport, maritime transport, or logistics facilities outside the container terminal (highlighted in gray in the table below)

（2）Efforts contributing to the decarbonization of vessels and vehicles using the terminal will be evaluated (highlighted in blue in the table below).

Category	Classification	Primary Machines/Facilities as CO2 Emission Sources		Operators, etc.	GHG Scope
（1）Terminal Facilities and Equipment	Cargo Handling Equipment	Shio to shore handling	STS Cranes (Container Cranes)	Terminal Lessees / Terminal Operators / Stevedores / Port Authorities, etc.	Scope 1/ Scope 2
		In the Yard	Transfer Cranes, Straddle Carriers, Reach Stackers, Forklifts, Yard Tracks, AGVs, etc.		
	Various Terminal Facilities	Reefer Equipment			
		Yard Lighting			
		Administration Buildings, etc.			
	Others (Excluded Items)	Purchased Products/Services, Capital Goods, Fuel and Energy-related Activities not Included in Terminal Facilities or Cargo Handling, Transport/Distribution (Upstream), Waste from Business Sites, Employee Travel, Employee Commuting		Terminal Lessees / Terminal Operators/ Port Transport Operators / Port Authorities, etc.	Scope 3
（2）Vessels and Vehicles Using Terminals	Vessels	Vessels at Berth	CO2 Emissions from Auxiliary Engines at Berth	Shipping Companies (Container Ships)	Scope 3
		Sailing Vessels (Inside/Outside Ports)	CO2 Emissions During Sailing (Inside/Outside Ports)	Shipping Companies (Container Ships)	
	Vehicles	Trailers/Trucks	Traffic Congestion at Gates/Waiting Within Yard	Port Transport Companies / Land Transport Companies	
		Trailers/Trucks	Container Transport to/from Coastal Areas and Hinterland Production/Consumption Areas	Port Transport Companies / Land Transport Companies	
Others （Excluded Items）	Logistics Facilities	Warehouses, Logistics Centers, etc.	Cold Storage, Ambient Storage, Logistics Centers	Warehouses	Scope 3
	Consignor Companies in Manufacturing and Related Industries	Container Cargo User Companies	Manufacturing Industries, Such as Automotive and Electronics, Retail Stores, etc.	Private Companies	

Main Initiatives Related to Article 5, Paragraph (1) ②

Since emissions from vessels and vehicles account for a large share of total GHG emissions in the supply chain, the focus will be on evaluating initiatives that contribute to the decarbonization of these emissions at the terminal.

Specifically, the evaluation items will include the introduction of onshore power supply equipment for vessels using the terminal, the introduction of functions for supplying low or zero carbon fuels, such as LNG bunkering*[1], and the implementation of incentives such as port fee reductions for ships using low or zero carbon fuels.

Similarly, the evaluation items will include measures to reduce gate congestion for vehicles using the terminal, such as the introduction of reservation systems, and the implementation of incentives such as priority gates and lanes for low-carbon vehicles.

*[1]: LNG bunkering and port fee reductions may be initiatives at the port level rather than the

port terminal level, but they will be evaluated if these services are available at the target terminal due to their significant contribution to the decarbonization of the entire supply chain.

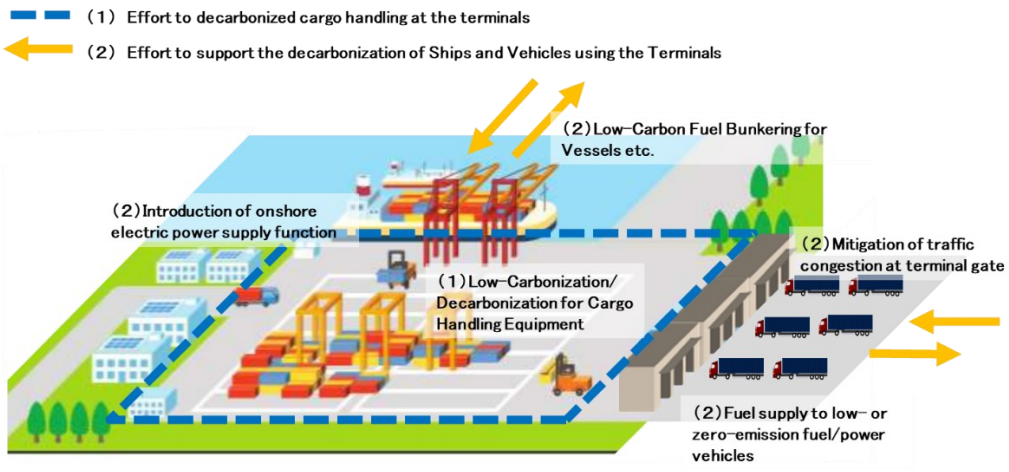


Figure 2. Evaluation Framework Image

Although the electrification of equipment within the terminal is progressing, achieving zero emissions in electricity and heat distribution still requires the use of electricity derived from renewable energy. Therefore, the ultimate goal is to achieve carbon neutrality in electricity consumption. Similarly, for equipment that relies on fuel as a power source, the ultimate goal is to achieve carbon neutrality of fuel used for the equipment.

