



Green Report

Incheon International Airport Corporation Green Report 2018



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This report was printed on eco-friendly paper using soy oil ink.

IIAC's 2017 Green Report won the Platinum award in the Vision Awards held by the US LACP and the Gold award in the ARC Awards held by US MerComm.

About This Report

'Green Report' stated the energy management and low-carbon eco-friendly management of Incheon International Airport Corporation (IIAC) classified as Green Insight and Eco Insight focusing on IIAC's vision, strategic goals and major projects, etc.

This report contains IIAC's initiative intention as a global eco-friendly airport company aiming for extended sustainability by predicting the future of earth environment and creating new opportunities with a responsible attitude on climate change, energy saving and resource issues.

Purpose of the Report

Incheon International Airport Corporation has been continually making efforts to achieve Low-carbon Eco-friendly Management, and published its annual 'Green Report' since 1999 to share our management performance with our stakeholders.

Applied reporting criteria

This report follows the Environmental Report Guidelines by the Ministry of Environment and GRI G4, an internationally complied report publication guideline. The report also conforms with ISO 26000, UN Global Compact and ACI (Airport Council International) on corporate social responsibility

Reporting period and scope

This document reports IIAC's Low-carbon, Eco-friendly Management activities and the performance of 2017 (Between Jan. 1st, 2017 and Dec. 31st, 2017). Important data are reported for the recent three years to help with the understanding of changes and trends. The scope of reporting includes all business sites of the Airport, tenant companies, partner companies and the Airport users.

Achieved awards

IIAC's Green Report won the 5th consecutive Platinum award in 2017 in the corporate social responsibility reporting category from the Vision Awards annually held by the US-based League of American Communications Professionals (LACP) which recognized IIAC's Low-carbon Eco-friendly Management performance and the effectiveness in communication with stakeholders.

Eco-design process

This report was produced following the three steps of eco-design process developed by IIAC in order to reduce the environmental impacts and minimize resource wastes in the course of design and printing.



Apply minimum paper margin to reduce paper waste and reduce the number of pages

Limit spot color and background color printing and apply Eco-font to save up to 35% ink

Use eco-friendly paper and soy oil ink, and limit paper coating

For more detailed information and inquiries about this report, please refer to the IIAC website and contact the relevant department.

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IIAC will present new standard and value for growth and progress.

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Dear aviation stakeholders,

Incheon International Airport Corporation (IIAC), celebrating its 17th anniversary this year, completed the long journey of the 3rd phase construction project connecting Korea to the world, and began a new leap forward with the opening of Passenger terminal 2. Especially during the period of the special transportation plan for the PyeongChang Winter Olympics, the outstanding operating system and service know-how of IIAC were well acknowledged, by not only the participating athletes, but also the overseas press and users from various countries.

In April, IIAC won the largest contract in its history for the operation of Kuwait Airport, proving once again the world-class airport operating capacity of Incheon Airport that had already been proven by 12 consecutive awards from the Airport Service Quality(ASQ) Assessments. As such, Incheon Airport has been imprinted in the minds of people from around the world as another national brand representing the Republic of Korea.

Furthermore, thanks to the efforts of all staff of the airport, Passenger Terminal 2 and surrounding facilities obtained the top grade in green architecture certification. IIAC is taking the lead as a low-carbon eco-friendly airport based on Green, Eco, Smart strategy, such as by raising the ratio of new & renewable energy including photovoltaic power and geothermal energy and introducing fuel cell facilities.

Now, IIAC is taking on new challenges towards becoming a world-class hub airport beyond Northeast Asia, based on its past performances achieved through relentless efforts and potential. With the success of the 3rd phase construction as the stepping stone, IIAC will proceed with the 4th phase construction according to plan, and advance to become the 'International passenger TOP 3 Airport' by 2027. In addition, we plan to equip ourselves with the competitive power to lead the world's airport industry by introducing elements of 4th industrial revolution technologies such as robots, AI, big data, biometrics, etc. and through broad-scale innovation of overall operation. Furthermore, by realizing mid- to long term strategies for low-carbon, eco-friendly airport, and actively utilizing new & renewable energy, we will shift the airport operation paradigm from energy-consuming type to energy-independent type in order to secure the highest competitive capacity in airport operation.

IIAC will continue activities to share our know-how, coexist with nature, and reach out to the local community. We will always pursue social value as the utmost priority, and fulfill the public responsibility as the public corporation representing Korea, sharing growth with the local community. We ask you for your attention and encouragement, so that Incheon Airport would become the genuine hub for the sky path of the world, and continuously contribute to the prosperity of international aviation industry as well as the development of the national economy.

Thank you.

Incheon International Airport Corporation
President & CEO **CHUNG IL-YOUNG**

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Company Overview

Airport Company 'Incheon International Airport Corporation'

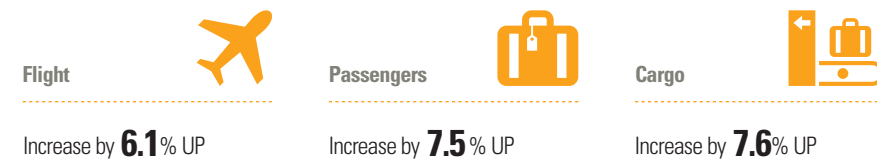
Incheon International Airport Corporation was incorporated for the purpose of efficiently constructing the Incheon International Airport, operating and managing its facilities & infrastructure, and for the purpose of managing the airport to respond flexibly to air transport demands and contribute to the development of the national economy.



General Overview and Performance

Date of Establishment	February 1, 1999
Headquarter Address	47, 424 beon-gil, Gonghang-ro, Incheon Metropolitan City
Organizational Structure	5 Divisions, 3 Offices (1 unit), 33 Groups, 119 teams with 1,467 employees
Annual Service Capacity	500,000 flights, 72,000,000 passengers, 5,000,000 tons of cargo
Affiliated Company	Incheon Airport Operations & Management Co., Ltd. (Special Purpose Company), Incheon Airport Energy Co., Ltd., PT. Mitra Incheon Indonesia
Investor Company	Khabarovsk Novy airport, Incheon United

Flight and Passenger Transportation Performance



Classification	2016	2017	Compared to previous year
Flight (thousand)	340	360	6.1% increase
Passengers transportation (10 thousands)	5,777	6,208	7.5% increase
Cargo (thousand ton)	2,714	2,922	7.6% increase

※ Dec. 31, 2017 Reached 580 million accumulated passengers
 ※ Dec. 20, 2017 Reached 60 million accumulated passengers in year
 ※ Dec. 31, 2017 Reached 560 million accumulated cargoes
 ※ Mar. 6, 2017 Won Airport Service Quality (ASQ) award for 12 consecutive years

Vision and Business Area

Company vision and Goals

After the completion of the long journey of the 3rd phase construction project, Incheon International Airport, as the North-eastern hub airport connecting Korea with the world, announced the successful opening of Passenger Terminal 2. With continued growth, IIAC has grown into a world class airport ranked 7th in international passengers and 2nd in international cargoes. Rather than being satisfied with the past performance, IIAC aims to take a further leap with the vision, 'A New Leap Forward, Towards the Global Leading Airport'. By expanding facilities and grafting future style technologies through 4 major vision goals, and 20 strategic objectives in preparation of the age of 100 million passengers per year, IIAC will be reborn as an eco-friendly smart airport leading the world.

VISION

A New Leap Forward, Towards the Global Leading Airport

VISION STATEMENT

[Corporation] We will faithfully fulfill our social responsibility acknowledging that the airport corporation is growing together with the nation.
[Operation] We will maintain the history of being an airport with non-stop operation since opening and providing the best service in the world.
[Hub] We will contribute to Korea taking a leap to become a powerhouse in the aviation industry by growing into one of the 5 major airports in the world.
[Growth] We will maximize profitability and create air transport demands through creative business models.

