

UPA 2022

ESG Management Report



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ABOUT THIS REPORT

Report Overview

This report is an ESG management report published by Ulsan Port Authority (hereinafter, “UPA”). In publishing this report, we aim to identify the interests of stakeholders in our sustainable management activities and publicize our sustainable management activities and performance in a transparent manner.

Reporting Guidelines

This report was prepared in line with the Core Options of the Global Reporting Initiative (GRI) Standards. In addition, it reflects the contents of the UN Global Compact (UNGC) and the UN’s Sustainable Development Goals (SDGs), while also incorporating the ISO 26000 standard regarding corporate social responsibilities.

Reporting Period, Scope, and Boundary

This report covers our activities and performance from Jan. 1, 2021 to June. 30, 2022 and includes data from the past three years (2019 to 2021) so as to convey trends, both positive and negative, in quantitative performance.

Report Verification

To ensure the objectivity and reliability of this report, we have implemented third- party verification in accordance with the AA1000AP Principles (2018), which is the international verification standard. Further details regarding verification can be found in the Appendix.

Additional Information on the Report

The report is published in both Korean and English and can be accessed via our homepage. Should you have any comments or inquiries, please contact us using the contact details provided below.

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About UPA

Ulsan Port Authority



Message from CEO

Ulsan Port Authority, the Center of Liquid Logistics in Northeast Asia, Will Lead the Future.



Dear stakeholders,

Ulsan Port Authority which has led the port of Ulsan, the industrial capital of Korea, has just celebrated its 15th anniversary. I would like to express my gratitude to all stakeholders who have worked hard for their unwavering interest and support even during the COVID-19 crisis over the past two years.

Since its opening in 1963, UPA has continued to grow steadily as Korea's largest and the fourth in liquid cargo handling ports in the world. However, in the recent changing external factors, UPA is facing a moment of new challenges and opportunities.

The Global 2050 Carbon Neutrality Declaration is rapidly shifting the energy paradigm away from fossil fuels to renewable and eco-friendly energy. Accordingly, Ulsan Port Authority is striving to make Ulsan Port the largest clean port in Korea equipped with a hydrogen/LNG energy ecosystem by 2030 by expanding the main cargo of Ulsan Port, centered on petrochemical products, to eco-friendly energy such as hydrogen and LNG.

As a result of these efforts, Ulsan Port, which was selected as the government's representative hydrogen port in 2021, is building an imported hydrogen supply-chain and promoting the construction of a green hydrogen tank terminal in connection with the hydrogen business. We are preparing for the production of female hydrogen and distribution to the industrial complex in the background. In addition, the construction of the largest commercial LNG terminal in the Yeongnam region began in 2021 by forming a private consortium on a site of about 300,000m² in Ulsan New Port. Commercial operation is scheduled to start in 2024, and in connection with this, we are promoting a new ship LNG fuel supply business in which Ulsan Port Authority directly participates.

Meanwhile, ESG management has become a top priority for sustainability for all companies including Ulsan Port Authority. Accordingly, UPA is making diversified efforts for innovation-based environment, safety, and transparent management. In fact, a startup supported by Ulsan Port Authority developed the world's first AI+5G technology to develop an artificial intelligence system for berthing ships and was designated as an innovative product. In addition, for the first time in a domestic port, we established a resource circulation ecosystem in which the public and private sectors cooperate, and was selected as a representative Korean New Deal company by the government.

All these achievements are based on UPA's unique integrity and ethical management culture. Ulsan Port Authority, a leader in integrity and ethical management, has been shown to be leading the integrity and ethical management by being selected as an excellent institution for three consecutive years in the integrity evaluation hosted by the Anti-Corruption and Civil Rights Commission and jointly ranked first in the ethical management index in the management evaluation of public institutions in 2021. As the head of the organization, I will remember the tireless efforts of our employees and their achievements, and will continue to uphold the tradition of integrity.

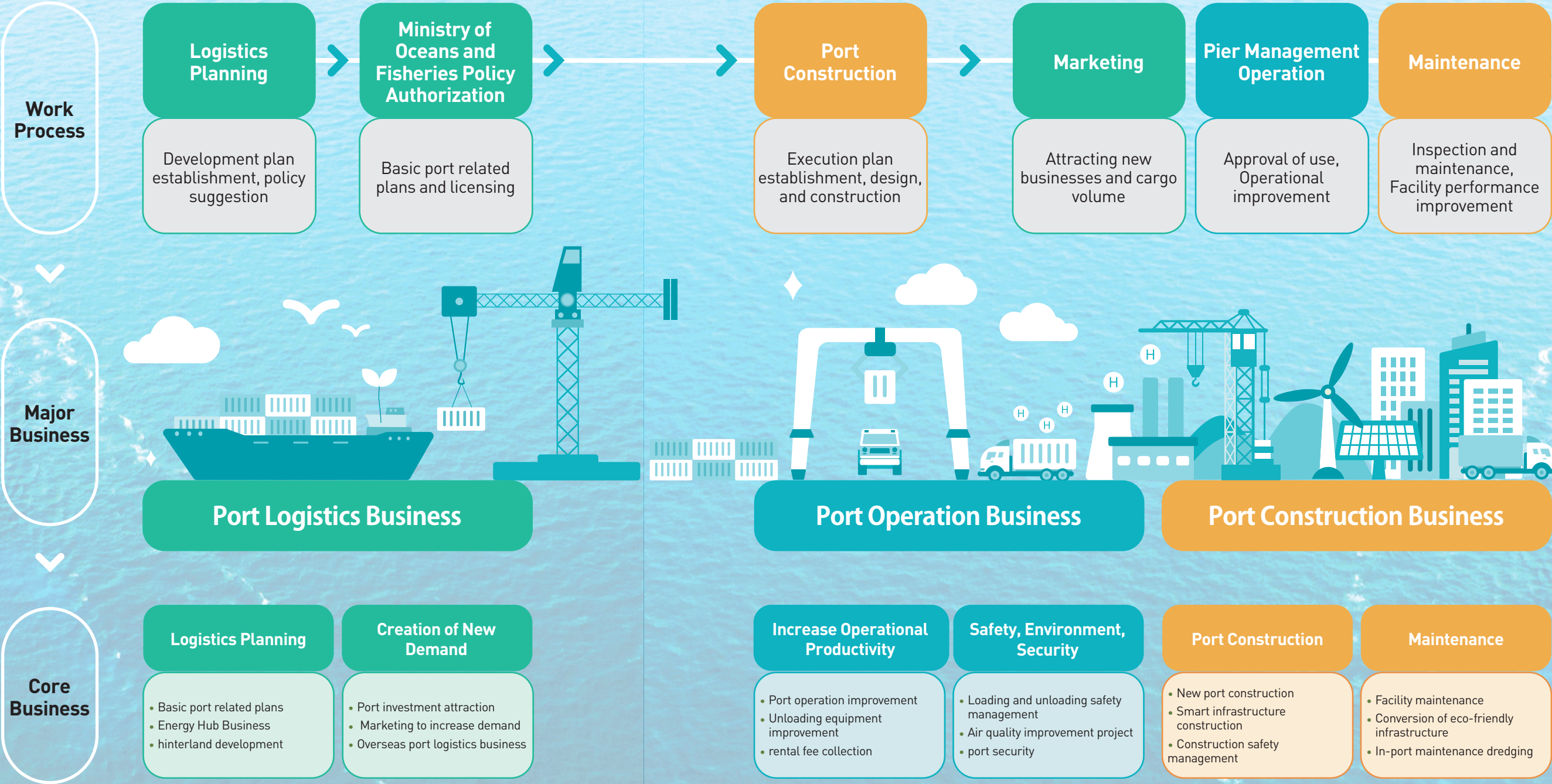
Ulsan Port Authority will continue to grow into a public corporation that makes a greater contribution to the nation and local community by making future bass businesses and ESG management businesses blossom. We ask for your unwavering interest and support from all stakeholders.

Thank you.
Kim, Jae-gyun
CEO, Ulsan Port Authority

Business of the Ulsan Port Authority

Introduction of Major Businesses

To help your understanding of Ulsan Port Authority's major business such as port logistics business, port operation business, and port construction business, I would like to introduce the core business with a workflow diagram.



Introducing UPA

Company Overview

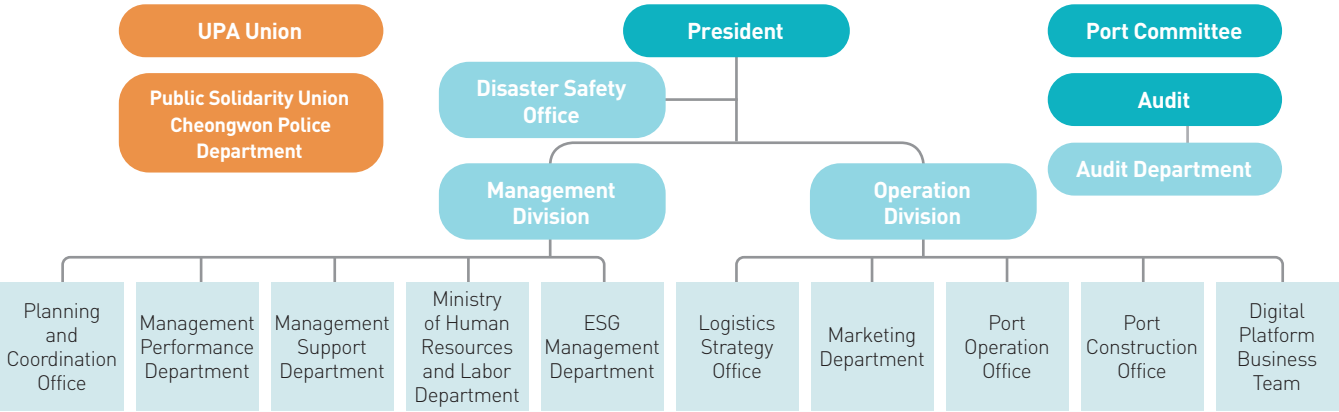
Ulsan Port Authority is a public institution established in July 2007 in accordance with the Port Authority Act to enhance the professionalism and efficiency of the development, management and operation of Ulsan Port. We are striving to contribute to the development of the national economy by fostering Ulsan Port as a competitive shipping and logistics hub. We work for the development, management, and operation of the Ulsan port facility, logistics terminal, port hinterland complex creation and management, Ulsan port related research, development and training, direct implementation and investment in Ulsan port related incidental projects, and investment.

[As of the end of December 2021]



Organizational Structure (2 Divisions 5 Offices 6 Department 1 Team)

[As of July 1, 2022]



Main Features and Roles

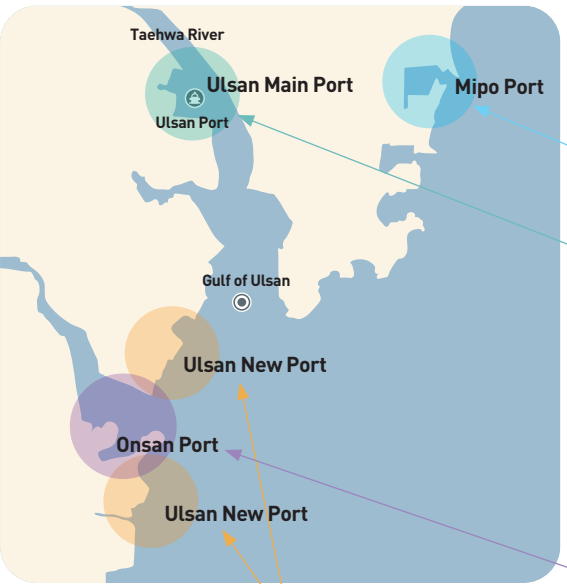
- Implementation of construction related to new construction, remodeling, maintenance, repair, and dredging of port facilities and management and operation of ports
- Projects entrusted by the state or local governments in connection with port facility construction, management, and operation
- Port management and operation investigation, research, technology development, manpower training
- Construction and operation of livelihood neighborhoods and welfare projects for the convenience of port users
- Business entrusted by the state or local government
- Creation, management and operation of foreign ports

Major Business

Ulsan Port Authority's main projects include the construction, management, and operation of Ulsan Port including Ulsan Main Port, Onsan Port, Mipo Port, and Ulsan New Port, creation and management and operation of the port hinterland, and direct implementation, investment, and contribution of port-related incidental projects.

Characteristics of Ulsan Port

Ulsan Port is a blessed port with few tidal differences and deep waters to maintain calm temperatures. It is a liquid logistics-oriented port that supports automobile, shipbuilding, and petrochemical industries located in the national industrial complex of the hinterland.



Mipo Port Shipbuilding Industry Support Port
Length of the Wall: 210m
Berthing Ability: 20,000DWT, 1 Ship
Handling Cargo: Iron



Ulsan Main Port Port Ulsan Port Central Port
Length of the Wall: 10,085m
Berthing Ability: 1,818,500DWT, 61 Ships
Handling Cargo: Coal, miscellaneous goods, automobiles, liquid chemicals, etc.



Ulsan New Port the leader in Northeast Asia's energy hub
Length of the Wall: 5,153m
Berthing Ability: 713,000DWT, 22 Ships
Handling Cargo: liquid chemistry, container



Onsan Port High Value-Added Logistics Base
Length of the Wall: 5,073m
Berthing Ability: 1,807,000DWT, 33 Ships
Handling Cargo: Other ore, container, oil, chemical, etc.

Port Facilities



Ulsan Port Operation Status in 2021



Port facilities and operation status data were prepared as of December 31, 2021.

UPA History



“Let's follow the history of UPA”

2007



Ulsan Port Authority Inauguration Ceremony

- 07 Inauguration of Kim Jong-un as the first president
- 07 Launched Ulsan Port Authority
- 07 Establishment of the Port Committee (Board)
- 08 Opened a new container route between Ulsan and Chennai, India
- 08 Formation and operation of the Pier Management Council

2009



Signed MOU to Promote Logistics Cooperation

- 01 Signed MOU to Promote Logistics Cooperation
- 05 Implementation of Ulsan Port Ship Information System Construction Project
- 05 Held the UPA Ship Sea Love Marathon to Commemorate the Day of the Sea
- 07 Opened Ulsan New Port Container Terminal
- 09 Held an International Seminar on the Tasks of Ulsan Port for the Promotion of Liquid Logistics-oriented Ports
- 12 Started Operation of Liquid Cargo Transshipment Pier in Ulsan New Port Southern Breakwater

2011



ISO14001 Certified

- 07 Declared the Vision of 'Liquid Logistics-Centered First Class Port'
- 07 Implemented the Integrity Ombudsman System
- 08 Fully Permitted Overnight Departures of Ships Using Onsan Port
- 11 CS Promotion Council Launched
- 12 Inauguration of the 3rd President Park Jong-rok
- 12 Acquired Environmental System ISO14001 Certification

2013



Northeast Asia Oil Hub Groundbreaking Ceremony

- 01 Designated as a Quasi-market Type Public Company
- 02 Ulsan Port Clean Belt Construction (23 organizations)
- 07 Won the Grand Prize for Sustainability Management at the 1st Korea Management Awards
- 09 Ulsan Port 50th Anniversary, Ulsan Port Slogan and Vision 2030 Declaration
- 09 Establishment of Safety Management Network (Korea Occupational Safety Association, Ulsan Shipping Union, Ulsan Port Logistics Association)
- 11 Acquired the Best HRD Certification for Public Sector HRD
- 11 Northeast Asia Oil Hub Groundbreaking Ceremony

2008



Jangsaengpo Whale Festival

- Designation of other Public Institutions 01
- Port-MIS Integrated Management Start 01
- Officially Joined the International Port Association (IAPH) 01
- Ulsan Port 17 Piers Dredging Construction Started 03
- Ulsan New Port Hinterland Development Started in Earnest 05
- Inauguration of the 2nd President Chaeik Lee 12

2010



Signed MOU for Northeast Asian Oil Hub Business

- Ulsan New Port Container Terminal, Container Quantification Introduced Work Ship Automation System (OCR/CPS) 01
- Yeompo Pier Opened 02
- Started Construction of Ulsan New Port Hinterland (Section 1) Project 05
- For the Northeast Asian Oil Hub Ulsan Project Signed a Business Agreement with UPA and Korea National Oil Corporation 08
- Ulsan New Port Southern Breakwater Open to Citizens 08
- Published 'History of Port of Ulsan Read Together with Citizens' 12

2012



Received Presidential Citation at National Quality Management Competition

- Completed Jangsaengpo Small Boat Mooring 01
- Ulsan Port Authority New Building Completed 01
- Port Facility Management and for the First Time in a National Port Computerized Berth Assignment 06
- Completed Construction of Onsan Port Seonwon Rest Area 10
- Presidential Citation at the 38th National Quality Management Contest 11
- Completed Ulsan Port Pier Operation Center 12

2014



Ulsan Port Maritime Safety Belt launched

- Ulsan Port Forum Officially launched 02
- Establishment of Maritime Safety Belt Agreement in Ulsan Port 05
- Northeast Asia Oil Hub Symposium held (Jointly hosted by the Ministry of Foreign Affairs and Trade, the Ministry of Trade, Industry and Energy supervised by the Port Authority and the Korea National Oil Corporation) 06
- Ulsan Port Marine Center Solar Power Plant Installation Work Completed 07
- Completed Ulsan New Port Hinterland Zone 1 07
- Eco-friendly Hopper R&D Success 08
- Inauguration of the 4th President Kang Jong-yeol 10

2022



Inauguration and Signing Ceremony of the Ulsan Port Carbon Neutrality Council

- Inauguration of Ulsan Port Carbon Neutrality Council and Signing of Business Agreement 02
- Acquired an Excellent Grade in the Shared Growth Evaluation with Public Institutions 04
- Subsidiaries of Public Institutions in 2021 hosted by the Ministry of Employment and Labor Acquired the Highest Grade (Grade A) in the Operational Status Evaluation 04
- Acquired Grade B in Management evaluation of Public Institutions hosted by the Ministry of Strategy and Finance 06
- Ministry of Oceans and Fisheries RPA Idea Contest Best Idea Selection 08
- 2022 17th Pregnancy Day Minister of Health and Welfare Commendation 10
- Acquired the Excellence Award for Employment and Labor-Management Culture in the Department of Public Institutions Managed by Korea Certified Labor Attorney Association 11

2020



Namhae Regional Coast Guard and UPA Business Agreement Ceremony

- The 4th Active Administration Best Practice Contest Commendation from the Director of Human Resources Innovation 02
- Best Practices for Safety and Health Activities in the Service sector 07
- Korea Occupational Safety and Health Agency Chairman's Award 11
- Awarded by the Minister of Strategy and Finance as an Outstanding Fair Recruitment Institution 12
- Commendation from the Minister of ICT Convergence Science, Technology and Information 12
- Leisure-friendly Certification Excellent Company Local Culture Commendation from the President of the Promotion Agency 12

2018



44th National Quality Management Competition Presidential Citation

- Inauguration of the 5th President Sang-Hwan Koh 01
- The 21st Korea Logistics Awards Ceremony Grand Prize Opening Ceremony of Smart Port Logistics Support Center 05
- 4th Industrial Revolution Power Korea Daejeon Minister of Oceans and Fisheries Award 08
- Acquired ISO 37001 Certification for Anti-corruption Management System 08
- Korea Employment-Friendly Best Management Grand Prize in Regional Specialization 09
- Korea CEO Hall of Fame Grand Prize in Ethical Management 11
- 44th National Quality Management Competition Presidential Citation 11
- 2018 Presidential Commendation for Disaster Response Safety Training 12

2016



Opening ceremony of South Cargo Storage

- Ulsan Port South Cargo Storage opened 02
- Introduced the First 3 Ports 5S by a Domestic Port Corporation 03
- 11th Korea Meteorological Industry Awards Gold Award 06
- Ulsan Port Sailor Welfare Center opened 09
- Signed MOU for International Cooperation in LNG Bunkering (Global Ports 7 Countries, 9 Institutions) 10
- Energy Management System ISO 50001 Certification 12

2021



Certification of Excellent Labor-management Relations Company

- Simultaneous Certification of Compliance Management System (ISO37301) and Anti-corruption Management System (ISO37001) for the First Time in the Public Sector 05
- Prime Minister's Commendation for Social Economy Revitalization 07
- Inauguration of the 6th President Kim Jae-gyun 08
- Awarded the Ulsan Regional Employment and Labor Office Director Award at the 2021 Ulsan Area Work-Life Balance Excellence Case Contest 10
- Certified as an Excellent Company in Labor-management Relations by the Korea Management Certification Institute 11
- Commendation from the Minister of Health and Welfare on the Day of Recognition of Community Contribution in 2021 12

2019



Opening Ceremony of Smart Port Logistics Support Center

- Selected as an Excellent Case for Public Institution Innovation by the Ministry of Strategy and Finance 01
- Awarded the Minister of Employment and Labor Award for Social Contribution to Job Creation 02
- Commendation from the Mayor of Ulsan Metropolitan City to Commemorate the 24th Environment Day 06
- Awarded the Minister of Environment Award at the 13th National Sustainability Management Competition 06
- Selected as the Best Institution in the Comprehensive Evaluation of Information Disclosure by the Ministry of Public Administration and Security 09
- 4th Public Sector Presidential Citation for Best Cases in Active Administration 11
- Selected as an Excellent Organization for Disaster Management Evaluation 12
- Smart Port Logistics International Civil Organization ASOCIO ICT Award 12
- Received the Minister of HR Innovation Award at the HR Innovation Best Practice Contest 12

2017



Ulsan New Port Yongyeon Pier and Port Hinterland Opening Ceremony

- Commendation from the Minister of Public Safety and Security for Public-private Collaboration in Anti-corruption 01
- LACP 2015/2016 Sustainability Management Gold Award 02
- Ulsan New Port Yongyeon Pier and Port Hinterland opened 04
- 5th Business Scholar Award for Best Management in Korea 05
- Korea Good Company Award 1st in Port Management Category 11
- Awarded by the Prime Minister at the Safety Culture Awards 12

2015



Korea Management Innovation Award

- LACP 2013/2014 Sustainability Management Gold Award 02
- Held the 1st Ulsan Port 'Port Dues 3.0' 03
- Selected as One of the World's Top 5 Seafarers' Welfare Ports 06
- 2015 Korea Management Innovation Grand Prize 06
- Started Broadcasting Service of Local Maritime Meteorological Information for the First Time in a National Port 07
- Acquired a Family-friendly Company Certification from the Ministry of Gender Equality and Family 11
- 4th Education Donation Grand Prize in Domestic Shipping and Port Logistics Sector 12

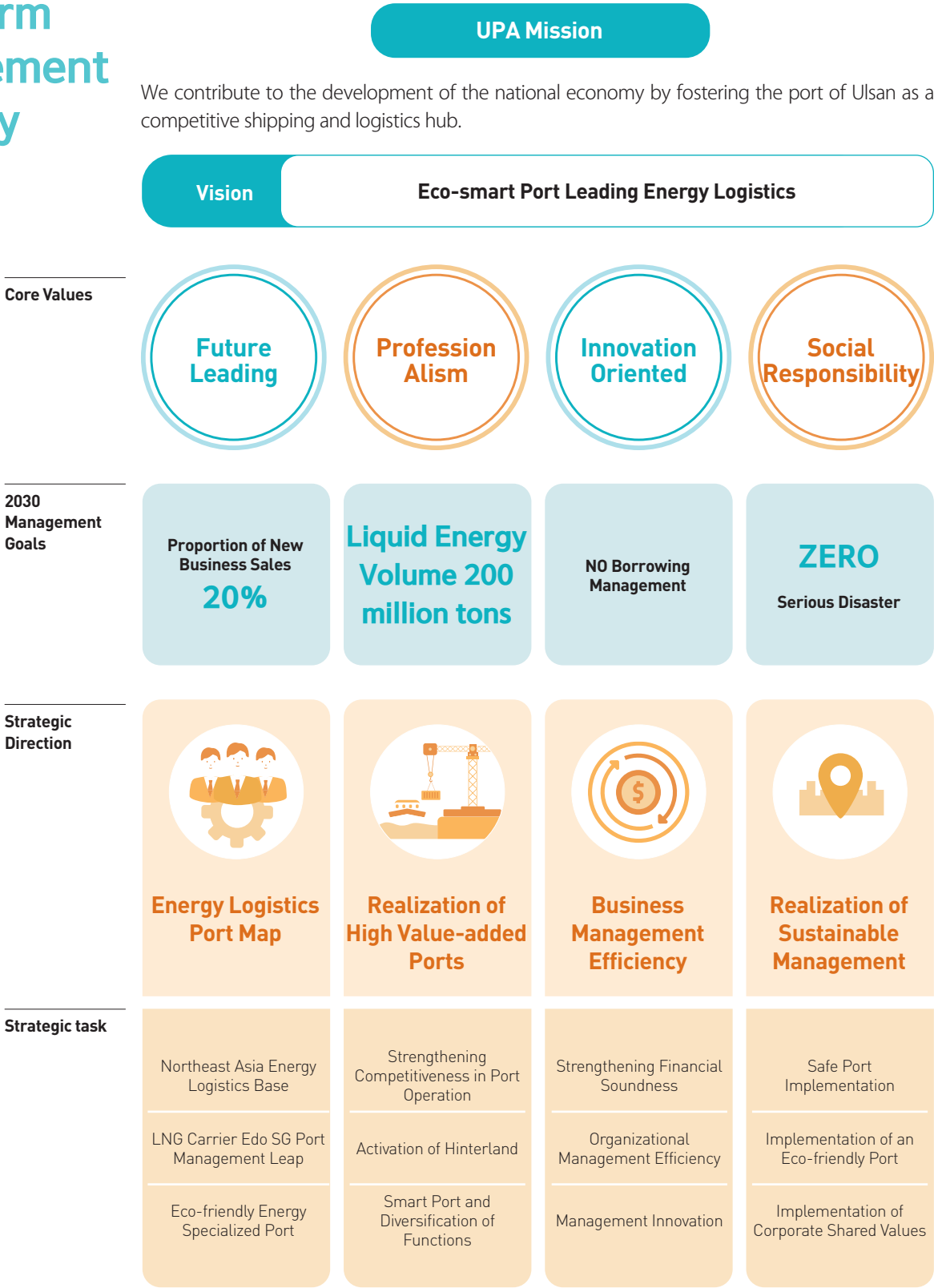
“They've won so many awards”



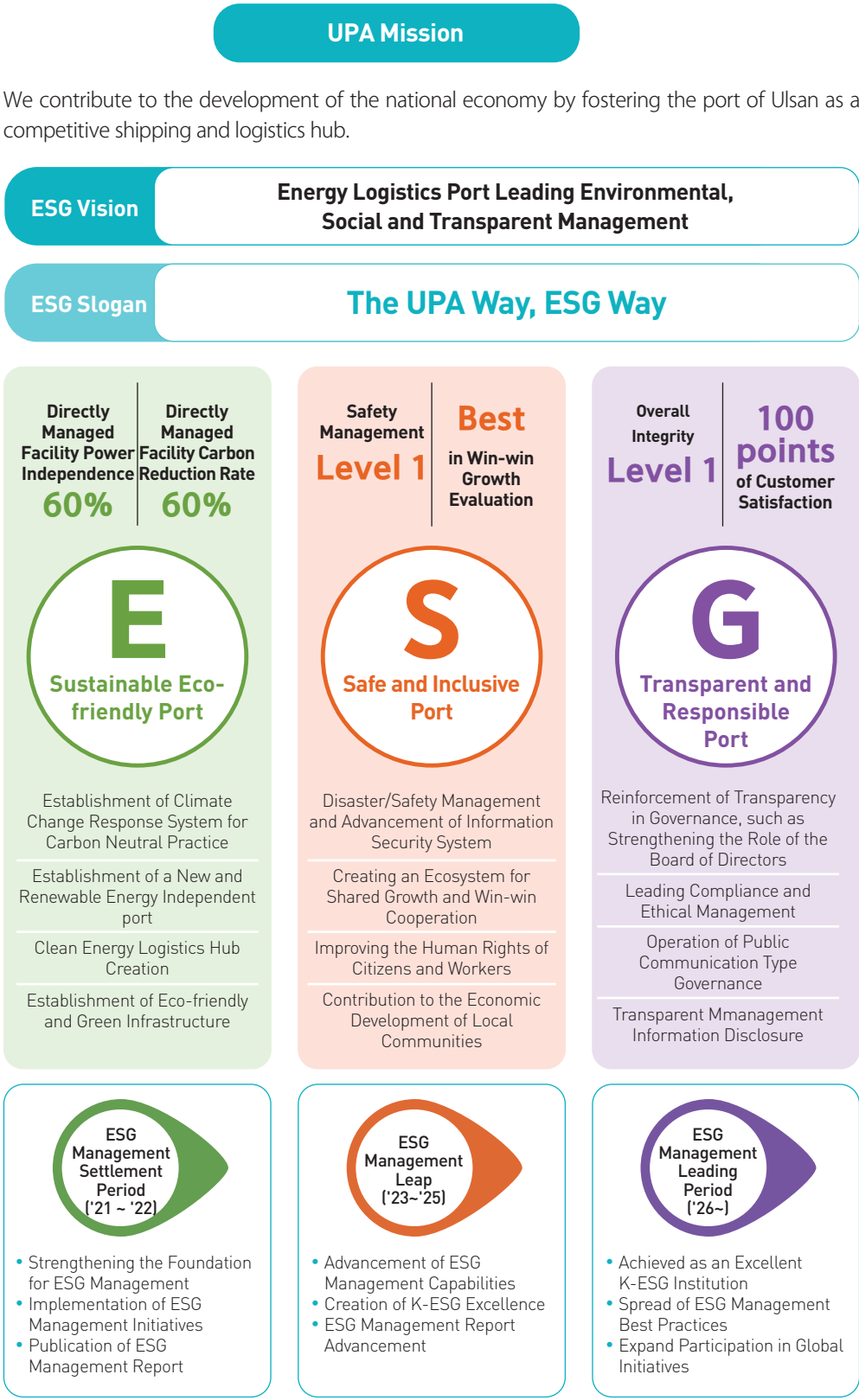
“We, UPA, will continue to grow!”