To achieve this goal, multi-level evaluations (certification levels of Levels 1 to 5) will be conducted on the introduction status of decarbonized equipment, such as cargo-handling equipment and lighting, at container terminals.

The evaluation will consider both hard measures, such as the introduction of low or zero emission cargo-handling equipment, and soft measures, such as the introduction of container pickup and delivery reservation systems. In this certification system, the evaluation shall be based on the aim of carbon neutrality through specific efforts at the terminal, with carbon offset efforts evaluated as supplementary.

Efforts to achieve decarbonization of cargo handling equipment and facilities are diverse, and the CO2 reduction effects vary. However, this certification system evaluates the efforts that led to the decarbonization of ports. Therefore, the performance requirements for low or zero emission cargo handling equipment and facilities will be evaluated based on the type of equipment and facilities introduced. In addition, efforts expected to reduce CO2 emissions through energy savings (e.g., electricity consumption and temperature reduction), efficiency improvements (e.g., shortening work time), and incentives (e.g., preferential measures to promote efforts) will also be evaluated.

Among the evaluation items, the efforts necessary to obtain certification at each level, from Level 1 to Level 5, are defined as “requirements.” If all the “requirements” needed at each level are met, certification at a given level will be granted.

Efforts other than the “required” requirements that are desirable under this certification system are defined as “recommendations.” If these “recommendations” are met, a “+” will be added to the certification level according to the number of items met, and it will be included in the certification document.

For example, if all the “requirements” for Level 4 are met and two “recommendations” are achieved, certification at “Level 4++” will be granted and the content of “recommendations” will be included in the certification.

Annex 1. Evaluation Items（1／2）

✔: Requirement　＋：Recommendation

Category		Evaluation Items			Evaluation Criteria	Certification Level					Remarks
		Major Items	Sub-items			Level 1	Level 2	Level 3	Level 4	Level 5	
(1) Decarbonization efforts related to cargo handling at terminals	Common	Commitment	・Plan toward decarbonization of the container terminal ・CO2 emissions per unit of cargo handling at the terminal		・Developing a feasible plan toward decarbonizing the container terminal ・Calculation of CO2 emissions per unit of cargo handling (e.g., TEU) at the terminal	✔	✔	✔	✔	✔	
	At the terminal	Cargo handling equipment	Ship to shore handling	STS	Introduction of STS with inverter system for energy saving, etc.	–	✔ 10% or more	✔ 50% or more	✔ 80% or more	✓ 100%	・If CO2 emissions are reduced through the introduction of renewable energy power or decarbonized fuel, it will also be evaluated. ・The number under "✓" indicates the introduction rate based on the number of units. ・For terminals using both transfer cranes and straddle carriers, the combined number of units will be evaluated. ・For terminal tractors (including AGVs), future evaluation criteria will be considered based on the status of low-carbon and decarbonization. ・For the cargo-handling equipment other than STS cranes, transfer cranes, or straddle carriers, future evaluation criteria will be considered based on the status of low-carbon and decarbonization.
			In the yard	RTG, RMG	Introduce low- or zero-emission equipment, such as hybrid and electric machinery, or fuel savings through the introduction of automation	–	✔ 10% or more	✔ 50% or more	✔ 80% or more	✓ 100%	
				Straddle carrier	Introduce low- or zero-emission equipment, such as hybrid and electric machinery	–	✔ 10% or more	✔ 50% or more	✔ 80% or more	✓ 100%	
				Yard truck, AGV, and other cargo-handling equipment	Introduce low- or zero-emission equipment, such as hybrid and electric machinery, or fuel savings through the introduction of automation	＋	＋	＋	＋	＋	
		Facilities in the yard	Yard lighting		Introduce LED lighting	–	✔ 10% or more	✔ 50% or more	✔ 80% or more	✓ 100%	
			Reefer facility and other facilities		Energy saving measures, such as limiting temperature rises through low-reflective heat paving, installing roofs, etc.	＋	＋	＋	＋	＋	