GOAL OF VISION



4-STEP STRATEGY

Concentrating on public value-to grow hand in hand with the nation	Innovating airport operation to assure safety and convenience	Strengthening Hub-competitiveness to lead the aviation industry	Fostering futuristic industry to acquire new growth engine
1. Generate quality jobs 2. Lead open innovation 3. Realize Low-carbon / Eco-friendly airport 4. Build strategic ICT leadership	1. Manage safety / disaster issues on site 2. Upgrade Aviation security system 3. Provide Mo.1 passenger service 4. Lead 4th industrial revolution	1. Build a system that connects tourism and transport 2. Reinforce core market marketing 3. Generate a global cargo traffic in new markets	1. Construct mid-and long-term infrastructure 2. Revitalize the development of the Air City 3. Establish the best concession facilities

※ Application vision goals are set on base timeline of 2020 ※ There are total of 20 strategic goals

Key business areas

Our key business areas include airport construction aiming for efficient construction of Incheon International Airport, and airport operation focusing on airport management and maintenance. Airport construction area involves the development of surrounding areas, and establishing ancillary business infrastructures based on convergent technologies of civil engineering, architecture, electrical engineering, electronics, telecommunication, and environment. Airport operation area encompasses transporting passengers and cargos, maintaining facilities within the airport, offering various services to airport users, conducting sales activities, etc. In the near future, with the in-house knowledge and technology accumulated from our past experiences, IIAC will continue to expand our business areas by actively participating in projects regarding the construction, management, and operation of overseas airports.

Current Business Areas	Future Business Areas
Construction and management/operation of Incheon International Airport	Business areas based on construction/operation of Incheon International Airport
Development of surrounding areas, ancillary business and other government entrusted projects	Development of surrounding areas and establishing business infrastructure related to ancillary business
Research on construction and management/operation of airport	Construction, management, and operation of overseas airports and development of its surrounding areas



INCHEON

AIRPORT





Incheon Airport Green Map

Construction of low-carbon and eco-friendly airport

IIAC established the target of realizing a low-carbon and eco-friendly airport. As the global airport company ranked in 7th in international passengers and 2nd in international cargoes in the world, we are being reborn as the world's eco-friendly hub airport.

Advancement of eco-friendly management

- Advancement of recertified energy management system 'ISO 50001'
- GHG Emissions Reduction and Energy Conservation Promotion Committee
- Direct and inspect the energy management of vendors and tenant companies
 - Energy consulting to overseas airports

Reinforcement of energy consumption efficiency

- Improvement of energy consumption efficiency such as 100% switchover to LED lighting by 2020
- Pursue construction of Green Grade 1, Energy Efficiency Grade 1 Green Airport
- Acquire T2 Green Grade 1 in Green Architecture Certification
- Promote 4th phase Green Airport Construction

Expanded introduction of New & Renewable Energy

- Solar photovoltaic power 4,951kW, geothermal heat 8,195kW in year 2017
- Concluded an agreement to promote fuel cell power generation business

Expansion of low-carbon management

- Expand charging infrastructure for electric cars
- Promote introduction of hydrogen fueled cars and charging stations
- AC-GPS 69 units, PC-AIR 42 units installed at Passenger Terminal 2
- Operation of carbon offsetting program and expansion of contribution to local community

Strengthened management of environmental resources

- Strengthened resource recycling and environment monitoring through expanding waste recycling and monitoring
- Creation of eco-friendly spaces such as World Peace Forest and waterscaping space, etc.
- Minimization of environmental impact through PR and extended training, etc.



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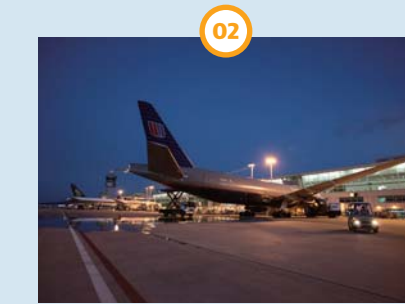
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Eco-friendly management

- (1) Energy management promotion system
- (2) Operation of system ISO 50001, ISO14001
- (3) Energy saving campaign to the people



Expansion of low-carbon management

- (1) A-CDM set up and operation
- (2) Operation of Low-carbon Green Apron
- (3) Performance of energy saving activities



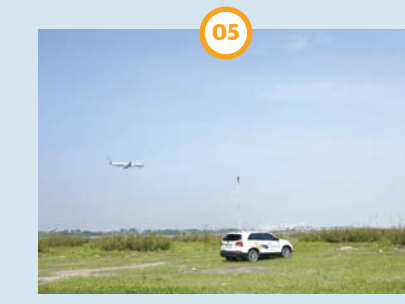
Introduction and expansion of new and renewable energy

- (1) Operation of solar photovoltaic power generation facilities
- (2) Operation of geothermal heat facilities
- (3) Introduction of fuel cell facilities



Realization of eco-friendly airport

- (1) Green-Eco Smart Airport Construction
- (2) Expanded eco-friendly vehicle charging stations
- (3) Operation of building energy management system(BEMS)



Environmental resources management

- (1) Resources recycling management
- (2) Advancement of environmental monitoring system
- (3) Minimize of environmental impacts



Living in harmony with local community

- (1) Carbon neutrality advancement activities
- (2) Environment cleaning activities with local community
- (3) Creating 'World Peace Forest'



GREEN MAP



New Leap Forward, Global Leading Green & Eco & Smart Incheon International Airport

Having 'The Global Leading Low-Carbon Eco-friendly Airport' as our vision for environmental and energy management, IIAC has played a leading role as an eco-friendly global airport company. IIAC presents the alternative to future airports in response to climate change, excessive development of resources, destruction of nature and eco-system, etc. IIAC realizes Green Airport through advancement of eco-friendly management, improvement of energy efficiency, expansion of low-carbon management, reinforcement of environmental resources management, expansion of new & renewable energy, etc.



2017 Spotlight

The fruition in 2017 achieved through eco-friendly management

IIAC's has adopted the realization of 'low-carbon eco-friendly airport' as its objective. Our faithful performance of related government tasks is highly appreciated by the related organizations. Especially this year, with Passenger Terminal 2 opening and being rated as the top grade by green architecture certification, we are being reborn as an eco-friendly world class Hub airport beyond being the world's 7th Northeast Asian airport in the international passenger transit.



Grand opening of Passenger Terminal 2, received top grade in green architecture certification



After completing the long journey of the 3rd phase construction project, IIAC has successfully opened Passenger Terminal 2. Within 100 days after opening, the number of customers surpassed 5 million, and we achieved the performance of an increase in international passengers using Incheon International Airport by 12.4% compared to the previous year.

Especially, Passenger Terminal 2 received the top grade (Green Grade 1) in green architecture certification. Through application of high efficiency LED lighting, use of new & renewable energy, use of eco-label certified products in addition to its design facilitating daylighting, ventilation and insulation, this site was acknowledged as the eco-friendly building 40% more efficient than Passenger terminal 1 through the creation of natural green area occupying more than 26% of the land in contrast to plottage. Passenger Terminal 2 receiving the top grade in green architecture certification is the result of the realization of Incheon airport's mid to long term strategy which aims for a low-carbon eco-friendly airport.



Acquired Eco-friendly certification, 'global carbon management certification (CTS)'

IIAC has acquired 'global carbon management certification (CTS: Carbon Trust Standard)' which is the 2017 eco-friendly certification. The global carbon management certification was introduced in 2008 through a partnership between the U.K. Government and corporations for the purpose of switching over to a sustainable low-carbon economy, and is contributing to the calculation of carbon footprint as well as eco-friendly services such as enhancing the level of corporate carbon management and cost saving by greenhouse gas reduction. Incheon airport has been recognized for its performance in various activities for enhancing energy efficiency and reducing greenhouse gas such as switchover to LED lighting devices and highly efficient refrigerators, and operation of green apron.