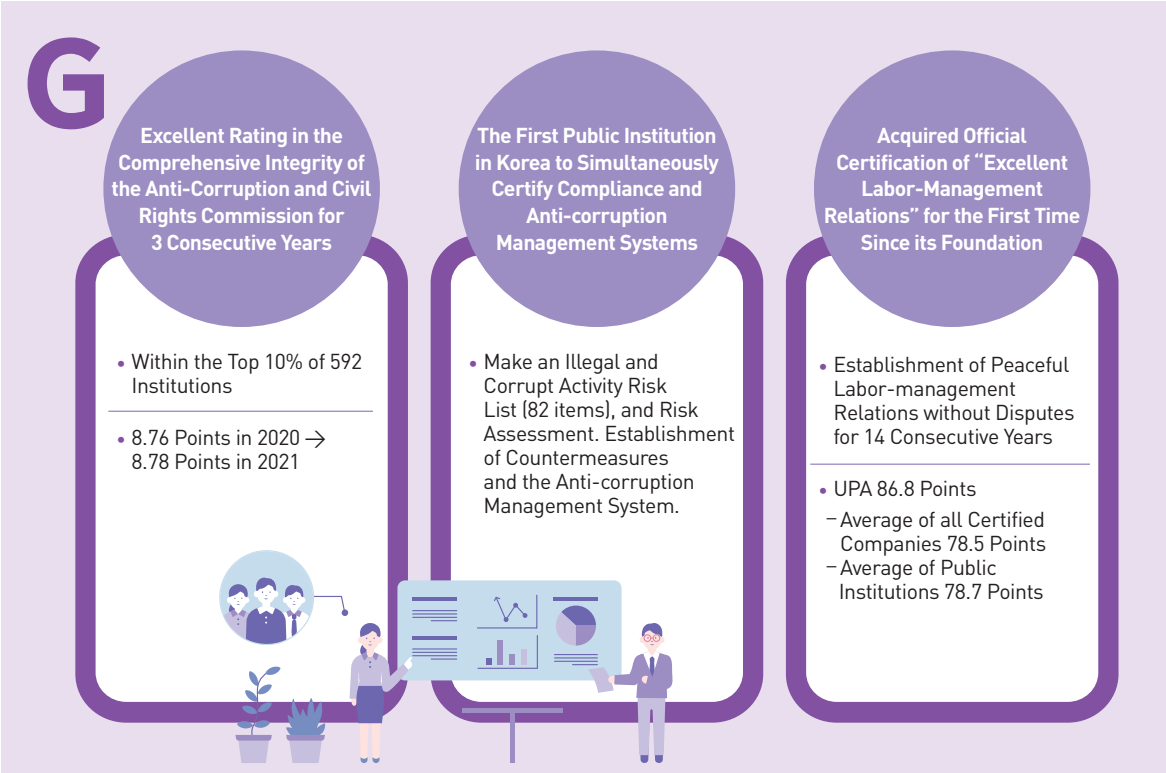
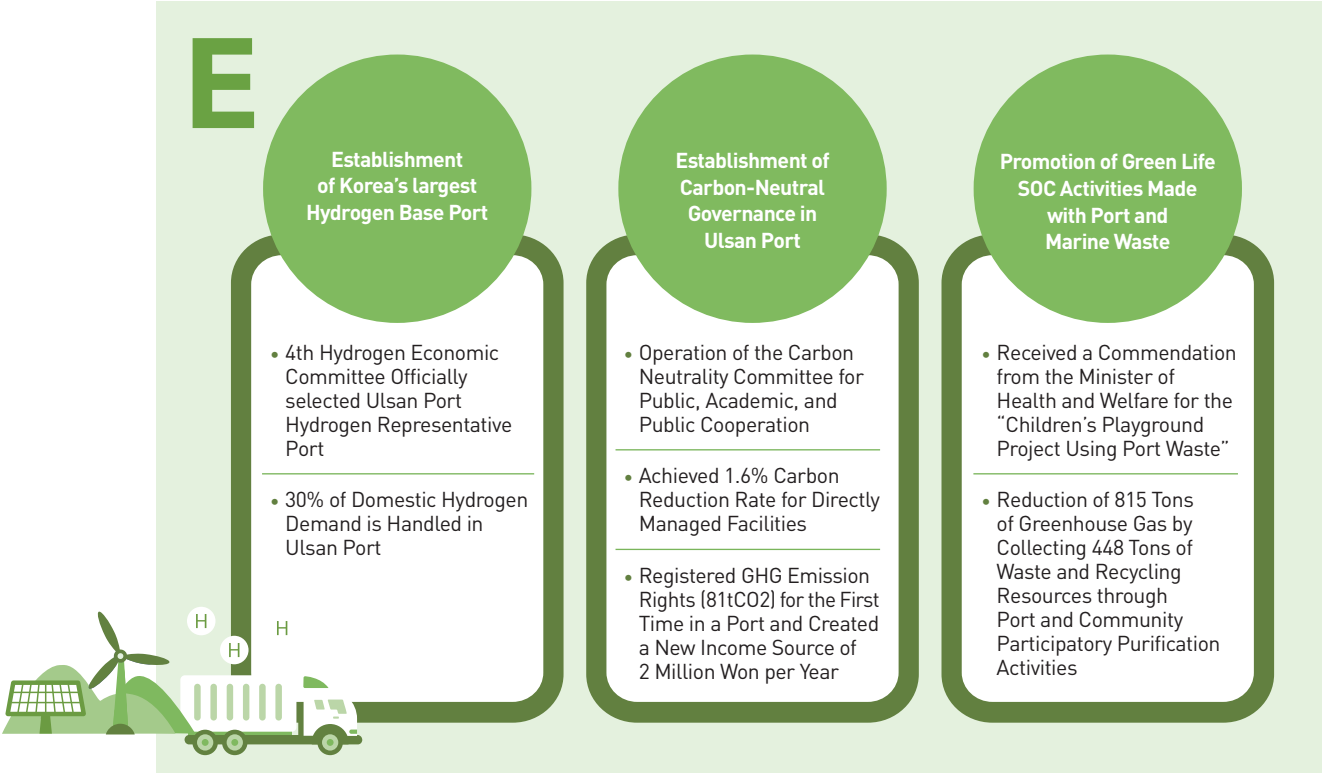
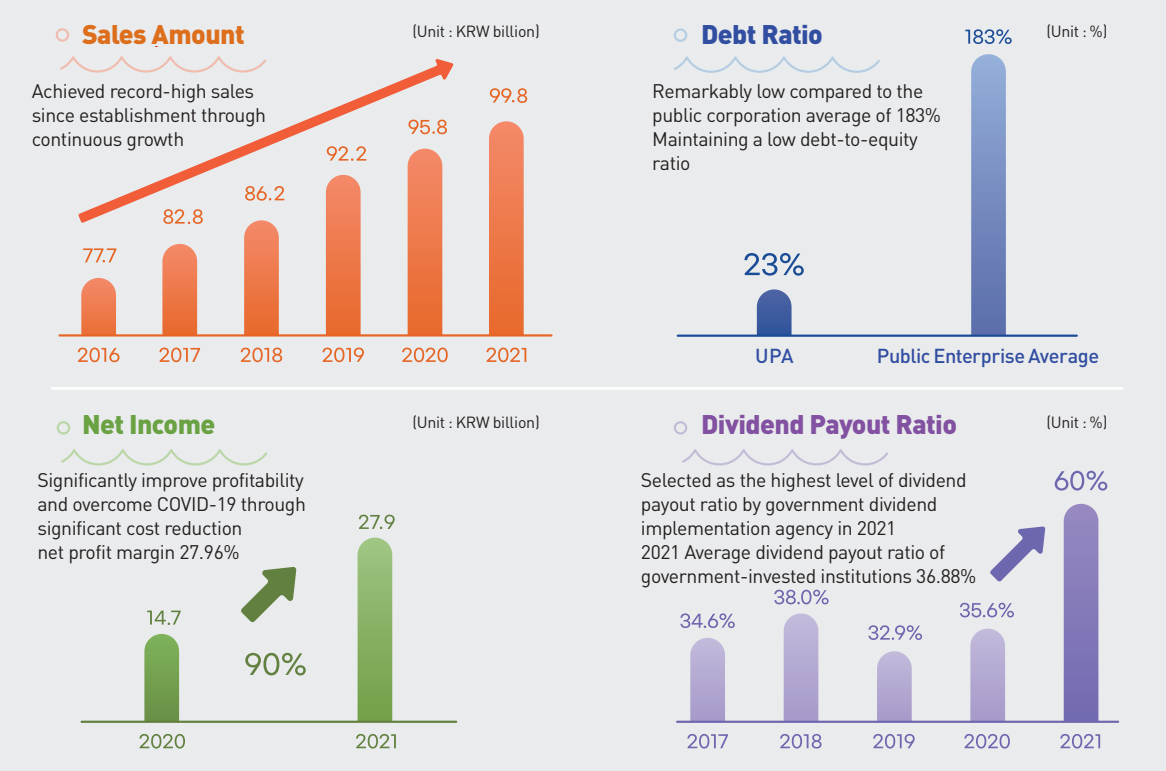
UPA's Mid/long-term Management Strategy



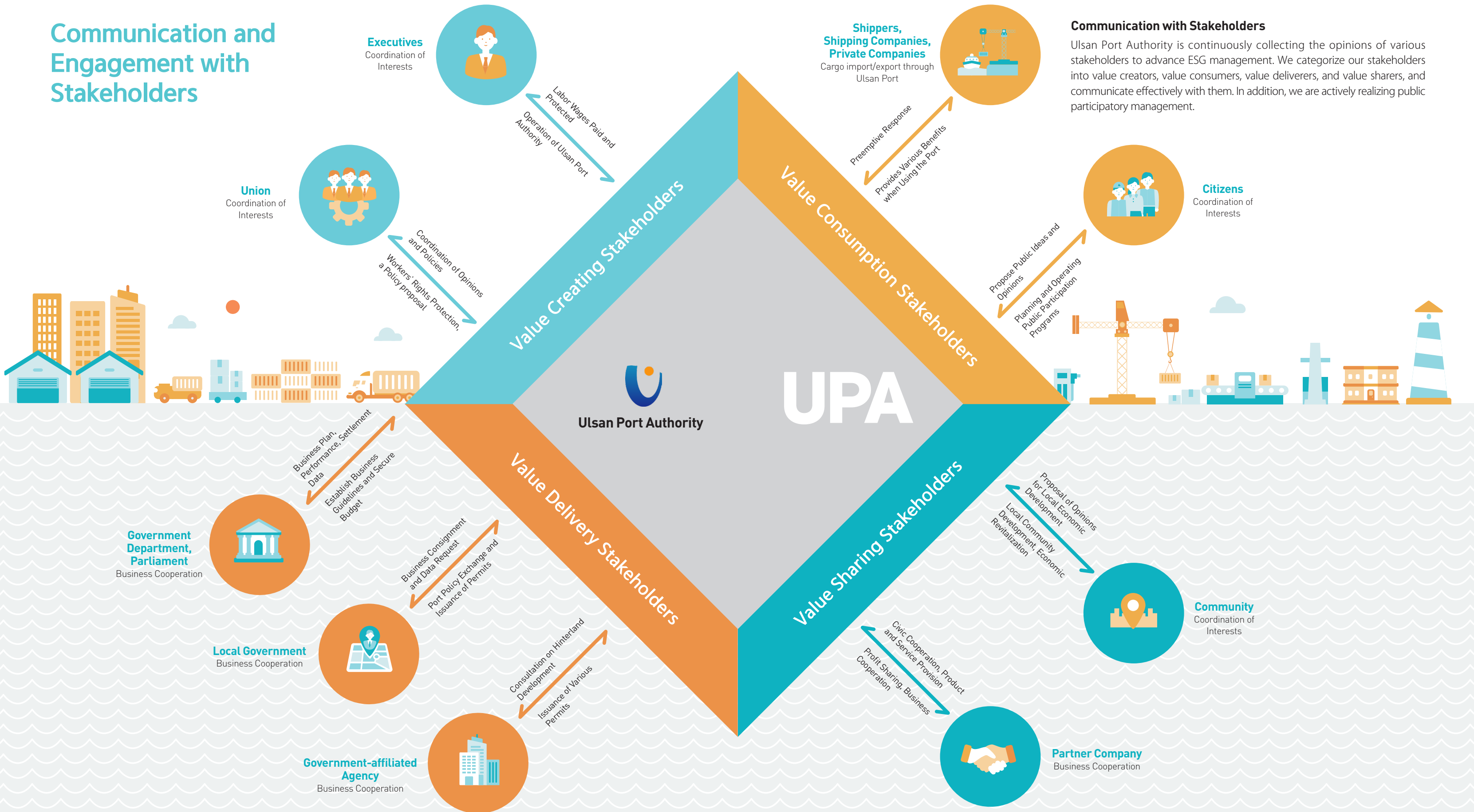
ESG Management Strategy



ESG Management Highlights



Communication and Engagement with Stakeholders

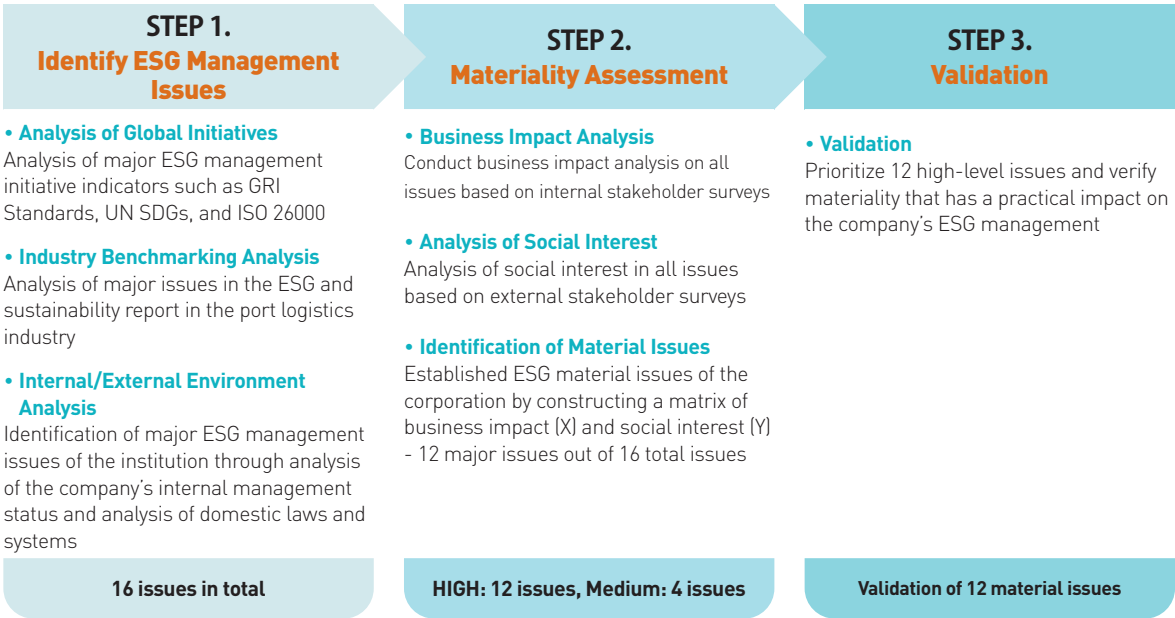


Materiality Assessment

























Materiality Assessment

Ulsan Port Authority conducted a materiality assessment to derive material issues for ESG management in accordance with the reporting principles of the GRI Standards. The entire pool of issues for materiality assessment was conducted based on the results of global initiative analysis, industry benchmarking analysis, and internal and external environment analysis, and was comprehensively evaluated by reflecting issues affecting our business and social interest.

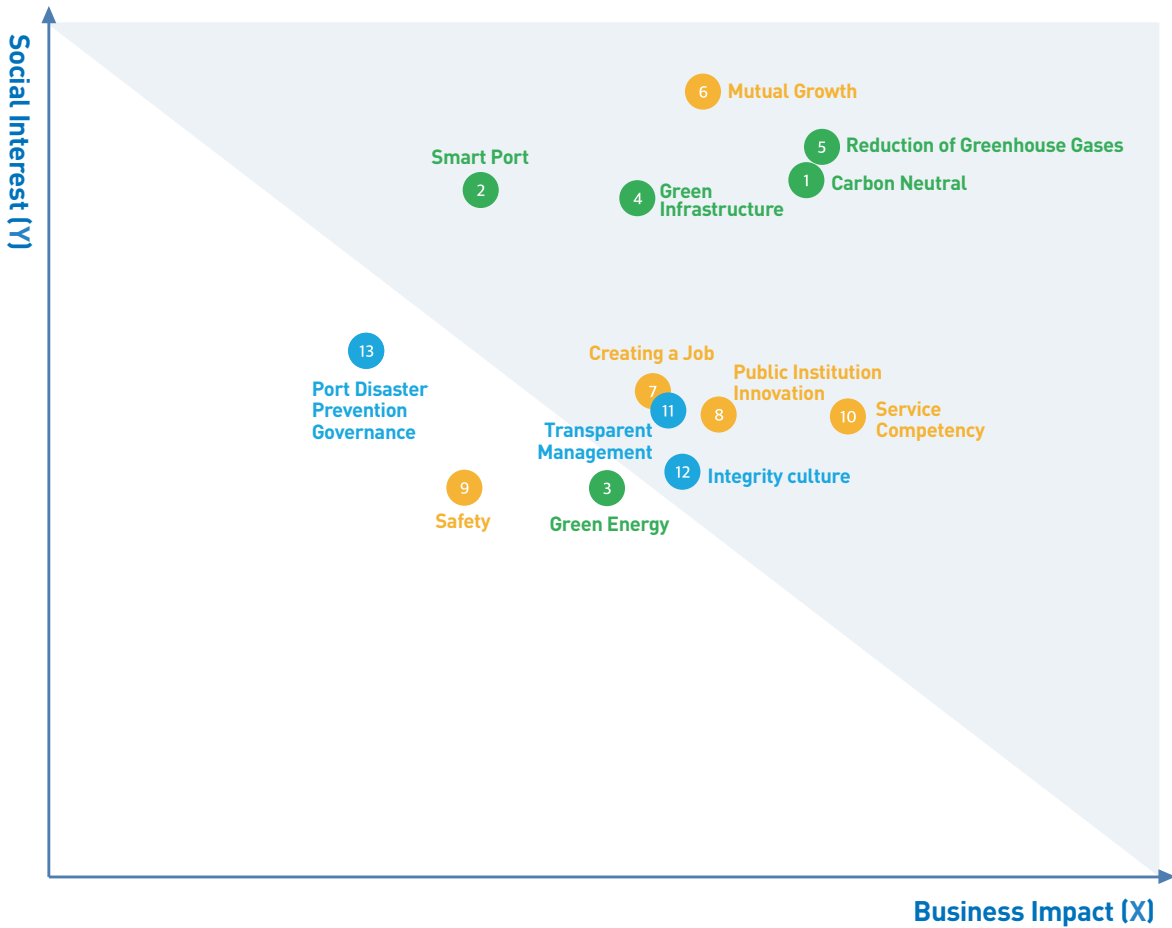
Materiality Assessment Process



Ulsan Port Authority ESG Management Issues

Issues	GRI Topic	UN SDGs	Reporting Boundaries	Page of Report
1. Carbon Neutral	Energy, Air Emissions	  	internal&external	30~32
2. Smart Port	-	    	internal&external	40~43
3. Green Energy	Energy	 	internal&external	33~35
4. Green Infrastructure	-	    	internal	44~45
5. Reduction of Greenhouse Gases	Air Emissions	 	internal&external	36~39
6. Mutual Growth	-	  	internal&external	50~53
7. Creating a Job	Employ	   	external	62~64

Identification of Material Issues



Issues	GRI Topic	UN SDGs	Reporting Boundaries	Page of Report
8. Public Institution Innovation	Indirect Economic Effect	 	internal	82~83, 88~94
9. Safety	Occupational Safety and Health, Customer Information Protection	 	internal&external	54~57
10. Service Competency	Products and Services		internal&external	33~35
11. Transparent Management	Ethics and Integrity, Governance, Anti-Corruption	 	internal	76~77, 80
12. Integrity culture	Ethics and Integrity, Anti-Corruption		internal	78~79
13. Port Disaster Prevention Governance	Security Practices, Occupational Safety and Health	 	internal&external	54~56

“Stakeholder Interview

Interview Summary

These interviews are a reinterpretation of the 2021 Ulsan Port Authority's management goals (businesses for innovation of technological change according to social change) from the ESG management perspective. It was conducted to advance the UPA's sustainable management by sharing it with various stakeholders. ESG management has a principle of expanding corporate competitiveness based on three core values: environment, society, and corporate governance. In particular, ESG management aims to achieve social innovation through the creation of corporate financial and non-financial values. This interview, which was produced for the purpose of advancing Ulsan Port Authority's ESG management, will be used to establish a response system for ESG-based management strategy and sustainable management of the corporation, and at the same time, it will be a valuable foundation for opening a better future for the community of Ulsan.

2022 UPA Stakeholder Interview / Internal Stakeholders



Lee, Dong Man General Manager/ESG Management Department of Ulsan Port Authority

The ESG Management Department, newly established in July 2022, oversees UPA's ESG management. I think that the construction of a mid-to-long-term strategy to make Ulsan Port a carbon-neutral port by 2050 and the construction of a smart port are important issues. Ulsan Port will need to establish a clear strategic direction for carbon neutrality, decarbonization, and digitalization. Ulsan Port Authority's ESG management strategy is based on a new growth engine called future value creation. In order to promote this, a strategic approach is needed to identify the needs of various stakeholders and systematize the role and response of the UPA. In order to internalize UPA's ESG management, it is necessary to conduct mandatory practical training to raise employee awareness and strengthen their capabilities.

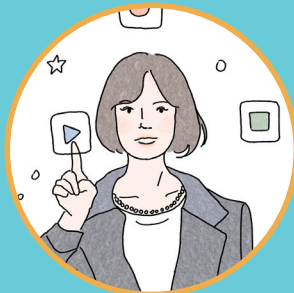


Jung, Sae Byul Deputy General Manager/Ulsan Port Authority Planning and Coordination Office

I am Jeong, Saet-byeol, the Deputy General Manager, in charge of legal affairs at the Ethics and Legal Affairs Team of the Planning and Coordination Office of the Ulsan Port Authority. UPA strives for compliance management through prior legal advice when promoting various projects or tasks. Considering the characteristics of the port industry, which emits a large number of environmental pollutants, new incentives must be prepared to reduce pollutants. In introducing new methods and technologies, and breaking away from the existing methods, it is important to manage and abide by the law, but laws and regulations always follow later than reality. In order to solve these problems, I think it is necessary to improve the law and system through active administration-based work.

Hong, Hyun Sook Director/Ulsan Port Authority Digital Platform Project Group

I am in charge of planning, development, and operation in the IT field of UPA, and I am carrying out the mission of building a smart port. Building a smart port is a task that must be pursued through the cooperation of all departments. It is important to improve the work efficiency of internal employees and innovate customer services. The first link in establishing a smart port is the innovation of the company's internal working system. You have to work smart yourself to implement public services smartly. It is necessary to structure the current performing tasks, refrain from performing tasks by people, and build a system to do the tasks. In addition, it is necessary to promote revenue and cost rationalization by providing customers with practical information.



Jeon, Sung Nam Deputy General Manager/Disaster Safety Office, Ulsan Port Authority

We are carrying out a support project to establish a safety management system for workplaces with less than 50 employees in order to establish an inclusive safety net in accordance with the implementation of the Act on the Punishment of Serious Accidents and the Special Act on Port Safety. In addition, in connection with the disaster prevention facility construction project of the Ministry of Maritime Affairs and Fisheries, we are supporting the safety facility construction project for the safety of port transportation operators. We are committed to creating safe ports so that dock worker can work and return home in a safe environment. Not only that, but we also need to move toward the values of eco-friendliness and carbon neutrality. For the continuity of policy implementation and the securing of professionalism, we're required to promote our own experts instead of subcontractors. That is, in order to achieve UPA's vision, it will be necessary to establish and operate our own training program.



Jin, Dong Hoon Director/Korea Port

As the operator of Pier 5 to Pier 6 (Seats 1.2) of Ulsan Main Port, Korea Port is operating the business in continuous cooperation with Ulsan Port Authority. Since the merger between the Ministry of Maritime Affairs and Fisheries and the pier operating company in 2015, we have streamlined the operation of Ulsan Port and created extra value for the local community. Ulsan Port Authority has promoted the transition of logistics to create a 'clean port' to resolve the grievances of local residents. As a result, many cargoes were moved to other ports, and eventually, the volume of goods transported at Ulsan Port shrank. At the suggestion of the Ulsan Port Authority, we promoted a change in use as an automobile transshipment pier. Through this, we have grown more than before. However, in order to continue this, we need to operate a yard to store cargo.

2022 UPA Stakeholder Interview / External Stakeholders

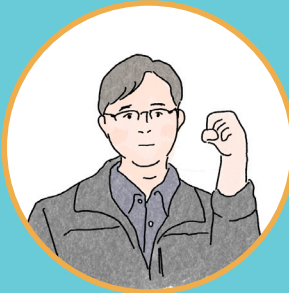


Kim, Si Dae Deputy General Manager /Ulsan Maritime

I am in charge of reporting the arrival and departure of ships entering Ulsan Port, port logistics cargo reporting, and reporting of low-speed vessels (VSR) and eco-friendly vessels (ESI). As a way to respond to climate change and disasters, we strive to achieve carbon neutrality for ships arriving at Ulsan Port. When a ship enters a port, it is economical to berth in a short time. However, the accelerated operation of ships generates a huge amount of soot and smoke. To prevent these problems, there are two ways: The first is to install emission reduction systems (ESI) on ships, and the second is to encourage low-speed operation (VSR). Attaching an ESI is ideal because fast berthing of ships is very important, but support for it should follow because ESI is expensive. Above all, most ocean vessels are the ships of foreign companies. Therefore, proper publicity is needed for this project.

Choi, Ki Young Head of Health and Welfare Department/Ulsan Shipping Labor Union

For workers in the port industry, safety is of the utmost importance. In order to create a safe working environment, safety education should be provided to raise workers' safety awareness. In addition, companies should prepare customized support measures considering the characteristics of the port industry for the health of workers. For example, workers performing loading and unloading operations may be assisted in equipping them with back protection. By realizing the value of safety in this way, we will have to spread social values as a port of inclusiveness that coexists with the Ulsan region. I think it is also important to deploy professional personnel within the corporation in order to respond appropriately to pending issues surrounding Ulsan Port.



Kim, Eun Suk Director /Ulsan Social Economy Support Center

The Ulsan Social Economy Support Center supports various social enterprises based on funds received from the Ulsan Port Authority. It is important for social enterprises to secure business continuity above all else. To this end, projects should be pursued under long-term goals, but project performance should be objectively and periodically evaluated through external participants. Through this, it is important to supplement the direction of business promotion and prepare effective support measures. In addition, it is important to recognize the difference between social enterprises and small and medium-sized venture businesses. It is also required to focus its capabilities on strengthening the self-sufficiency of social enterprises. [Social economy enterprises and small and medium-sized enterprises should be distinguished so that social economy enterprises receive the benefits they deserve.]



Choi, Ki Ho Executive Director/Jeongil Stolt Heaven

Jeongil Stolt Heaven in Ulsan provides storage and shipping of liquid cargo such as chemicals. Therefore, it is very important for us to secure cargo volume with competitiveness in port services. To this end, the task is to improve the quality of service through customer-oriented port operations. As Ulsan Port Authority promotes ESG management strategies, we are also facing a situation of transition to energy logistics. We will flexibly respond to the flow of the times with the existing facilities that handled liquid logistics. From a long-term perspective, it is essential to establish an ESG management system through the self-evaluation index of the Ulsan Port Authority in order to improve the quality of port services.

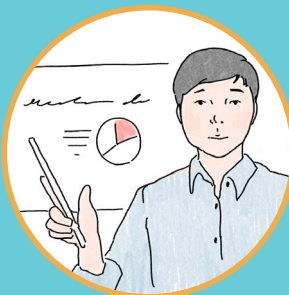


Lee, Jin Woong Director /Ulsan Port Logistics Association

Ulsan Port Authority needs to strengthen port service competitiveness so that ship owners using Ulsan Port can come again. After the establishment of a clean port at Ulsan Port, the cargo handling subject changed, which led many of the ship owners to move to other ports. As a result, Ulsan's port industry was unavoidable for restructuring, and the work burden of workers who remained at Ulsan Port increased. Flexible countermeasures must be prepared so that Ulsan residents and port companies can coexist. In order to create economic value through Ulsan port companies, support sales should be activated to promote new businesses by attracting new cargoes and minimizing corporate losses.

Oh, Hyun Soo Professor/Korea Port Training Institute Busan Training Institute

I am a safety policy advisory committee member and an advisory committee member of the 4th Industrial Revolution Promotion Committee at Ulsan Port Authority. In order to strengthen port service competitiveness, I am developing a technique to evaluate Ulsan Port's safety and health management system. In ESG management, the basic basis of S is the safety and health management system. Companies should invest in the safety of port stevedoring and establish safety policies that reflect customer needs. In addition, they're required to promote the sustainable growth of the company through socially responsible management. To this end, it is necessary to place additional personnel with expertise in the safety field within the Ulsan Port Authority, and let them focus on that field. In addition, since port safety is related to port operation, intentional support for the port operation department is deemed necessary.





A Sustainable Eco-Friendly Port



A Sustainable Eco-friendly Port



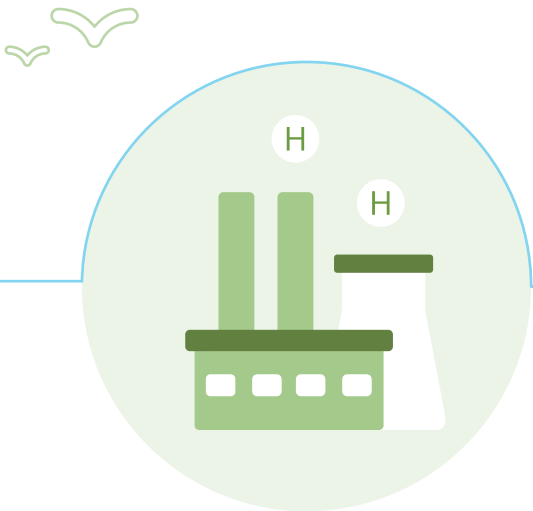
Eco-friendly Logistics Hub



Carbon Neutral Green Port



Reduction of Greenhouse Gases



Securing the Position as a First Mover in the Hydrogen Port by Having the First and Largest Hydrogen Terminal Project in Korea(Private Investment of KRW 511.4 Billion, Creation of 2.62 million tons cargo volume)



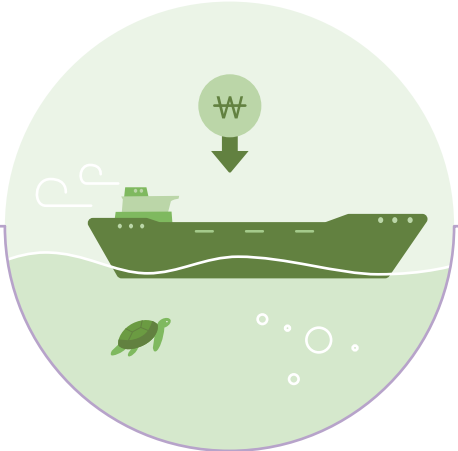
Started Construction of #3 Facility by Securing Demand for LNG Facilities (Investment of KRW 307 Billion) and the Creation of 700,000 Tons of Goods



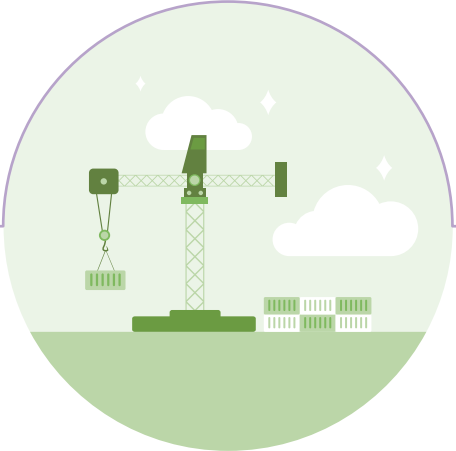
Recruitment of Private Companies Participating in the Joint Venture for the UPA LNG Bunkering Project and Signing of the Business Agreement



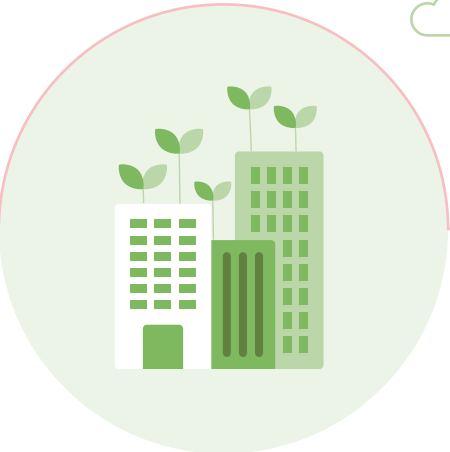
Carbon Neutral Council (UP-CEO) Launched



Reducing 14,000 Tons of Greenhouse Gas Emissions and 544 Tons of Air Pollutants through the Expansion of Low-speed Operation at Ulsan Port



Reduction of 22.1 Tons of Air Pollutants per Year through Eco-friendly Conversion of Private, Local Government and Public Sector Joint Handling Equipment



36.61% was reduced Compared to the Company Building's GHG Reduction Target(34%) for Three Consecutive Years, which Exceeds the Target.



Sustainable Expansion of Carbon Sinks



Achieved 133% Low-pollution Vehicle Ratio

UPA Leading Carbon Neutrality

UPA, the Eco-Port Leading in Carbon Neutrality

Ulsan Port Authority has established the <Ulsan Port 2050 Carbon Neutral Roadmap> as the first step to achieving zero carbon emissions from Ulsan Port by 2050. Ulsan Port Authority, which has operated ports based on crude oil and petroleum products, has established the following roadmap based on the environmental analysis results of the government's 2050 carbon-neutral promotion strategy, and benchmarking of advanced overseas cases. According to this roadmap, we aim to reduce carbon emissions by 30% by 2030 and 50% by 2040 compared to 2018 and reach 100%, or zero carbon emissions, by 2050. In the future, Ulsan Port Authority plans to actively respond to the paradigm shift in port and energy due to the climate change crisis and promote the low-carbonization of port operation facilities, activation of eco-friendly incentives, and activation of a carbon-neutral circular economy in order to lay the foundation for sustainable port operation.

Establishment of <2050 Carbon Neutral Roadmap> for Realization of Green Ulsan Port

Environmental Analysis for the Establishment of a Carbon Neutral Roadmap for UPA		
Analysis of Government and Shipping and Port Sector Policies	Ulsan Port Status Analysis	Benchmarking of Other Ports
<ul style="list-style-type: none">Government's <2050 Carbon Neutral Promotion Strategy>Reinforcing IMO CO2 emission regulations	<ul style="list-style-type: none">Port operation based on high carbon energyLack of consensus on carbon neutrality among logistics agents	<ul style="list-style-type: none">(Rotterdam) Expansion of hydrogen infrastructure(Yokohama) Eco-friendly incentive system

Promoting <Ulsan Port 2050 Carbon Neutral Roadmap>			
Emission Reduction Roadmap	<ul style="list-style-type: none">Realization of carbon neutrality at Ulsan Port by 205030% of the 2018 greenhouse gas emission standard in 2030, 50% in 2040, and 100% reduction in 2050	Direction	<ul style="list-style-type: none">Establishment of 9 carbon-neutral projects by 2050; low-carbonization of port operation facilities, activation of eco-friendly incentives, and creation of carbon-neutral circular economy, etc.

Outcome Responding to Paradigm Shifts in Ports and Energy Due to the Climate Change Crisis. Laying the Groundwork for Sustainable Port Operation

Roadmap	2030 30% Reduction in Carbon Emissions at Ulsan Port	2040 Establishment of Foundation for Carbon Neutrality in Ulsan Port	2050 Realization of Carbon Neutrality at Ulsan Port
Goal	<ul style="list-style-type: none">(Carbon Reduction) 30%(Carbon Neutral Investment) 5% of Total Budget(High Voltage AMP) 9 Units	<ul style="list-style-type: none">(Carbon Reduction) 50%(Carbon Neutral Investment) 7.5% of Total Budget(High Voltage AMP) 39 Units	<ul style="list-style-type: none">(Carbon Reduction) 100%(Carbon Neutral Investment) 10% of Total Budget(High Voltage AMP) 66 Units
Strategy	Establishment of Low-carbon Port Infrastructure	Transition to Eco-friendly Port Operation	Creation of a Carbon-neutral Port Ecosystem
Task	<ol style="list-style-type: none">Acceleration of low-carbon energy transitionInnovation of high-carbon port operation structureLow-carbonization of port operation facilities	<ol style="list-style-type: none">Vitalization of the incentive system for eco-friendly shipsConversion of eco-friendly unloading and transportation equipmentVitalization of eco-friendly and low-carbon energy	<ol style="list-style-type: none">Establishment of port-centered carbon-neutral support systemActivation of a carbon-neutral circular economyRaising community awareness of carbon-neutral ecosystems

UPA, Building a Carbon-Zero Eco-Port for Carbon Neutrality

Ulsan Port Authority has reduced 13,010 tons of greenhouse gases by building a zero-carbon 'eco-port' for carbon neutrality. To this end, we followed the government's GHG reduction guidelines and discovered self-reliant energy-saving factors such as installing high-efficiency LEDs in office buildings. In addition, 100% of new vehicles were eco-friendly vehicles, and fuel consumption was drastically reduced by installing electric vehicle charging stations in civil petition parking lots. In addition, we established a waste resource circulation network by reducing pollutant emissions in ports through air quality management and through marine waste recycling projects. In particular, by practicing carbon reduction through new and renewable energy businesses such as LED conversion and solar power generation, we registered greenhouse gas emission rights in the LED field for the first time as a domestic port. Through these achievements, we realized sustainable social values by revitalizing the carbon-neutral circular economy and spreading awareness of carbon neutrality in the local community.