Annex 2. Evaluation Items（2／2）

Category		Evaluation Items		Evaluation Criteria	Certification Level					Remarks
		Major Items	Sub-items		Level 1	Level 2	Level 3	Level 4	Level 5	
(2) Efforts contributing to the decarbonization of vessels and vehicles	Vessels	Decarbonizing fuel or power of vessels	Vessels at berth	Reduce CO2 emissions by onshore power supply, etc.	+	+	+	+	+	・If onboard power generation using low-carbon and decarbonized fuel becomes widespread, the evaluation criteria will be reconsidered.
			Low- or zero-emission fuel bunkering	Introduce low- or zero-emission fuel bunkering for vessels moored at the terminal, such as LNG, etc.	+	+	+	+	+	・If bunkering services from other ports can be received at the terminal, they will also be evaluated.
		Promote low- or zero-emission fuel vessels	Port incentives for environmentally friendly ships	Introduce port incentives for low- or zero-emission vessels or impose penalties for fossil fuel vessels	–	–	–	✔	✔	・Initiatives at the terminal or port where the terminal is located will be evaluated.
	Vehicle	Efficiency	Trailer congestion in front of the gate, stagnation in the yard	Introduce gate reservation system for the efficient collection and delivery of cargo, alleviate traffic congestion by extending gate operating hours, etc.	–	–	–	✔	✔	
		Promote low- or zero-emission fuel/power vehicles	Incentives for large commercial EVs, FCVs, etc.	Introduce incentives for EVs or FCVs, such as preferential gate lanes, or impose penalties for vehicles powered by fossil fuels	+	+	+	+	+	・Future evaluation criteria will be considered based on the commercialization status of low-carbon and decarbonized fuel trucks.
（3）Others		Decarbonization efforts other than (1) and (2) above		Introduce low-carbon and decarbonized fuels and electricity, introduce environmental friendly tugboats, such as LNG or EV tugboats, implement technologies to reduce emissions, such as urea, eliminat the offshore waiting, utilize inland ports, promote the blue carbon and carbon offsetting measures	+	+	+	+	+	・Recommended items for all certification levels. ・Specific initiatives not included in the evaluation items of categories (1) and (2) should be detailed in the application.

Annex 3 . Setting Performance Requirements for Decarbonization Initiatives in this Certification System

○ Initiatives for the decarbonization of cargo-handling equipment and facilities are diverse, and the CO2 reduction effects vary. However, this certification system evaluates efforts that lead to ports decarbonization; therefore, the performance requirements will be evaluated based on the type of equipment and facilities introduced.

○ Examples of low-carbon or decarbonization types of equipment to be evaluated are as follows. Types not listed below will also be considered if they contribute to decarbonization of the port.

Target Equipment/Facilities	Conventional Approach	Examples of Low-carbon or Decarbonization Approaches
STS Crane	Thyristor Control System	Inverter Control System
Transfer Crane	Diesel-Electric System	Hybrid System
		Hydrogen Fuel Cell System
		Hydrogen Engine System
		Electric System
Straddle Carrier	Diesel-Electric System	Hybrid System
		Fuel Cell System
		Electric (Battery) System
Yard Track	Diesel Engine System	Hybrid System
		Fuel Cell System
		Electric (Battery) System
Forklift	Diesel Engine System	Hybrid System
		Fuel Cell System
		Electric (Battery) System
Reach Stacker	Diesel Engine System	Hybrid System
		Fuel Cell System
		Electric (Battery) System
Top Lifter	Diesel Engine System	Hybrid System
		Fuel Cell System
		Electric (Battery) System
AGV	Diesel-Electric System	Electric (Battery) System
Yard Lighting	High-Pressure Sodium Lamp	LED Lamp
Tugboat	Heavy Fuel Oil System	LNG Fuel System
		Ammonia Fuel System
		Hydrogen Fuel System
		Electric Propulsion System