A-CDM (Airport Collaborative Decision Making) introduced



A-CDM is the system that manages target time by sharing aircraft movement time information individually managed by airport operator, control center, airlines, and operating company through a single system, and predicting the flight operation time. It can manage aircraft departure/arrival, taxiing and operation status as milestone time information, and share them with cooperating organizations to collectively respond to air traffic flow. Through this, expansion of airport capacity, advance adjustment of departure plan, aircraft fuel saving and noise management due to reduced aircraft waiting hours, and optimization of resource management such as equipment and human resources are made possible. Through the implementation of A-CDM, we forecast that it will ultimately save energy and reduce carbon emissions.

IIAC's Green Report won 'ARC Awards' from US MerComm for 3 consecutive years

IIAC's Green Report won the Gold Award in the social responsibility report category at the 2017 ARC Awards (Annual Report Competition Awards) held by US MerComm.

The decision was made upon evaluation of 2,000 annual environmental reports submitted from 70 countries. IIAC was awarded again for three consecutive years following the winning of the Grand Award at the ARC Award 2015, proving that IIAC is the global leader in environmental management as well as in sharing and publicizing the achievements with its stakeholders



The Platinum Winner for 5 consecutive years by US LACP

IIAC's Green Report was listed as the Platinum Winner again in 2017 in the corporate social responsibility reporting category from the Vision Awards held by the US-based League of American Communications Professionals (LACP). IIAC has won the Platinum award, the grand prize for the past five consecutive years.

LACP is the corporate PR group with the highest authority in the world. In 2016, world class top tier corporations comprised of top 9 companies within the Fortune 500 companies as the leading group, competed for the Vision Awards. IIAC received perfect scores in 7 categories of design, excellence in eco-friendly contents, clarity in information communicated, creativity and description method, etc. out of a total of 8 categories. IIAC's Green Report won the 5th consecutive Platinum award in 2017 from U.S. LACP. We obtained 99 points out of 100 points in total, with the honor of winning the Platinum award for 5 consecutive years.



IIAC won the Gold Award at the Green World Award as carbon eco-friendly airport

In December 2017, being recognized for its performance of operating a low-carbon eco-friendly airport, IIAC was awarded with the gold award in the National Initiative category at the '2017 Green World Award' held in Dubai, United Arab Emirates. The Green World Awards were officially endorsed by the Green Organization which is a U.K. based non-profit organization. The organization awards companies, governments, and regional governments which demonstrated superior environmental achievement and innovations.

Carbon footprint of Incheon International Airport

Low-carbon eco-friendly airport management

IIAC identifies and manages GHG emitted both directly and indirectly from the operation of Incheon International Airport.

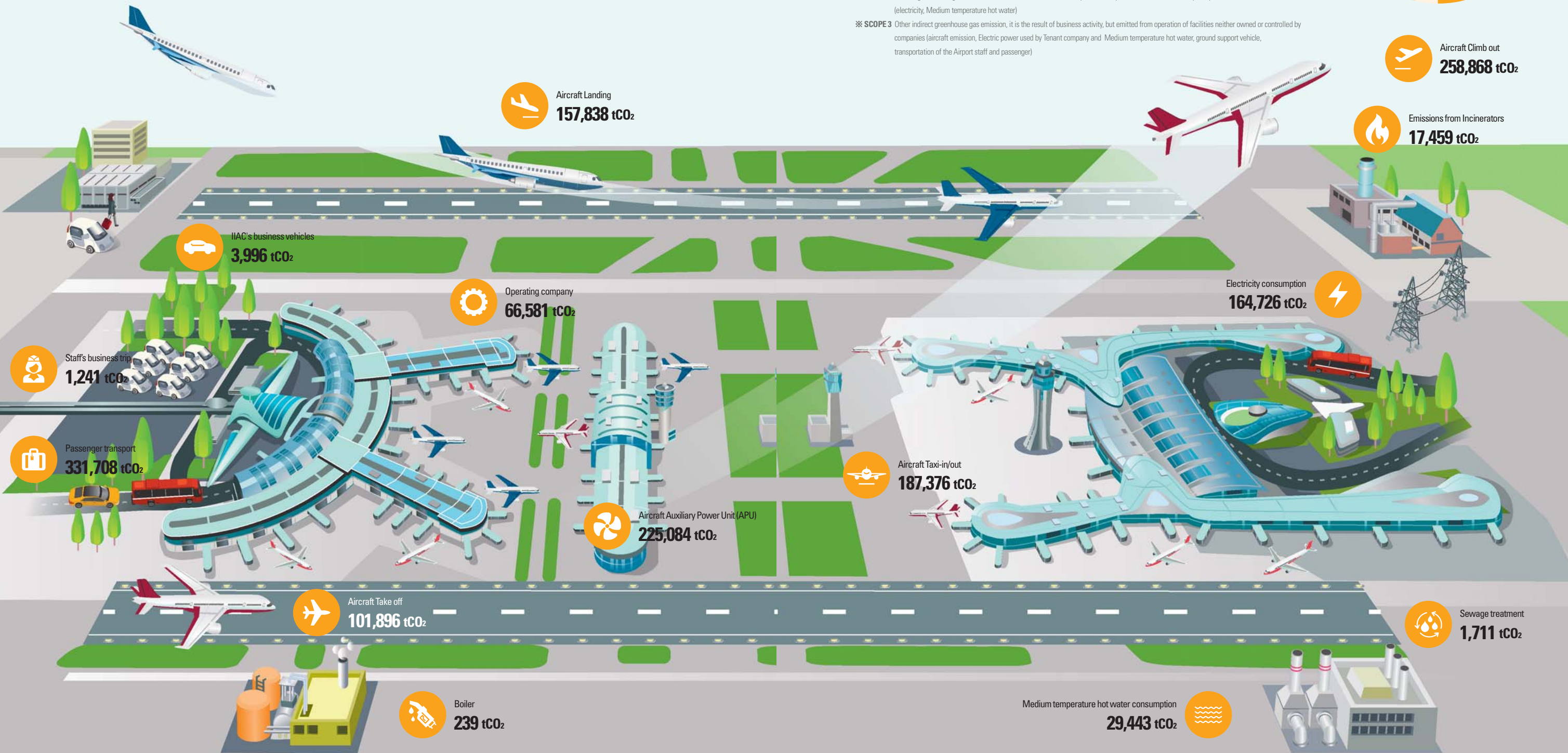
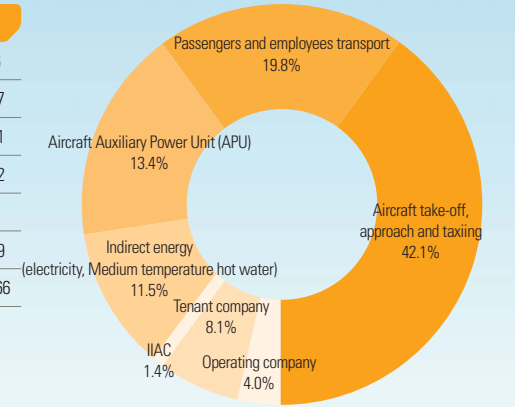
Total greenhouse gas emission from airport area

Based on 2017 (Unit : tCO₂)

Scope	Category	2013	2014	2015	2016	2017
1	IIAC	19,732	20,951	20,923	22,637	23,346
2	Indirect energy (electricity, Medium temperature hot water)	133,281	134,754	134,987	141,288	188,987
3	Tenant company					135,741
	Airlines					931,062
	Operating company	1,116,180	1,196,466	1,259,463	1,406,103	66,581
	Passengers and employees transport					332,949
Total CO ₂ emissions from the Airport		1,269,193	1,352,171	1,415,373	1,570,028	1,678,666