Outcome

Reduction of Greenhouse Gases (Office Building Facilities)

- 555.312 tons of emissions according to the greenhouse gas reduction target → Achieved 535.93 tons (34.3% reduction from the previous year)
- Active implementation of government-recommended standards and achievement of exceeding goals (2 consecutive years)

Provision of Eco-friendly Vehicles and Reduction of Fuel Consumption

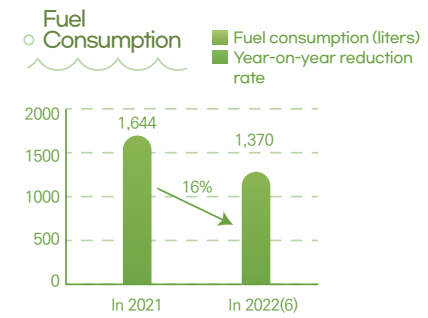
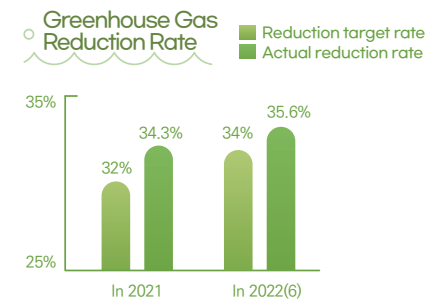
- As of 2021, purchase of eco-friendly vehicles.
- Achieved 133% of low-emission vehicles with 2 electric vehicles and 1 hybrid vehicle
- Reduction of fuel consumption by more than 60% for 2 consecutive years (67.7% in 2020, 68.9% in 2021)

LED Upgrade and Renewable Energy Business

- Greenhouse gas reduction (866 tons)
- LED 208 tons (cumulative 972 tons) Solar power 658 tons (cumulative 2,277 tons)
- Registered GHG emission rights in the port LED field for the first time in Korea (approximately 81 tons/year)

(As of June 30, 2022)

Greenhouse as Reduction Rate and Fuel Consumption Reduction Trend



Greenhouse Gas Emissions Trading System

This is a greenhouse gas reduction system stipulated in Article 17 of the Kyoto Protocol. It is a system in which the government assigns annual emission rights to workplaces that emit greenhouse gases to emit greenhouse gases within the allocated range. In addition, it is a system that evaluates the actual GHG emissions of the assigned business sites and allows trade between business sites for surplus or insufficient emission rights. In accordance with Article 46 of the "Basic Act on Low Carbon, Green Growth ('10.1)", the "Act on Allocation and Trading of Greenhouse Gas Emissions Permits ('12.5)" was enacted for Korea's emission trading system and has been in force since January 1, 2015. (Korea Environment Corporation)

Launch of Ulsan Port Carbon Neutrality Public-Private Joint Consultative Body UP-CEO

UPA launched 'UP-CEO', a joint cooperation organization, the Ulsan Port Carbon Neutral Council. 'UP-CEO' is an acronym for Ulsan Port Carbon Emission 0 (zero), and it is a governance-type cooperative body in which 11 member companies engaged in business activities in Ulsan Port participate. Businesses and organizations that participated in UP-CEO include the UPA, Ulsan Port Shipping Association, Ulsan Port Shipping Agency Association, Ulsan Port Pilot Association, Ulsan Branch of Korea Tug Industry Cooperative, Ulsan Port Logistics Association, Ulsan Port Tank Terminal Association, etc. . In addition, two oil refineries, SK Energy and S-Oil, UNCT, a container pier operator, and Ulsan Shipping Labor Union, which provides port labor, also participated. UP-CEO will work together by sharing policies and information for the realization of carbon neutrality at Ulsan Port in the future.



Established Ulsan Port Carbon Neutral Council

UPA Leading Carbon Neutrality

UPA's Efforts to Realize Carbon Neutrality

UPA practices greenhouse gas reduction and energy saving to respond to the climate crisis. To this end, we establish a rationalization plan for energy use, organize and operate an energy conservation promotion committee, and purchase products with a first-class energy efficiency rating when replacing outdated electronic products in the office building. In addition, by introducing 8 out of 9 government vehicles as eco-friendly vehicles, we not only achieved 100% of the government-recommended target but also contributed to reducing greenhouse gas emissions. We will continue to strive to achieve carbon neutrality within the company by reinforcing and checking greenhouse gas reduction and energy saving.

Summer Season	Winter Season
<ul style="list-style-type: none"> Indoor Temperature Turn off the air conditioner in the office building for 1 hour (15:30~16:30), spread an energy-saving culture through in-company announcements Lighting Turn off lights in hallways and offices during lunchtime, turn on minimal lights during night shifts, replace low-efficiency lights in office buildings Electricity Turn off the pc monitor, turn off all office equipment power to cut off standby power when leaving work Energy Reinforcing energy inspection activities, such as encouraging the use of the stairs on the lower floors and nearby floors, and checking the power of individual's heaters/ACs. 	<ul style="list-style-type: none"> Indoor Temperature 18°C→17°C adjustment, heating facility, hot water outlet temperature (existing 50°C → 45°C) Adjust flow rate, pressure, etc. Lighting Turn off 50% of window and aisle lights, operate a separate work gathering place for flexible workers and night workers * Purchase and distribute office stands (30) Electricity Restrictions on use of the multi-purpose hall. Adjusting the operation of the thermo-hygrostat. Installation of the automatic control system for efficient management Energy Leading implementation of the Every-fifth-day-no-driving System (64 vehicles), energy saving idea contest

Practice of Reducing Disposable Items to Respond to the Climate Crisis

UPA is actively responding to the <Practical Guidelines for Reducing Disposable Use by Public Institutions> to achieve carbon neutrality by 2050. To internalize ESG values, we are trying to spread an eco-friendly culture by educating and reducing the use of disposable products. We are actively promoting campaigns for no disposable products and restrictions on bringing them in, provision of facilities for multi-use items (umbrella rainwater remover, replacement of all hand dryers, multi-use cup sterilization washer, etc.), and promotion of recycling products. In addition, UPA is contributing to the local economy and consumption revitalization by establishing a corporate culture for carbon neutrality and running a campaign to promote using tumblers with cafes in Jangsaengpo.

Labor-Company-Government's joint Port Cleanup Activities in UPA

In celebration of World Environment Day, Ulsan Port Authority carried out labor-company-government joint port cleanup activities for 'clear waste-free port operation'. This activity was linked to the coastal cleanup activities conducted by the Ministry of Maritime Affairs and Fisheries and was an event to collect garbage and clean up in Ulsan Port. The Ulsan Regional Office of Oceans and Fisheries, Korea Marine Environment Corporation, the Port Union, and Ulsan Port Management Co. gathered for this joint cleanup activity. Through this event, UPA had an opportunity to reflect on the seriousness of marine debris and the importance of preserving the marine environment. We will continue to create a clean Ulsan Port through continuous environmental management in the port.



Labor-Company-Government's joint Port Cleanup Activities

Energy Conversion and Green Hydrogen Port

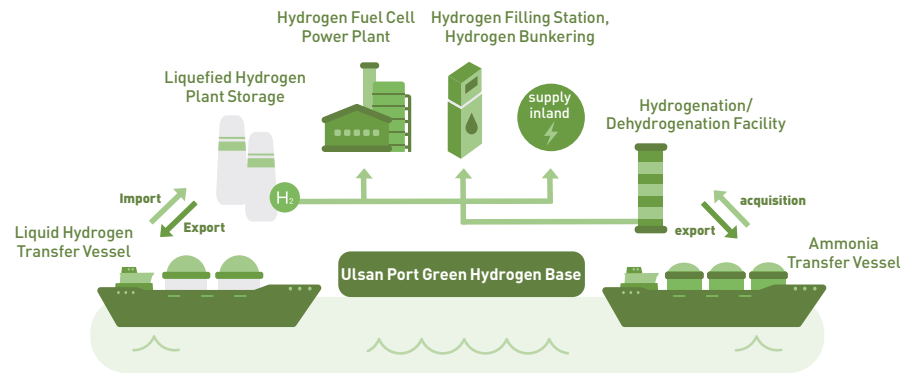
We See the Future in the Energy Transition

Ulsan Port Authority will build a hydrogen-only port infrastructure and operate a hydrogen tank terminal at Ulsan Port soon to create an overseas green hydrogen supply chain and logistics ecosystem. In addition, we plan to carry out projects necessary for overseas green hydrogen imports by securing overseas sellers of green hydrogen. As of 2020, oil and liquefied natural gas (LNG) transported at Ulsan Port totaled 153.15 million tons, accounting for 34% of the total domestic cargo volume (449.15 million tons). Ulsan Port is Korea's No. 1 energy import/export gateway, and infrastructure for processing imported energy cargoes in liquid form is concentrated. There are hydrogen demand sources such as the Ulsan Petrochemical Complex and the National Industrial Complex within a radius of 10km, so it is expected to be reborn as a hydrogen logistics hub port.

New Future Potential of the Port Through the Discovery of New ESG Businesses

Presenting a Blueprint for an Inland Fuel Hydrogen Port and Leading Hydrogen Energy Jobs

Establishment of the Business Model of Ulsan Port Green Hydrogen Logistics Hub



(UPA) Hydrogen-only pier/site construction

Proposal/Establishment of the Cooperation for the Green Hydrogen Logistics Hub



(Private) Hydrogen import, production, storage, and export operations

The Government Selected Ulsan Port as the Representative Hydrogen Port

Benefit

By 2030 by Attracting KRW 1.2 Trillion of Private Investment
Expected Effect of Creating 6,700 Hydrogen-related Jobs

Energy Conversion and Green Hydrogen Port

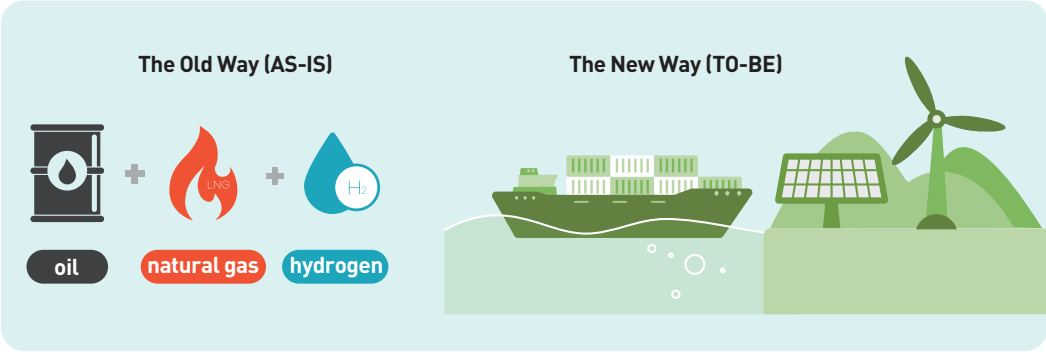
Innovation in Maritime Logistics, from Liquid Logistics to Eco-logistics

Ulsan Port Authority, the largest liquid logistics center in Korea, has been faithfully fulfilling its role as an oil hub in Northeast Asia with large-scale storage facilities for crude oil and petroleum products. However, in accordance with the global paradigm shift of carbon neutrality and green energy conversion, and the government's new carbon-neutral policy, Ulsan Port Authority also sought to establish a green energy logistics hub. First of all, we found items that can be treated as liquid energy from the renewable energy pool. In addition, reflecting the strengths of Ulsan Port, LNG and hydrogen, which already have large-scale infrastructure, were selected as the main energy sources. Based on this, Ulsan Port Authority has transformed from a liquid logistics-centered port to an energy logistics-centered port, reborn from an oil-centered port to a hydrogen-centered port.

Securing Future Growth Engines by Reestablishing the Strategy for Being the Ulsan Port Energy Logistics Hub

Business Conditions	Government's Policy Change		UPA's Current Issues	
	<ul style="list-style-type: none">Carbon neutrality by 2050 + Korean New Deal (national policy)Plan to supply 3.9 million tons of hydrogen by 2030 (Ministry of Commerce, Industry and Energy)Hydrogen port construction plan by 2030 (Ministry of Maritime Affairs and Fisheries)		<ul style="list-style-type: none">It is necessary to secure future growth engines due to the decrease in fossil fuel products, the main cargo of Ulsan Port.Expansion of business areas due to the low growth of the traditional port industry	
Strategic Goal Linkage	Growth	Unique Industry	Eco-Friendly	
	15% of new business sales	170 million tons of liquid energy volume	50% carbon reduction rate within the facility	
Redefine Strategy	AS-IS		TO-BE	
	<ul style="list-style-type: none">Maximization of liquid energy transportation volume creation		<ul style="list-style-type: none">Emerging as a port leading to carbon neutrality by establishing an eco-friendly energy logistics hub	

Taking Advantage of Ulsan Port's LNG Infrastructure to Become a Central Port for LNG logistics



UPA, Innovative Growth as a Green Hydrogen Energy Logistics Hub

UPA decided to build a supply distribution network and industrial ecosystem to become a key port for green hydrogen*, a key future energy source. Accordingly, we established a mid-to-long-term roadmap to make Ulsan Port a port that encompasses hydrogen import (supply) and production. In particular, in accordance with the 2030 hydrogen port construction plan of the Ministry of Oceans and Fisheries and the 1.96 million tons of hydrogen import plan of the Ministry of Commerce, Industry, and Energy, a large-scale hydrogen storage base was created at Ulsan Port. In addition, we plan to foster hydrogen imports and domestic distribution and supply bases. In particular, in November 2021, at the 4th Hydrogen Economy Committee presided over by the Prime Minister, Ulsan Port was officially selected as the domestic hydrogen representative port, and it has grown into a green hydrogen base port.

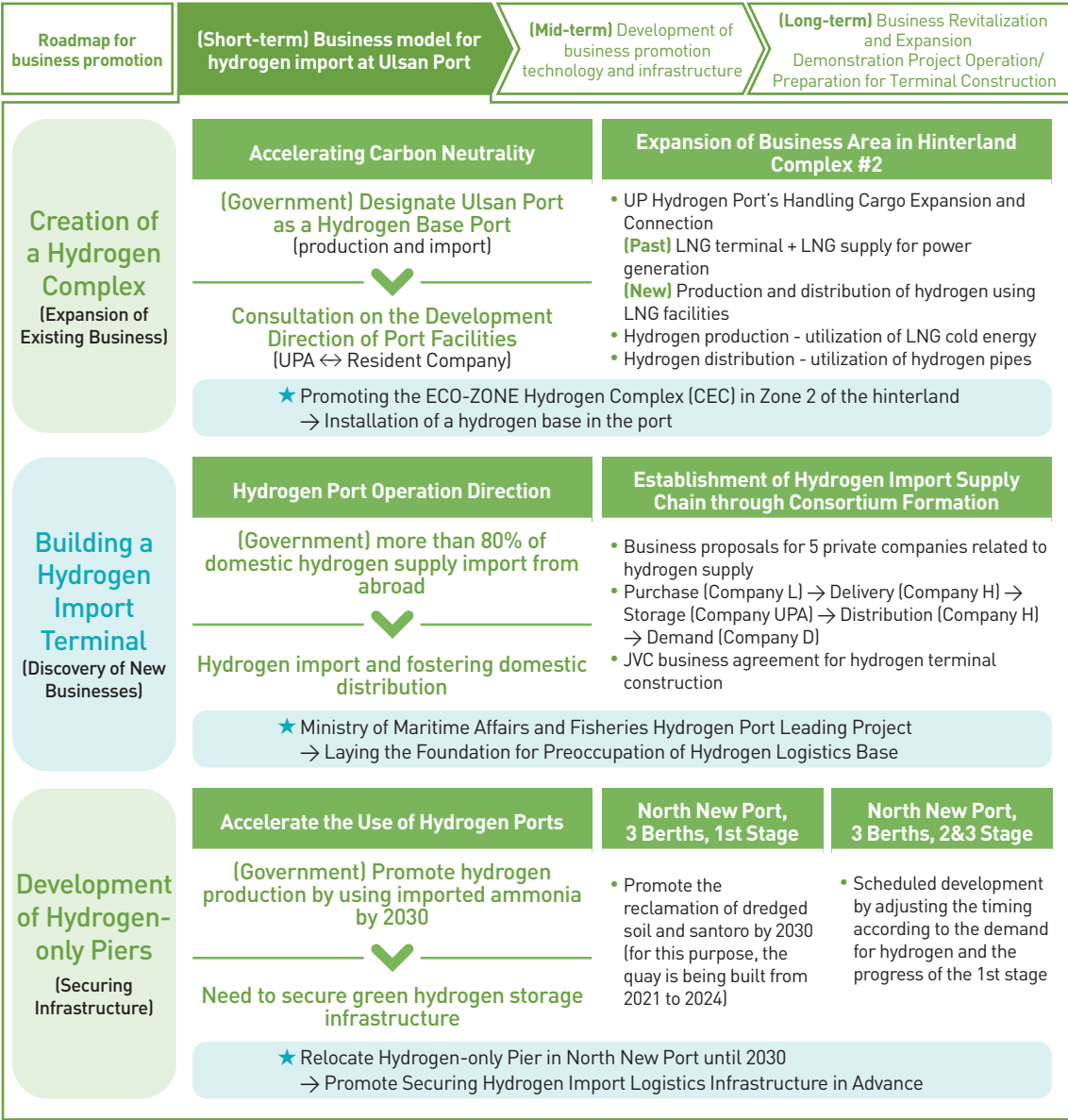
Through Green Hydrogen Production, Supply Chain Selection, and Storage Infrastructure Construction

Establishment of Hydrogen Import Business Model

→ Attract KRW 1.2 Trillion of Private Investment, The Estimated Economic Ripple Effect of KRW 312.1 Billion, and Annual Cargo Volume of 2.7 Million Tons

* green hydrogen: Unlike by-product hydrogen or LNG-modified hydrogen, It is a water electrolytic hydrogen produced with electricity from renewable energy that produces zero carbon emissions.

Construction of Hydrogen Base Port through UPA Type Clean Energy Business









Green Ulsan Port's Greenhouse Gas Reduction Project

Responding to Policy Changes to Improve Port Air Quality

Ulsan Port Authority is making efforts to reduce air pollutants such as fine dust generated from ports for the next five years from 2021. We have established the '1st Comprehensive Port Area Air Quality Improvement Plan (2021-2025)' and are following the 「Port Air Quality Act」, which is a systematic and effective policy to improve air quality in the port area in the mid- to long-term every 5 years. . We are planning to activate the 'Ship Low Speed Operation Program', which is a plan to reduce fine dust by reducing the fuel consumption of ships. In order to expand the number of eco-friendly ships, we will support the private companies' eco-friendly ship construction, installation of green facilities, and DPF attachment projects. In addition, we plan to develop technologies related to hydrogen and electric propulsion ships, which are expected as new eco-friendly ships in the future.

As of December 31, 2021

Improvement of Port Air Quality through Customized Reduction Activities

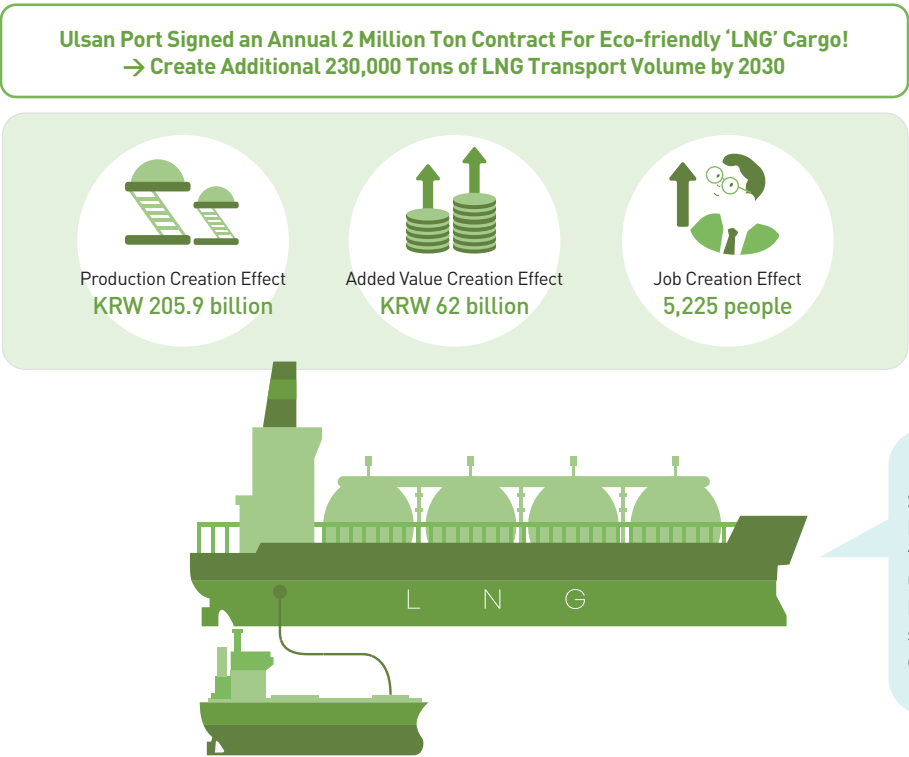
Classification	Management Part	Pollution Source	Efforts	Outcomes
Sea (Ship)	 From the section where the ship enters the port boundary to the entrance of the passage	Low-eco friendly Ships and Fuel	<ul style="list-style-type: none">Encourage eco-friendly ships to enter ports through the 'ESI incentive system' and reduce entry and departure fees for eco-friendly shipsSulfur content is regulated for ships in operation. Prohibited use of fuel oil with a sulfur content of 0.5% or more	<ul style="list-style-type: none">349 Eco-friendly ships entered the portReduction of 2,599 tons of air pollutants (SOx)
	 From route entrance to port facility	Fossil Fuel Use	<ul style="list-style-type: none">Ships through the 'Vessel Slow Operation Program (VSR)'Inducement of low-speed operation (reduction of entry and departure fees), reduction of fossil fuel consumption and greenhouse gas emissions, and reduction of air pollutants when ships operate at low speed	<ul style="list-style-type: none">1,558 Incoming ships participate in low-speed operation445 Tons of air pollutants reducedReduction of 11,347 tons of greenhouse gasses
	 After docking at port facilities	Fossil Fuel Use	<ul style="list-style-type: none">Sulfur content regulation for ships berthing and anchored. Prohibited use of fuel oil with a sulfur content of 0.1% or morePower supply through AMP to ships berthing.Replace fossil fuel use	<ul style="list-style-type: none">Reduction of 9,128 tons of air pollutants such as fine dust517 Tons of greenhouse gas reduction
Land (Unloading Facilities)	 Harbor loading and unloading	Fossil Fuel Use	<ul style="list-style-type: none">Change and operation of unloading equipment to eco-friendlyOperation of 31 yard tractors equipped with DPF(UPA) DPF* installation support/(unloader) DPF equipment operation <small>* DPF : exhaust gas reduction device</small>	<ul style="list-style-type: none">0.3Ton reduction in fine dust
	 Travel by land	Non-oxide Generation	<ul style="list-style-type: none">Scattering dust is generated during cargo unloading and transportation. Operation of 22 cargo vehicles equipped with airtight covers to reduce diffusion. Operate water cannons to reduce fine dust in the port (April-November)	<ul style="list-style-type: none">0.3Ton reduction in fine dust
	 Port facility	Fossil Fuel-based Power Use	<ul style="list-style-type: none">Solar power facility and operation (main port)Replacing fossil fuel power with renewable energyReplace port lighting with LEDGreenhouse gas reduction by reducing electricity consumption	<ul style="list-style-type: none">Reduction of 866 tons of greenhouse gasesGreenhouse gas emission permit business approved for the first time in Korea in the field of port LED

Air Pollutant Analysis by Emission Source and Real-time Port Air Quality Monitoring

We have built unloading and storage facilities for dusty cargoes to prevent scattering dust generated when handling dusty cargoes such as cement, coal, and sand at the port. Forests were created by planting trees around ports that handle dusty cargoes. In addition, fishermen and port workers who are easily exposed to fine dust are instructed on how to respond to fine dust. We clean the loading dock when high concentrations of fine dust occur, and use eco-friendly loading and unloading equipment. We have established a system that can analyze air pollutants generated in ports by emission sources (ships, loading equipment, trucks) and monitor air quality in real time. In addition, we plan to develop a system that simulates the air pollution analysis and policy effects of the port through artificial intelligence by implementing a virtual port with digital twin technology.

Creation of Eco-friendly LNG Cluster

In order to reduce air pollutants generated within the port and build an eco-friendly port infrastructure, we are pushing to convert the fuel of 'Yard Tractor (YT)' to LNG. In addition, we are developing a system that restricts the entry and exit of vehicles with level 5 emission gas in the port through cooperation with the Ministry of Environment. In addition, we are expanding the number of LNG-fueled ships and building an LNG bunkering terminal at Ulsan Port in preparation for an increase in demand for LNG bunkering. In order to reduce emissions from ships anchored in ports, by 2030, 248 berths of high-voltage onshore power supply (AMP) will be installed in 13 major ports. In addition, we will build and support AMP power-receiving facilities.



Key Performance

Air Pollutants
Total Reduction of 12,173 Tons

(Effect of Reducing Air Pollutants)
Effect of replacing two 4,000 MW class thermal power plants (capable of supplying power to 2,600 households for one year)

Green Gas
Total Reduction of 12,730 Tons

(GHG Reduction Effect)
Effect of planting **5.4 million pine trees** (2.3 thousand ha),
Equivalent to **KRW 380 million** in carbon credit trading

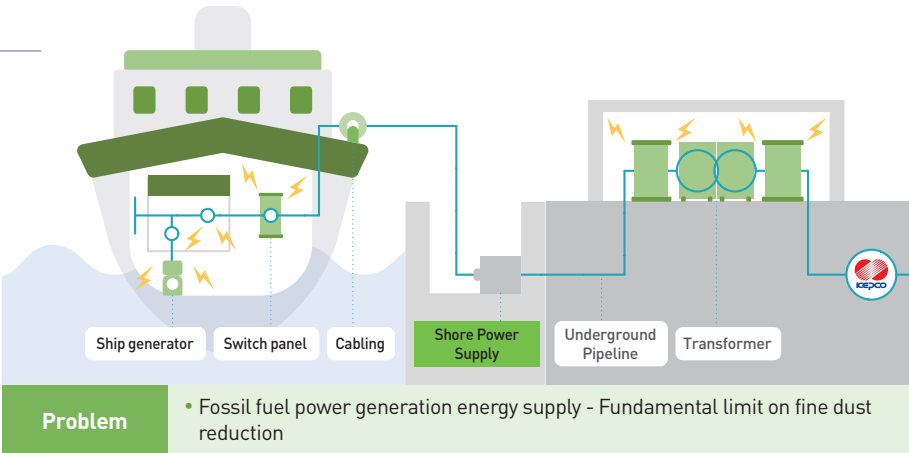
New Eco-friendly LNG Cargo at Ulsan Port Contract for 2 Million Tons per Year

Green Ulsan Port's Greenhouse Gas Reduction Project

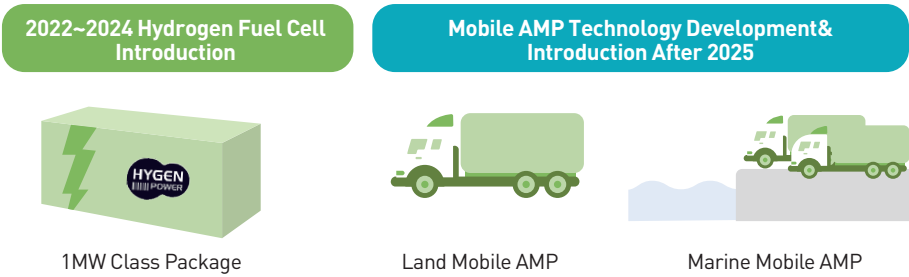
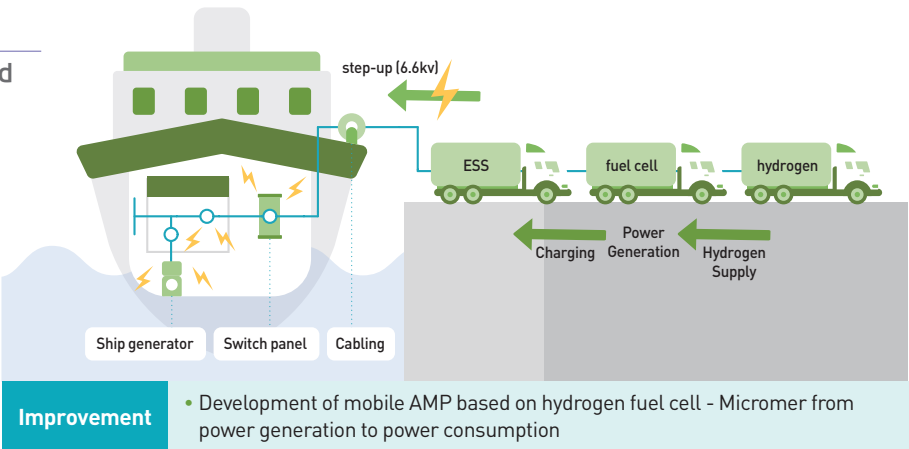
Greenhouse Gas Reduction by Introducing Hydrogen (Fuel Cell)-Based Mobile AMP Ttechnology

UPA has tried to reduce fine dust emissions by using less engines by supplying electricity to ships. AMP (Onshore Power Supply), a device that supplies power to berthing ships, can be an alternative for the port atmospheric environment but has some fundamental limitations. There are still limits to the fact that energy is obtained through fossil fuels and fine dust reduction. In order to fundamentally solve these problems, UPA will promote the use of eco-friendly energy by developing a mobile AMP based on a hydrogen fuel cell. In addition, we want to reduce the generation of fine dust to zero. To this end, hydrogen fuel cells will be introduced in 2024 and mobile AMPs will be introduced after 2025 through the hydrogen network established with Ulsan City and technology development cooperation with H company.

Existing Method (As-Is)



Improved Method (To-Be)



Securing Carbon Credits through the Expanded Use of Renewable Energy

Ulsan Port Authority developed the world's first port LED in 2009 and replaced a total of 68 lighting towers in the port with LEDs by 2021 with a total budget of KRW 6.45 billion. Through this, we were the first in Korea to be approved for carbon credits in the port light emitting diode (LED) field. This project replaces the existing sodium and halogen lighting towers at Ulsan Port with LEDs, and through this, it is possible to reduce greenhouse gas emissions by about 81 tons per year. Carbon credits are greenhouse gas emission rights allocated when a company changes its technology development or electricity operation method and is certified to reduce greenhouse gas emissions by the government. In Korea, carbon credit trading was introduced in 2015. Companies are allocated annual emission permits, and trade is allowed for shortfalls and excesses. In the future, the UPA will promote hydrogen ship onshore power facilities (AMP) and hydrogen fuel cell port installation (2024), solar power generation, and the offshore wind power industry. UPA plans to expand the carbon credit business in Ulsan Port. Through these achievements, Ulsan Port Authority intends to lead the world's eco-friendly energy market based on the best technology we have.



LED lighting tower approved for carbon credits in the port LED field for the first time in Korea

Creating an Eco-friendly and Clean Ulsan Port

UPA operated various internal campaigns such as <Carbon Footprint Reduction> to realize carbon neutral and eco-friendly ports. With the goal of reducing 1 ton of greenhouse gas per employee per year, we ran the <Digital Carbon Diet> campaign which promotes reducing greenhouse gas emissions by frequently deleting unnecessary emails. We also encouraged all employees to recycle PET bottles and to attend special lectures on carbon neutrality to reduce carbon emissions in all areas of our lives. In addition, we promoted bamboo planting in the region in collaboration with Ulsan City to expand carbon sinks. According to a study by the National Institute of Forest Science, bamboo is an excellent fossil fuel substitution as its greenhouse gas absorption rate and biomass production rate are 3-4 times better than other tree species. It also makes a large amount of phytoncide that helps for creating a healthy ecological space.

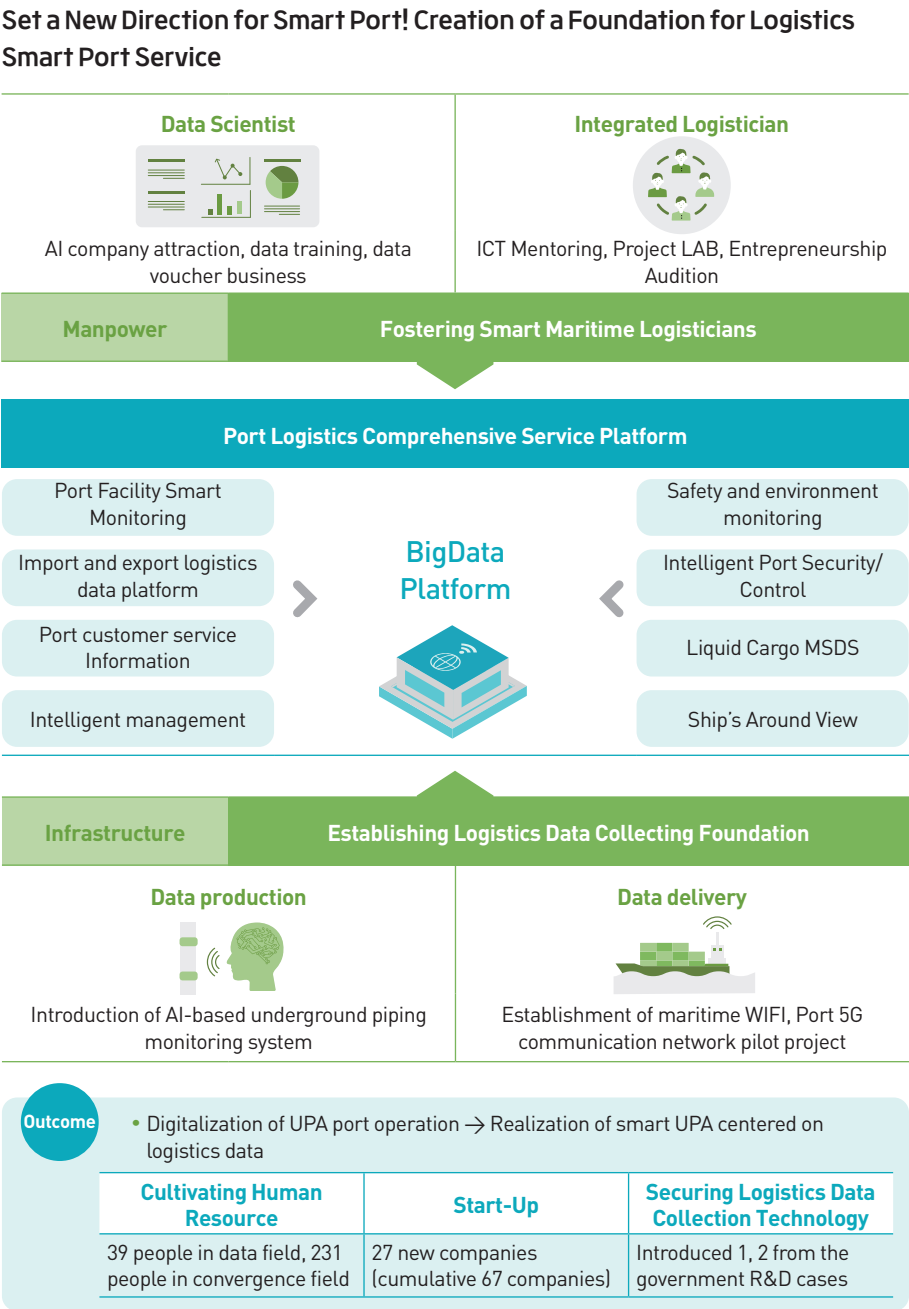


Bamboo Planting Activities for Carbon Neutral

Eco-friendly Smart Port Leaping in the Future

Customized Smart Port and Smart Maritime Logistics System for Ulsan Port

UPA has been focused on liquid cargoes using conventional loading and unloading equipment. That is, we have limitations in converting to a smart port compared to other ports whose cargo volume is container cargo-centered and unloading has already been converted to semi-automation. However, we have overcome the difficulties of infrastructure according to these cargo characteristics and set a new direction for Ulsan Port. The direction is to establish a one-stop digital port service from port entry to port departure. We aim to realize the unique smart port of Ulsan Port by proceeding with the establishment of a port logistics service platform, cultivation of smart maritime logistics talent, and establishment of logistics data collection infrastructure.