Table 2. Examples of Certification Level Evaluation

✔: Requirement ＋: Recommendation

Category		Evaluation Items			Evaluation Criteria	Content of the effort to be evaluated	Certification Level					Remarks
		Major Items	Sub-items				Level 1	Level 2	Level 3	Level 4	Level 5	
(1) Decarbonization efforts related to cargo handling at terminals	Common	Commitment	・Plan toward decarbonization of the container terminal ・CO2 emissions per unit of cargo handling at		・Developing a feasible plan toward decarbonizing the container terminal ・Calculation of CO2 emissions per unit of cargo handling (e.g., TEU)	・Port decarbonization promotion plan (Formulated in xx) ・Calculation of CO2 emission per unit	✔	✔	✔	✔	✔	
	At the terminal	Cargo handling equipment	Ship to shore handling	STS	Introduction of STS with inverter system for energy saving, etc.	60%	–	✔ 10% or more	✔ 50% or more	✔ 80% or more	✔ 100%	・If CO2 emissions are reduced through the introduction of renewable energy power or decarbonized fuel, it will also be evaluated. ・The number under "✓" indicates the introduction rate based on the number of units. ・For terminals using both transfer cranes and straddle carriers, the combined number of units will be evaluated. ・For terminal tractors (including AGVs), future evaluation criteria will be considered based on the status of low-carbon and decarbonization. ・For the cargo-handling equipment other than STS cranes, transfer cranes, or straddle carriers, future evaluation criteria will be considered based on the status of low-carbon and decarbonization.
			In the yard	RTG, RMG	Introduce low- or zero-emission equipment, such as hybrid and electric machinery, or fuel savings through the introduction of automation	60%	–	✔ 10% or more	✔ 50% or more	✔ 80% or more	✔ 100%	
				Straddle carrier	Introduce low- or zero-emission equipment, such as hybrid and electric machinery	Not applicable	–	✔ 10% or more	✔ 50% or more	✔ 80% or more	✔ 100%	
				Yard truck, AGV, and other cargo-handling equipment	Introduce low- or zero-emission equipment, such as hybrid and electric machinery, or fuel savings through the introduction of automation	Unsupported	+	+	+	+	+	
		Facilities in the yard	Yard lighting		Introduce LED lighting	100%	–	✔ 10% or more	✔ 50% or more	✔ 80% or more	✔ 100%	
			Reefer facility and other facilities		Energy saving measures, such as limiting temperature rises through low-reflective heat paving, installing roofs, etc.	・Introduction of LED to Administration building ・Installation of roofs on Reefer facilities	+	+	+	+	+	
(2) Efforts contributing to the decarbonization of vessels and vehicles	Vessels	Decarbonizing fuel or power of vessels	Vessels at berth		Reduce CO2 emissions by onshore power supply, etc.	Unsupported	+	+	+	+	+	・If onboard power generation using low-carbon and decarbonized fuel becomes widespread, the evaluation criteria will be reconsidered.
			Low- or zero-emission fuel bunkering		Introduce low- or zero-emission fuel bunkering for vessels moored at the terminal, such as LNG, etc.	Unsupported	+	+	+	+	+	・Bunkering services from other ports can be received at the terminal, they will also be evaluated.
		Promote low- or zero-emission fuel vessels	Port incentives for environmentally friendly ships		Introduce port incentives for low- or zero-emission vessels or impose penalties for fossil fuel vessels	Unsupported	–	–	–	✔	✔	・Initiatives at the terminal or port where the terminal is located will be evaluated.
	Vehicle	Efficiency	Trailer congestion in front of the gate, stagnation in the yard		Introduce gate reservation system for the efficient collection and delivery of cargo, alleviate traffic congestion by extending gate operating hours, etc.	Extended Gate Operating Hours	–	–	–	✔	✔	
		Promote low- or zero-emission fuel/power vehicles	Incentives for large commercial EVs, FCVs, etc.		Introduce incentives for EVs or FCVs, such as preferential gate lanes, or impose penalties for vehicles powered by fossil fuels	Unsupported	+	+	+	+	+	・Future evaluation criteria will be considered based on the commercialization status of low-carbon and decarbonized fuel trucks.
（3）Others		Decarbonization efforts other than (1) and (2) above			Introduce low-carbon and decarbonized fuels and electricity, introduce environmental friendly tugboats, such as LNG or EV tugboats, implement technologies to reduce emissions, such as urea, eliminat the offshore waiting, utilize inland ports, promote the blue carbon and carbon offsetting measures	・Introduction of EV tugboats ・Creation of Carbon ecosystem on container terminal seawalls	+	+	+	+	+	・Recommended items for all certification levels. ・Specific initiatives not included in the evaluation items of categories (1) and (2) should be detailed in the application.

(Explanation)

- The requirements for Certification Level 3 are all met. However, some evaluation items do not meet the requirements for Certification Level 4 or higher (e.g., STS, transfer cranes, port entry incentives). Additionally, two "recommendations" (the efforts decarbonization of yard facilities and the efforts decarbonization except (1) and (2)) have been implemented. In this case, the certification level will be Level 3++.

３．２　Requirements for Each Evaluation Item

The evaluation items in Table 1 and Table 2 of the Outline are explained below, along with the concepts of the evaluation indicators.

【About Annex 1】

(1) Plan for Decarbonized of Terminals

The items listed 1 and 2 below is requirement applies to all certification levels.

① Port decarbonization promotion plan based on the provisions of Article 50-2, Paragraph 1 of the Ports and Harbor Act must be prepared at the port where the applicant terminal is located.

② For the applied terminals, the plan shall be prepared including the following:
If the following is included in the port decarbonization promotion plan shown in ①, it shall not be required to prepare another plan.

- The plan for decarbonizing the applied terminal (it shall be a feasible plan based on the agreement of the actors involved)
- The targets (i.e., Key Performance Indicators (KPIs) and Sustainability Performance Targets (SPTs)) for decarbonizing the applied terminal.
- The implementation plan of monitoring for achieving the targets of the applied terminal.

(About Targets for Decarbonization)

The decarbonization targets for the terminal should include the establishment of KPIs focused on the “low-carbon and decarbonization efforts of the terminal”. In addition, measurable SPTs should be defined along with target dates for each KPI, as shown in Table 3.

Example 1: Setting CO2 emissions per TEU of handled containers

- KPI: Reduction of CO2 emissions per TEU of handled containers at the terminal.
- SPT: Reduce CO2 emissions to ○kg CO2/TEU by ○year (○% reduction compared with ○year).

Example 2: Setting the introduction rate of low or zero emission cargo handling equipment.

- KPI: Increase the introduction rate of low or zero emission cargo handling equipment at the terminal.
- SPT: Increase the introduction rate of low or zero cargo handling equipment to ○% by ○year.

Table 3． Examples of Setting Targets (KPIs and SPTs)

KPI (Key Performance Indicator)		Around 2028 SPT	Around 2033 SPT
KPI 1	Reduction of CO2 emissions per unit of cargo handling	○○kg CO2/TEU (○% reduction compared with 2013)	○○kg CO2/TEU (○% reduction compared with 2013)
KPI 2	Introduction of near-zero-emission RTGs	50% introduction rate	80% introduction rate
KPI 3	LED conversion of yard lighting	50% introduction rate	100% introduction rate
KPI 4	LED conversion of lighting in the management building	80% introduction rate	100% introduction rate

(About Monitoring Implementation Policy)

Monitoring at the terminal will involve assessing the status of energy-saving and decarbonization efforts to achieve the above targets, comparing them with the set benchmarks, and incorporating the implementation policy into the plan. Monitoring should be conducted within one year of obtaining certification under this system and at least once a year thereafter. The monitoring implementation policy should specify the monitoring items, frequency, timing, and the applicant's monitoring implementation system.