- ※ **SCOPE 1** Direct greenhouse gas emission, GHG emitted from the sources owned and controlled by companies (boiler fuel, vehicle fuel, incineration)
- ※ **SCOPE 2** Indirect greenhouse gas emission, GHG emitted from the electricity and steam purchased and consumed by companies (electricity, Medium temperature hot water)
- ※ **SCOPE 3** Other indirect greenhouse gas emission, it is the result of business activity, but emitted from operation of facilities neither owned or controlled by companies (aircraft emission, Electric power used by Tenant company and Medium temperature hot water, ground support vehicle, transportation of the Airport staff and passenger)

Incheon International Airport Carbon Footprint Share



GREEN INSIGHT

Implementation of eco-friendly management by operation of low carbon airport and efficient energy management

Incheon International Airport Corporation has performed the leading role as an international airport company, with the vision in environment and energy management of 'global leading low-carbon eco-friendly airport'. IIAC is sparing no effort to realize these visions, such as enhancing efficiency in energy consumption and expanding new & renewable energy, through 4 core promotion strategies comprised of advancement of eco-friendly management, improvement of energy efficiency, expansion of low-carbon management, and reinforcement of environmental resources management.

Eco-friendly management / Expanding low-carbon operation / Strengthening energy independence base / Resource consumption and circulation Flow Map



Eco-friendly management

Reinforcement of eco-friendly management in preparation of environmental changes

Through building up eco-friendly management system and comprehensive energy management, IIAC is participating in the pan-government efforts for greenhouse gas reduction, reinforcing training and PR for expanded autonomous participation in energy saving. Furthermore, by accelerating eco-friendly airport management using new & renewable energy, we saved energy and subsequently reduced carbon emission.

Eco-friendly management vision and strategy

Vision and 4 major action strategies (by 2020)

VISION

Global leading low-carbon eco-friendly airport

Eco-friendly management system (ISO 50001, ISO 14001)

STRATEGIC OBJECTIVES

ACI carbon accreditation Level 3

LED 100% Energy independence 3%

Greenhouse gas reduction 66,000tCO₂

Environment performance index 130

ACTION STRATEGY

Advancement of eco-friendly management

Improvement of energy efficiency

Expansion of low-carbon management

Reinforcement of environmental resources management

STRATEGIC TASKS

- Reinforcement of eco-friendly management system
- Comprehensive energy management system
- Expansion of training and PR
- Reinforcement of efficiency in energy consumption
- Construction of eco-friendly airport
- Expanded introduction of new & renewable energy
- Expansion of eco-friendly transportation system
- Reduction of aircraft greenhouse gas
- Carbon offsetting program
- Monitoring of resources recycling environment
- Creation of eco-friendly space
- Minimization of environmental impacts

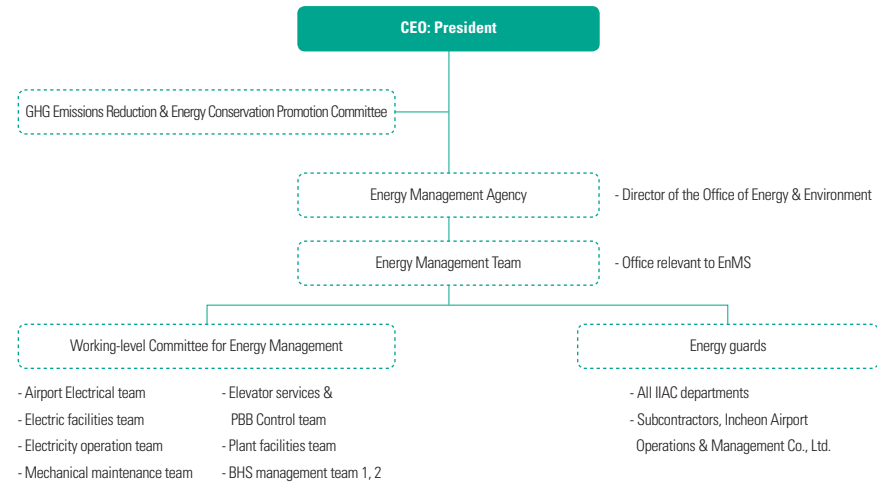
Action strategy roadmap

Strategy	Promotion task	2015	2016	2017	2018	2020
Advancement of eco-friendly management	Reinforcement of eco-friendly management system	ACI airport carbon accreditation		ISO50001 recertification		Advancement of energy management system
	Comprehensive energy management system	Operation of GHG Emissions Reduction and Energy Conservation Promotion Committee, Reinforcement of direction and inspection on energy management of subcontractors, tenant companies				
	Expansion of training and PR	e-Learning	Fostering experts		Energy consulting for overseas airports	
Improvement of energy efficiency	Reinforcement of efficiency in energy consumption	Substitution of refrigerator	LED 75%	Aircraft LED lighting	LED 90%	LED 100%
	Construction of eco-friendly airport	Airport Construction of green 1st grade, energy efficiency 1st grade			T2 Green 1st grade in Green Architecture certification	Construction of 4th phase green airport
	Expanded introduction of new & renewable energy	Solar photovoltaic power 240kW	Solar photovoltaic power 360kW	Solar photovoltaic power 4,124kW Geothermal heat 5,250kW	Solar photovoltaic power 881kW	Solar photovoltaic power 1,970kW
Expansion of low-carbon management	Expansion of eco-friendly transportation system	Incentives for eco-friendly vehicle	Expand electric vehicle charging infrastructure		Promote introduction of hydrogen Fueled Cell vehicle and charging stations	
	Reduction of aircraft greenhouse gas	Replacement of domestically produced AC-GPS (200 units) and domestically produced PC-AIR (44 units)				
	Carbon offsetting program	Operation of the voluntary GHG reduction agreement		Contribution to local community		Plan for the afforestation project in forestry
Reinforcement of environmental resources management	Monitoring of resources recycling environment	Reduction of pollution through waste recycling and monitoring				
	Creation of eco-friendly space	Improvement of landscape at the entrance of terminal	Project for the creation of the Forest of World Peace		Improvement of landscape at the entrance of T2	Project for creation of complex cultural space
	Minimization of environmental impacts	Implement training and inspection for minimization of environmental impacts				

Operation of eco-friendly managerial organization

Energy management promotion system

IIAC established and operates a corporate-wide organizational structure for energy management to successfully implement energy management strategy. IIAC's strong will for energy management is well demonstrated in the organizational structure consisting of GHG Emissions Reduction and Energy Conservation Promotion Committee - the CEO advisory group and the Energy Management Team at working level. Furthermore, Working-level Committee for Energy Management and Energy guards organization operated under the Energy Management team carefully deliver the work together.