CEO's Strong Commitment to Change to Digital Green

The representative paradigm leading the future is climate crisis response and the 4th industrial revolution, and this is already a world trend that cannot be reversed. UPA will create an eco-smart port by applying countermeasures against the global climate crisis and 4th industrial revolution technology to the port industry. UPA's CEO suggested the following directions; leading carbon neutrality in the port sector, discovering resource circulation business models, building a unique smart port for Ulsan Port, supporting smart maritime logistics startups, and nurturing human resources.



UPA was Officially Selected as the **Hydrogen Representative Port**
(The 4th Hydrogen Economy Committee presided over by the Prime Minister, November 2021)

Founding **27 Startups** of Young Adults,
Creation of **51 Jobs** for Young Adults,
Support for **9 Startups** for their Advancement

Eco-friendly Smart Port Leaping in the Future

Ulsan Port, the Safe and Efficient Smart Port

Port safety is largely composed of three things: industrial safety net, rapid disaster response, and security management. Emphasizing productivity and efficiency naturally leads to neglect of safety which might cause industrial accidents. However, Ulsan Port Authority introduced the 4th industrial revolution technology to the port safety system to achieve safety and efficiency (productivity) at the same time. In other words, through the promotion of the Digital New Deal 2.0 project, we will install a new safety system based on various digital convergence technologies as follows. In this way, we expect to secure productivity and efficiency while ensuring port safety.

Efforts and Achievements of Smart UPA to Spread Digital Convergence through Digital New Deal 2.0

SOC Digitization		Establishment of Safe Smart Ulsan Port through the Digitalization of the Port Site
Digital Convergence at the Port Site		<ul style="list-style-type: none">Installation of AI smart fire extinguishers for real-time fire detection.Introduction of IoT-based measurement management system for risk detectionInstalling smart IoT air showers in crowded facilities
Hyper-connected New Industry		Accepting New Industries for Rapid Digital Transformation
Cloud		<ul style="list-style-type: none">Establishment of maritime and fisheries cloud conversion ISP for early use of cloudPromote change to metaverse by selecting cloud as a support project
Metaverse		<ul style="list-style-type: none">ICT convergence business support by utilizing various metaversesApplying metaverse to various programs such as Employment Camp, Golden Bell for promoting ethics and integrity, Public Data Training Center, etc.
Virtual Infra		Expansion of Virtual Digital Infrastructure to Respond to the Post-COVID-19 Era
Remote Work		<ul style="list-style-type: none">Providing a cloud-based efficient collaborative work environmentSecuring work continuity even in the Covid-19 era. Creating flexible virtual infra and administration
Flexible Virtual Admin		<ul style="list-style-type: none">Provides Port-MIS paperless bill (Kakao Talk, Social media, etc.) and online payment serviceConvert public forms to electronic through 'Document 24' for the first time in PA (application for use of port facilities)



Responding to COVID-19 and securing construction site safety



Laying the foundation for the expansion of new hyper-connected industries



Leading the digital transformation to respond to the virtual era

Analysis and Management of Greenhouse Gases and Air Pollutants in UPA through Smart Technology

Ulsan Port Authority is striving to improve air quality by classifying pollution sources in the port. By utilizing big data analysis technology which is the core technology of the 4th industrial revolution, greenhouse gases, and air pollutants in UPA are analyzed and managed throughout the entire port logistics process, from ship arrival to unloading. First, we are using big data analysis in the port sector provided by the government. Through this process, Ulsan Port Authority is effectively managing port air quality and reducing pollutants.

Air Quality Analysis and Management Using Big Data

Classification	Emissions Calculation
Data Collection	<ul style="list-style-type: none">(Government Data) Information on ships entering Ulsan Port(Stevedore Data) Operation information of unloading equipment
How to Select	<ul style="list-style-type: none">Applying the emission formula of the European Environment AgencyReflecting changes in the characteristics and environment of Ulsan Port → Improved the emission formula

Establishment and Management of Reduction Targets (Unit: 1,000 tons)				
Emission Category		2018	2021	
			Goal (Reduction Rate)	Performance (Reduction Rate)
Sea	Air Pollutants	35.0	12.1(▲34.5%)	12.2(▲34.8%)
	Greenhouse Gas	819.6	8.5(▲1.0%)	11.9(▲1.4%)
Land	Air Pollutants	0.279	0(▲-)	0.001(▲0.3%)
	Greenhouse Gas	33.5	0(▲-)	0.866(▲2.6%)
Total	Air Pollutants	35.2	12.1(▲34.3%)	12.2(▲34.6%)
	Greenhouse Gas	819.6	8.5(▲1.0%)	12.7(▲1.5%)

Set up and carry out action tasks			
Sea	<ul style="list-style-type: none">Eco-friendly Incentive	<ul style="list-style-type: none">Low-speed navigate program	<ul style="list-style-type: none">AMP Operation
Land	<ul style="list-style-type: none">Replacing unloading equipment with eco-friendly ones	<ul style="list-style-type: none">A water cannon Operation	<ul style="list-style-type: none">Introduction of new and renewable energy

Eco-friendly Infrastructure Construction and Resource Circulation

Establishment of Waste Resource Circulation Network through Marine Waste Recycling Business

Marine waste such as waste plastic discharged from ships amounts to about 2,000 tons per year, and landfilling or incineration of such waste causes many environmental problems. To solve this problem, Ulsan Port Authority started a resource circulation project by creating a resource circulation belt and providing convenience facilities to waste utilization areas. It expanded the business of collecting waste plastic and developing and selling upcycling products. By signing a business agreement with seven public institutions for the joint practice of ESG management, we collected not only marine plastics but also plastics from ships and local institutions. In addition, an upcycling production line was established at a local company to create a business model that produces, sells, and consumes 14 types of products such as work clothes and work vests.

From Marine Debris to a Safe Playground

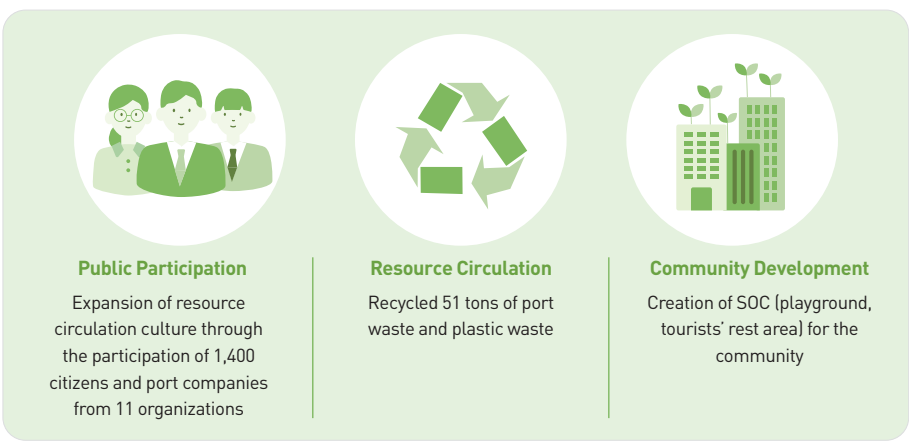
In Gyeoru Park, Ulju-gun, Ulsan, Korea's first "Happiness Sharing Safety Playground" that recycled port waste was built. As a result of the living SOC creation project planned to respond to climate change, 51 tons of waste tires, which were previously landfilled and incinerated, were used as flooring for the playground. This project is expected to reduce 57.6 tons of carbon absorbed by a 1.8 acres (2,300 pyeong) pine forest for a year. We will continue to minimize the negative impact of Ulsan Port on the local environment and strive to create new values together with the local community.



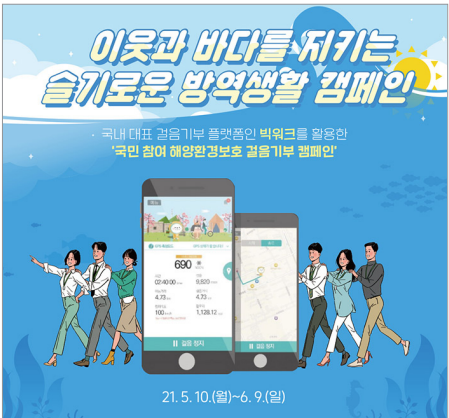
Ceremony for the creation of the Safe Playground

Building a Ship Wastewater Treatment Facility to Protect the Marine Ecosystem

Due to the absence of a ship wastewater treatment facility in Ulsan, logistics costs have increased and the port users have been inconvenienced by transporting ship wastewater to other ports. In order to solve this problem, Ulsan Port Authority requested a review of the site for the ship wastewater treatment facility, coordinated various interests among companies that applied for site use, and reviewed the safety of the site. Through this effort, two facilities were created: a ship wastewater treatment facility of 3,000 m2 and a marine waste recycling center of 3,478.3 m2 in a hinterland. This is the first ship wastewater treatment facility in Ulsan. These facilities reduced logistics costs and contributed to the balanced development of the region. In addition, the use of the hinterland increased the company's income. (KRW 74 million per year)



Wow Plastick Challenge



Marine Environment Protection Walk Campaign



Happiness Sharing Safety Playground



Woo-Ga Rest Area

Ensuring children's right to play in industrial complexes

Support for revitalizing fishing tourism that has been stagnant due to COVID-19

Outcome

- Reducing a total of 12,173 tons of air pollutants and 12,730 tons of greenhouse gases by managing major pollutants in the port
- Reducing 105 tons of CO₂ by establishing a resource circulation belt at Ulsan Port and expanding waste plastic business (Recycling of 2.5 million plastic bottles)





A Safe and Inclusive Port



A Safe and Inclusive Port



Mutual Growth
and Cooperation



Accident-free
and Safe Port



Creating a Job of
Private and Public

A Safe and Growing UPA for Everyone



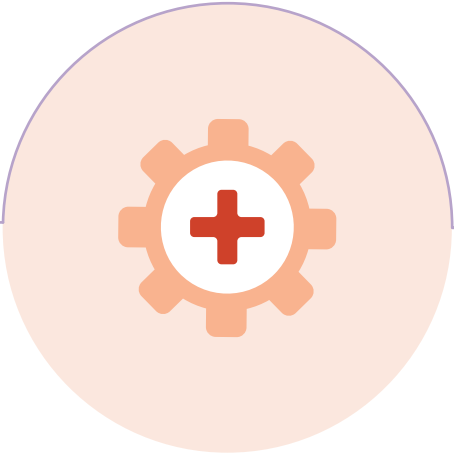
Received the Ulsan City Social Contribution
Appreciation Plaque as a Result of Promoting
the Marine Environment Upcycling Campaign in
Collaboration with the UPA Project



Small Business' Technology Protection Merit
Received a commendation from the Minister of Small and
Medium Venture Business



Received a plaque of appreciation from the Ministry
of Patriots and Veterans Affairs
[June. 2022]



Improving Safety Inside the Port and Improving
the Competitiveness of Port Services by Building a
Comprehensive Marine Port Safety Network



Maintaining 0 case of the serious accidents
Achieving 'Good' status in Workplace Risk Assessment



Awarded by the Korean Red Cross Society for Social
Contribution [November. 2022]
Ensure Continuity of Port Operations and Minimize
Damage through Systematic Disaster Management



Creating a Job-Creating the Highest Number of
Public Jobs by Managing



Creating 199 jobs by supporting 15 startups developing
innovative technologies in the community

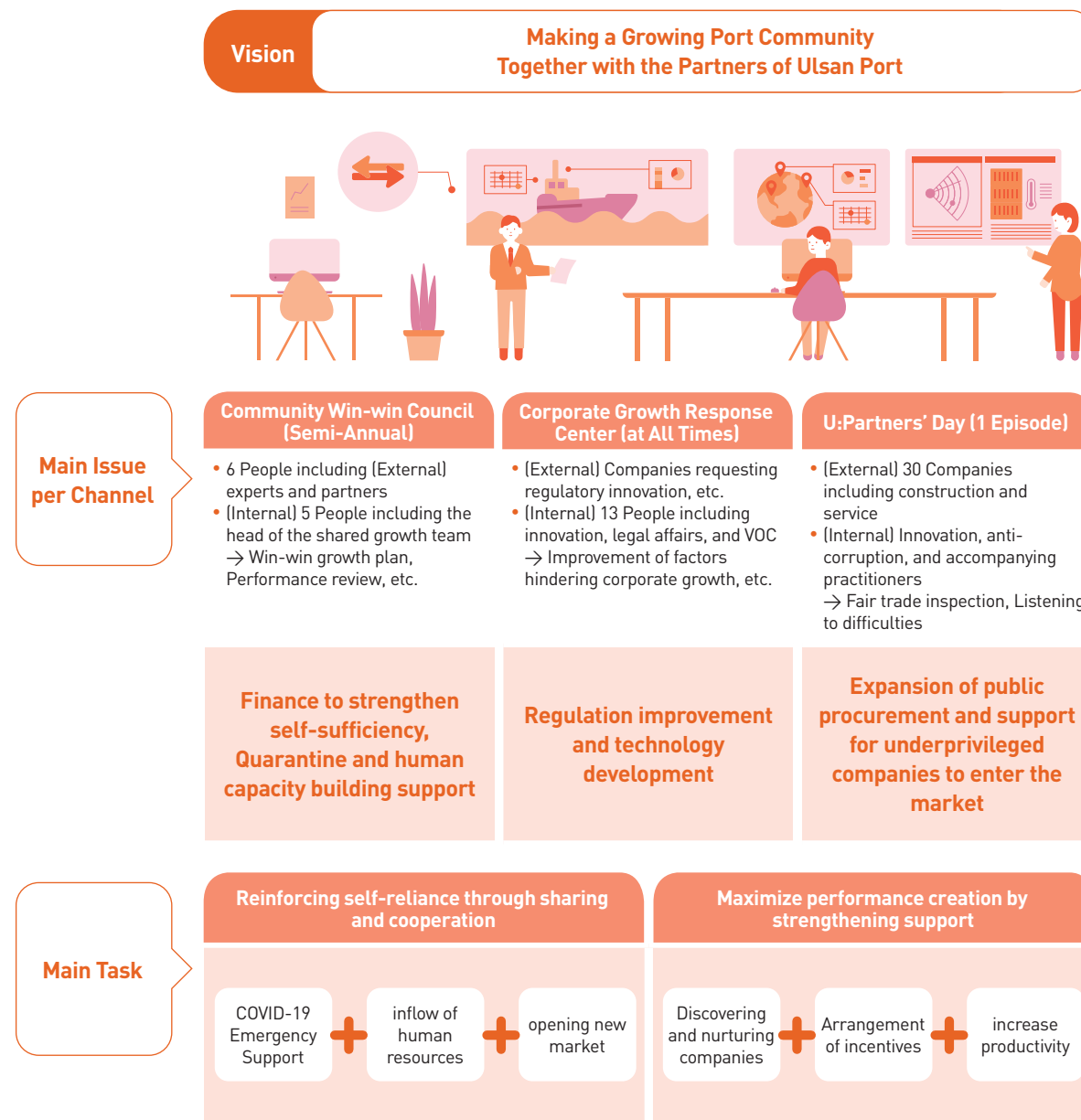


Giving Young Adult Opportunities to Strengthen their
Ability to Grow [11 Young Adult's Entrepreneurial
Partnerships, 25 Young Adult's Education]

Mutual Growth

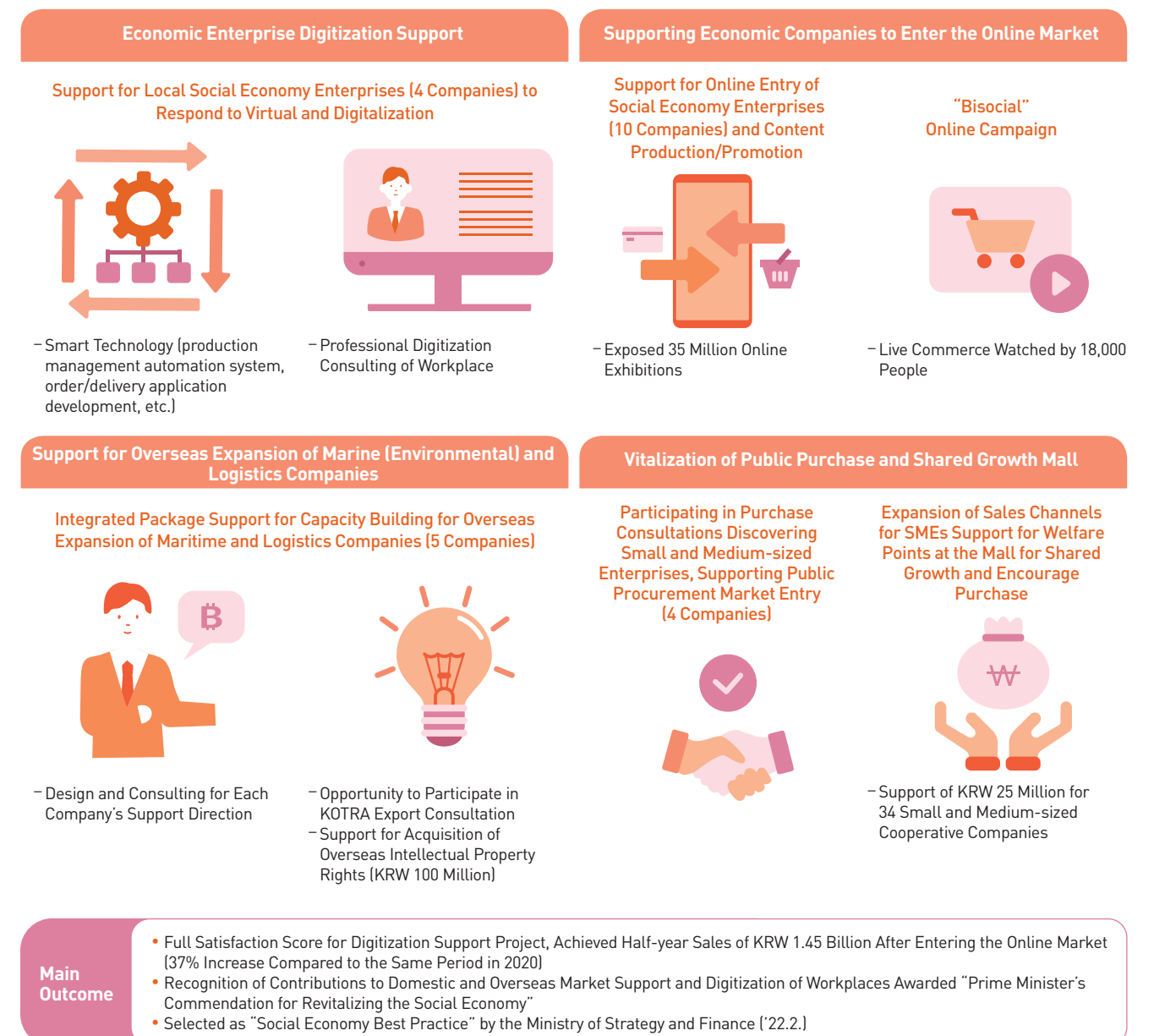
Port Community Growing Together with Partners

Ulsan Port Authority tried to prepare a new revival strategy in accordance with the stagnation of the region's flagship industries (automobiles and petrochemicals) and the shift in the energy paradigm. UPA seeks to grow together on specific issues with experts and partners. We tried to realize a win-win partnership through cooperative projects such as financial support to strengthen the self-sufficiency of our partner companies, support for COVID-19 response capabilities, and support for cultivating human resources. In addition, we strived for corporate growth through the Corporate Growth Response Center, improving regulations and supporting technology development. In addition, U:Partner's Day was designed to check fair trade, establish economic order for companies, and support social enterprises to enter the market.



Strengthening Sustainability of the Partner Companies through Sharing and Cooperation

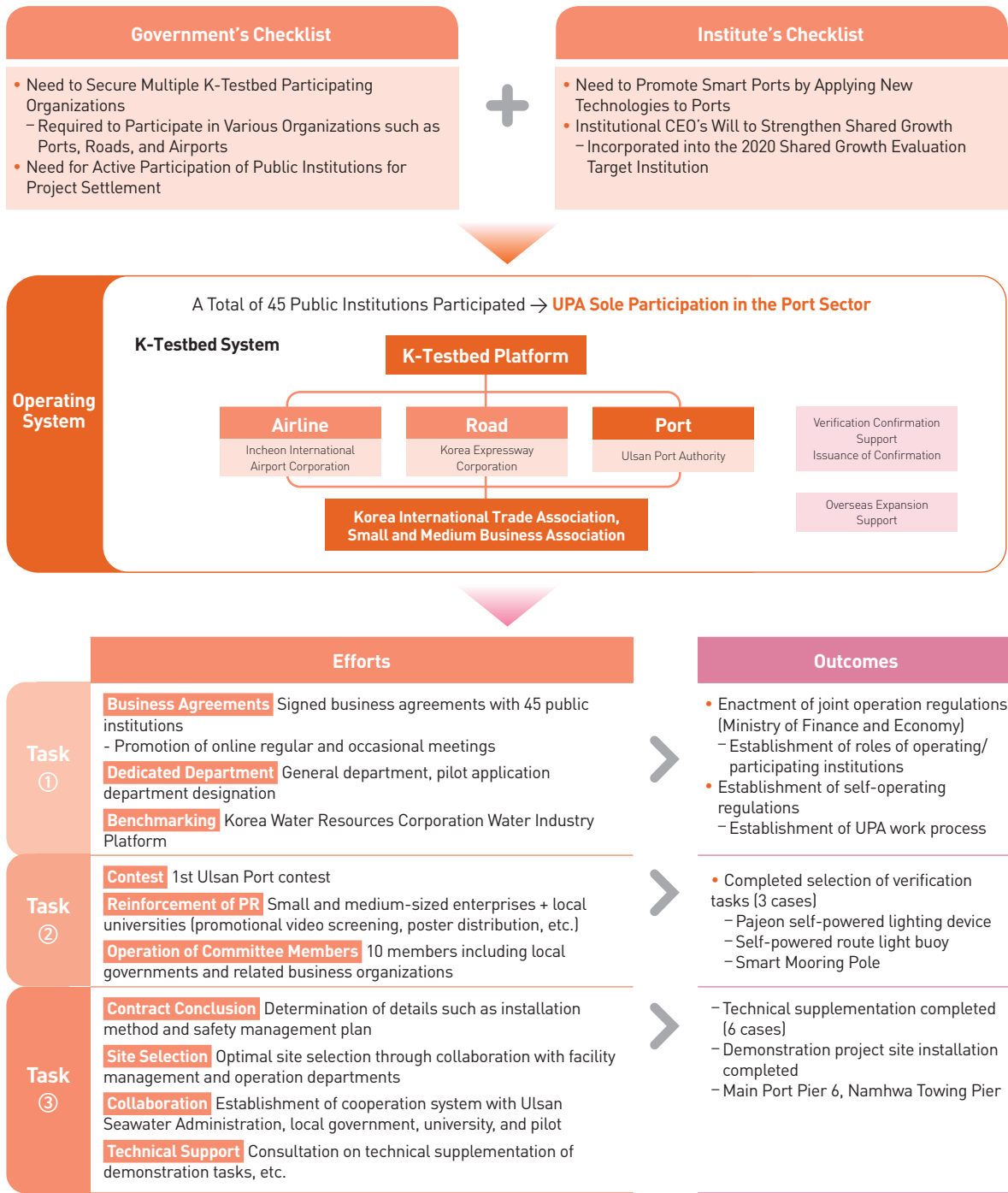
Ulsan Port Authority sought to strengthen the sustainability of social economy companies by supporting sales channels and expanding public procurement through the Mutual Growth Mall. To this end, we supported and operated a virtual response system, and helped the companies enter the online market, create and promote their contents. We conducted an online campaign called 'Bisocial' to promote their products. In addition, we provided consulting for marine environment companies and logistics companies to advance overseas, helped them acquire overseas intellectual property rights, and held export consultations. In addition, we helped the SMEs that attended the consultation to join the public procurement market, and to increase corporate sales through the welfare point system of the Mutual Growth Mall.



Mutual Growth

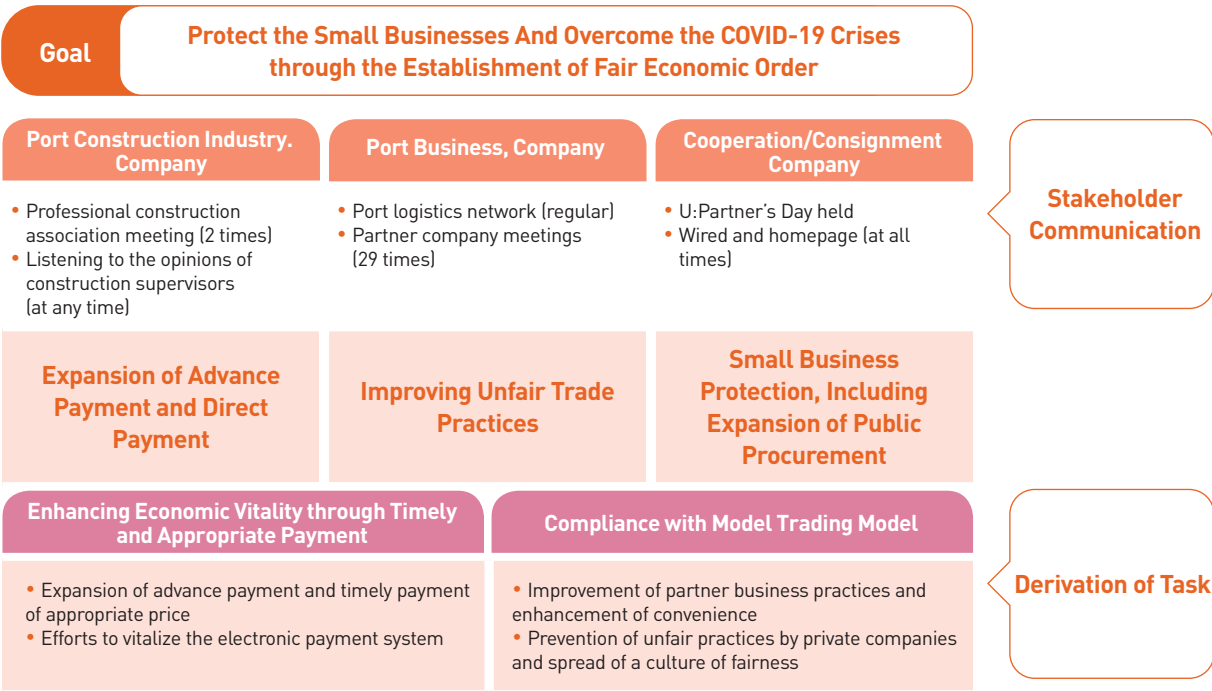
Establishment of Foundation for Growth of Partner Companies through Provision of Testbed

The 'K-Testbed' project is a national project that supports private companies to develop products and promote innovative technology by utilizing public facilities. For this national project, Ulsan Port Authority will actively support maritime SMEs to secure their competitiveness by providing good quality testbeds. Through this, we intend to induce the creation of added value to revitalize the local economy of Ulsan by strengthening the technology of new technologies and prototypes in various port fields.



Establishment of Fair Economic Order to Overcome COVID-19 Crises Together With Partners

Ulsan Port Authority protected small businesses and supported them in overcoming COVID-19 by establishing a fair economy. To this end, meetings were held with port construction companies and organizations to identify their needs. As a result, we came up with the task of 'timely and reasonable payment' and 'compliance with model transactions.' UPA sought to support business recovery of partner companies by expanding advance payment and paying appropriate compensation in a timely manner. In addition, we laid the foundation for a fair economy by protecting small businesses by improving trade practices and eradicating factors of abuse of power.



Support for Securing Fund Liquidity for Partner Companies

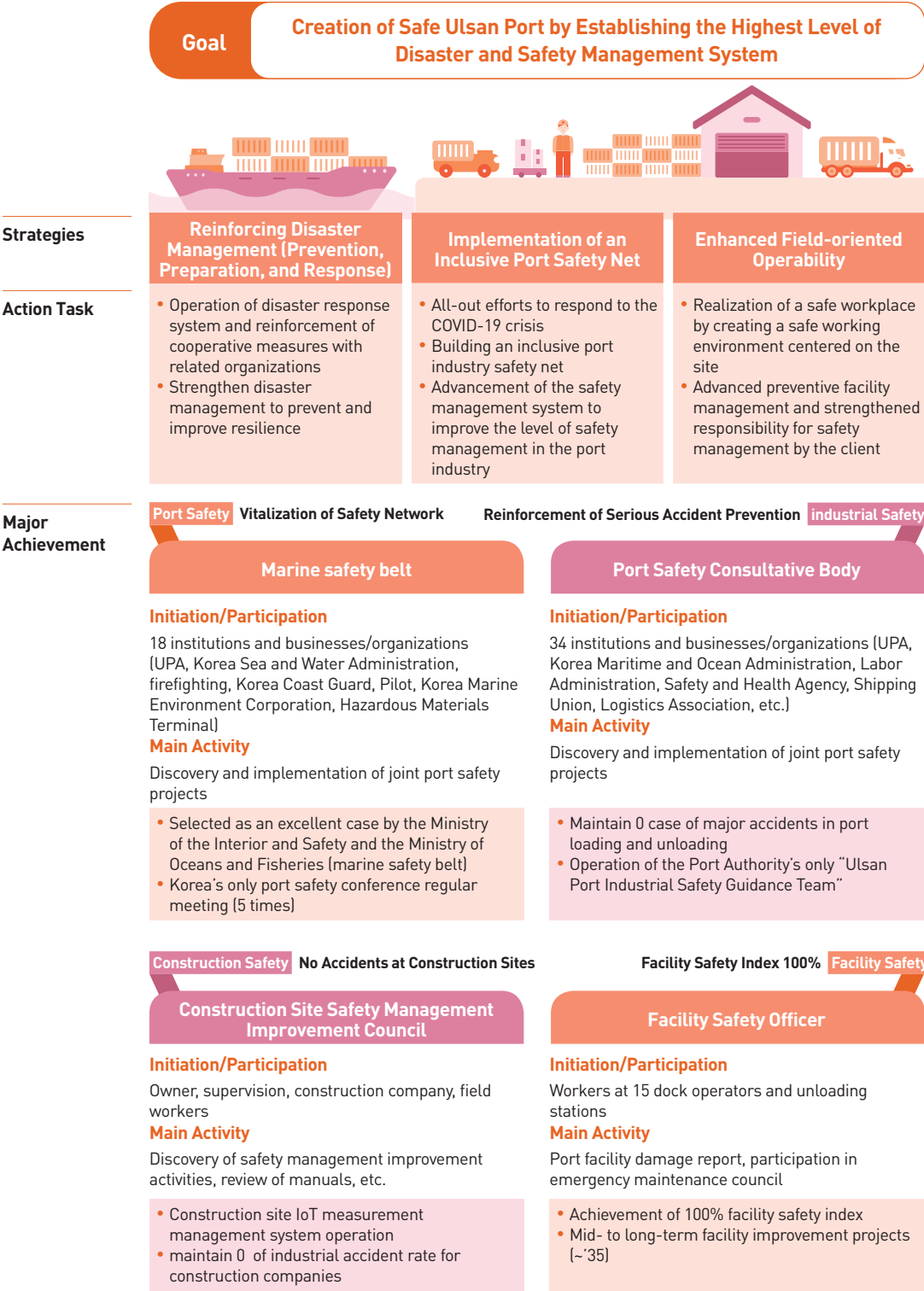
Ulsan Port Authority has maintained the rate of advance payment at 80% of the contract amount to secure funds for partner companies. We have expanded the period for payment of advance payments and made efforts to make payments promptly. As a result of these efforts, the amount of advance payment increased by 78% compared to 2020, and the government SOC financial early execution target was exceeded by 2.2%. In addition, a total of KRW 1.78 billion was increased by accepting contract changes by applying the inflation rate. In the case of delivery delays due to COVID-19, 30 delivery contracts were extended by waiving delay fees or various sanctions. We activated the electronic payment system to secure liquidity of funds for partner companies.

Expansion of the Scope of Use	Encouraging and Publicizing the Participation of Contract Partners	Improvement of User Convenience
<ul style="list-style-type: none"> • Downward adjustment of contract amount conditions for use (500 million won → 300 million won) 	<ul style="list-style-type: none"> • 105 contracts for confirming use (52% of all contracts) 	<ul style="list-style-type: none"> • Efforts to expand agreement banks (Industrial Bank + Hana Bank)

Safe Port without Accidents and Security Incidents

Port Safety Ecosystem Responding to Complex Disasters

While the emergency situation caused by COVID-19 continues and there is a need to upgrade the port safety management system. Therefore, we have established an inclusive safety ecosystem. We will establish and inspect a disaster management system so that we can respond wisely to emergencies, and create a safe port.



Complete Maritime Chemical Accident Response System

At the time of the unprecedented ship explosion (in 2019), UPA mobilized marine fire extinguishing agents from other ports due to lack of fire extinguishing agents. Under the leadership of the UPA, the private, government, and public sectors have established a joint disaster response system for maritime chemical accidents (2nd year). Through this, our response capability, damage resilience, and disaster preparedness have been strengthened.