(2) CO2 Emissions per Unit

CO2 emissions related to cargo handling at the applicant terminal (Scope 1 and Scope 2) should be calculated, and the CO2 emissions per unit should be calculated This requirement applies to all certification levels.

The relevant CO2 emissions per unit will be published together with the certification results on the website of the Ministry of Land, Infrastructure, Transport and Tourism (CNP certification system portal site) (the applicant may also publish it itself).

The specific calculation targets of CO2 emissions include facilities and equipment within the container terminal that consume fuel and electricity, as illustrated in Table 4. CO2 emissions from ships at berth and vehicles experiencing gate congestion at the terminal boundary are generally not included in the calculation of total CO2 emissions in the supply chain, as they are considered part of maritime and land transport emissions.

However, if measures to reduce CO2 emissions from ships at berth (e.g., onshore power supply equipment, ship exhaust gas recovery devices) or vehicles experiencing gate congestion (e.g., gate reservation systems) are implemented, the CO2 emissions resulting

from these measures within the container terminal can be included in the calculation, allowing the reduction effect of CO2 emissions from ships and vehicles to be calculated.

Table 4. Main Facilities Emitting CO2 at Container Terminals (Examples)

Facility (Example)		GHG Category
Cargo Handling Machinery	STS Cranes (Container Cranes)	Scope2
	Transfer Cranes	Scope 1 (Scope 2 if electrified)
	Straddle Carrier	Scope 1(Scope 2 if electrified)
	Yard Tractors	Scope 1 (Scope 2 if electrified)
	Reach Stackers	Scope 1 (Scope 2 if electrified)
	Top Lifters	Scope 1 (Scope 2 if electrified)
	Forklifts	Scope 1 (Scope 2 if electrified)
Facilities within the Terminal	Reefer Power Supply	Scope 2
	Lighting Towers	Scope 2
	Management Buildings, Substations, Gates, Other Facilities	Scope 2

The specific calculation method will follow the "Greenhouse Gas Emissions Calculation and Reporting Manual" (Ministry of the Environment and Ministry of Economy, Trade and Industry) and the "Port decarbonization promotion plan" Development Manual (Industrial Port Policy Division, Ports and Harbours Bureau, Ministry of Land, Infrastructure, Transport and Tourism). For fuel use, the CO2 emission factor per unit of fuel used will be applied, while for electricity use, the CO2 emission factor per unit of electricity consumed will be applied to calculate CO2 emissions.

The annual CO2 emissions will be divided by the annual cargo handling volume at the terminal (in principle, TEU) are defined the CO2 emissions per unit. The annual cargo handling volume at the terminal should be based on data consistent with port surveys (port statistics).

(3) STS Cranes

For Ship to Shore cranes used for loading and unloading container cargo between ships and the terminal, the introduction rate (number of units) of inverter driven type machinery, should meet the threshold for each certification level. The introduction rate is calculated by dividing the number of inverter driven type units by the total number of units at the terminal. Specifically, the threshold for certification level 2 requires an introduce rate of at least 10%, certification level 3 requires an introduce level at least 50%,

certification level 4 requires an introduction rate of at least 80%, while certification level 5 requires a full 100%. If introducing low or zero carbon electricity achieves CO2 emission reductions, the requirements will be considered met regardless of the type of the Ship to Shore cranes.

If CO2 emissions are reduced by the introduction of low-carbon and decarbonized electricity, the terminal is assessed as satisfying the requirements regardless of the performance of the Ship to Shore cranes.
When assessing the introduction of low-carbon electricity, the number of inverter driven units and the number of units excluding inverter driven units multiplied by the introduction rate of low-carbon electricity are added together and divided by the total number of units at the applied terminal, which is regarded as the introduction rate. If 25% of the electricity supplied to the gantry cranes is low-carbon and decarbonized electricity and two of the ten gantry cranes are inverter-controlled, the installation rate is (2 cranes + (8 cranes x 25%)) / 10 cranes = 40%).

(4) Transfer Cranes

If the yard handling method at the terminal is transfer crane-based, the introduction rate (number of units) of low-carbon, decarbonized, should meet the threshold for each certification level. Specifically, the required introduction rates are as follows: 10% or higher for certification level 2, 50% or higher for certification level 3, 80% or higher for certification level 4, and 100% for certification level 5. If introducing low-carbon and decarbonized fuel, or automation achieves the required CO2 emission reductions, the requirements will be considered met regardless of the performance of the transfer cranes. If both transfer cranes and straddle carriers are used at the terminal, the introduction status will be evaluated based on the combined number of these units.
When assessing the introduction of low and decarbonized fuels, the number of low and decarbonized units plus the number of units excluding low and decarbonized units multiplied by the uptake of low and decarbonized fuels, divided by the total number of units at the terminal concerned, is considered as the uptake (for example, 25% of fuel supplied to the transfer crane is low and decarbonized fuel)and 2 out of 10 total transfer cranes are low-carbon and decarbonized, the introduction rate would be (2 + (8 x 25%)) / 10 = 40%).