Major achievements

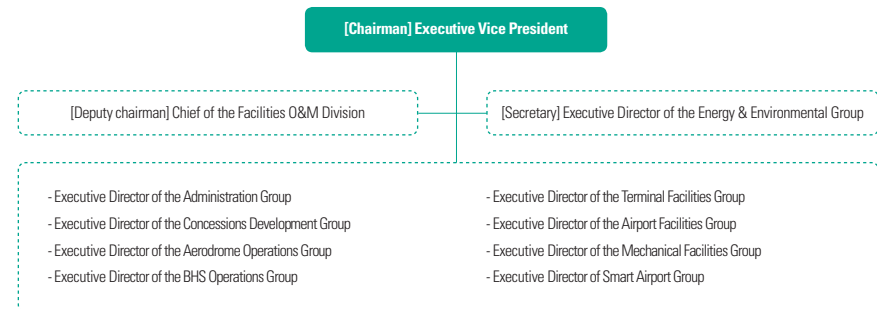
- Renewal of Level 3 ACI airport carbon accreditation certification
- Renewal of Energy management system (ISO 50001) certification
- Greenhouse gas reduction, performance analysis on energy conservation promotion, and derived areas of cooperation between departments
- Selection of promotion task for realization of low-carbon eco-friendly airport
- Laid the proactive groundwork for the Emission Trading System implemented by the government
- Established eco-friendly transportation system by purchase and installation of eco-friendly vehicles and charging stations
- Measures to introduce mandatory supply ratio of new & renewable energy

Major achievements

- Response plan for allocation status of GHG Emission Trading System
- Sharing energy target and achievement status by department
- Sharing energy consumption reduction performance by department and additional discovery of promotion plan items

GHG Emissions Reduction and Energy Conservation Promotion Committee

Following the Regulation for the Act on Rationalization of Energy-use in Public Organizations, IIAC established and operates a decision making body in the area of GHG and energy. The committee consists of a chairman, a deputy chairman, a secretary, and 8 bureau directors. As the advisory group directly under the CEO, this committee is held semi-annually to analyze and discuss the promotion plan and results of the low-carbon eco-friendly managerial tasks.



Working-level committee for energy management

IIAC operates Working-level committee for energy management, in order to systematically comply with the Emission Trading System and effectively operate the Energy Management System. The Committee checks energy consumption status and the saving performance by each department and communicates internally the measures to meet the target. The committee is comprised of 8 members from major departments in charge of energy including Airport Facilities Group, BHS Operations Group, Energy & Environmental Group, Mechanical Facilities Group etc, in order to facilitate communication and cooperation between departments.

Reinforcement of eco-friendly management system



ACI airport carbon accreditation Level 3 certification Renewal

In order to meet the requirements and expectations of stakeholders which are ever more complex and diverse, IIAC establishes and manages eco-friendly alternatives by identifying the factors threatening the future such as climatic change, excessive resources development, destruction of nature and ecosystems, etc. Currently, the low-carbon accreditation (ACA) granted by International Airport Council International (ACI) is comprised of 237 member airports from 60 countries, and provides the guide on carbon emission reduction and management. IIAC obtained the ACA Level 3 (Optimization) certification covering emission reduction items on all carbons emitted from the airport area including airport's internal facilities for the first time in the country in 2014, and have renewed the certification by managing the Level 3 certification items in 2017. The airport carbon accreditation Level 3 is even more meaningful in the aspect that it sums up and manages all carbon volumes related directly or indirectly to airport management and implements strategic airport carbon management by the joint participation of stakeholders.

IIAC has been engaging in various activities to continuously reduce carbon emissions such as switching over to LED lighting devices and carrying out a project for replacing the existing refrigerators with high efficiency refrigerators as well as expanded operation of green apron to reduce taxiing of aircraft and subsequently save fuel, etc. In the future, IIAC will continuously manage and maintain the carbon volume related to airport management at Level 3.

<Items for carbon emission reduction management>

Classification	Management Item
Level 1	Calculation management on direct emission source under IIAC's management (fuel) + indirect emission source (electricity, Medium temperature hot water)
Level 2	Level 1 + carbon management procedure and reduction planning, implementation item management
Level 3	Level 2 + management of greenhouse gas emission quantity (aircraft, tenant company, customers) in operation process for the entire airport
Level 3+	Level 3 + Level 1 greenhouse gas emission quantity are offset by purchase of Certificated Emissions Reduction (CER)

Operation of environmental management system (ISO 14001)

IIAC obtained environmental management system (ISO 14001) standard certification in airport construction area in 1998 and airport management area in 2002. We continuously maintain and improve subsequent environment level through proper fulfillment of ISO specification requirements such as setting up environmental targets, assessment of significant environmental impacts and internal environment inspection, etc. In addition, by implementation of ex-post management inspection (annually), recertification audit (once every 3 years) by external certification authority, the suitability of environmental management system is ensured.

Furthermore for the sake successful management of environmental operation system and continuous improvement in environment management, IIAC introduced quantitative environmental performance assessment system which is in operation since 2012. The environmental performance assessment is applied with '2006 environmental performance assessment guideline' by International Standardization Organization (ISO) and Ministry of Environment, and is in effect according to the environmental performance indicators (42 indicators) developed in 2012 reflecting the characteristics of the airport. These indicators are systemically developed to simplify assessment procedures and prevent distortions, and we plan to continue to manage the indicators by setting the environment index for 2020 at 130 points through analysis of past performances.

In addition, IIAC operates separate organizations composed of Environment management team and environment management office for the sake of efficient operation of environment management tasks. The environment management team is in overall charge of environmental issues such as waste, water quality, air quality, aircraft noise, etc. The environment management office ensures the realization of eco-friendly airport through such as inspection and operation of measurement stations by specialty service provider, analysis on measurement data and 24-hour monitoring of airport environment, etc.





Operation of energy management system (ISO50001)

The fine dust issue due to industrialization and climatic change due to greenhouse gas emission are the problems that the entire human race is facing, and any response measure is desperately needed as soon as possible. For corporations that have to reduce energy consumption and greenhouse gas emissions as well as cost, energy management is an indispensable management strategy to be introduced on a managerial level. The energy management system enables systemic management of energy, and provides the overall management system for the target energy management system for greenhouse gas as the quality certification system for management. IIAC obtained demonstrative certification of energy management system (ISO 50001) standard in the building category for the first time in the world for an airport in February 2012. We obtained official certification in June 2014, and completed recertification review in May 2017.

Anticipated effects of energy management system (ISO 50001)

- Cost reduction, efficiency improvement, mitigation of environmental impacts through improved energy performance
- Effective and sustained improvement of work is possible by visualizing energy use and efficiency
- Response to greenhouse gas reduction and emission rights trading system by quantitative measurement of energy use
- Enhanced level of activities in energy operation management (purchase, planning, consumption)
- Enhanced corporate image and expanded business opportunities through improved confidence of stakeholders

Eco-friendly PR and training



Energy saving campaign to the people

3 organizations (Incheon International Airport Corporation, Incheon city government, Korea Energy Agency) jointly conducted an energy saving campaign at the passenger terminal to further enhance our image of eco-friendly airport. In order to attract responses from domestic and foreign customers, we ran booths such as booth for 'making my own folding fan' and booth about 'bicycle power generation'. In addition, we distributed energy saving leaflets to resident staffs at Incheon airport and installed placards and banners semi-annually in summer and winter, to promote awareness and create consensus about energy saving. Additionally, in order to efficiently push ahead with the strategic tasks of advancing low-carbon eco-friendly management and to encourage energy saving, we are engaging in various efforts to practice energy saving and enhance awareness on energy management by implementing 'a reward system to contributors to energy saving' and holding a public contest of exemplary cases of energy saving aimed at the airport staff and managers, vendors as well as resident staffs.

Participation in Korea's largest scale eco-friendly industry expo

In order to publicize our strategies and performance on low-carbon eco-friendly management to domestic and international stakeholders, and to enhance our image of global eco-friendly company, IIAC participated in 'ECO-EXPO KOREA 2017' held from November 1 to 4, 2017 at Coex, Samseong-dong, Seoul. At the PR booth installed at Korea's largest scale 'ECO-EXPO KOREA 2017', we publicized the performance of eco-friendly management, overview of the Green, Eco, Smart construction of Passenger terminal 2, action strategies comprised of setting up transportation infrastructure, aircraft ground power supply device(AC-GPS) applying low-carbon eco-friendly technologies, aircraft cooling & heating supply device (PC-AIR), as well as installation and management of eco-friendly new & renewable energy, etc.