Strengthening Public-Private-Public Collaboration		Establishment of a "24-hour" Joint Response Operation System on Standby for Maritime Chemical Accidents		
Ulsan Port Authority		Prompt Fire Response by Stocking More than the Proper Amount of Extinguishing Agent for Fire Suppression		
Fire Extinguishing Agent	Ulsan Coast Guard	Fire Extinguishing Agent Purchase and Transfer Support		
	Fire Extinguishing Agent Management and Chemical Accident Response			
	Preliminary Cooperative	Fire Extinguishing Agent Transfer and Incident Response Support		
Fire Extinguishing Agent		39.7ton	69.7ton	123.7ton
		in 2019	in 2020	in 2021
Ability of Extinguish		1ship	2ship	3ship
		in 2019	in 2020(Cumulative)	in 2020(Cumulative)
Mobilizable Ship		5ship	14ship	25ship
		in 2019	in 2020(Cumulative)	in 2020(Cumulative)
Budget Support		-	180 million won	240 million won
		in 2019	in 2020	in 2021

Joint Training with Related Organizations by Disaster Type		(November) Disaster Response Safe Country Training
(March) Incident Response of Anchored Ships	Contents	Explosion of chemical product carrier in response to infectious disease disasterComplex disaster response training according to fire
(April) Response to Maritime Chemical Accident	Cooperation institutes	UPA, Ulsan City, Korea Sea Water Service, Quarantine Station, Coast Guard, Firefighting Headquarters, VTS, etc. Participated in training (12 organizations)
(May) Response to Ship Fire Accident	Public Communication	Enhancing public participation and communication, such as participating in key training for an online public participation group (5 people) and contesting essays
(July) Response to Complex Marine Pollution Accidents		

Strengthening Disaster Response Capabilities through Customer-centered, Custom-made Disaster Management Activities	
Emergency Rescue Agencies (Fire, Coast Guard) Customized Education Implementation	Dangerous Goods Pier Arrival Information Standard System
Problem	Problem
Difficulty in Extinguishing Initial Fires Due to Lack of Understanding of Port Facilities and Ship Structures	Ulsan Port Terminal Arrival Information Possibility of Accidents During Arrival-Departure Due to Lack of Familiarity
- Firefighters (structural/fire suppression) local adaptation training	- Advancement of port arrival information at terminals handling dangerous goods
- Waterproof work training for large ship fires	- Recording self-safety management plans and emergency response procedures for each terminal
- Implemented ship structure and firefighting equipment specialized training	- Safe navigation information for port entry · departure (access speed, emergency departure conditions, etc.)
Rescue Agencies also have a Better Understanding of Vessels, Enhancing their Ability to Quickly Suppress Fires.	Laying Foundations for Enhancing Maritime Safety at Ulsan Port(entry ↔ departure)

Safe Port without Accidents and Security Incidents

Realization of Safety Ecosystem By Expanding Management Scope

Spreading Awareness of the Importance of Safety

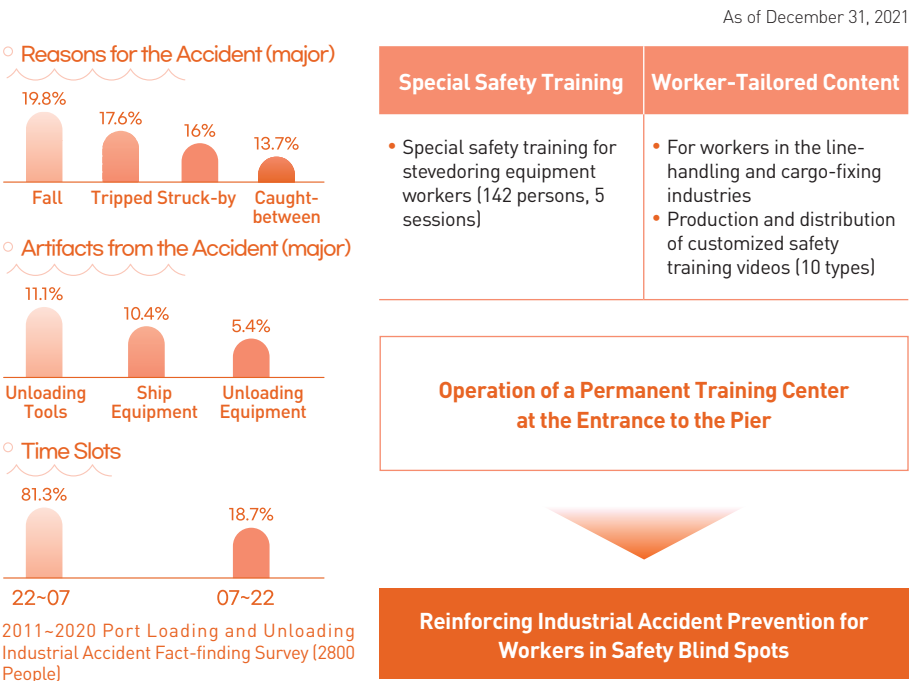
UPA spreads safety culture through voluntary participation of port officials. We supported online industrial safety training for port stevedoring workers. We provided safety consulting and safety facilities to SMEs. In addition, we contributed to the spread of safety culture by encouraging the participation of various stakeholders by holding a safety conference, a safety-related new technology product fair, and an industrial accident prevention best case contest.

Expansion of Safety Management Scope to Partner Companies

UPA expanded the activities of the Ulsan Port Industrial Safety Guidance Team, which is currently being implemented for wharf and tank terminal operators, to the port hinterland, striving for safety management in the port industry. Since March 2020, the Ulsan Port Industrial Safety Guidance Team has been conducting field-oriented safety guidance activities for 15 companies operating piers and 6 companies operating tank terminals together with Ulsan Port Authority and the industrial safety experts from outside. Through the workshops, we shared ways to secure safety management at Ulsan Port and directions for improvement by industry. Through these efforts, we have contributed to building a safety net for the entire society beyond the ports.

Safety Education for Workers, Expansion of Safety Blind Spots

UPA has conducted a comprehensive survey of industrial accidents in port loading and unloading nationwide with the purpose of identifying the exact types of industrial accidents and preparing effective countermeasures. The type and frequency of accidents were the highest in the order of fall, tripped, struck-by, and caught-between. It was determined that it was necessary to raise workers' safety awareness, so safety training and videos customized for port industry workers were produced and distributed.



Cyber Security

In line with the spread of virtual/online environments, institutional-targeted cyber attacks have been increased so that people got interested in protecting its personal information. Therefore, UPA has strengthened our cyber security management system. This effort reduced the cyber risk by 56% compared to the previous year. We have established a cooperative system with other organizations by utilizing cyber attack response training and cyber threat information sharing system. As a result, UPA obtained an excellent grade in the Ministry of Maritime Affairs and Fisheries' cyber attack response training.

	Reinforcing Remote Work System Security	Prevention of Leakage of Important Information	Advancement of Information Security Infrastructure
Pre-vention	<ul style="list-style-type: none">Introduction of the 2nd certification system for the preventive remote work systemEstablishment of document centralization system	<ul style="list-style-type: none">Detection of illegal eavesdropping and wiretappingInspection of information system access records	<ul style="list-style-type: none">Introduction of system account and access rights management systemTransition to CSAP certified cloud service
	Cyber Attack Response Training		Cyber Threat Sharing System
Res-ponse	<ul style="list-style-type: none">DDoS response training, cyber security drillHacking mail response training		<ul style="list-style-type: none">Utilization of the national cyber threat information sharing systemEstablishment of cooperation system with related organizations

Together, For the Herd Immune System in Cyberspace

As the threat of cyberattacks increases, the UPA found that the level of information security differs from region to region and from company to company. Accordingly, UPA supported information security training and services for service companies at Ulsan Port, and promoted an information security leader training project for local university students. On the other hand, UPA conducted its own cyber security assessment weekly operation to check information security work. In addition, we promoted a campaign to cultivate information security knowledge to spread a culture of information security compliance, and through these efforts, we achieved zero accidents from cyber attacks such as hacking accidents, information leakage, and ransomware infections.

Ulsan Port Related Companies	Employees of Ulsan Port Authority	Local College Student
<ul style="list-style-type: none">Information security service support to prevent cyber incidents and strengthen capabilities (8 companies)Establishment of cyber security mutual cooperation system by providing investment company information security consulting	<ul style="list-style-type: none">Measures against vulnerabilities of employees' work PCs through weekly cyber security diagnosisSystematic and comprehensive security assessment for overall information security tasks	<ul style="list-style-type: none">Diagnosis of information security vulnerabilitiesProvide a working environment
<ul style="list-style-type: none">100% completion of information security training tailored to employees and service providersSatisfaction with information security training achieved 4.6 points (out of 5 points)		<ul style="list-style-type: none">Fostering next-generation information security leaders equipped with the ability to respond to website forgery/altering attacks
Balanced Development of Security with the Community		

Diagnosis of Personal Information Management Level

Perfect Score for 2 Years

Inspection of Personal Information Processing Status

Highest Rating for 3 Years

Win-win with Local Communities

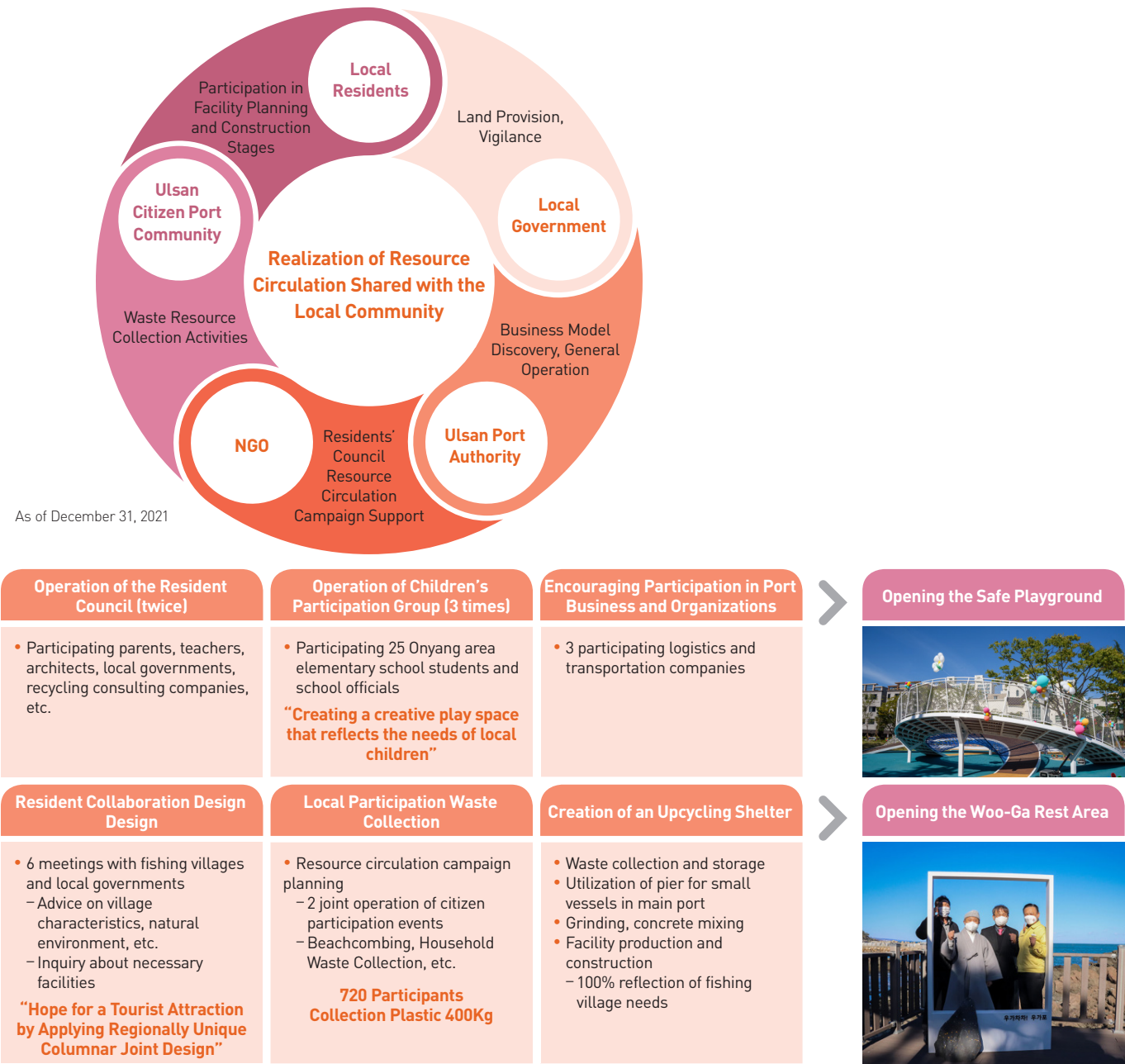
U:Partner Revitalization of Social Economy Ecosystem in Ulsan Area

Ulsan Port Authority tried to strengthen the self-sufficiency of social enterprises and vitalize the social economy ecosystem through this. A social economy that realizes cooperation and inclusion is being presented as a solution to various social problems, including self-reliance of the vulnerable and environmental problems. UPA seeks to solve social problems by supporting the growth of social economy enterprises, thereby bringing about social change. To vitalize the social economy ecosystem, KTO encourages youth entrepreneurship and supports sustainable growth. In addition, we discovered and promoted a business model that meets the needs of the underprivileged and the local community who have difficulty getting a job.



Realization of Shared Value for Marine Waste Resource Circulation



Ulsan Port Authority tried to practice ESG management through resource circulation of 2,000 tons of marine and port waste, and to share the value of mutual growth with underdeveloped regions. UPA has created a sharing business model by building public facilities with the social enterprises in the community by using marine wastes. UPA also fulfilled its social responsibilities by supporting the needs of local residents and tried to play a leading role in ESG management by solving environmental issues. For instance, 51 tons of waste tires and 37.5 tons of waste plastic at the port were circulated and recycled by borrowing the capabilities of local companies to create a playground for children and a shelter for local residents. These activities created the effect of reducing greenhouse gas emissions, strengthening our important values of togetherness. With these efforts, UPA received a commendation from the Minister of Health and Welfare.



Win-win with Local Communities





Realizing the Value of Mutual Growth with the Local Community

Ulsan Port Authority aims to realize the social value of mutual growth by connecting the sea and people. UPA has made efforts to achieve social transformation that the local residents of Ulsan can see and feel. To achieve this vision, UPA identified the concerns of the local community, discovered a win-win business model that could meet the needs of various parties, and led it to grow into a social economy company.

	Bangeojin Port Urban Regeneration Support Project	Dock Worker Workwear Laundry
Community Concerns	① Local economy depressed due to decrease in visitors ② Lack of means of transportation within the region	① Insufficient washing facilities for port workers' work clothes ② Demand for stable jobs for basic recipients
Discovery of Win-win Business Models	 <ul style="list-style-type: none"> Discovery of projects for electric bicycles for fishing village residents in Bangeojin -Port 	 <ul style="list-style-type: none"> Discovery of oil-stained work clothes laundry operation business in cooperation with UPA and local governments
Grow into a Social Enterprise	<ul style="list-style-type: none"> Bangeojin-port Village Management Social Cooperative 	<ul style="list-style-type: none"> Opened Taehwagang Clinic

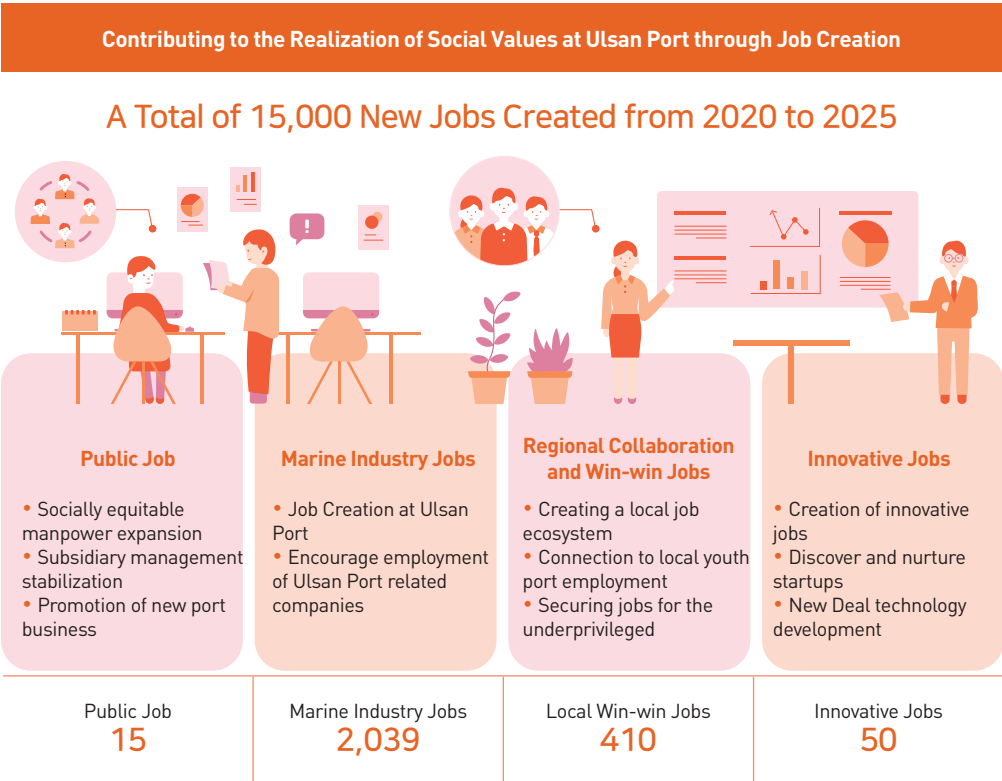
Realizing the Value of Inclusion through the Promotion of Reading Culture

In response to COVID-19, we improved the quality of life of local residents through the development of virtual public programs. While developing a virtual reading program for Ulsan citizens, we promoted braille provision services and audio books for the visually impaired. In addition, in order to secure the education rights of the teenagers who don't have any technical devices, UPA provided them with tablets through the Welfare Safety Net Center in Ulsan Metropolitan City. We also support Ulsan-E Sungkyunkwan, the online library platform. Likewise, UPA has tried to promote the reading culture of Ulsan citizens by offering various programs for the underprivileged in the community.

 <ul style="list-style-type: none"> Reading Activities Development 	 <ul style="list-style-type: none"> Welfare Arrangements for the Visually Impaired 	 <ul style="list-style-type: none"> Online Library Service Expansion 	 <ul style="list-style-type: none"> E-Sungkyunkwan Support
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Establishment of Port Job Ecosystem to Live Together

UPA tried to build a port job ecosystem for everyone by responding to the era of eco-friendliness after the corona era and reflecting the voices of various stakeholders in Ulsan Port. In the public sector, long-term leave demand was investigated in advance to reduce manpower vacancies and early recruitment was carried out. We created the largest number of public jobs ever by shortening working hours and discovering customized jobs for the socially underprivileged. In the private sector, while preserving existing jobs, we operated a working-level job consultation team for new businesses. In addition, we supported the recruitment of SMEs by improving the system to maintain employment for SMEs or by expanding early execution and investment of project budgets.

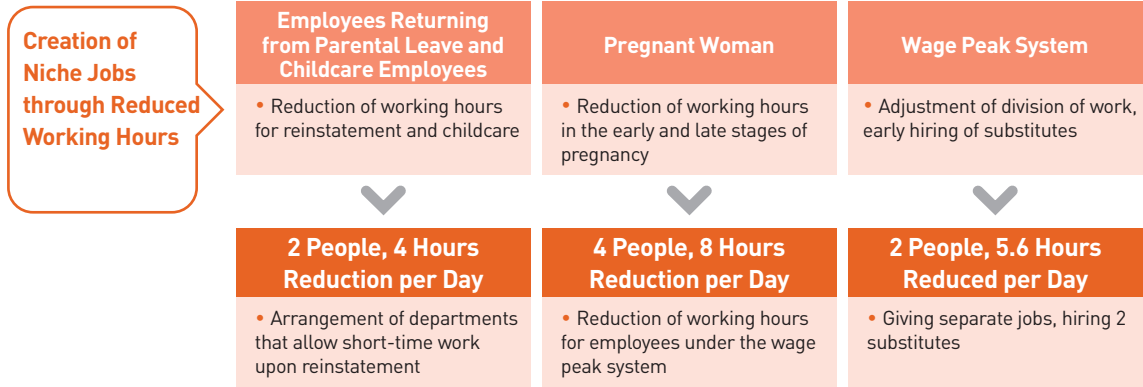


Job Evaluation	Stakeholder Needs	Job Evaluation
<ul style="list-style-type: none"> (Public) Continuing decrease in Chung Hyeon-won difference (Subsidiary) Excellent rating in operation evaluation (Private) Achievement of private jobs target 	<ul style="list-style-type: none"> (Port Industry) Sustainable growth of ports / Securing of excellent human resources (Local Residents) Win-win jobs for the underprivileged 	<ul style="list-style-type: none"> Employment stability due to prolonged COVID-19 Demand for the growth of the Korean version of the New Deal ESG/eco-friendly paradigm shift
Timely Promotion of Core Businesses	Employment security and job security	Promotion of the Korean Version of the New Deal
Strengthening Youth Employment Capacity	Creating Win-win Jobs for the Underprivileged	Full Introduction of Virtual Matching

Creating a Job

Niche Jobs

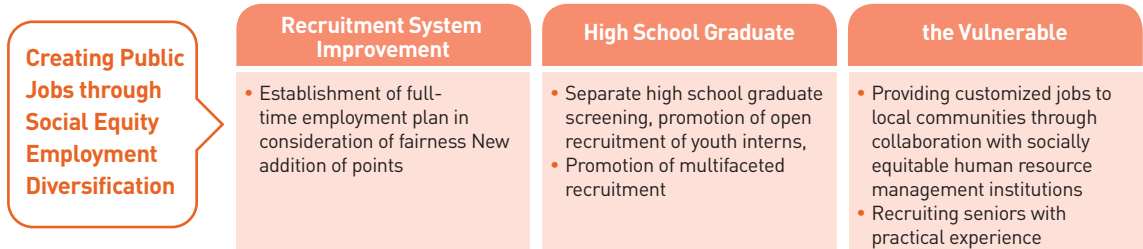
UPA has targeted niche jobs through efficient manpower management and system improvement. In 2021, the UPA has set a target of 2% or less of the regular rate of difference due to long-term leave, resignation of members, and those subject to the wage peak system. We surveyed demand for long-term leave in advance and hired 3 replacement workers early in the first half and 4 in the second half, while preparing niche jobs by activating the working hour reduction system. We recruited 3 replacement workers by promoting reduced working hours for employees returning from parental leave and pregnant women, while hiring 8 full-time workers by securing employment capacity for the hydrogen supply base construction project. Through this, KDHC achieved the lowest sine-to-zero ratio of 1.6%.



Inclusive Jobs for the Socially Vulnerable

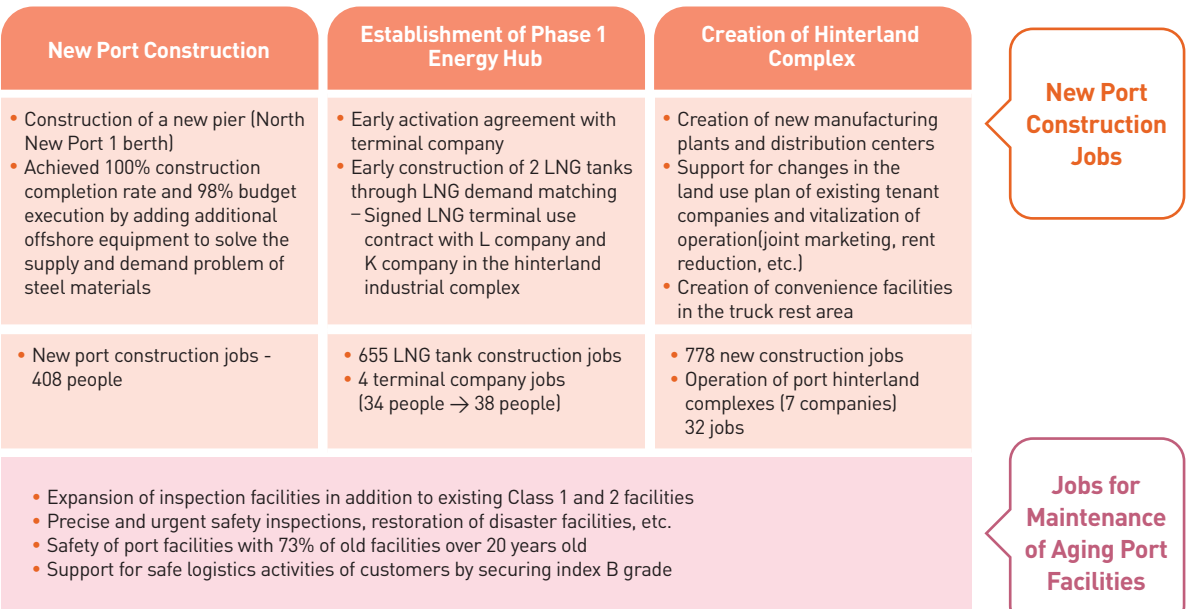
UPA sought to realize the social value of mutual respect and inclusion by securing the diversity of manpower within the organization through socially equitable recruitment. In 2021, UPA worked with the Korea Employment Agency for the Disabled in order to discover customized jobs that considered the social conditions of the vulnerable class, and hired 3 people for goods management and port entry civil service jobs for the disabled and low-income class. We hired 7 people for positions such as parking guidance and postal management for people of national merit, and worked hard to discover jobs for multicultural families and North Korean defectors in cooperation with the Multicultural Family Support Center and Hana Foundation. Based on these 2021 performances, we have supplemented the job creation strategy for the socially vulnerable in 2022. We are making continuous efforts to realize the social value of inclusion by improving the existing recruitment system for socially equitable full-time employment and preparing an open recruitment system for young interns for separate high school graduates.

Securing Workforce Diversity to Create an Inclusive Organizational Culture of Mutual Respect



Jobs for New Port Construction and Old Port Maintenance

Ulsan Port Authority aims to become a carbon-neutral port through the transition to eco-friendly energy logistics. In order to convert existing main cargoes such as petroleum and chemical products, facility infrastructure such as hydrogen and LNG energy must be equipped. UPA promoted a project to build a hydrogen complex in the port hinterland, which created new port construction jobs and employed 1,877 people. While preparing new ports, we expanded the maintenance business of old port facilities. A detailed inspection was performed from the existing facilities to be managed. Thanks to these efforts, 73% of Ulsan Port's facilities have been aged for more than 20 years, but safety index B has been secured.



Jobs through Port Industry Technology Development

Ulsan Port Authority intends to jump into a smart port by fully supporting the start-up and technology development of the maritime industry. To this end, UPA has established a full-cycle training cycle with Ulsan National Institute of Science and Technology. This project not only contributed to the revitalization of the local economy by driving 51 youth employment and KRW 7.6 billion in sales, but also created results that improved port safety. Meanwhile, by promoting technology development projects through port R&D, we created jobs for 9 people and supported the competitiveness of venture companies. For the stable employment of small and medium-sized shipbuilders, we made efforts to build a job ecosystem at Ulsan Port by placing an additional order for a project to convert old ships into LNG tugs.

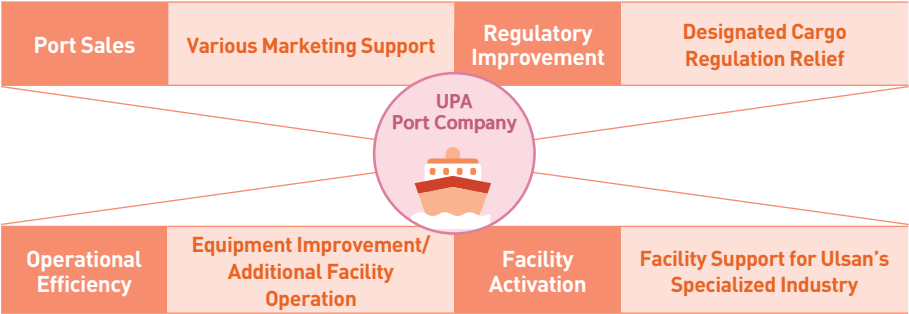
Technology Development Jobs

Marine Startup Fostering Project	Port R&D Development Project	Old Ship Upgrade Project
51 People	9 People	11 People

Creating a Job

Jobs for Port Companies through Operational Efficiency of Ulsan Port

UPA has promoted operational efficiency at Ulsan Port to overcome the downturn in the port industry caused by COVID-19. UPA has tried to vitalize port sales by conducting virtual overseas joint marketing, pioneering new routes, and providing incentives for attracting general cargo. In addition, considering the characteristics of Ulsan Port centered on liquid logistics, the efficiency of the facility has been increased. Meanwhile, we have improved the regulations restricting cargo handling at the wharf to stabilize the operations of related companies. We created 89 jobs at port companies by improving overall port operation efficiency, such as increasing stevedoring productivity through equipment improvement and expanding and operating bunkering berths.



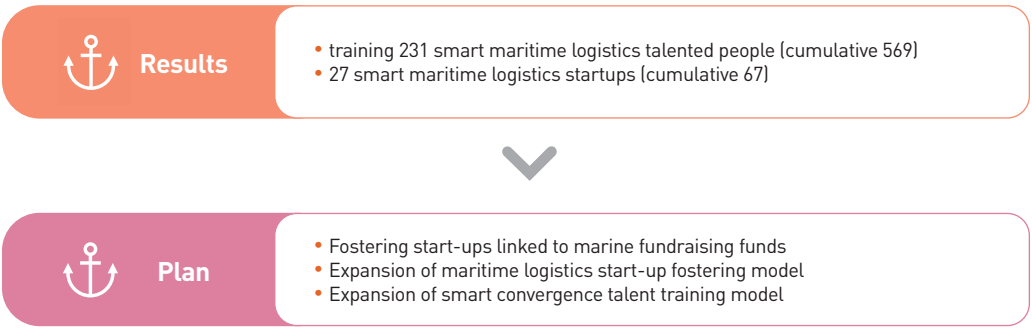
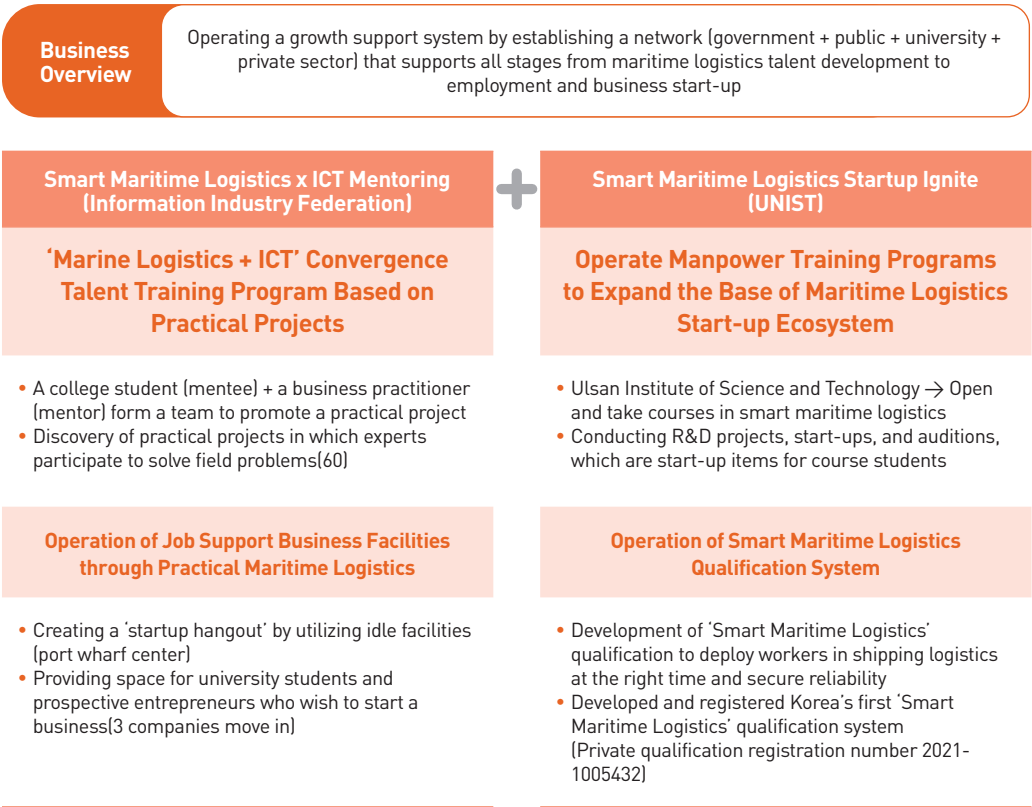
Jobs for Young Adult

Because of COVID-19, UPA actively utilized virtual counters to support young people to find employment at the port. Ulsan Port, which handles liquid cargo, absolutely needs talented people who are in charge of weighing when loading and unloading ship cargo. However, due to low awareness of inspectors and difficulties in accessing related certifications, we developed e-learning contents for national licenses for inspectors and appraisers. In addition, we supported on-the-job training for incumbents in trade and logistics, and held an online recruitment center at Ulsan Port and an online job fair by theme for specialized jobs in the maritime industry. In addition, UPA's 'First Penguin Club', an external activity for university students, designed and operated the 'Ulsan Port Metabus Employment Headquarters' in 2021 to provide necessary contents to young people who wish to get a job at a company located in Ulsan Port.

Support for Acquisition of Specialized Licenses for Port Business	<ul style="list-style-type: none">Host an online job fairCertification E-learning content developmentMatching companies related to Ulsan Port	<ul style="list-style-type: none">36 people obtained certification16 people employed
Practical Training Support for Incumbents	<ul style="list-style-type: none">Collaboration between Youth Foundation and Korea International Logistics AssociationOnline trainingPractical training for incumbents	<ul style="list-style-type: none">18 people employed
Online Job Fair	<ul style="list-style-type: none">Ulsan Port Online Recruitment AdvancementHeld an online job fair by maritime theme (new)	<ul style="list-style-type: none">154 people employed
Ulsan Port Metabus Employment Headquarters	<ul style="list-style-type: none">Establishment of Ulsan Port Employment Support Headquarters metabusHeld employment camp at Metaverse Employment Support Headquarters	<ul style="list-style-type: none">Production and operation of the metaverseCultivate 20 talented people100 people participated in the employment camp

Smart Port Ecosystem Created by Talented Young Adults

As the importance of smart maritime logistics has been highlighted worldwide, Korea is also promoting future national strategic projects such as building smart ports and developing autonomous ships through the 'Korean New Deal Policy'. A smart port refers to a port that automates and digitizes a port by utilizing the 4th industrial revolution technology and automatically handles various logistics tasks such as unloading, transportation, storage, and management when a ship enters a port. Ulsan Port Authority has established a one-stop support cycle for the entire life cycle from maritime logistics talent training to corporate growth support for the first time in a port. A college student mentee and an industrial expert mentor formed a team to carry out a development project to nurture convergence talents with maritime logistics knowledge and ICT practical experience, and expanded the base of the startup ecosystem by opening a smart maritime logistics course at the Ulsan Institute of Science and Technology.