(5) Straddle Carriers

If the yard handling method at the terminal is straddle carrier-based, the introduction status (number of units) of low-carbon and decarbonized should meet the threshold for each certification level. Specifically, the required introduction rates are as follows: 10% or

more for certification level 2, 50% or more for certification level 3, 80% or more for certification level 4, and 100% for certification level 5. If the introduction of low-carbon and decarbonized fuel or automation achieves the required CO2 emission reductions, the requirements will be considered met regardless of the performance of the straddle carriers. The method of evaluating the introduction of low-carbon and decarbonized fuel, it shall be followed by (4) written above.

(6) Yard tractor (including AGV) and other cargo handling facilities

Regarding the terminal tractor (including AGV) and other cargo handling facilities (e.g., Jib cranes, reach stackers, top lifters, forklifts, etc.) upon the reason such as the dissemination of low-carbon and decarbonized type is not done and developed the low-carbon and decarbonized technologies, the introduction of low-carbon and decarbonized type is recognized as “recommendation”.

The Evaluation standard for these cargo handling facilities will be considered in the future based on the low-carbon or decarbonized situation.

(7) Yard Lighting

For yard lighting at the terminal, the introduction rate of LED lighting must meet the threshold for each certification level. Specifically, the required introduction rates are as follows: 10% or more for certification level 2, 50% or more for level 3, 80% or more for level 4, and 100% for level 5. If the introduction of low-carbon and decarbonized electricity or automation achieves the required CO2 emission reductions, the yard lighting will be considered compliant with its level, regardless of its type.

The rate of installation of LED lighting etc. is basically evaluated based on the number of lighting towers (poles) in which LED lighting etc. has been installed, but in cases where LED and sodium lights are mixed in one lighting tower, it is evaluated based on the number of lights (e.g. if 6 LED lights and 6 sodium lights are installed in one lighting tower, it is evaluated as 0.5 LED lighting towers). (e.g., if a lighting tower has 6 LED lamps and 6 sodium lamps, it is evaluated as 0.5 LED lighting towers).

The evaluation method of introduction of low-carbon and decarbonized electricity shall be followed (3) written above.

(8) Reefer Facilities and Other Facilities

For reefer facilities at the terminal, measures such as reflective, heat-reducing pavement and roof installations to mitigate temperature rise are recommended. CO2 reduction initiatives for other yard facilities, such as LED lighting for office buildings, are also encouraged.

【About Annex 2】

A. Related to Ships Using the Terminal

(1) Measures for Power Supply

It is recommended to implement measures to reduce CO2 emissions from ships berthed at the terminal, such as introducing onshore power supply equipment for the ships berthed at the terminal. Additionally, establishing a supply system for low-carbon fuels, such as LNG, or decarbonized fuels, such as hydrogen and ammonia.

Even if the fuel supply system is located in other ports, it will be evaluated based on its availability of the service at the terminal.

(2) Promotion of Low or Zero Emission Fuel Ships

To promote the use of low or zero emission fuel ships at the terminal, participation in the ESI program, implementation of incentives such as port fee reductions for LNG and other low-carbon fuel ships, or the efforts of regulations on fossil fuel-powered ships is required. This requirement applies to certification levels 4 and above. The initiatives undertaken at the terminal or the port where it is located will be evaluated.

B. Related to Vehicles Using the Terminal

(1) Gate Efficiency

To enhance vehicle efficiency at the terminal, it is required to implement measures such as gate reservation systems like CONPAS, systems that optimize cargo pickup and delivery, and initiatives to alleviate congestion, such as extended gate opening hours. This requirement applies to certification levels 4 and above.

(2) Promotion of Low or Zero Emission Vehicles

To promote the adoption of low or zero emission vehicles at the terminal, it is recommended to introduce incentives such as priority gates and lanes for large commercial biodiesel trucks, electric vehicles (EVs), and fuel cell vehicles (FCVs) or efforts of regulations on vehicles using fossil fuels.

C. Other Decarbonization Initiatives (Free Entry)

Other decarbonization initiatives at the terminal that do not fall under categories (1) and (2) are considered recommended items and should be detailed in the application. Although this evaluation items are free to enter, they will be included in the certification document after certification review enhancing public relations (PR) efforts to such as stakeholders.

Examples: Introduction of low-carbon and decarbonized electricity or fuel, environmentally friendly tugboats, implementation of emission reduction technologies (e.g., urea injection), efforts for elimination of offshore waiting, utilization promotion of inland ports, development of blue carbon ecosystems, and efforts for carbon offsetting.