Publishing environment report (Green Report)

In order to publicize our strategy and performance on low-carbon eco-friendly management in response to climatic change, we published 'Green Report' and distributed it to external and internal organizations. The environment report (Green Report) was prepared based on the Ministry of Environment's guideline and GRI G4, and received the Platinum Award from U.S. LACP. We also submitted this report for the eco-friendly report category sponsored by MerComm. This report was well acknowledged as the best corporate annual report, and received the gold award in ARC Awards. As the winner of the Annual Report award with world's highest authority, IIAC has been confirmed again as the global leader of low-carbon eco-friendly management. 2,200 copies of the environment report published were distributed to domestic and foreign organizations and national/public libraries, etc., to publicize the best practices of low-carbon eco-friendly management, and was made available as a training material for eco-friendly management.

Operation of energy guards

IIAC conducts eco-friendly, energy related training such as operation of energy guards in order to propagate the necessity of energy saving and expand energy saving activities by sharing related information. IIAC selected a total of 130 individuals as energy guards from public corporations, subcontractors, tenants and operators of facilities built with private capital (voluntary contractors), and is conducting workshops on a regular basis to enhance their expertise in energy management. The workshops proceeded with the programs comprised of energy related training, research on the status of eco-friendly products, technology, and energy development; visit to relevant companies, viewing eco-friendly expo, etc.

ICAO certified 'airport greenhouse gas management course' operated

IIAC received final approval of "airport safety management course," jointly developed by the Korean Ministry of Land and Transportation and ICAO under the United Nations, as the ICAO certified training course on March 8, 2016. This course was designed to diagnose the level of aviation safety in the ICAO treaty countries, and to enable the operation of an optimized airport safety management system (SMS). Furthermore, this course reflects ICAO's PANS (Procedure Air Navigation Service), and was operated at ICAO Canada, Montreal Divisions and IIAC Human Resource Development Center. In 2016, 'Airport environment management course' was conducted by inviting national trainees from 15 countries in Asia and Africa. The 'Airport Power & Energy management course' conducted for Beijing Airport energy subsidiary was well received in the industry. In 2017, we are preparing ICAO STP airport greenhouse gas management course as an internet e-Learning class.

Environment management training

IIAC is providing online and offline training to prevent any environmental accident in the course of construction and operation of an airport, and to manage the environment and energy. Trainees are in-house airport staff and managers, subcontractors, operators of facilities built with private capital, staffs assigned to environment and energy duties, staffs assigned to 3rd phase construction and development of the surrounding areas. This training is conducted once a year.



Expansion of low-carbon management

Reinforcement of low-carbon, energy saving

IIAC reduced the use of fossil fuel to cut down on greenhouse gas, and operates low carbon green apron, exceeding the targeted greenhouse gas emission through these efforts. In addition, we plan and implement the plan to replace equipment with low energy efficiency, remove factors of energy waste, and maintain the best energy efficiency.

Greenhouse gas reduction activities and performance

Greenhouse gas emission volume

237,692 Target (KPI)

212,346 Performance

10.7% Reduced Greenhouse gas (tCO₂) over achieved by 10.7% from the target

Achievement of greenhouse gas emission target

IIAC recognized the global warming issue as the common issue for the globe, and exercised companywide efforts. Thanks to these efforts, we over-achieved GHG emissions reduction by 10.7% from our target last year, and it was accredited by the Korean government as early reduction performance. We over-achieved our goal in the past six consecutive years since the introduction of the target management pilot project in 2011.

Operation of Aircraft - Ground Power Supply (Aircraft Ground Power Supply)

There are 3 types of method for supplying power to an aircraft : APU (Auxiliary Power Unit) by running aircraft's own engine; GPU (Ground Power Unit) by mobile diesel vehicle, and AC-GPS (Aircraft Ground Power Supply) which supplies power through cables. The most efficient method is the AC-GPS method, in which energy consumption can be reduced by 98% in comparison with APU method and by 86%~90% in comparison with GPU method. By supplying power to aircrafts parked at the ramp and replacing the existing APU, it can obtain the effect of saving aircraft fuel and reducing GHG emissions in the airport area. IIAC supplies the power required by aircrafts while it stays on the ground via AC-GPS, and is gradually expanding its operation. A total of 208 units are under operation in 2017.

<Operational performance>

Classification	Specification	Quantity	Remarks
Passenger terminal 1	C-D-E grade	90KVA	71 Set
	F class	90KVA	16 Set
Concourse	C-D-E-F grade	90KVA	52 Set
Passenger terminal 2	C-D-E-F grade, MARS	90KVA	69 Set

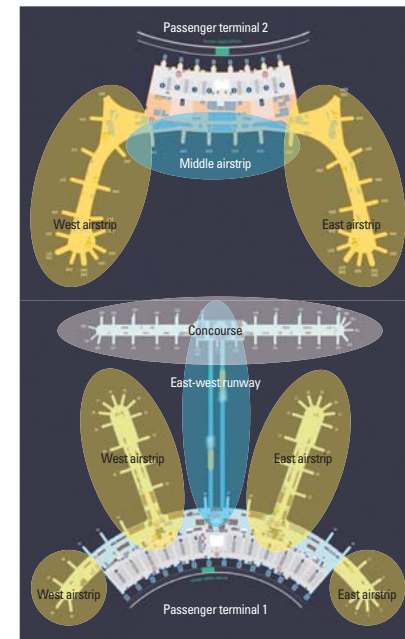


Operation of aircraft cooling & heating supply unit

An aircraft usually runs auxiliary engine to supply cooling & heating into the aircraft while the aircraft is stationed at an apron and the main engine is shut down. Aircraft cooling & heating supply unit (PC-Air: Preconditioned-Air) is a unit for directly supplying cooling & heating from outside during this period rather than using the auxiliary engine. Thus, this unit can obtain the effect of saving aircraft fuel and reducing GHG emissions in the airport area. IIAC operates a total of 91 aircraft cooling & heating supply units in 2017.

Operation of low-carbon green apron

Noticing the fact that use of apron and runway differs according to aircraft route, IIAC is operating 'low-carbon apron' where fuel consumption and greenhouse gas emission is reduced through analysis on ground taxiing path of aircraft and minimizing the running distance. In 2017, we expanded the applicable routes to the Americas, and reaped the effect of saving fuel by 53,587L and reducing greenhouse gas emissions by 198.59 tCO₂. In 2018, we will expand from the current 16 flights to 30 flights after the opening of Passenger terminal 2.

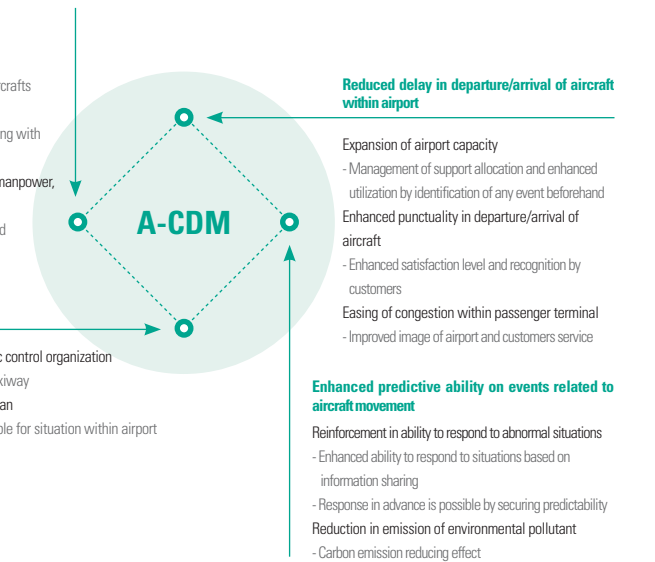


A-CDM (Airport Collaborative Decision Making) set up and operation

A-CDM is the system that manages target time by sharing aircraft movement time information individually managed by airport operator, control center, airlines, and operating company through a single system, and predicting the flight operation time. It can manage aircraft departure/arrival, taxiing and operation status as milestone time information, and share them with cooperating organizations to collectively respond to air traffic flow. As expansion of airport capacity, advance adjustment of departure plan, aircraft fuel saving and noise management due to reduced aircraft waiting hours, and optimized management of resources such as equipment and human resources are made possible through A-CDM, we forecast that it will ultimately save energy and reduce carbon emissions.