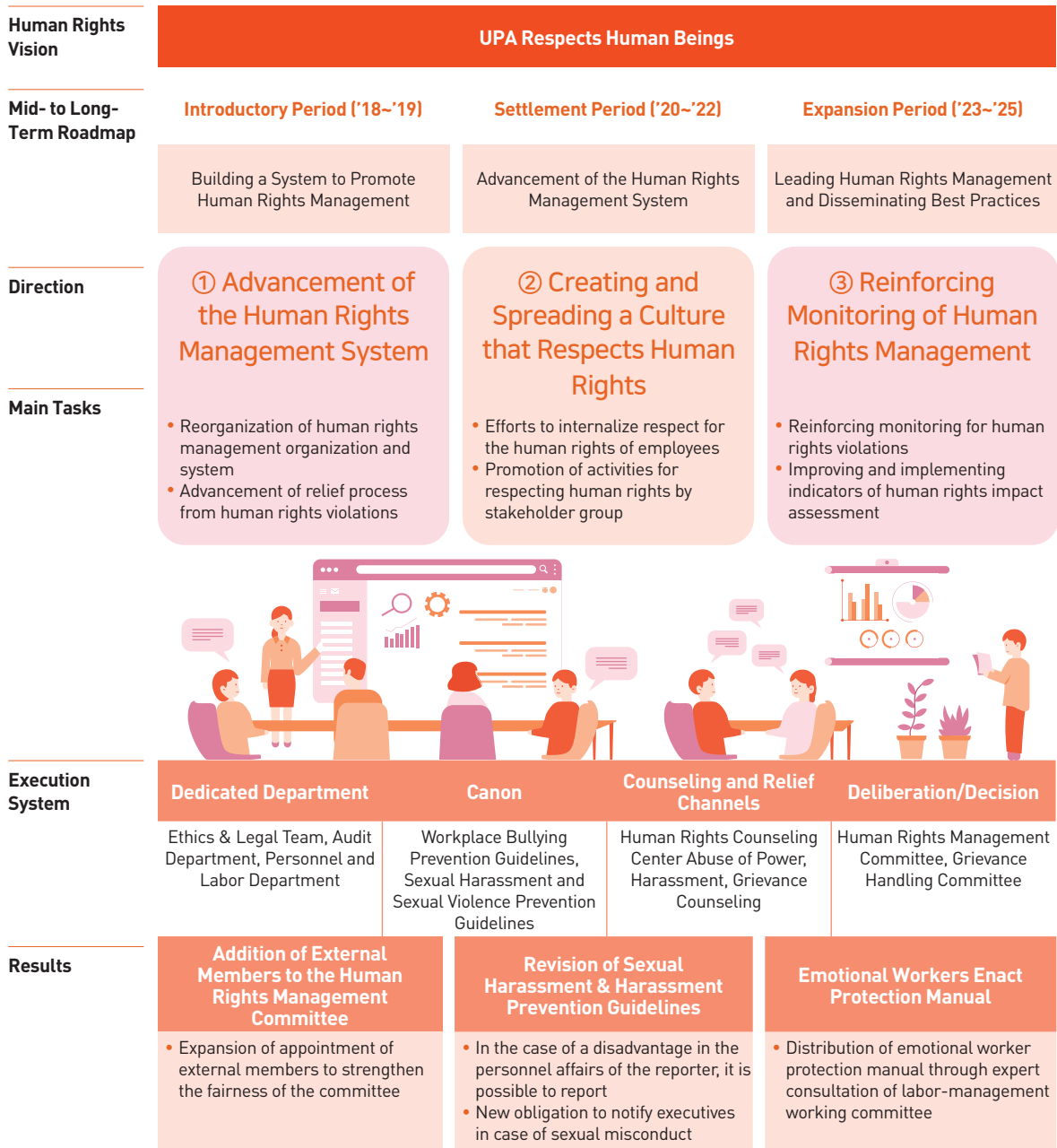


Human Resources Development for the Future

Human Rights Management

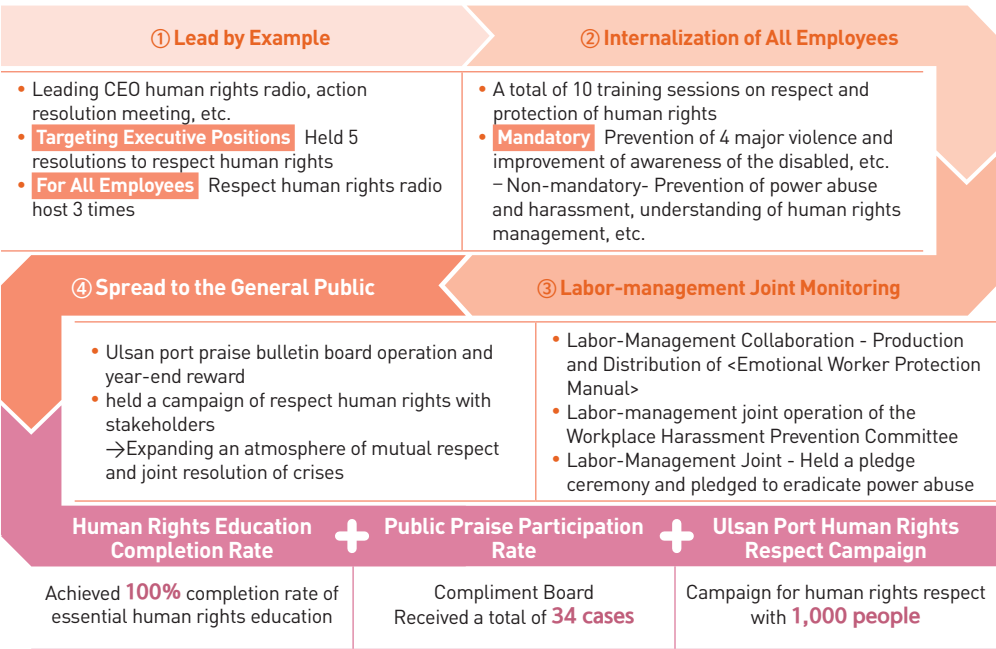
A Port that Respects Human Rights that Puts People First

Ulsan Port Authority established human rights management implementation guidelines and a roadmap for 2020 based on the will of the head of the institution to practice people-centered human rights management. UPA tried to advance the human rights management promotion system by reorganizing the human rights management organization and system and supplementing the grievance handling system. In addition, in order to raise employees' awareness of human rights and internalize them, various activities led by the head of the institution were promoted. Monitoring was strengthened to prevent human rights violations in advance, and human rights impact assessment indicators were improved. As such, UPA aims to become an institution leading human rights management by realizing the value of human respect.



Spreading a Culture of Respect for Human Rights

In order to realize the social value of respect for human rights, the head of the institution took the lead in promoting a culture of respect for human rights, and provided training to employees to lay the foundation for human rights management. We have advanced the response system for the protection of human rights of the institution, and encouraged public participation through the UPA's online praise bulletin board, leading to the spread of a culture of respect for human rights to the public.



Major Achievements up to 2021

- Advanced Human Rights Management Implementation System
- Encourage External Organizations to Cooperate in the Field of Human Rights

Major Achievements of 2022

- Expanding the Roles and Responsibilities of the Human Rights Management Committee
- Continuous Improvement of the Human Rights Violation Remedy Process

Improvement Effect

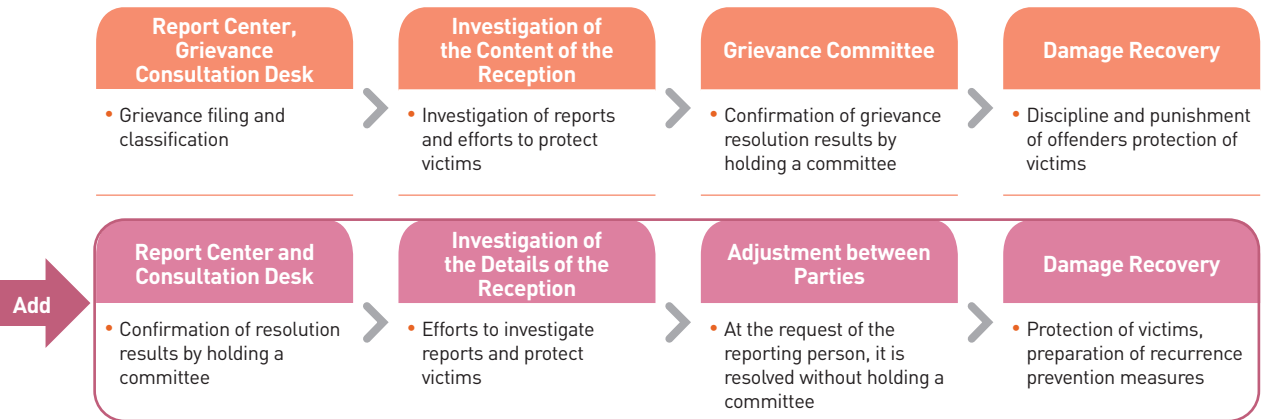
- Human Rights Impact Assessment Achieved 'Very Good'
- Accomplished Zero Cases of Human Rights Violations such as Abuse of Power

Human Rights Violation Relief Process

As a result of conducting a survey on the grievance counseling system for employees, it was found that it was difficult to use grievance counseling due to the necessity of deliberation on holding the grievance handling committee when grievances occurred. In response to this, we have taken measures to reduce the burden on reporters and make it possible to handle them by dividing the method into two categories.

Satisfaction with Handling Difficulties

Good 86.33 Points



Establishing
a Healthy
Organizational
Culture

Labor-Management Cooperation System for ESG Management

UPA tried to build an ESG-based labor-management cooperation system that takes responsibility for social values. Internally, in response to prolonged negotiations with the 2nd union, conflict factors were resolved through active communication led by the head of the institution, and a conflict mediation committee was established to prevent disputes in advance. Externally, a collective agreement was signed to create a working environment in consideration of changes in government labor policy and the new normal era caused by COVID-19. By responding to the internal and external environment surrounding labor and management, we have strengthened the foundation of trust and further strengthened the solidarity between labor and management by forming a consensus on social values and responsibilities.

Vision	Establish Cooperative Labor-Management Relations that Contribute to the Establishment of an ESG Management System and Play a Leading Role		
	Excellent Labor-Management Relations	Lay the Foundation for Lasting Labor-Management Peace	Create a Work Environment with a Work-Life Balance
Goal of 2021	① Establish ESG-Oriented Labor-management Relations ② Implementation of Joint Labor-Management Strategies ③ Zero Labor Incidents	④ Building a Relationship of Trust between Labor and Management ⑤ Reinforcing Internal and External Labor Capacity ⑥ Advance the Conflict Management System	⑦ Expansion of Work-family Balance ⑧ Expansion of Smart Work System ⑨ Discovery of Excellent Welfare Benefits
9 Major Tasks	<ul style="list-style-type: none">Response to internalization of joint ESG management between labor and managementEnd of internal conflict, no disputes for 14 consecutive yearsRestoration of trust in the 2nd union, conclusion of long-term negotiations	<ul style="list-style-type: none">Vitalization of intergenerational communication and empathy channelsExpansion of internal labor experts (67.7%↑)Advancement of labor management through collective intelligence	<ul style="list-style-type: none">Expansion of work environment with work-life balanceRegular institutionalization of smart workWith COVID-19, daily recovery support
Results of 2021	<ul style="list-style-type: none">First certified as 「Excellent Labor-Management Relations Company」Labor-Management Cooperation Index - 'Good' (88.10 points)2nd Labor Union Salary/Collective Agreement - Initial Agreement	<ul style="list-style-type: none">Labor-Management Relations and Performance Index 'Excellent' (91.60 points)Satisfaction with organizational culture - 'excellent' (90.46 points)Satisfaction with communication and conflict resolution - 'good' (88.25 points)	<ul style="list-style-type: none">Case of work-life balance in Ulsan Competition 1st place (grand prize)Satisfaction with work-family balance - 'excellent' (92.25 points)



Labor-Management Leadership
97 Points

Labor-Management Relations
91.6 Points

Labor-Management Relations Maturity
83.9 Points

Compared to other Public Companies
Average 6.91 Points

Acquired Public Certification as a Company with Excellent Labor-Management Relations

Ulsan Port Authority seeks to establish a future-oriented labor-management relationship that is the foundation of ESG management based on a cooperative system that realizes win-win growth. To this end, UPA sought to establish a stable management foundation and form a consensus to advance into the future through joint activities that realize social values. In addition, various innovations were promoted internally for a healthy organizational culture of UPA, and based on these efforts, we were able to acquire public certification as a company with excellent labor-management relations.

Labor-management Representative Leadership	Labor-Management Relations Results	Labor-Management Relations Maturity
<ul style="list-style-type: none">The 2nd labor union's first collective bargaining agreementLabor-management agreement, such as the labor director system	<ul style="list-style-type: none">Maintained dispute-free for 14 consecutive yearsEstablishment of the Pre-Conflict Mediation Committee	<ul style="list-style-type: none">Operate labor-management working-level committees by sectorTrust-based omnidirectional communication channels

Formation of Labor-management Consensus through Active Communication

The UPA recognized labor unions and workers' representatives as cooperative partners and actively communicated with them to form a consensus between labor and management based on trust. Customized communication activities were carried out with employees, labor-management relations workers, and external stakeholders. We operated a talk concert by the head of the institution to revitalize internal communication, which had been dampened by COVID-19, and established a TFT, a preliminary conflict committee, and a meeting to respond to and prevent labor-management disputes in advance. In addition, reverse mentoring was conducted to prevent conflicts with the MZ generation. In this way, we have established a developmental organizational culture by promoting communication activities involving various stakeholders surrounding UPA.

External Environment	<ul style="list-style-type: none">Demand for reform of working conditions following government innovationChanges in organizational culture are necessary due to prolonged COVID-19	Internal Environment	<ul style="list-style-type: none">Operating communication channels between labor and management centered on multiple unionsRespect for diverse voices between generations as the MZ generation increases
Background	Understand Current Issues and Share Transparent Information to Expand Labor-management Trust	Operate Customized Channels to Improve Reasonable Working Conditions	Establish a Participation-oriented Communication Culture to Vitalize the Organization
Representative Communication Channel	<ul style="list-style-type: none">Visiting Personnel and Labor Information SessionIndustrial Relations Working GroupCEO Talk ConcertWelcome CEO Meeting	<ul style="list-style-type: none">Petition Police Labor Improvement CouncilJob-oriented Personnel System Improvement CommitteeWake-UP Board (Junior Board)Labor-Management Working Committee for Gender Equality	<ul style="list-style-type: none">Yoo In-do (UPA Insider Challenge Golden Bell)Organizational Culture Revitalization Promotion TFYellow Love Communication CafeChirrit Chirrit Bunggae Gathering

Strengthen labor-management Partnership through Joint social Contribution Activities

Ulsan Port Authority tried to strengthen cooperative labor-management relations by linking the basic plan for ESG management with labor-management relations strategies and forming and spreading internal consensus. By conducting employee surveys and interviews with labor and management representatives, common tasks for realizing social values were discovered, and labor-management joint social contribution activities were resolved through labor-management collective agreements to fulfill social responsibilities as members of public institutions. Based on this, we decided to carry out social contribution activities on the last Wednesday of every quarter, and promoted social contribution activities that realize the value of ESG, such as port cleanup activities, group blood donation events, and donation events for the underprivileged. Ulsan Port Authority will play an exemplary role in realizing social values in the Ulsan region by building a solid internal management foundation from labor-management relations.

Organizational Culture Satisfaction
'Great'

Internal Satisfaction
'Good'
(promoting communication and resolving conflicts)

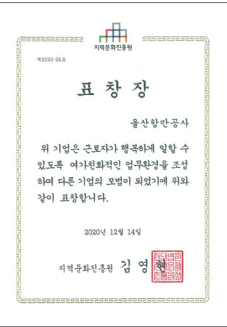
14 Consecutive Years since its Founding
Maintaining Dispute-free Labor Relations

Background	Promotion of Quarterly Social Contribution Activities		
<ul style="list-style-type: none">Labor-management Agreement under the 「Collective Agreement」 - Labor-management joint Social Contribution Activities Contributing to the Local Community through Regularization			
	Group Blood Donation Event	Donation Event for the Underprivileged	Port Cleanup Activity

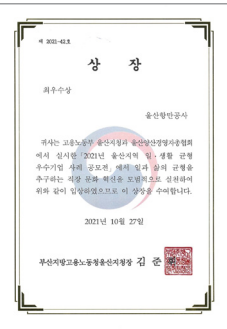
Establishing
a Healthy
Organizational
Culture



Female Family Friendly
Company Certificate



2020 Female Family
Friendly Excellent
Company



2021 Work and Life
Balance Excellent
Company Award

Better Working Conditions for Everyone's Well-being

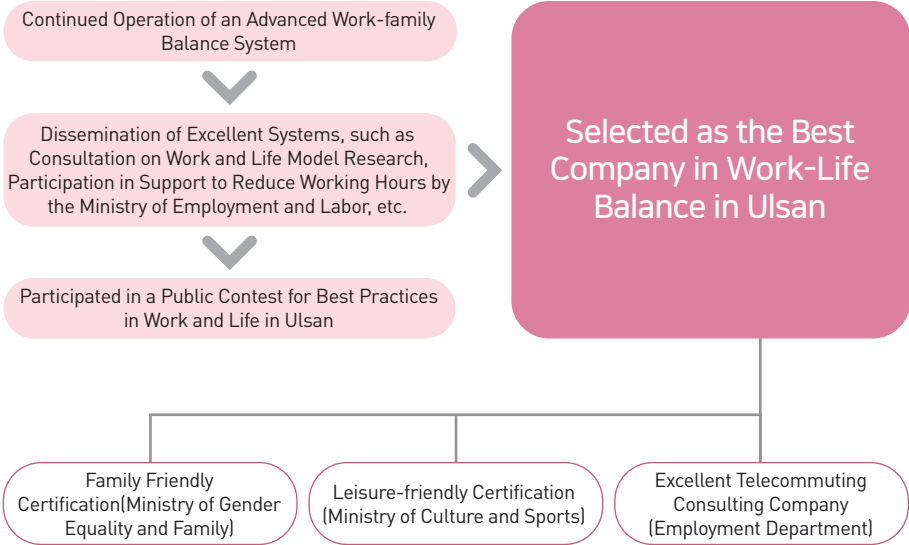
UPA has made efforts to realize a work-life balance culture. We created a better working environment, hoping that an excellent working culture would spread out from UPA and become a better local community. In a situation where telecommuting is expanding due to COVID-19, inefficient work environments caused by inadequate related systems have been improved. We expanded the flexibility of the leave system and working hours to ensure workers' work-life balance, and were selected as the best company for work-life balance in Ulsan in recognition of our achievements such as improving the welfare of minority workers.

Goal of 2021

Establishment of a Working Culture that Respects Work and Life in the Local Community through the Expansion of UPA Recognized by Specialized Organizations and an Excellent Culture of Work-Life Balance

Improvement of Work Convenience	Support Overcoming COVID-19
<ul style="list-style-type: none">Incorporated into the regular work system of Smart Work<ul style="list-style-type: none">Revision of the operating guidelines for the flexible work systemExpansion of work space such as smart work centerSimplification of application and use procedures for flexible working hoursExpansion of meeting rooms, new establishment of single-person video conference room	<ul style="list-style-type: none">COVID-19 blue stress relief<ul style="list-style-type: none">Personal psychological counseling, stress management educationSupport for daily recovery (mental care fair)Flexible service system for each phase of COVID-19Vaccine supply, regular disinfection, provision of sanitary products, etc.
Improving Office/Rest Environment	Expansion of Work-family Balance
<ul style="list-style-type: none">Easing density through expansion of office spaceExpansion of rest space for employeesDecentralized arrangement of exchange spaces among employeesAdditional operation of the grievance counseling center	<ul style="list-style-type: none">Giving parenting time (children under the age of 5)Expansion of annual savings and parental leave split useSelective-time (Working Mom) job searchGuaranteed right to rest for R&D employees<ul style="list-style-type: none">Expansion of the settlement unit for the optional working hour system

Results



Family Friendly System

UPA has tried to create an environment where work and family can be compatible. Parenting time was granted to employees with children under the age of 5. A customized system was designed so that workers can adjust their work schedules appropriately according to circumstances by allowing them to save annual leave or divide parental leave. In addition, an effective system was prepared to solve the efficiency of manpower management and childcare support at the same time by discovering jobs suitable for the flexible part-time system targeting working mothers. Thanks to these efforts, the company achieved 'excellent' in work-family balance satisfaction.

Institutionalization of Smart Work

As the spread of COVID-19 has been prolonged, UPA has implemented telecommuting for the health and safety of its employees. However, due to the unclear grounds for implementing telecommuting and the lack of overall systems, problems such as workers unnecessarily taking annual leave arose. So, UPA interviewed workers to establish a suitable telecommuting implementation system, and eventually came up with a reasonable telecommuting agreement. In addition, we established Hosa's work IT infrastructure centered on 19 jobs suitable for working from home discovered through expert consulting. UPA was selected as an excellent case by the Ministry of Employment and Labor in recognition of its achievements in improving work convenience through the institutionalization of smart work.

Improving Treatment of the Minority Workers

In the port industry, there are various types of business and various jobs. Due to the nature of public institutions fulfilling their duties of social value, there are jobs prepared for the socially vulnerable. Therefore, it is imperative to improve the treatment of minority workers. Labor and management agreed to expand the flexible work system, as there are variations in working hours for technology development workers depending on the duration of the research project. For those subject to the wage peak system, the working hours were shortened according to the rate of reduction in the basic wage to comply with the government guidelines. We supported customized training for workers who changed jobs and helped them acquire professional certificates. In addition, existing support was expanded for other minority workers and incomplete systems were improved to create a good working environment.

Employees Subject to the Wage Peak System	R&D Staff	Junior Staff (level 7)	Indefinite/Fixed-Term	The Labor-Vulnerable Class in the Region
<ul style="list-style-type: none">Reduction of working hoursSupport for customized educationSupport for acquisition of professional qualifications	<ul style="list-style-type: none">Expansion of flexible work system	<ul style="list-style-type: none">Expansion of subsidies for post-secondary school tuition for high school graduatesImplementation of a special promotion system	<ul style="list-style-type: none">Removal of promotion restrictionsReset the break time of secretariesMentoring when re-employment	<ul style="list-style-type: none">Support necessary items in the rest room for the elderly who collect wastepaper

Cases of Local Work-Life Balance

1st Place in the Contest

Excellent Work-family Balance Satisfaction

92.25 Points

Smart Work System

Ministry of Employment and Labor

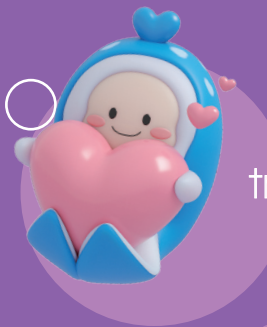
Selection of best practices



A Port of Transparency and Responsibility



A Port of Transparency and Responsibility



Strengthening the expertise and transparency of the Board of Directors



Sustained Enhancement of Board Expertise by Newly Appointing Two Management Labor & Legal Experts



Creating a Culture of Workers' Participation in Management, such as the Continuous Operation of the Worker Observation System



Utilizing the Expertise of the Board of Directors and Improving Participation in General Construction Management through Field-specific Subcommittee Activities



Ethical Management Leading Organization



2021 Ministry of Strategy and Finance Management Performance Evaluation Results, Group II Public Enterprises Achieved 1st place in the ethical management index



Comprehensive Integrity Evaluation by the Anti-Corruption and Civil Rights Commission, Achieved Excellent Grade for 3 Consecutive Years



100% Completion of Training on Prevention of Conflicts of Interest for Employees and Conflict of Interest Prevention System Set Up



UPA Communicating Transparently



Chosen by Korea's Official Labor Society as an Excellent Institution for Labor-management Culture This Year Certified as an Excellent Company for Labor-management Relations by the Korea Management Certification Institute



Sustained Certification as an Excellent Institution for Fair Recruitment under the Supervision of the Korea Management Certification Institute



Selected Excellent Cases in the Field of Comprehensive HR by HR Innovation Department



Transparent Board of Directors

Board of Directors

Establishment of Board Operating System

UPA has created an operating system by setting operational goals and tasks for the board of directors for responsible management. The operational goal is for board members to actively participate in management with expertise. We will strengthen the role of the board of directors by analyzing the internal and external environment and deriving appropriate action tasks.

Operational Goal	Activation of the Board of Directors through Active Participation in Management Based on Expertise			
Environmental Analysis	Internal: Hoping for open communication among board members		External: Demand for governance improvement according to ESG management ethos	
Strategic Direction	Securing a Balanced Board of Directors	Strengthen Practical Management Improvement	Improvement of Management Transparency	Internal Stability of Operation and Improvement of Feedback Flow
Action Task	• For optimal decision making Strengthening expertise and diversity	• Expanding participation in management by sector	• Governance based on ESG management Restructuring	• Introduction of performance management system

Composition of Board of Directors

The highest decision-making body of the UPA is the Port Commission established under the Port Authority Act. The Port Committee is composed of 7 non-standing directors in accordance with Article 11 of the Port Authority Act and Article 5 of the Enforcement Decree of the same Act. The committee monitors the management and serves as a management recommendation for each specialized area of the Port Commissioner. The resolutions and protection matters of the committee are specified in Article 7 of the articles of incorporation, and it deliberates and decides on matters such as management goals, budget, fund plan, business plan, and operation plan, acquisition and disposal of basic assets, and changes to the articles of incorporation. In addition, we are actively contributing to the company's value creation through management consulting using our expertise.

Name	Lee, Joong Woo Chairman/Male	Goag, Sang Min Commissioner/Male	Kang, Jaehwa Commissioner/Male
Major Career	C) Technical Advisory Committee member of Ministry of Maritime Affairs and Fisheries ('21.11 ~ commissioned for 2 years) Present) Vice President of Busan City Rowing Association	C) Managing Director of SK Energy Co., Ltd. Present) Captain of Hyundai Merchant Marine	C) Vice President of Korea Commercial SW Association Present) President of Busan Port Facility Management Center
Lee, Ki Won Commissioner/Male	Beak, Soon Hum Commissioner/Male	Song, Moon Hui Commissioner/Female	Kim, Hae Ryong Commissioner/Male
C) Ulsan Local Labor Commission Public Service Commissioner Present) President of Ulsan Economic Promotion Institute	C) CEO of Korea Zinc Company, Ltd. C) Ulsan Chamber of Commerce and Industry Vice President	C) Representative Attorney at Sehwa Ulju Branch Office C) Non-executive director of Ulsan Facilities Corporation	C) Professor of Business Administration, University of Ulsan C) Ulsan (Busan) Regional Labor Relations Commission Adjudicator, Public interest member

Subcommittee Operation Status

The UPA is composed of 7 subcommittees consisting of a port committee with expertise in each field and non-executive directors. In addition to the existing five subcommittees, such as the Budget Deliberation Subcommittee, Performance Management Committee, Safety Management Committee, Ethical Management Committee, and Executive Recommendation Committee, the Carbon Neutral Promotion Committee and ESG Management Committee were newly established to implement ESG management strategies. In addition, the company's management policies were established by reflecting key management proposals in the fields of environment, society, and governance.

Field	Key Management Suggestions	Policy Reflection
Carbon Neutral	• Establishment of port infrastructure and readjustment of port operation is necessary in view of the next 30 years	• Declaration of Ulsan Port Eco-Smart Port Promotion Strategy (2021 Ulsan Port Eco Smart Port Grand Festival)
Performance Management	• Mutual communication between members prior to system changes due to benefits or disadvantages Consensus needs to be formed	• Communication with the labor union regarding evaluation issues • Revision of evaluation handbook for 2021 after collecting company-wide opinions
Ethical Management	• It is necessary to identify the causes of internal integrity sub-categories and continue to make efforts to improve them.	• Intern Integrity Monitoring Team launched • Self-assessment to strengthen accounting transparency

Efforts to Strengthen the Role of the Board of Directors

Strengthening the Role of the Board of Directors by Establishing an Effective Performance Management System

UPA has established an operating system for the board of directors through the PDCA (Plan – Do – Check – Act) method. The board of directors self-evaluated performance, disclosed work performance, evaluated and improved operational satisfaction, so the number of proposals increased from 36 in the previous year to 40 in 2021, and the number of sub/specialty committees held was 10 in 2020 and 2021 has been increased to 15 times.

Establishment of Key Operating Directions		Activity Support/Monitoring	Performance Evaluation	Deriving Improvement Tasks
Establishment and Reporting of Board Operation Goals		Compliance with Prior Distribution of Agenda, Report of Results of Previous Meetings	Establishment and Operation of Annual Self-evaluation System for Non-executive Director Activities	Business Performance Report, Reflection of Plans for the Next Year
Purpose	• Realization of responsible management by non-executive directors, strengthening of the role of management control, discovery and advancement of matters for improvement in the operation of the board of directors			
Evaluation		Evaluation Items		Result of '21
Self-diagnosis of BOD Activities		Responsibility, Professionalism, Activity, Transparency, Independence		95.71 Points
Satisfaction with Board of Directors		Independence, Provision of Information, Reflection of Suggestions, Participation in Management, Activity Support		96.43 Points

Spreading the Culture of Ethical Management and Integrity

Ethical Management Promotion System

Strengthening the Ethical Management System

With the vision of 'Integrity UPA Leading Ethical Management', the UPA has set its 202 goal of 'Leading Ethics and Integrity Culture through Achievement of Excellent Overall Integrity Level for 3 Consecutive Years'. As a major achievement, we acquired the compliance management system and anti-corruption management system certifications at the same time for the first time as a public institution.

Vision	Integrity UPA Leading Ethical Management		
Goals of '21	Leading a Culture of Ethics and Integrity by Achieving an Excellent Grade in Comprehensive Integrity for 3 Consecutive Years		
Strategic Direction	① Ethical Management System Advancement	② Ethical Settlement of Organizational Culture	③ Expansion of Internal and External Integrity Awareness
Execution Task	<ul style="list-style-type: none">Reinforcement of organizations such as Ethics & Legal Affairs Team and Integrity Monitoring TeamSystem improvement such as strengthening punishment and system certificationProtect reporters by introducing a proxy reporting system	<ul style="list-style-type: none">Strengthening the CEO's exampleParticipation in organizational culture improvementSource blocking of accounting corruption	<ul style="list-style-type: none">Integrity Contest, Golden Bell, etc. Expansion of public participationIncrease the completion rate of integrity education and strengthen performance evaluationSpreading a culture of integrity by establishing an ethical and integrity ecosystem

Internalization of Ethical Management

Reinforcing Ethical Management Execution Organization

UPA is spreading a culture of ethics and integrity by expanding the company-wide ethics management organization. We established a department dedicated to ethics and compliance management, deployed in-house lawyers to establish an ethics and legal team, and launched the Integrity Monitoring Group, which holds monthly meetings. In addition, to spread a culture of ethics and integrity, we commissioned an Integrity Citizen Auditor to create a cooperative system to monitor corruption-vulnerable areas.



Internalizing the Ethical Management and Promoting Activities

In order to spread company-wide ethical management, UPA is conducting various activities such as ethics education, campaigns, and integrity radio, taking the lead from the head of the institution. In addition to these activities of the head of the institution, all employees also are operating various activities such as ethical practice pledges, integrity training, UPA Integrity Month, Golden Bell, discussions, and so forth. Through this, UPA is practicing and spreading the culture of ethics and integrity.

Conflict of Interest Prevention System

Establishment of Foundation for Public Trust through Conflict of Interest Prevention System

UPA has established a conflict of interest prevention system to prevent conflicts of interest and raise awareness among employees. We have set a goal for 2021 to be a UPA that is trusted by the people by early settlement of the Conflict of Interest Prevention Act. To achieve this, we are making efforts to prevent conflicts of interest by establishing three strategic directions and action tasks. Through these efforts, UPA will become an institution trusted by the public.

Realization of UPA as a public enterprise trusted by the people through the early establishment of the Conflict of Interest Prevention Act			Goals of '21
Establish a Foundation for Preventing Conflicts of Interest	Internalization of Conflict of Interest Prevention	Intensive Monitoring	Strategic Direction
<ul style="list-style-type: none">Establishment of UPA undisclosed information standardsComplete overhaul of the Code of Conduct for EmployeesOperation of monitoring voluntary reporting system	<ul style="list-style-type: none">1:1 integrity education for permanent executivesProfessional training for all employeesIntegrity now campaign	<ul style="list-style-type: none">Implementation of property registration for business-related personsMonthly, quarterly, semi-annual monitoringOperation of an intensive inspection period for private interest pursuits	Action Task
Dedicated Organization	Normative System	Report/Consultation	Propulsion System
<ul style="list-style-type: none">[Department in charge] Audit Department, Ethics & Legal Team[Conflict of Interest Prevention Officer] Head of Audit Department	<ul style="list-style-type: none">[Criteria for Conduct] Code of Conduct for Employees[Punishment Criteria] Personnel Regulations and Enforcement Rules	<ul style="list-style-type: none">[Report] Integrated reporting system, K Whistle[Consultation] In-house lawyers, lawyers for relief reports	Promotion Performance
No Conflict of Interest Education	Jeans Campaign	Random Quiz Operation	
<ul style="list-style-type: none">Conducted 6 integrity training sessions for a total of 500 people	<ul style="list-style-type: none">Conducted 13 campaigns targeting a total of 1,000 people	<ul style="list-style-type: none">Total 4 times, 90 people quized	

Operation of Conflict of Interest Prevention System Process

UPA has established a conflict of interest prevention system process. This consists of foundation building, awareness raising, monitoring, and internal and external dissemination. We are doing our best to ensure early adoption of the Conflict of Interest Prevention Act.

Establishment of Undisclosed Information Standards	Reorganization of Employee Code of Conduct	Self-monitoring of All Departments	To Prevent the Conclusion of Preferential Contracts Voluntary Reporting System	01 Foundation Building
Conflict of Interest Prevention Training	Integrity Campaign		Code of Ethics Quiz	02 Awareness Raising
Company-wide Social Responsibility Self-inspection	Real Estate Related Department Property Registration	Corruption Cases of Interns Reception of Experience	Personal Interest in Using Work Information Avoid Pursuit	03 Monitoring
- Employee Conflict of Interest Prevention Act - Brochure Production	- Prevention of Conflicts of Interest for Employees - Establish a Self-checklist	Port Authority Conflict of Interest Prevention Joint Declaration	Port Authority Conflict of Interest Prevention Guidebook Production	04 Diffusion Inside and Outside

Fair and Transparent Organizational and Human Resources Management

Fair Personnel System

Improving Fairness and Transparency through Improvement of Personnel System

UPA maintains a fair and transparent personnel system. In the recruitment process, we have been selected as the No. We operate a performance evaluation system transparently to conduct fair evaluation according to job duties. In addition, transparency in personnel management is being strengthened through the operation of the Promotion Review Committee and the operation of mild positions within the personnel system.