4． Procedures Related to this Certification System

4．1　Procedures for Applicants

Outline

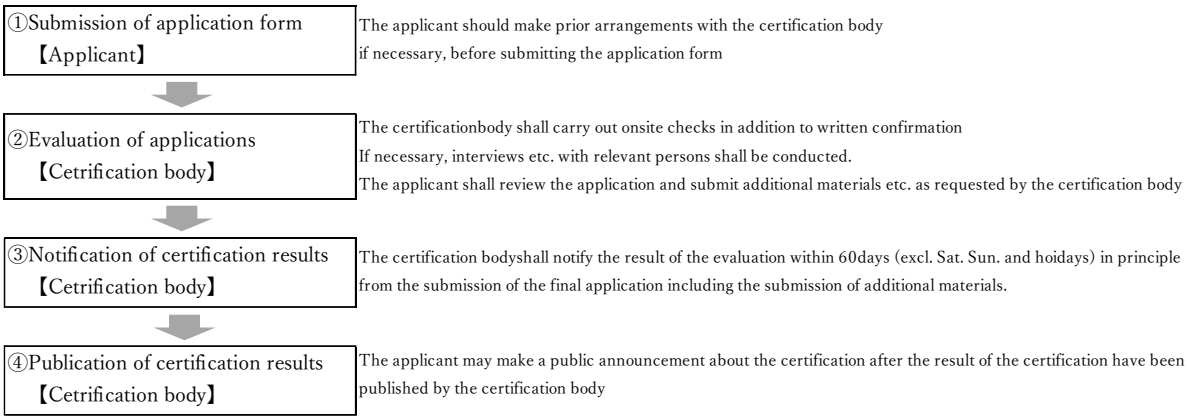
(Procedures for Applicants) Article 6　The procedures for applicants under this certification system are as follows: (1) Application Documents: Applicants must complete the prescribed contents in the application form and submit it to the certification body along with the required attachments. (2) Other Requirements: Other necessary procedures will be prescribed by certification body.

【Explanation】

Applicants must submit to the certification body (i.e., the Ports and Harbours Bureau of the Ministry of Land, Infrastructure, Transport and Tourism) the application form along with the prescribed attachments.

The detailed procedure for application is shown below.

(1) Process from application to certification.



(2) Application method

Terminals shall submit the application form, etc. by e-mail with the attached documents.

① Terminals wishing to apply should submit the application to the email of the relevant regional development bureau.

Hokkaido Regional Development Bureau : hqt-hokkaido-cnp-certificate@gxb.mlit.go.jp

Tohoku Regional Development Bureau : hqt-tohoku-cnp-certificate@gxb.mlit.go.jp

Kanto Regional Development Bureau : hqt-kanto-cnp-certificate@gxb.mlit.go.jp

Hokuriku Regional Development Bureau : hqt-hokuriku-cnp-certificate@gxb.mlit.go.jp

Chubu Regional Development Bureau : hqt-chubu-cnp-certificate@gxb.mlit.go.jp

Kinki Regional Development Bureau : hqt-kinki-cnp-certificate@gxb.mlit.go.jp
Chugoku Regional Development Bureau : hqt-chugoku-cnp-certificate@gxb.mlit.go.jp
Shikoku Regional Development Bureau : hqt-shikoku-cnp-certificate@gxb.mlit.go.jp
Kyushu Regional Development Bureau : hqt-kyushu-cnp-certificate@gxb.mlit.go.jp
Okinawa General Bureau : hqt-okinawa-cnp-certificate@gxb.mlit.go.jp
(*Only applications submitted by e-mail are accepted.)

② Attachment of documents to be submitted.

- The documents (files) to be submitted shall be compiled in a single folder, and the folder shall be compressed into a zip format before transmission.
- The files shall be sent in a single folder, and the folder shall be compressed into zip format.

③ Application fees

The application fee shall be free of charge. However, all costs associated with the application (e.g., communication charges for e-mails) shall be borne by the applicant.

(3) Contact information

CNP Promotion Office, Industrial Port Policy Division, Ports and Harbours Bureau, Ministry of Land, Infrastructure, Transport and Tourism
Telephone: 03-5253-8672
E-mail: hqt-cnp-certificate@gxb.mlit.go.jp

(4) Outline of application documents

The application form and attached documents are outlined below.
The format of the application form and attached documents will be posted separately on the website of the Ministry of Land, Infrastructure, Transport and Tourism (CNP Certification System Portal Site).

①	Cover Page of the Application Form ・Applicant ・Outline of application, etc.
②	Overview of the Terminal Applying for Certification ・Overview of the Terminal Applying for CNP Certification ・Location and Layout of the Container Terminal, etc.
③	Decarbonization Plan for Terminals Under the Port Decarbonization Promotion Projects ・Decarbonization Targets and Key Performance Indicators (KPIs) ・Monitoring and Reporting Policy for Decarbonization Efforts, etc.
④	Calculation and Publication of CO2 Emission Intensity at the Terminal Applying for Certification
⑤	Implementation Status of Each Evaluation Item at the Port Applying for Certification

In addition to the above, evidence relating to the application shall be submitted as required.