Cost saving and improved safety

- Enhanced utilization of aircraft
 - Fuel saving by calculated management of aircrafts
- Safe flight of aircraft
 - Sufficient rest for pilots and crew by complying with labor hours
- Aircraft, airport equipment and management manpower, etc.
 - Optimized resources management, minimized maintenance cost for resources



Enhanced capacity of air traffic control

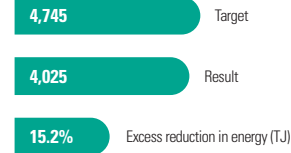
- Enhanced ability to accommodate by air traffic control organization
 - Reduced congestion in route, runway and taxiway
- Flexible management of advance departure plan
 - Advance adjustment of departure plan suitable for situation within airport
- Enhanced efficiency in air traffic control
 - Reduced workload for air traffic controller

Major duties of cooperating organizations

- (Airlines) confirmation on preparation of passenger, luggage, aircraft, etc. and inputting of target preparation time for takeoff
- (Operating company) Providing aircraft's flight preparation information and duties entrusted by small airlines
- (IIAC) Applying the shared timeframe for apron management and ground control duties for aircraft
- (Control tower) Providing advance departure management and pushback time using airline preparation time

Energy saving management

Energy consumption



Companywide energy target and performance

In order to achieve the allocated amount of greenhouse gas emission, IIAC has set detailed target by department, and pursued rationalization of energy use such as energy saving, etc. As a result, it has used 4,025TJ which is a 15.2% reduction from its goal for energy consumption in 2017 which is 4,745TJ.

Classification	Major energy using department							Other facilities	Total
	Mechanical facilities team	Plant facilities team	Baggage management team 1	Elevator facilities team	Electricity management team	Airport Electrical team	Sub total	Energy management team	
Allocation	972	483	292	179	419	29	2,374	2,371	4,745
Performance	971	497	294	174	366	26	2,327	1,698	4,025

Performance of energy saving activities

IIAC endeavored to reduce greenhouse gas emission by using less fossil fuel with systemic energy management. In 2017, IIAC reduced 5,076 tCO₂ of greenhouse gas by improving facilities and management methods, etc.

Classification	Electricity	Machine	Information telecommunication	Aircraft operation	Total
Number of cases	7	25	5	2	39
Energy saving amount (MWh)	3,075	6,868	859	31	10,833
Reduction effect (tCO ₂)	1,434	3,202	227	213	5,076
Effect of saving (million Won)	301	674	84	29	1,088

Improvement of energy efficiency



Switchover to high efficiency LED lighting

Classification	2014	2015	2016	2017	2018	2019	2020	
Government's target	50%	60%	-	80%	-	-	100%	
IIAC's target	55%	65%	75%	85%	90%	95%	100%	
Replacement quantity	Accumulated replacement	95,053	118,068	138,776	160,532	174,120	183,997	194,196
	Current year	19,962	23,015	20,708	21,756	13,588	9,827	10,199
Project cost (million Won)	Current year	2,523	4,000	3,042	2,281	2,617	3,600	7,000

LED lighting is reputed as more efficient in electric consumption than fluorescent lamp by 13~25%, and is superior in performance by about 1.3 times based on identical optical efficiency. In addition, LED does not use mercury, electric discharge gas like fluorescent lamp, and hence is an eco-friendly lighting. IIAC commenced switching over to LED lighting since 2009 to enhance energy consumption efficiency. By 2017, IIAC replaced 85% of all lightings and was able to obtain the effect of reducing 7,446MWh and 3,472 tCO₂ of energy.

Replacement of obsolete equipment

For the sake of saving energy, IIAC is replacing equipment that lack electric consumption efficiency. By annual inspection of facilities, and setting up and implementing the plan for replacing low efficiency equipment, IIAC has thoroughly removed any factor that wastes energy, and maintains the best energy efficiency.

Equipment replacement results	Annual effect of greenhouse gas (tCO ₂) reduction
3 turbo refrigerator units in utility building A were replaced with highly efficient turbo refrigerators	2,649.6
Idle Roller was installed at the belt conveyor at the tunnel in the baggage arrival section in the Concourse	158.7
Obsolete biomass reactor diffuser and ventilator were replaced with highly efficient items	812.8



Reinforcement of groundwork for energy independence

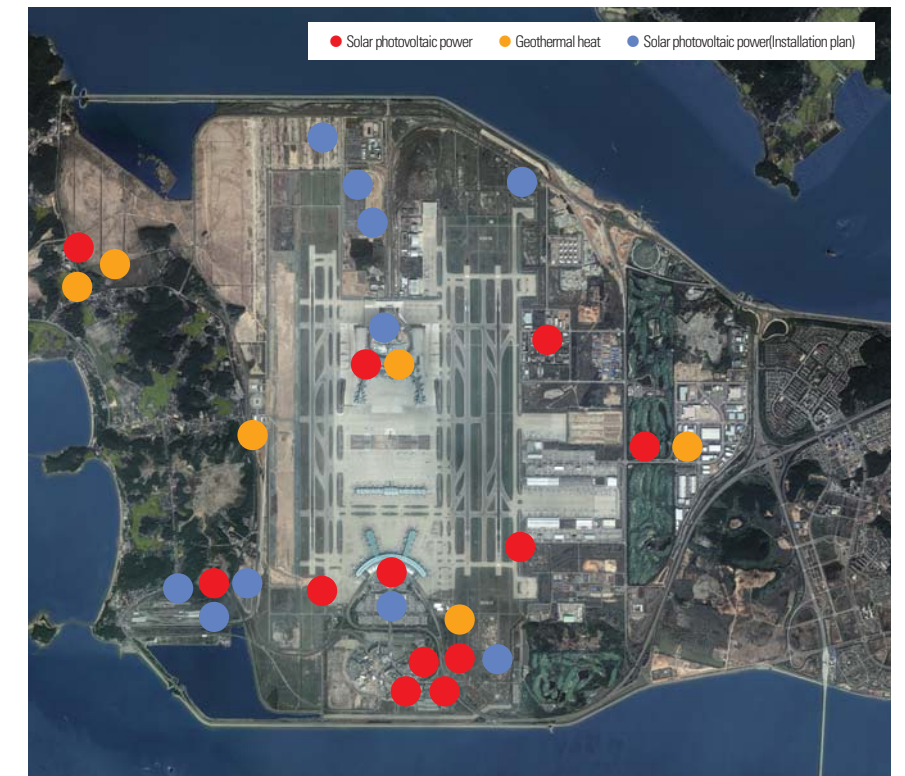
Carbon reduction and expansion of new and renewable energy

IIAC actively expanded new & renewable energy such as solar photovoltaic power generation facilities, geothermal heat cooling and heating system, fuel cell equipment, etc. By doing so, IIAC exceeded the energy consumption reduction target by 2% in 2017, and cemented its position as GREEN AIRPORT anticipating annual CO₂ emission reduction of about 29,000 tons.