Recruitment Fraud Prevention	Fair Performance Evaluation System	Enhancing Transparency in Personnel Management
<ul style="list-style-type: none">Prohibition of mitigation of disciplinary action against those who misbehaved in hiringIncreased statute of limitations (3 years → 5 years)Prohibition of two consecutive selections of the same memberProhibition of appointment of members requesting personal information	<ul style="list-style-type: none">Operation of organizational evaluation site due diligence observersExpansion of organizational evaluation subcommittees (6 → 8)Operation of evaluation results and objection period for each departmentConducting feedback lectures on organizational performance evaluation results	<ul style="list-style-type: none">When the promotion review committee is held, the member of the committee must be present.Compliance with the principle of rotation of positions to prevent corruptionRecruitment of open position to secure excellent talentFostering excellent talent through personnel exchanges between PAs

Strengthening management transparency

Transparent Budget Execution and Management Operation

UPA is managing budget execution transparently by expanding public participation in management for transparent management. For projects that have been judged eligible through ESG project contests, budgets are organized and projects are carried out through participatory management. In order to promote public participation in management, we operate a real-name business system. We disclose our business on the company website and introduce the corporate card ERP (Enterprise Resource Planning) system to strengthen the transparency of budget operation.

Advancement of Important Records Management System

The first step toward transparent management is information disclosure. To this end, a record management system must be developed. We increased the efficiency of managing important records by converting records into digital ones, established a record management standard table that reflects the characteristics of our business, and applied it to the company-wide system. In addition, we are continuously developing the management of important records by operating the evaluation committee for records.

Classification	Promotion Contents	Promotion Performance
The 2nd Important Records DB Construction Project	<ul style="list-style-type: none">Promotion of digital conversion of important records from 1997 to 2006Promotion of original reorganization of important records	<ul style="list-style-type: none">228,881 pages of important records double preservation completed → Reinforcing important records preservation system, enhancing administrative responsibility
Records Classification System Rolling	<ul style="list-style-type: none">Gathering departmental opinions and deriving business function unit tasksConfirmation of the record management standard table and reflection in the system	<ul style="list-style-type: none">Confirmation of 109 sub-functions and 446 unit tasks, reflected in the system → Reflecting work characteristics, establishing a flexible and consistent evaluation basis
Inspection of Possession Records	<ul style="list-style-type: none">Inspection of non-electronic records in the archivesUpload data system related to non-electronic records	<ul style="list-style-type: none">Complete inspection and upload of 32,747 records in the collection → Continuous advancement of the integrated management system for non-electronic important records
Record Evaluation Disposal	<ul style="list-style-type: none">Completion of inspection and selection of evaluation target recordsOperation of evaluation council and inspection/ destruction of records	<ul style="list-style-type: none">Completion of deliberation including external experts and destruction of records → Re-selection of important records and establishment of identity through timely disposal

Financial Risk Management System

Operation of Financial Risk Management System

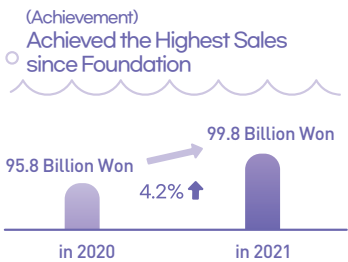
UPA maintains financial soundness by establishing a risk management and response system with the direction of 'promoting active risk management according to the expansion of business environment volatility'. By operating the KRI (Key Risk Index), we not only respond flexibly to changes in the business environment, but also maintain safety, and were selected as an excellent institution for dividends among government dividend implementing institutions (out of 22 institutions).

Promoting Active Risk Management According to the Expansion of Business Environment Volatility				Direction
Business Risk	Safety Risk	Market Risk	Operational Risk	Management Target
Sales and Related Expenses	Securing Debt Repayment Capacity and Liquidity	External Financing Rate	Internal Control	KRI
EBITDA/Revenue	Debt Ratio, Current Ratio	Interest Rate EaR [%]	Control Level 'Good'	
Financial Risk Management Regulations		KRI (Key Risk Indicator)	Response Organization/ Monitoring System	Management System
(Improvement) Slimming of Regulations such as Elimination of Duplicates		(Improvement) Updating the Basis for Determining the Crisis Situation	(Improvement) Introducing a New Risk Management System	

Financial Crisis Response

Achieved Highest Sales since Foundation through Proactive Financial Risk Response

The logistics disruption caused by the corona pandemic and the decrease in liquid transportation volume due to the decrease in oil consumption led to a decrease in sales and operating risks. UPA recognized this and actively responded by marketing, utilizing idle facilities, and revitalizing hinterland complexes, resulting in a slight increase in sales compared to the previous year. The main reason for the increase in sales is the increase in rental sales following the completion of self-financed facilities such as hinterland complexes and oil hubs, and has achieved the highest sales since its foundation.



Reinforcing Crisis Response Capability by Inspecting and Improving the Crisis Response System

Changes in the business environment lead to uncertainty about when and what kind of financial risks may arise. UPA has checked and improved the effectiveness of risk management guidelines, general rules, and manuals to respond to such uncertainties. Items for inspection and improvement include unifying risk management guidelines, general rules, and manuals, improving key risk indicators, and setting specific countermeasures. Through this, we have strengthened our crisis response capabilities.

Problem	Set Improvement Direction		
[Problem] Insufficient concreteness due to simple listing of countermeasures in case of crisis	<ul style="list-style-type: none">Simplify compliance with risk management guidelines, general rules, and manualsKRI changes/updates to determine the level and stage of the current financial crisisSecuring specificity for crisis response measures in case of financial crisis		
<Improvement 1> Unification of Response Guidelines and Regulations		<Improvement 2> KRI Improvement	<Improvement 3> Improvement of Specificity of Countermeasures

Risk Management

Innovative communication where All Participates

Innovation in Communication with Stakeholders

Develop Communication Strategies by Operating Customized Channels for Each Stakeholder

UPA operates customized communication channels for each stakeholder and establishes communication strategies to listen to the diverse voices of stakeholders in various ways. We operate 12 communication channels according to the purpose of communication and the needs of stakeholders.

	Value Creating Customer	Value Delivery Customer	Value Consuming Customer	Value Sharing Customers
Stakeholder Classification	Executives, Union	Related Institutions, Subsidiaries, Partner Companies	Shipping Company (agent), Shipper, Pier Operator, Tenant Company	Government, Local Government, Media, Local Citizens
Purpose of Communication	• Labor-Management Win-win, Mutual Benefit Maintain Cooperative Relationship	• Through Consensus Building Collaboration and Problem Solving	• Improve Customer-oriented Port Operation Service Quality	• Change Felt by the People and Social Value Creation
Communication Channel Operation Direction	• Decision Maker (CEO) Centered Operation of Multidirectional Communication Channels	• Expansion of Communication Channels to Strengthen Cooperation System	• Operation of Online and Offline Channels Reflecting Customer Needs	• Expansion of Non-face-to-face Multi-directional Public Participation Channels
Representative Communication Channel	① Management Performance Inspection Meeting ② Labor-management Workshop, Employee Meeting ③ CEO Talk Concert	④ Relevant Agency Work Council ⑤ Subsidiary Business Council ⑥ Meeting with Partner Companies	⑦ Meeting with Clients ⑧ Berth Management Meeting ⑨ KiUP (corporate) Growth Response Center	⑩ Citizen Participation Innovation Group, Contest ⑪ On Public Participation and Communication Committee ⑫ Community Win-win Council

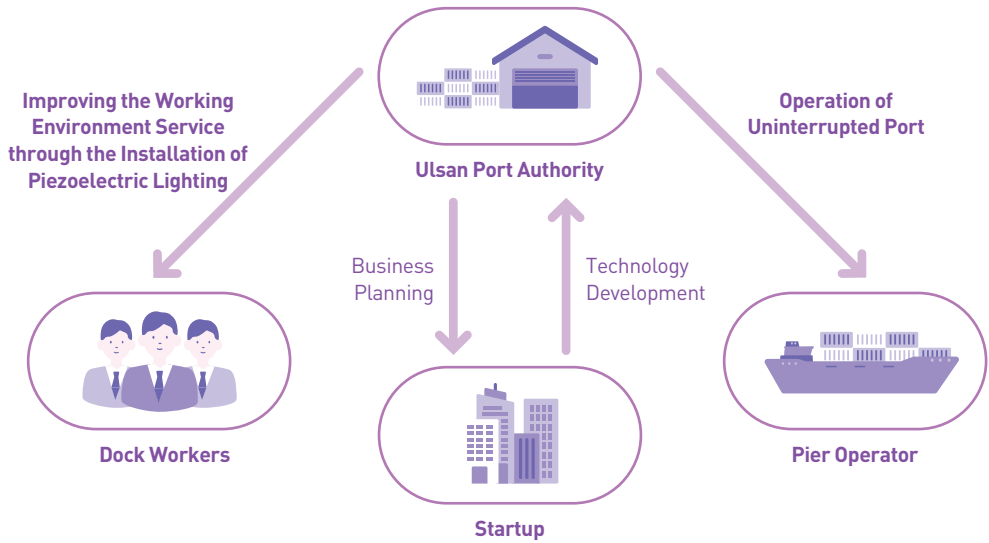
Customized Channel Operation Performance by Stakeholder

The corporation analyzed major issues for each stakeholder group and conducted communication activities through communication channels for each group based on the issues. Through this, we actively collected the requirements of each stakeholder and created various social values. In particular, based on vitalization of communication with partner companies, we have strengthened the collaboration system by accommodating various demands, such as exempting deposits for small contracts and simplifying advance payment procedures.

Classification	Communication Activities	Promotion Performance
Value Creating Customers	• Management performance discussions involving the head of the institution and executives • Labor-management consultations to improve the remuneration system • Talk concert with the participation of the head of the institution and the representative of the employees	• For the first time in the construction, live broadcasting of all employees and transparent disclosure of policies • Expansion of job-based wage application • Communication Conflict Resolution Satisfaction 'Good' (88.25 points)
Value Delivery Customer	• Ulsan Port CIQ (Customs, Immigration Control, Quarantine) Consultation on COVID-19 quarantine response • Subsidiary performance management introduction, operation improvement TFT • Supplier survey, U-Partners' Day meeting, unfair trade reporting center	• Installation of special sample collection facilities • Support for the use of COVID-19 self-diagnosis app by using Wi-Fi for foreign seafarers • Subsidiary evaluation handbook finalized, evaluation system implemented
Value Consuming Customer	• Port-MIS working-level meeting at Ulsan Port • On/offline berth operation meeting • Operation of on/offline QiUP Growth Response Center	• Receipt and action on 17 suggestions including system improvement • Reduction of working hours and improvement of fairness in berth assignment by improving the berth operation system
Value Sharing Customers	• Operation of on/offline citizen participatory innovation groups • Online public participation communication meeting • Discovery of regional support projects, consultation on joint promotion	• Supplement 33 innovative tasks, improve 2 compensation systems • Feedback on public communication results and reflection of 14 committee suggestions • Implementation of 2 shared value creation project ideas

Improvement of Port Working Environment and Convenience through Communication with Port Workers

Between the dock workers demanding the installation of lighting in the cargo yard and the dock operator's opinion that it interferes with loading and unloading, UPA has tried to find a solution that satisfies everyone. As a result, we developed a piezoelectric lighting device that does not require electrical wiring in collaboration with a startup, thereby improving the working environment and realizing uninterrupted port service at the same time.



Innovation in Communication with the People

Expanding the Right to Access Information by Disclosing Information that Reflects Public Demand

UPA is expanding public information access by developing an information disclosure infrastructure. There are programs and websites that people can participate in called ON-National Monitor Group, Information Disclosure Council, Public Contest, Information Disclosure Claimant, and each channel has its own website. We are improving and expanding accessibility for the convenience of users.

Realization of Active Administration that the People Can Feel

UPA strives to improve the organizational culture and system within the company to achieve public administration that people can feel. For this active administration, consulting audit enforcement guidelines were enacted, ex officio exemption regulations were established, actual conditions were checked to eliminate passive administration, and disciplinary regulations were supplemented. We promote through social media to spread an active administrative culture.

Active Administrative Support	Passive Administration Revolution	Proliferation of Active Administration Culture
• Enactment of 'Consulting Audit Implementation Guidelines' → Activation of the Pre-consulting System • Establishment of 'Ex officio Exemption Regulations' → Activation of Active Administration	• Inspection of actual conditions and supplementation of disciplinary regulations for rigorous scrutiny of passive administration of corporations and subsidiaries • Investigation and improvement of regulations that induce passive administration • Opening of the Integrated Reporting Center for Passive Administrative Administration	• Discovery and dissemination of exemplary cases of positive administration • New 'Active Administration' menu on the homepage • advertisement of active administration using UPA's social media.



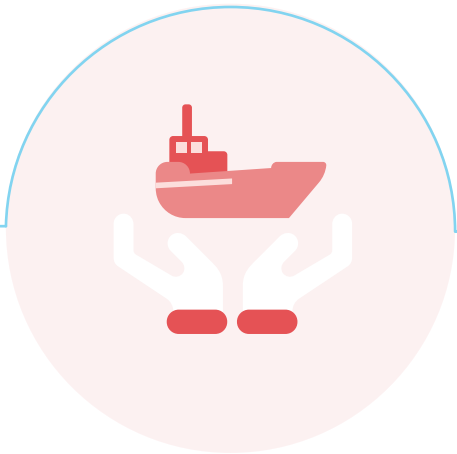
A Port of Innovation and Communication



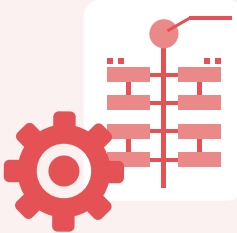
A Port of Innovation and Communication



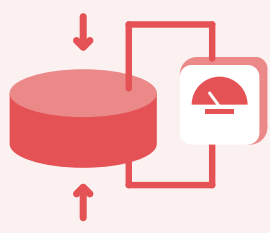
Improving the Convenience of the Port Working Environment



Improving Working Environment for Port Users and Operating Uninterrupted Port Service



Introduced Piezoelectric Technology for the First Time in a Port and Selected K-testbed Business



Expansion of Installation of Piezoelectric Equipment in Ports



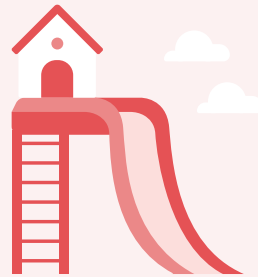
Port Waste SOC Model Excavation



Resource Recovery of 51 tons of Port Waste by Discovering a SOC Business Model Utilizing Port Waste



Received a Commendation from the Ministry of Health for Contributing to Local Coexistence by Discovering a SOC Business Model Using Port Waste



Creation of Children's Playground through New Utilization of Port Waste and Safety Verification



Eco Smart Ulsan Port Construction



Registered Greenhouse Gas Emission Rights for the First Time as a Port

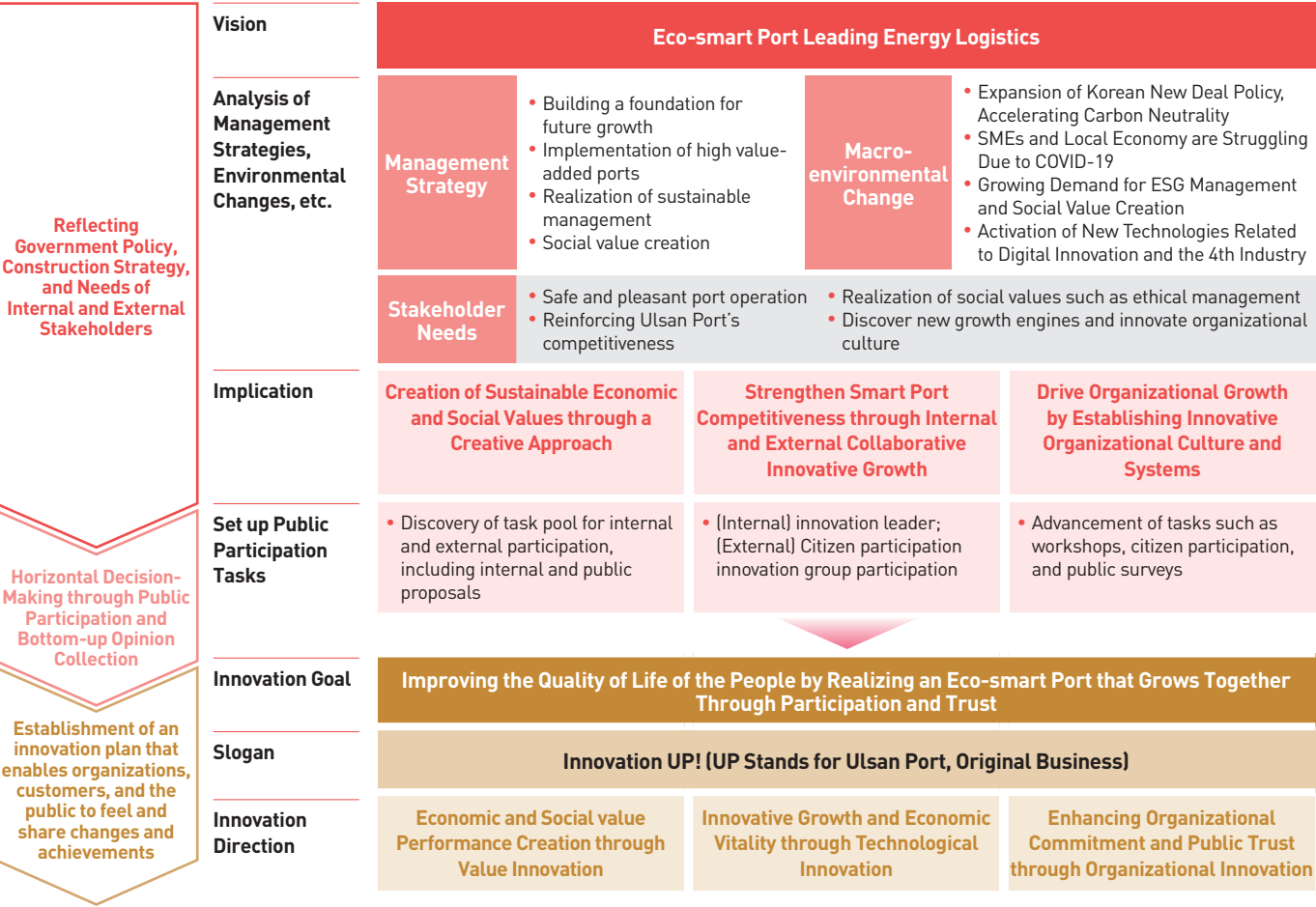


Advanced Ship Around View 5G MEC* Technology Convergence



2 Patent Applications for the Creation of Smart Ulsan Port

Establishment of Innovation Plan



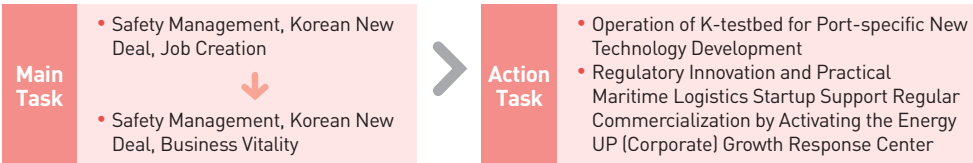
Establishment of an Innovation Plan that Can Be Experienced by the All

Establishment of Innovation Goals and Direction of UPA

UPA established our vision and strategy, analyzed the internal and external environment, and collected opinions from stakeholders to derive direction and tasks for innovation. The process of establishing the plan reflected the needs of all stakeholders of the company and the people's demands, and this will be an innovative plan that everyone can feel.

Set Innovation Tasks to Achieve Goals

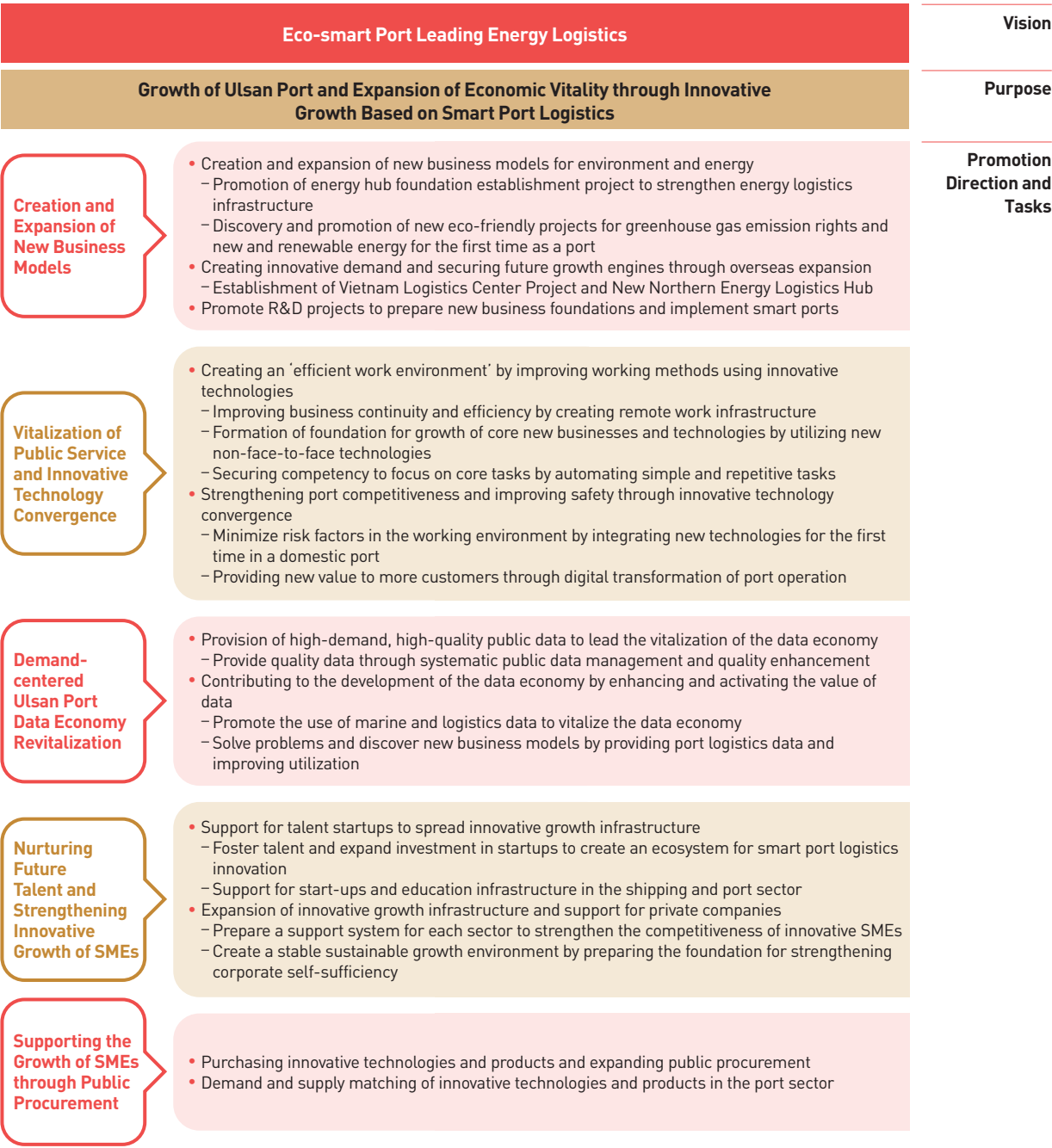
UPA has established a bottom-up, convergent innovation task through communication with internal and external stakeholders to enhance the degree of completion of the innovation task. Corporate vitality was selected as a new task for 2021, along with safety management and the Korean New Deal, which were the existing key tasks. As a detailed implementation task for business vitality, we are operating a K-test bed for the development of new port technology for small and medium-sized enterprises, and through this, we will establish a foundation for innovative growth by connecting with small and medium-sized enterprises.



Innovative Growth Promotion Strategy for Economic Vitality

Ulsan Port Authority's Innovative Growth Strategy

We have established detailed strategies based on the direction of 'innovative growth and economic vitality through technological innovation' newly established by the UPA. Our goal is to strengthen competitiveness as a smart port and expand the economic vitality of Ulsan Port. There are a total of five directions for promotion: creation and expansion of new business models, activation of public service and innovative technology convergence, user-centered data economy activation, human resource development and support for SME innovation growth through innovation-oriented public procurement.



Environmental Innovation

Green New Deal

Establishment of Carbon-Neutral 2050 Roadmap to become the Eco-friendly Port

The first step to be an eco-friendly port is the realization of carbon neutrality. So Ulsan Port Authority has established the Carbon Neutral 2050 Roadmap. In order to become a carbon-neutral port, it is necessary to establish low-carbon port infrastructure, eco-friendly port operation, and create a carbon-neutral port ecosystem. We are doing our best to achieve the goal of reducing carbon emissions by 30% in 2030, 50% in 2040, and 100% in 2050 compared to 2018.

Efforts and Achievements to Realize Carbon Neutrality

The corporation is promoting carbon reduction activities internally to realize carbon neutrality. In order to reduce greenhouse gas emissions from office building facilities, we are practicing energy saving by installing automatic fire fighting elevator sensors and installing high-efficiency LED lights. In addition, by introducing eco-friendly vehicles, we have reduced fuel consumption for two consecutive years.

Classification	Performance	Results
Reduction of Greenhouse Gases (Office Facility)	<ul style="list-style-type: none">Compliance with government guidelines and discovery of energy saving factors<ul style="list-style-type: none">Installation of automatic sensors for firefighting elevators, installation of high-efficiency LEDs, etc.	<ul style="list-style-type: none">Greenhouse gas emission target 555.312 tons → Achieved: 535.93 tons (34.3% decrease from the previous year)Active implementation of government-recommended standards and achievement of exceeding targets (2 consecutive years)
Supply of Eco-friendly Vehicles	<ul style="list-style-type: none">Dramatic reduction in fuel consumption by introducing 100% eco-friendly vehicles and installing electric vehicle charging stations in civil parking lots100% introduction of eco-friendly vehicles when introducing new vehicles in 2021<ul style="list-style-type: none">2 electric cars, 1 hybrid car	<ul style="list-style-type: none">2 years in a row, more than 60% reduction in fuel consumption<ul style="list-style-type: none">67.7% in '20, 68.9% in '21
LED Conversion and New Renewable Energy Business	<ul style="list-style-type: none">Practice of carbon reduction through LED conversion and new renewable energy businessRegistered greenhouse gas emission rights in the port LED field for the first time in Korea (About 81 tons)	<ul style="list-style-type: none">Greenhouse gas reduction (866 tons)<ul style="list-style-type: none">208 tons of LED (accumulated 972 tons)658 tons of solar power (cumulative 2,277 tons)

Establishment of Green Industry Innovation Ecosystem

In order to carry out the Port Green New Deal, the UPA is establishing a green industry to lay the groundwork for realizing carbon neutrality. To create a low-carbon port, we are operating an ESI incentive system that gives incentives to eco-friendly ships and a low-speed ship operation program, and we are promoting the installation of pollution reduction devices such as DPF to reduce fine dust caused by port loading and unloading equipment. In addition, by developing a hydrogen-based portable AMP, we are creating a green hydrogen infrastructure that leads to improved air quality by reducing emissions such as sulfur oxides generated in the power procurement process.

Improvement of Port Air Quality Management	Ulsan Port Green Hydrogen Infrastructure and Carbon Neutral Network Establishment
<ul style="list-style-type: none">Induce eco-friendly ships through ESI incentive system and VSR (reduction of 11,347 tons of greenhouse gas emissions)Carried out a project to support eco-friendliness of unloading equipmentPromote installation of DPFs, airtight covers, etc. (accumulated 53 units in 2021)	<ul style="list-style-type: none">Promotion of hydrogen-based mobile AMP development for low-carbon port operationSigning a business agreement to build a green hydrogen value chainFormation of the Ulsan Port Carbon Neutrality Promotion Committee and working-level promotion group composed of port, environment, ICT and energy experts

Eco-friendly Energy Business Leading to Growth

Creation and Expansion of New Eco-friendly Energy Business

We have established a roadmap to create demand for eco-friendly energy transportation and create a path for new eco-friendly energy businesses. By strengthening energy logistics infrastructure based on LNG fuel and green hydrogen, we have taken the first step to become an eco-friendly energy port. In the long term, we will expand our business areas to eco-friendly energy-related projects such as green hydrogen and gradually establish a green energy port infrastructure to lay the groundwork for an eco-friendly energy hub port.

Background	<ul style="list-style-type: none">[Government Policy] Enactment of the Carbon Neutral Basic Act and establishment of the Carbon Neutrality 2050 Plan, etc.[Industrial structure] Energy paradigm shift through carbon neutrality and hydrogen economy activation[Port Demand] Expansion of energy logistics transaction infrastructure and expansion of eco-friendly energy-related business areas		
Roadmap	Short Term(2021)	Mid Term(2022~2024)	Long Term(2025~2026)
	<ul style="list-style-type: none">Securing demand for LNG storage and businessAttracting companies to invest in and participate in the hydrogen business	<ul style="list-style-type: none">Korea's largest handling of ammonia (hydrogen)Attracting imported green hydrogen demonstration project	<ul style="list-style-type: none">Handling 1 million tons of eco-friendly energyLeap forward as a green hydrogen base port

Creation of a Port Specialized in Eco-friendly Energy

To become an eco-friendly energy hub port, UPA is creating infrastructure for the introduction of LNG and green hydrogen. To create an LNG-specialized port, we established a plan to expand LNG storage facilities and discover business models for LNG utilization. In addition, we are planning to introduce LNG fuel propulsion ships to create demand for LNG consumption and expand infrastructure for berthing of propulsion ships. In addition, to introduce green hydrogen to Ulsan Port, we created a green hydrogen logistics hub business model, installed green and blue hydrogen production bases, and built a large-scale hydrogen storage base. In this way, we are making efforts to create a hydrogen energy ecosystem in Ulsan Port.

Classification	Creation of LNG-specialized Ports	Creation of Hydrogen Port Ecosystem
Contents	<ul style="list-style-type: none">[Secure Storage Demand] Attract 500,000 tons of LNG per year by signing a pre-contract for the first-phase LNG storage facility at the Oil Hub[LNG-related Business] LNG bunkering using the introduced LNG<ul style="list-style-type: none">Discovery of (Refueling) service business model and securing feasibility[LNG Consumption Demand] Increased demand for LNG bunkering by expanding the introduction of LNG-powered vessels (2 vessels) at Ulsan Port[Infrastructure Expansion] Promoting an increase in the berthing capacity of LNG-only berths for berthing large LNG ships (85,000 ton class → 100,000 ton class)	<ul style="list-style-type: none">[Hydrogen Income] Purchasing and storage demand necessary for the introduction of green hydrogen<ul style="list-style-type: none">Securing a business model for the 'Green Hydrogen Logistics Hub' specialized in Ulsan Port through collaboration with all companies (5 companies)[Hydrogen Production] Laying the groundwork for green and blue hydrogen production in the port through the creation of a hydrogen complex in the hinterland area 2 and support for floating offshore wind power generation in Ulsan.[Infrastructure Creation] Establishment of a plan to develop a hydrogen-only pier in North New Port for the creation of a large-scale hydrogen storage base

Outcome	<ul style="list-style-type: none">Securing 2 million tons of annual LNG cargo destinations through marketing to secure demand for first-stage use of oil hubPromoting the LNG bunkering business will induce added value of 1.3 trillion won annually and create 10,000 jobs.'Green Hydrogen Logistics Hub Business Model' Reflecting government policies to realize a carbon-neutral hydrogen economy Leaping into the port of Ulsan
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Social Innovation

Digital New Deal

Providing aTest Bed for SM Enterprises in Ulsan Port to Become A Smart Port

UPA provided a test bed to test various port-specific technologies developed by SMEs. This has energized businesses. By building a test bed platform, we were able to develop innovative products by converging technologies. We also laid the groundwork for innovative growth by purchasing innovative products and supporting startups with innovative technologies. This will be the basis for building a smart port.

Background	<ul style="list-style-type: none">• [Public Demand] An accessible and systematic test bed system is needed for the growth of SMEs.• [Government Policy] Promoting the establishment of a K-test bed platform supervised by the Ministry of Strategy and Finance
Roadmap	<ul style="list-style-type: none">• [Fundamental preparation] Final selection of 'K-test bed platform' in the port field (only among PA / total of 45 institutions)• [System Establishment] Enactment of 「Ulsan Port Authority test bed operation regulations」 and establishment of work process• [Demonstration Tasks] Selection and promotion of 3 K-test bed projects and construction's own validation tasks <div><div>Pajeon self-powered lighting device</div><div>+</div><div>Piezoelectric Energy Harvesting</div><div>+</div><div>smart mooring pole</div><div>+</div><div>ship around view +5G MEC</div></div>

Human New Deal

Promotion of New Deal for Balanced Regional Development for Mutual Growth with Local Governments and Public/Related Organizations

To create a hydrogen economy ecosystem, UPA collaborated with local governments and local public and related organizations to create a hydrogen charging infrastructure and green hydrogen logistics hub business model in Ulsan Port. We have established a hydrogen charging infrastructure and business model to attract private investment. This has become a new growth engine for the stagnation of major industries in Ulsan, such as automobiles and petrochemicals, and has become a cornerstone for revitalizing the local economy.