(5) Handling of application documents

The submitted application documents shall be used only for the purpose of assessment. The applicant may be asked to submit documents for publication again after certification.

４．２　Procedures for Certification by the Certification Bodies

Outline

(Procedures for Certification) Article 7 (1) The certification body shall accept applications from applicants unless there are legitimate reasons not to do so. (2) If deficiencies are found in an application, the certification body may request applicants to review or supplement the application contents. (3) The certification body shall notify applicants of the examination results principally within 60 days (excluding Saturday, Sunday, and National Holiday) of the final submission of the completed application.

【Explanation】

The certification body will review the application forms and prescribed attachments submitted by applicants based on the outline and guidelines. If necessary, they may require applicants to review the application contents or submit additional materials. Certification bodies notify applicants of the examination results principally within 60 days (excluding Saturday, Sunday and National Holiday) of the final submission date.

４．３　Publication of Certification Results

Outline

(Publication of Certification Results) Article 8 (1) The certification body shall publish information about certified applicants. (2) Applicants may publicly announce their certification after the publication described in the previous paragraph.

【Explanation】

The certification body shall publish information about the certified applicants on the website of the Ministry of Land, Infrastructure, Transportation and Tourism promptly after notify the

result. Applicants may announce their certification after the certification body published the information on the website of the Ministry of Land, Infrastructure, Transportation and Tourism.

4．4　Procedures for Renewal of Certification

Outline

(Procedures for the Renewal of Certification) Article 9　Applicants wishing to renew certification or change the certification level shall apply to the certification body. Renewal of the certification or changes in certification levels may be applied even within the validity period of the current certification.

【Explanation】

Applicants shall apply for the renewal of obtained certification or changes in certification levels in the same manner as new applications. If it seems to be change the certification level with such as progress of efforts for low-carbon and decarbonization, applicants may apply for changes (i.e. level-up) in certification levels even within the three-year validity period. To maintain certification, applicants must apply with monitoring results showing that decarbonization efforts corresponding to the obtained certification level are maintained within the validity period of the certification. If compliance is not maintained, the certification level may be adjusted, or certification may be denied.

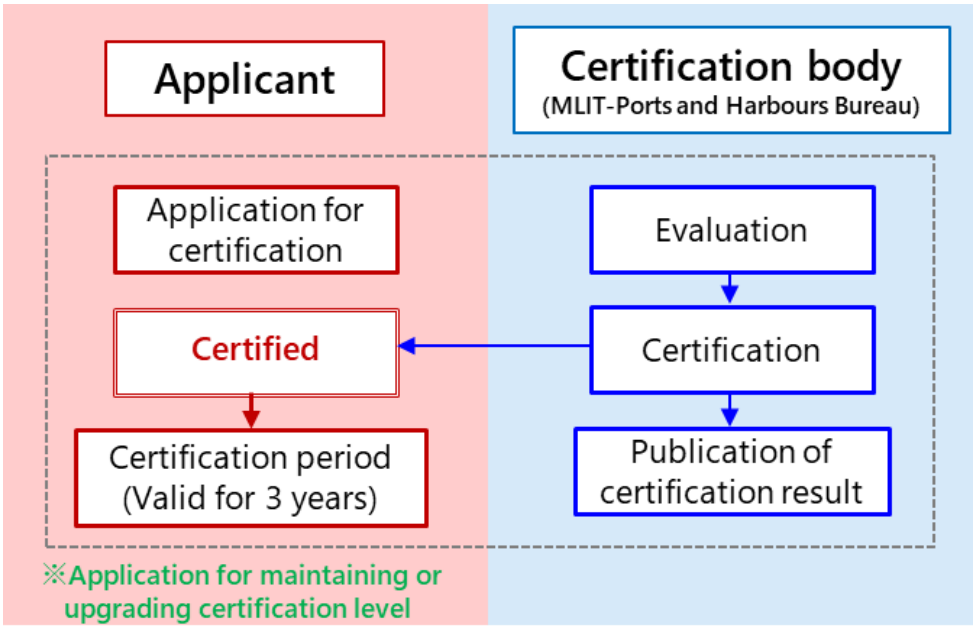


Figure　3．Flow of Application, Certification, and Renewal Procedures

4．5　Others

Outline

(Others) Article 10 (1) In the operation of this certification system, the evaluation items, evaluation indicators, and performance requirements for decarbonization efforts shall be reviewed in response to international deployment and technological advancements in decarbonization. (2) In addition to the provisions stipulated in this outline, any necessary matters for the operation of this certification system shall be determined by the certification body.

【Explanation】

This certification system aims to align with international initiatives, such as the "Green Shipping Corridor," which is being considered by ports and maritime sectors worldwide. It also seeks to promote the international recognition of this system deployment and dissemination (e.g., mutual recognition between this certification system and certification systems in other countries) of this certification system. In addition, the spread of initiatives and technological progress is expected to continue with regard to the low-carbonization of cargo handling machinery and facilities at port terminals. The evaluation items, indicators, and performance requirements for decarbonization efforts will be reviewed periodically—every five years—to reflect international deployments and technological advancements in decarbonization.