	Local Issue	Recognition of Current Issues and Problems	Construction Role and Performance	Results
Ulsan City 'Hydrogen' × UPA	Local Economic Downturn Automobile and Petrochemical Key Industries Stagnation New Growth Engines Needed	<ul style="list-style-type: none">• Absence of Hydrogen Refueling Stations for Ships	<ul style="list-style-type: none">• Establishment of hydrogen charging infrastructure in the pier• Establishment of hydrogen filling station in idle land• Hydrogen supply by extension of hydrogen pipelines in hinterland industrial complex• Installation of fire extinguishing facilities and barriers	Succeeded in Recharging and Test-running a Hydrogen Fuel Cell Ship in a Port for the First Time in Korea
	Ulsan City Government Designated as 'Hydrogen Demonstration City' Ulsan	<ul style="list-style-type: none">• Lack of hydrogen import logistics/supply chain, many investment risks• Expansion of hydrogen unloading/storage pier/tank facilities is essential	<ul style="list-style-type: none">• MOU for fostering Ulsan Port Green Hydrogen Logistics Hub• Promoting the designation of a specialized zone for the hydrogen complex in Zone 2 of the hinterland complex	<ul style="list-style-type: none">• Ulsan Port Green Hydrogen Logistics Hub Business Model Announcement• Contribute to regional economic development by attracting 1.2 trillion won of private investment
local businesses, 'Wastewater' × UPA	Trouble with Local Businesses Ship Wastewater Treatment Facility in Ulsan Absence	<ul style="list-style-type: none">• Request for site review for ship wastewater treatment facilities• Request for the use of idle land for the installation of the Marine Waste Recycling Center	Win-Win by harmonizing interests <ul style="list-style-type: none">• Coordination between land use applicants• Investigation of site status and safety review Attracting 2 facilities in idle sites <ul style="list-style-type: none">• Ship wastewater treatment facility 3,000㎡• Marine Waste Recycling Center 3,478.3㎡	<ul style="list-style-type: none">• Contributing to regional companies' logistics cost reduction and balanced regional development by attracting ship wastewater treatment facilities• Increase in income from construction using idle land (74 million won per year) and expansion of eco-friendly port services

Convergence of Innovative Technologies

Improving the Way of Working through Innovative Technologies

Due to the COVID-19 pandemic, the way we work has changed from in-person to virtual setting. In response to this change, we have established a video conference system to create a remote work infrastructure. In addition, we have established an integrated document repository to improve business continuity. Through these efforts, we have prepared everything necessary for remote work, and as a result, efficiency and security of the work have been strengthened. In addition, this remote work infrastructure was shared with SMEs to provide opportunities for mutual growth.

Classification	Background	Efforts	Results
Virtual Meeting	<ul style="list-style-type: none">• In-house video conferencing systems and various meeting spaces are required due to the rapid increase in demand for video conferencing due to COVID-19 and security vulnerabilities of foreign video conferencing platforms.	<ul style="list-style-type: none">• Establishment of cloud-based video conferencing system and dedicated video conferencing rooms (7 locations)• Creating a dedicated video conference space for 1-2 people that can focus on video conferences	<ul style="list-style-type: none">• Utilized for various forms of non-face-to-face work such as meetings, meetings, training, and job fairs (total 1,180 times / 516 hours used)
Document Centralization	<ul style="list-style-type: none">• Risk of information leakage and work inefficiency due to individual transfer of work files during remote work• Lack of diverse work sharing and collaboration environments due to personalization of information assets	<ul style="list-style-type: none">• Establishment of 'integrated document storage' that does not require moving work files in PC• All documents produced during work are centralized to provide an environment for sharing and collaboration	<ul style="list-style-type: none">• Establishment of a document centralization system for the first smart office of the Port Authority• Reinforcement of remote work efficiency and security and establishment of collaboration infrastructure

Utilization of data in the field of maritime logistics to activate the data economy

UPA is an institution specializing in the maritime and port sector under the data voucher support project among digital innovation projects. The data voucher business is a business that supports the cost of developing products and services using data with vouchers. We will establish a step-by-step plan by 2023 to spread the use of data in the maritime logistics field in the future. This will contribute to the data economy by creating jobs and increasing sales.

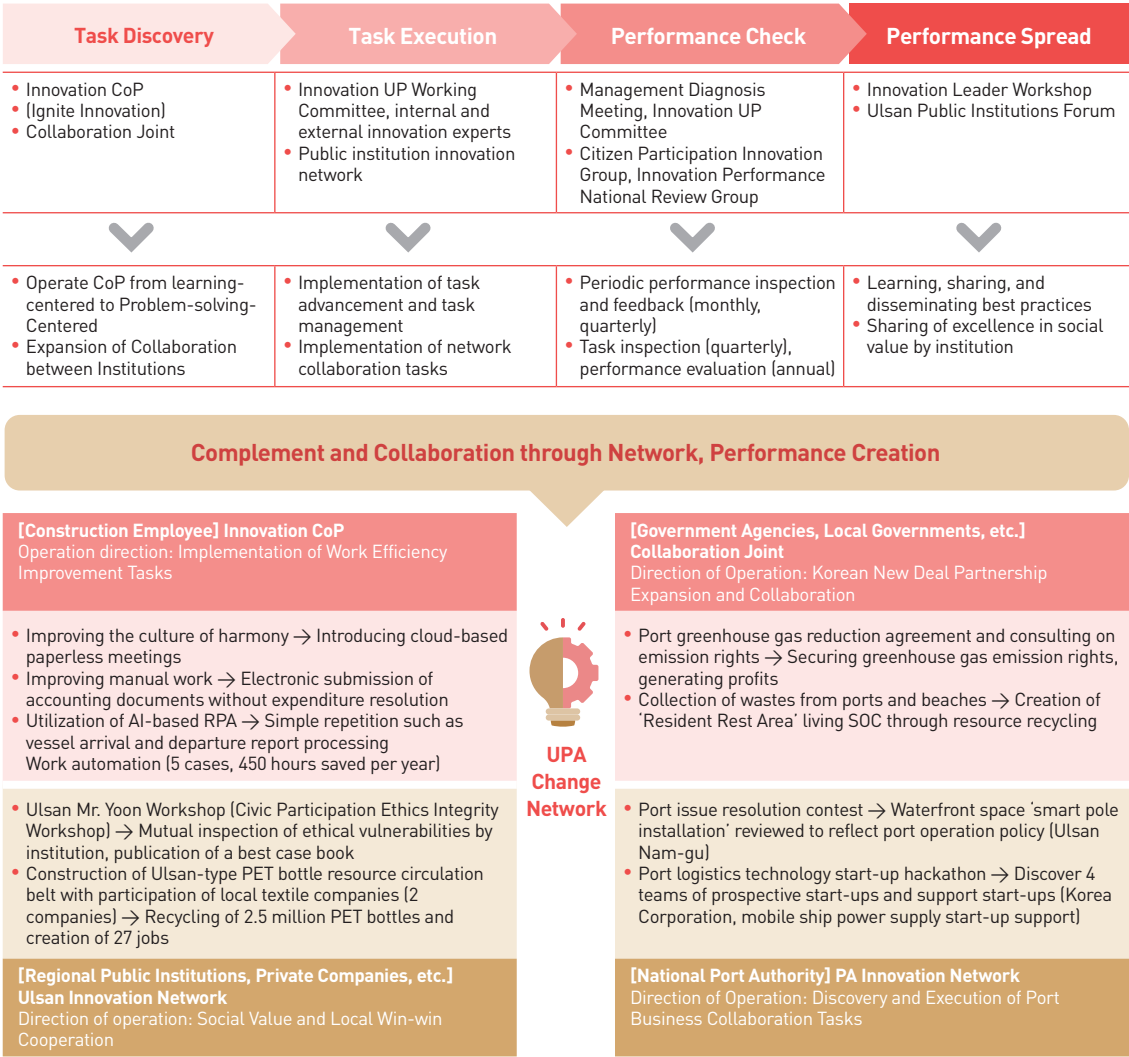
Main Content	Promotion of voucher-type data processing service support for companies that need business innovation and new product/service development through data utilization		
Promotion Content	<ul style="list-style-type: none">• Attracted the Ulsan branch of an artificial intelligence data processing social enterprise in the field of marine and logistics<ul style="list-style-type: none">– Providing offices, supporting data processing demand companies (sales partners) matching, etc.– Job matching to support the settlement of new companies and to nurture and hire the local underprivileged– Creation of a job pool in connection with the Korea Employment Agency for the Disabled, Women's Human Resources Development Center, and vocational high schools*A total of 15 people, including 1 disabled person, 7 career-interrupted women, and 7 young people, were employed in data processing• Data processing professional education and employment linkage for the local vulnerable class<ul style="list-style-type: none">– (Target) About 60 people with disabilities residing in the region, career-interrupted women, and multicultural women– (Education) Provide professional training such as AI data labeling and inspection (6 sessions in total, 180 hours)• Implementation of marine data voucher project for stable settlement of Ulsan branch<ul style="list-style-type: none">– Support expenses such as data purchase and processing to promote the use of artificial intelligence data by small and medium-sized enterprises and small businesses related to maritime and ports (Benefits from 5 companies, a total of KRW 100 million)		
Expansion Plan	2021 <ul style="list-style-type: none">• Discovery and support of data companies• Promoting its own data voucher business	2022 <ul style="list-style-type: none">• Designated as an institution specializing in data vouchers in the field of maritime logistics (national project)	2023 <ul style="list-style-type: none">• Expansion of data voucher business in maritime logistics

Governance
Innovation

Building an Innovation Network

Realization of Open Innovation through Vitalization of Internal and External Networking

UPA is creating innovative changes by connecting the internal and external groups and partners. The Innovation Network consists of the Innovation CoP (Community of Practice) composed of company executives, the Collaboration Association composed of government and local governments, the Ulsan Innovation Network composed of local public organizations and private companies, and the PA Innovation Network composed of the National Port Authority. We have laid the foundation for innovative growth together by supplementing our capabilities while communicating with each organization.



Sustainable Management Performance

Economic Performance

Creation and Distribution of Economic Value

Classification		Unit	2019	2020	2021
Government/ Local Government	Corporate tax	KRW million	8,857	5,502	8,316
Shareholder	Dividend	KRW million	12,262	8,799	13,661
Community	Donations (public corporation contributions and employee donations, etc.)	KRW million	1,099	1,281	1,276

Board of Directors Operation Status

Classification	Unit	2019	2020	2021	note
Number of board meetings	case	17	30	25	Including sub/professional committees
Number of resolutions	case	37	68	51	
Prior review rate	%	100	100	100	
number of suggestions	case	24	36	40	
attendance rate	%	98	100	94.7	

Shareholder Status

Classification	Unit	2021
Ministry of Strategy and Finance	KRW million(%)	384,306(87.24%)
Ministry of Oceans and Fisheries	KRW million(%)	264(0.06%)
Korea Maritime Promotion Corporation	KRW million(%)	55,918(12.7%)

Summary Statement of Financial Position

Classification		Unit	2019	2020	2021
Assets	current assets	KRW million	102,580	91,803	101,112
	non-current assets	KRW million	743,522	754,840	764,016
	Total assets	KRW million	846,102	847,872	865,128
Equity and Debt	total capital	KRW million	681,751	683,873	702,962
	current liabilities	KRW million	31,200	31,983	30,947
	non-current liabilities	KRW million	133,152	132,016	131,219
	total liabilities	KRW million	164,352	163,999	162,166

Summary Consolidated Statement of Comprehensive Income

Classification	Unit	2019	2020	2021
Sales amount	KRW million	92,198	95,776	99,843
cost of sales	KRW million	40,060	52,186	45,448
SG&A expenses	KRW million	14,201	13,895	15,027
operating profit	KRW million	37,937	29,695	39,368
other income	KRW million	1,536	1,342	2,364
Other costs	KRW million	2,601	9,610	4,163
Other profit (loss)	KRW million	-54	62	-3
financial profit	KRW million	1,983	1,218	978
finance cost	KRW million	123	2,585	2,447
Profits related to companies subject to the equity method, etc.	KRW million	0	0	0
Net Income Before Tax Expenses	KRW million	38,678	20,122	36,097
corporate tax	KRW million	8,857	5,502	8,316
Net Income	KRW million	29,821	14,620	27,781
Other comprehensive income	KRW million	-97	-235	106
total comprehensive income	KRW million	29,724	14,385	27,887

Environmental Performance

Environmental Performance

Classification	Unit	2019	2020	2021
Standard emissions (A)	tonCO ₂ eq, %	566	816	816
Greenhouse Gas Emissions (B)	tonCO ₂ eq, %	399	538	535
Reduction Rate[(A-B)/A*100]	tonCO ₂ eq, %	29.51	34.07	34.44

Water Usage

Classification	Unit	2018	2019	2020
Water usage	ton	6,900	5,036	5,199

Creation of an eco-friendly port

Classification	Unit	2019	2020	2021
Eco-Friendly Ship Entry Performance	EA	424	362	349
AMP Facility Usage Performance	KWh	1,406,897	1,806,967	1,700,606
Rate of ship speed operation	%	-	14.17	14.45

Current status of Low-emission Vehicles

Classification	Unit	2019	2020	2021
Class1 (Electric hydrogen)	EA	6	6	6
Class 2 (hybrid)	EA	3	2	2
Class 3 (meeting emission standards)	EA	0	0	0
general vehicle	EA	2	1	1
Total	EA	11	9	9

Waste Generation

Classification	Unit	2018	2019	2020
Waste generation	ton	20.40	15	29.97
Total	ton	20.40	15	29.97

Green Product Purchase Amount

Classification	Unit	2019	2020	2021
Total purchase amount (A) *Purchase implementation plan	KRW million	1,179	856	4,822
Green product purchase amount (B)	KRW million	1,094	744	6,341
Green product purchase ratio (B/A) *Change in green products (B-A)	-	92.78%	86.92%	1,519KRW million

*green product: It is a product that minimizes the input of energy resources and the generation of greenhouse gasses and pollutants, and includes eco-labeled products, good recycling (GR) products, and low-carbon certified products.

Social Results

Number of Employees

Classification			Unit	2019	2020	2021	
Executives	Warden	Standing committee quota	person	1	1	1	
		Standing committee mem- bers	person	1	1	1	
		Non-standing committee	person	0	0	0	
	Directors	Standing committee quota	person	2	2	2	
		Standing committee mem- bers	person	2	2	2	
		Non-standing committee	person	7	7	7	
	Auditor	Standing committee quota	person	0	0	0	
		Standing committee mem- bers	person	0	0	0	
		Non-standing committee	person	1	1	1	
	Etc.		person	0	0	0	
	Standing execu- tives quota(A)		person	3	3	3	
	Full-time	General Full time	Total(B)	person	100	105	111
Quota			Separate quota	person	0	0	0
			Flexible quota	person	0	0	0
Standing			Total	person	118.375	123.5	119.13
			Full time	person	114	122	117
			Part time	person	4.375	1.5	2.13
Indefinite Contract		Total(C)	person	10	10	11	
		Quota	Separate quota	person	0	0	1
			Flexible quota	person	0	0	0
			Standing	Total	person	10	9.5
		Full time		person	9	9	9
		Part time		person	1	0.5	0.5
	Total number of employees(A+B+C)			person	113	118	125

Social Results

Social Equitable New Recruitment Performance

Classification		Unit	2019	2020	2021
Total number of new full-time employees		person	7	8	7
Young adult		person	6	8	7
Female		person	3	1	3
Disabled		person	0	0	0
Talented in non-capital area		person	7	7	7
Local talent in the relocated area		person	0	0	0
High school diploma		person	1	1	1
Experiential intern		person	12	14	17

Use of parental leave

Classification		Unit	2019	2020	2021
Use of parental leave	Female parental leave	person	6	7	14
	Male parental leave	person	1	1	2
	Total	person	7	8	16
Maternity leave Spouse's mater-nity leave	Number of employees on maternity leave	person	2	2	4
	Number of Spouse Maternity Leave Employees	person	3	2	2
	Total	person	5	4	6
Pregnancy and childcare Working hour reduction system	Number of users of reduced working hours during Pregnancy	person	1	2	4
	Number of users of reduced working hours during childcare period	person	2	3	2
	Total	person	3	5	6

Use of flexible working hours

Classification		Unit	2019	2020	2021	
Optional time	Employment	Full time (general)	person	0	0	0
		Full time (non-retirement)	person	0	0	0
		Part time	person	15	7	6
		Total	person	15	7	6
	Transform	Full time(general)	person	2	5	6
		Full time(retirement)	person	0	0	0
		Part time	person	0	0	0
		Total	person	2	5	6
Resilient, Discreet, Remote work system	Jet-lag commute		person	32	34	11
	Selected working hours		person	53	46	20
	Intensive worktype		person	1	0	0
	Discretionary work type		person	0	0	0
	Remoted work type		person	0	50	109
	smart work type		person	0	0	33
	Total		person	86	130	173

Labor Union Membership Status

Classification		Unit	As of June 22
The 1st union	Number of employees eligible to join a labor union	person	121
	Number of employees belonging to labor unions	person	103
	Ratio of employees belonging to labor unions	%	85
The 2nd union	Number of employees eligible to join a labor union	person	42
	Number of employees belonging to labor unions	person	14
	Ratio of employees belonging to labor unions	%	33

Social Results

Employee Training Status

Classification	Unit	2019	2020	2021
education budget	KRW million	275	290	290
Average number of people per year	person	101.4	106.59	106.94
Training hours per person	hour/person	137	134.26	112.3

Employee Satisfaction

Classification	Unit	2019	2020	2021
Organizational Culture Satisfaction	point	87.5	91.86	90.46
Satisfaction with work-family balance	point	89.6	93.98	92.25

Customer Satisfaction Survey Results

Classification	Unit	2019	2020	2021
Public Institution Customer Satisfaction Index (PCSI)	point(grade)	89.8	89.9	86.6

Priority Purchase Performance

Classification		Unit	2019	2020	2021
Socially responsible purchase	Small business products	KRW million	26,643	36,422	34,667
	Technology development products	KRW million	867	724	2,536
	Women’s business products	KRW million	2,356	2141	2,839
	Disabled products	KRW million	580	1,270	836
	Products of national merit	KRW million	32	36	146
	Total	KRW million	30,478	40,593	41,024
Socioeconomic enterprise product purchase	social enterprise products	KRW million	653	871	863
	Social cooperative products	KRW million	58	130	57
	Total	KRW million	711	1,001	920

Public Institution Shared Growth Evaluation Results

Classification	Unit	2019	2020	2021
Win-win growth evaluation results	grade	N/A	Good	great

Ulsan Port Safety

Classification		Unit	2019	2020	2021
Port Safety	Number of unloading safety accidents	person	11		
	Number of serious accidents	person	0	0	0
	Number of security incidents	case	0	0	0
	Disaster Management Assessment	person	great	average	Assessment not conducted due to COVID-19

Employee Safety

Classification		Unit	2019	2020	2021
Employee Safety	Death toll	%	0	0	0
	Industrial accident rate	%	0	0	0
	Number of safety accidents	case	0	0	0
	Number of Cyber Infringement Incidents	case	0	0	0



GRI Standards Index

Universal Standards						
GRI 102: General Disclosure						
Classification	Indicators	Contents	ISO 26000	SDGs Goal	Report Page	Note
Organization Profile	102-1	Organization Name	6.3.10/6.4.1/6.4.2/6.4.3/6.4.4/6.4.5/6.8.5/7.8			
	102-2	Activities and Representative Brands, Products and Services				
	102-3	location of headquarters				
	102-4	Enterprise Zone				
	102-5	Ownership Characteristics and Legal Form			8~13	
	102-6	Market Area				
	102-7	Size of the Organization				
	102-8	Information on Employees and Workers				
	102-9	Organization's Supply Chain				
	102-10	Significant Changes in Organizations and Supply Chains				No significant change
	102-11	The Precautionary Principle and Approach			81	
	102-12	External Initiative		17	20~21	
	102-13	Association Membership				
Strategy	102-14	Key Decision Maker Statement	4.7/6.2/7/4/2		6~7	
	102-15	Key Impacts, Risks, and Opportunities			20~21	
Ethics AndIntegrity	102-16	Values, principles, standards and Codes of Conduct	4.4/6.6.3	16	78~79	
	102-17	Ethics-related Guidance and Grievance Mechanism	6.2/7.4.3/7.7.5			
Governance	102-18	Structure			76~77	
	102-20	Senior Management Responsibilities for Economic, Environmental and Social Topics				
	102-21	Consultation with Stakeholders on Economic, Environmental, and Social Topics			82~83	
	102-22	Organization of the Highest Decision-making Body and Committee			76~77	

Universal Standards						
GRI 102: General Disclosure						
Classification	Indicators	Contents	ISO 26000	SDGs Goal	Report Page	Note
Governance	102-23	Chairman of the Highest Decision-making Body			76~77	
	102-27	Plans to Enhance the Expertise of the Highest Decision-making Body				
	102-31	Examination of Economic, Environmental and Social Topics				
Stakeholder Participation	102-40	List of Stakeholder Groups	5.3		18~19	
	102-42	Stakeholder Identification and Selection				
	102-43	Stakeholder Engagement Approach				
	102-44	Key Topics Raised through Stakeholder Engagement and Interests			20~21	
Report practices	102-45	List of Subsidiaries and Joint Ventures Included in the Financial Statements	5.2/7.3.2/7.3.3/7.3.4			Not applicable
	102-46	Define the Boundaries of the Report Content and Topic			2	
	102-47	List of Material Issues			20~21	
	102-48	Correction of Information Recorded in Previous Reports			112	
	102-49	Changes in Important Topics and Scope			20~21	
	102-50	Reporting Period	7.5.3/7.6.2		2	
	102-51	Date of Publication of the Most Recent Report				
	102-52	Reporting Cycle				
	102-53	Inquiries about the Report			20	
	102-54	Reporting Method According to GRI Standards				
	102-55	Applied GRI index			104~107	
	102-56	Report External Assurance			108~109	
Management Approach	103-1	Description of the Material Topic and its Boundary			20~21	
	103-2	Objectives of the Management Approach, Methods of Managing Topics			20~21, 26, 46, 72, 84, 95	

Topic-specific Standards						
GRI 200 : Economic Topics						
Classification	Indicators	Contents	ISO 26000	SDGs Goal	Report Page	Note
Economic Outcome	201-1	Direct Economic Value Generation and Distribution	6.8.1/6.8.2 /6.8.3/6.8.7/6.8.9	8	10~11	
	201-2	Financial Impact and Other Risks and Opportunities of Climate Change on Organizational Activities	6.5.5	13	76~77	
Indirect Economic Effect	203-1	Social Infrastructure Investment and Service Support Activities	6.3.9/6.8.1/ 6.8.2/6.8.7	9	58~60	
	203-2	Significant Indirect Economic Effects	6.3.9/6.6.6/6.6.7/ 6.7.8/6.8.1/6.8.2/ 6.8.5/6.8.7/6.8.9		50~53, 58~64	
Procurement Practices	204-1	Proportion of Purchases Paid to Suppliers by the Business Site	6.4.3/6.6.6/6.8.1 /6.8.2/6.8.7	12		Not applicable
Anti-corruption	205-2	Communication and Training on Anti-corruption Policies and Procedures	6.6.1/6.6.2/6.6.3	16	78~79	
GRI 300: Environment Topics						
Energy	302-1	Energy Consumption within the Organization	6.5.4	7	97~98	
Water	303-3	Water Intake	6.5.4	6	98	
Dispose	305-1	Direct Greenhouse Gas Emissions (Scope 1)	6.5.5	13	97	
	305-2	Indirect Greenhouse Gas Emissions (Scope 2)		13		
Compliance	307-1	Violation of Environmental Laws				No legal violations

Topic-specific Standards						
GRI300: Social Topics						
Classification	Indicators	Contents	ISO 26000	SDGs Goal	Report Page	Note
Employ	401-1	Number and Rate of New Hires and Retirees	6.4.3	8	99~100	
	401-3	Parental Leave	6.4.4	8	100	
Safety and Health	403-1	Occupational Safety and Health System	6.4.4/6.4.6	10	54~56	
	403-3	Occupational Health Support Program		9		
	403-4	Worker Participation and Communication on Occupational Safety and Health	6.4.6	9		
	403-5	Worker Education on Occupational Health and Safety	6.4.6	9	70	
	403-6	Programs to Promote Workers' Health	6.4.4/6.4.6	9		
	404-1	Average Training Hours per Employee	6.4.7/6.8.4/ 6.8.5	4	102	
Training and Education	404-2	Programs for Empowerment of Employees and Support for Transition	6.4.7/6.8.4/ 6.8.5	4	71	
Diversity and Equal Opportunity	405-1	Diversity within the Governance Organization and Employees	6.2.3/6.3.7/ 6.3.10/6.4.3	5	76~77	
Non-discrimination	406-1	Discrimination Incidents and Corrective Actions	6.3.7	5	67, 71	Improving treatment of minority workers
Community	413-1	Operation of Community Engagement, Impact Assessment and Development Programs	6.8.3/6.8.6/ 6.8.9	11	58~60	
Customer Information Protection	418-1	Complaints Regarding Violation of Customer Privacy and Loss of Customer Data	6.7.1/6.7.2/ 6.7.7	9	57	
Compliance with social and economic laws	419-1	Violation of Social and Economic Laws and Regulations	4.6/6.7.2/6.7.4 /6.7.5/6.8.8			No legal violations

Third Party's Assurance Statement

Dear Employees and Stakeholders of Ulsan Port Authority.

1. Assurance Outline

Korea Productivity Center Quality Assurance(hereinafter referred to as "KPCQA") was commissioned by UPA (Ulsan Port Authority). (hereinafter referred to as "the applicant") to conduct an independent assurance on the 2022 ESG Management Report (hereinafter referred to as "the report").

UPA has sole responsibility for the preparation of the data within the report.

The assurance statement is intended to provide objective opinion on whether the report data was collected and presented with no significant error.

2. Independence of Assurance

KPCQA was not involved in any of the business operations of the applicant and the assurance was conducted with independence.

3. Scope of Assurance

The report covers the applicant's sustainability management(economy, society and environment) activities, performance and efforts. Our assurance engagement includes review of 2021 performance data and activities until the first half of 2022 in the report

- Economy : checking whether financial data were transposed correctly from the external assurance report of the financial statements.
- Environment and Social : verifying whether information generated by policies and operation were presented appropriately in the report.
- Governance: verifying whether information on governance was presented appropriately in the report based on the transparent principle.

4. Assurance Standards

The assurance was carried out in accordance with the following standards:

- In accordance with the Core Option of the Global Reporting Initiative(GRI) G4 Guidelines
- KPCQA ESG Report Assurance Protocol

5. Assurance Process

- Identified stakeholders' interests and requirements
- Verified materiality assessment process and stakeholders' feedback
- Verified media coverage of the applicant's social responsibility, ethics, EH&S etc.
- Interviewed employees responsible for drafting the sustainability report
- Verified financial and non-financial performance data and performance management system
- Verified data management systems and internal process to aggregate and analysis information

6. Assurance Opinion

KPCQA conducted assurance on the draft by review of the data, due diligence and interview with the employees. It was confirmed that all errors identified during the assurance were corrected.

▸ Financial Performance

The applicant (UPA) accurately presented financial data in the report on the basis of the 2021 financial statements.

▸ Environmental, Social and Governance Performance

The report did not properly describe the information of environmental, social and governance issues and there were no significant errors in the report.

▸ Responsiveness

KPCQA checked and reviewed the data related to the internal and external stakeholders of the applicant, we confirmed the applicant identified the reporting scope and stakeholders' interests and reflected them through materiality assessment.

▸ Materiality

The applicant presented sustainability performance data without any material omissions. Relating to the material issues in the report, nothing had come to our attention that would cause problem in decision-making process.

▸ Reliability

KPCQA reviewed and sample checked the applicant's internal decision-making system, operation process and all kinds of data management systems. The data and information in the report have not been identified for any part of material errors.

7. Recommendation

KPCQA provides the following recommendations with expectation that the report is widely used as a tool for communication with stakeholders and improvement of sustainability:

- Set ESG KPIs and systematically manage them.
- Consider efficiency of managing financial, social and environmental performance data.

2nd December 2022
Republic of Korea, Seoul
EO Kyung Hui Oh

kpc 오경희

Awards & Certificates Received

Awards & Certificates Received

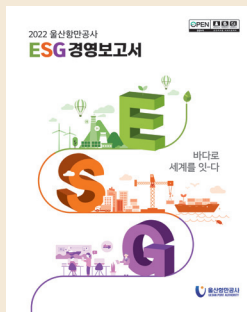
Date Awarded	Awards Details	Organization
Nov. 2022	2022 Personnel Innovation Excellence Contest Encouragement Award	Ministry of Personnel Management
Oct. 2022	2022 Employment and Labor-Management Culture Awards	Korea Official Labor Society
Oct. 2022	2022 17th Pregnant Women's Day in 2022	Ministry of Health and Welfare
Dec. 2021	2021 Community Contribution Recognition Day	Ministry of Health and Welfare
Oct. 2021	2021 Ulsan Area Excellence in Day-Life Balance Business Case Public Recruitment Award	Ministry of Employment and Labor Ulsan Branch, Ulsan Yangsan Employers Association
Jul. 2021	Prime Minister's Commendation for Social and Economic Revitalization	Ministry of Strategy and Finance
Dec. 2020	2020 Leisure-friendly excellent company award	Regional Cultural Promotion Agency
Dec. 2020	2020 ICT Convergence Science, Technology and Information Communication Minister's Commendation	Ministry of Science and Technology
Dec. 2020	Awarded as a Fair Recruitment Excellence Institution	Ministry of Strategy and Finance
Jul. 2020	2020 Best Practice Award for Safety and Health Activities in the Service Field	Korea Occupational Safety and Health Agency
Feb. 2020	The 4th Active Administration Excellence Case Contest Grand Prize	Ministry of Personnel Management
Dec. 2019	Selected as an excellent institution in 2019	Ministry of the Interior and Safety
Dec. 2019	2019 HR Innovation Excellence Case Contest	Ministry of Personnel Management
Dec. 2019	Awarded for emergency rescue training in 2019 by the Minister of Public Administration and Securit	Ministry of the Interior and Safety
Dec. 2019	Commendation for Government Innovation Best Practices Contest	Ministry of Oceans and Fisheries
Dec. 2019	Commendation for Contribution to Personal Information Protection in 2019	Ministry of Oceans and Fisheries
Dec. 2019	Awarded for contributing to safe national training for disaster response in 2019	Ulsan,Ulsan Metropolitan City
Nov. 2019	Awarded ASOCIO ICT AWARD for the international private organization for smart port logistics	Asia-Oceania Computing Industry Organization
Oct. 2019	2019 'Fruit of love', the emblem for charity donations to the Community Chest of Korea	Ulsan Community Chest of Korea
Sep. 2019	2019 Korea Employment-Friendly Best Management Awards	The Dong-A Ilbo
Jun. 2019	Minister of Environment Award at the 13th National Sustainability Management Competition	The Korean American Journalists Association
Jun. 2019	Ulsan Mayor's commendation in commemoration of the 24th Environment Day	Ulsan,Ulsan Metropolitan City
Feb. 2019	Ministerial Award for Social Contribution, including Job Creation	Korea Enterprises Federation The Korean American Journalists Association
Dec. 2018	2018 Presidential Citation for Safe National Training in Disaster Response	Ministry of the Interior and Safety
Nov. 2018	Presidential citation at the 44th National Quality Management Conference	Ministry of the Interior and Safety
Nov. 2018	Encouragement Prize at the Government Innovation Best Practices Contest	Ministry of Oceans and Fisheries
Nov. 2018	2018 Korea CEO Hall of Fame Grand Prize in Ethics Management	The Institute for Industrial policy Studies

Date Awarded	Awards Details	Organization
Sep. 2018	2018 Korea Employment-Friendly Model Management Awards	The Dong-A Ilbo
Aug. 2018	Awarded at the 2018 4th Industrial Revolution Power Korea held in Daejeon	Ministry of Oceans and Fisheries
Jul. 2018	2018 Presidential citation for the best organization for safe national training in disaster response	Ministry of the Interior and Safety
May. 2018	Grand Prize for Public Enterprises at the 21st Korea Logistics Awards 2018	Korea logistics society

Details of External Certificate

Date Awarded	Awards Details	Organization
Oct. 2022	Health and safety management system (KOSHA-MS) certification	Korea Occupational Safety and Health Agency
Sep. 2022	2022 Public Sector Human Resource Development Excellence Organization (Best HRD) Recertification	HR Innovation, Ministry of Education
Jan. 2022	2021 Educational Donation Excellent Institution Recertification	Ministry of Education
Nov. 2021	2021 Fair Recruitment Excellence Institution Certification	Korea Management Certification Institute
Nov. 2021	2021 Labor-Management Relations Excellent Company Certification	Korea Management Certification Institute
Oct. 2021	2021 Re-certification of Excellent Workplace for Reading Management	Ministry of Culture, Sports and Tourism
Aug. 2021	Anti-corruption management system certification	Korea Management Certification Institute
May. 2021	Compliance management system certification	Korea Management Certification Institute
Dec. 2020	Accredited as an excellent disaster mitigation company	Ministry of Public Administration and Security
Dec. 2020	2020 Fair Recruitment Excellence Institution Certification	Korea Management Certification Institute
Dec. 2020	2020 Leisure-friendly company certification	Ministry of Culture, Sports and Tourism
Oct. 2020	2020 Korea Reading Management Excellent Workplace Certification	Ministry of Culture, Sports and Tourism
Aug. 2020	Recognized as a research and development department	Korea Industrial Technology Association
Nov. 2019	2019 Fair Hiring Excellent Organization Certification	Korea Management Registrar inc
Oct. 2019	2019 Reading Management Excellent Workplace Certification	Ministry of Culture, Sports and Tourism
Sep. 2019	Excellent organization certifica tion for hu man resource development(Best HRD)	Ministr y of Education, Ministry of Personnel Management
Apr. 2019	Certified as an excellent educational donation institution	Ministry of Education
Dec. 2018	Certification of web accessibility quality	Ministry of Science and ICT
Dec. 2018	Certified as a family-friendly company	Ministry of Gender Equality & Family(MOGEF)
Aug. 2018	Certification for anti-corruption management system(ISO 37001)	Korea Productivity Center Quality Assurance

Ulsan Port Authority ESG Management Report



2022

COVER STORY

Based on the ESG vision of "An Energy Logistics Port that Favors Environment, Society, and Transparent Management," the Ulsan Port Authority is preparing to make another leap forward to become the nation's largest clean energy logistics port. This report is the 6th Sustainability Report of Ulsan Port Authority, which contains communication with stakeholders and performance of social responsibility, and is organized around material issues derived from the perspective of ESG management. In addition, the newly created characters Gonubi, Honggu, and Tangtangi in 2022 symbolize our promise to take the lead in preserving a clean marine environment and biodiversity. Going forward, Ulsan Port Authority will continue to advance port services that contribute to the quality of people's lives and the future marine environment through future base projects based on transparent operation.

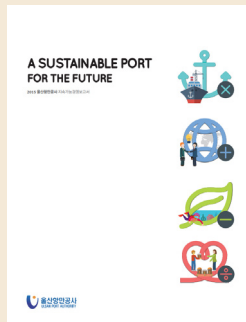
Ulsan Port Authority Sustainability Reports



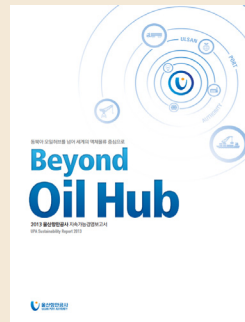
2019 - 2020



2018



2015



2013



2012

Information on the 2022 UPA ESG Management Report

This report is published in both Korean and English and can be accessed via our homepage. Should you have any comments or inquiries, please contact us using the contact details provided below

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