Introduction and expansion of new and renewable energy

New and renewable energy operation and introduction plan

Year	Installation name	Power generation
2007	Solar photovoltaic power	15kW
	Solar heat power	12kW
	Geothermal heat	29kW
2008	Solar photovoltaic power	20kW
	Geothermal heat	774kW
2009	Solar photovoltaic power	100kW
2011	Solar photovoltaic power	20kW
	Solar photovoltaic power	60kW
2012	Geothermal heat	393kW
	Solar photovoltaic power	162kW
2013	Geothermal heat	506kW
	Solar photovoltaic power	480kW
2016	Solar photovoltaic power	96kW
	Geothermal heat	363kW
2017	Solar photovoltaic power	3,998kW
	Geothermal heat	6,130kW
2018	Solar photovoltaic power	881kW
2020-	Solar photovoltaic power	26,578kW



Reinforcement of groundwork for energy independence

In order to prevent exhaustion of natural resources due to use of fossil fuel and to reduce greenhouse gas emission, IIAC actively introduced and expanded new & renewable energy as an eco-friendly alternative. Especially in the 3rd phase construction project, solar photovoltaic power generation facilities (T2 1,236kW, T2 front facilities 402kW) of a total size of 1,638kW were established at the roof and front side facilities of Passenger Terminal 2 while terminal energy was saved by the introduction of high efficiency green technologies. Subsequently, IIAC reaped the result not only of carbon reduction but also energy reduction of more than 300 million won that is equivalent to the energy level to be used by 683 families during one year while assuming usage of 250kWh per household.

IIAC plans to secure the level of solar photovoltaic power generation of 10,531 MWh/year, and geothermal heat power generation of 3,609 MWh/year by 2020. In order to meet the government policy to achieve the percentage of new & renewable energy for more than a certain ratio (21%) of energy consumption at newly built buildings, IIAC has a plan to continuously expand solar photovoltaic power and geothermal heat power generation facilities.



Solar photovoltaic power
Power generation 5,832MWh/year
Greenhouse gas reduction 2,719tCO₂/year



Geothermal heat
Power generation 3,068MWh/year
Greenhouse gas reduction 1,430tCO₂/year

* Based on power generation in 2017



Category	Solar photovoltaic power (MWh)
T2	1,236
T2 front side facilities	402
Power generation complex	2,359
Total	3,997

Operation of solar photovoltaic power generation facilities

Solar photovoltaic power is an unlimited, clean energy source. Especially in recent times, solar photovoltaic power is the new & renewable energy recognized for its economic value regarding carbon reduction thanks to advanced power generation technologies, and is anticipated to maintain a steep growth trend in the aspect of energy production for the time being. In 2017, IIAC installed large scale solar photovoltaic power generation facilities with 2,359kW capacity in the Solar photovoltaic power complex using idle land around the airport (80,000m²). IIAC also installed solar photovoltaic power generation facilities (T2 1,236kW, T2 front facilities 402kW) with a total capacity of 1,638kW at the roof and front side facilities of Passenger terminal 2. As a result, IIAC achieved annual power generation of 5,832MWh, reaping the effect of carbon reduction as well as energy saving equivalent to 800 million won per year.

Also we designed the solar photovoltaic power generation facilities to be in harmony with the beauty of the airport terminal building. The 2nd transportation center symbolizing the shape of a bird rising up to the sky with the streamlined shape of an aircraft as its motive, not only saves energy but also contains great effective value in space utilization, focusing on eco-friendliness and sustainability.

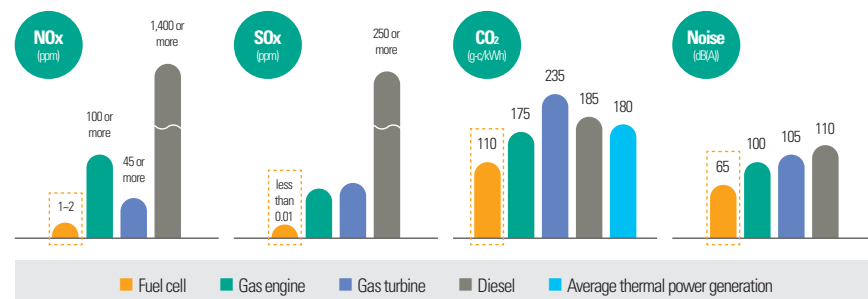
Introduction of fuel cell facilities



To strengthen the safety of the electrical power system within Incheon airport and to ensure stability in heat supply of the group energy supply facilities within the airport area, IIAC is planning to attract the construction of 60MW level fuel cell power generation facilities into the land neighboring the airport area cogeneration power plant. For this purpose, IIAC entered into a contract on joint development of new & renewable energy such as fuel cell and solar photovoltaic power business with Korea Western Power Co., Ltd. in October 2017. Both organizations are supporting each other, aiming to actively participate in government's new & renewable energy expansion policy and to shift the paradigm in airport management from energy consumption type to energy independent type using eco-friendly energy, through cooperation between public corporations.

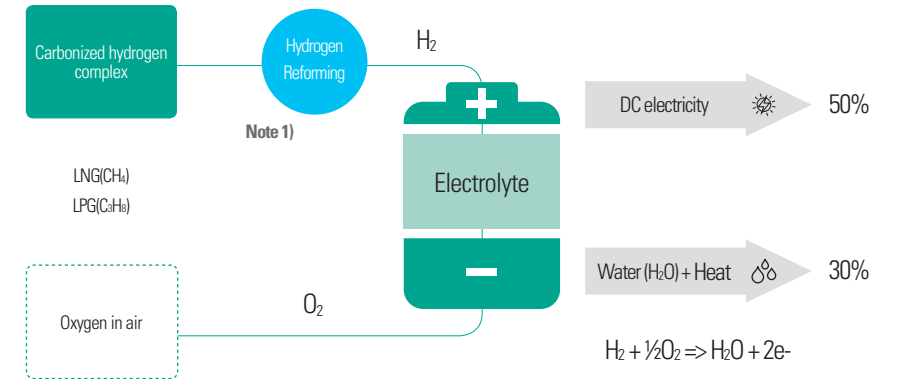
Fuel cell power generation is evaluated as the power generation system with the highest economy and very good environmental performance, producing electricity and pure water only, capable of generating power generation efficiency at around 50%, and at maximum efficiency of 80% including heat efficiency, from the total energy (electricity+heat) efficiency aspect. The fuel cell power generation facilities will be connected to KEPCO (Korean Electric Power) electricity supply system to function as a distributed power source. The heat produced at the same time as power generation will be received by the group energy supply facility and IIAC expects this to be able to enhance the facility operating efficiency.

<Environmental friendliness of fuel cell power generation>



Fundamentals of fuel cell power generation

By electrolysis of water, hydrogen and oxygen are generated. In contrast, fuel cell is the clean electro chemical power generation device which generates power using the reaction between hydrogen and oxygen. In fact, after separating hydrogen by heating LNG up to a high temperature with vapor, it produces electricity and heat as electrochemical reaction occurs with oxygen in the air.



Note 1) Reforming : heating fossil fuels such as natural gas, methanol, petroleum, etc. and converting them into hydrogen

Operation of geothermal heat facilities

Geothermal heat which is one of the new and renewable energy is the energy source available for cooling and heating, using the temperature difference in underground heat or underground water. Especially, geothermal heat facilities have great merit as non-contaminating low cost energy source, installed underground without any influence on building design. IIAC additionally installed 363kW sized geothermal heat facilities at the 2nd airport government office building in 2016, and newly installed 5,586kW facilities in 2017 at Passenger terminal 2, additionally installed 544kW at the 2nd government office building. With 8,195kW facilities installed at 7 places in total, IIAC anticipates reduction of GHG by 1,924tCO₂ and energy saving of 412 million won per year.

ESS (Operation of energy storage facility) management

ESS(Energy Storage System) is a device that stores electric power during low power night hours and supplies power during high power daytime periods. IIAC operates energy storage facilities to contribute to reducing electric power peak and to provide emergency power in the event of a national power supply crisis. The storage capacity of ESS is 2,000kW, with efficiency in energy use by charge amount of 501,905(kWh/year) and discharge amount of 448,032(kWh/year) which saved 33 million won in electricity bills in 2017.



Resource use and recycling Flow Map

This flow map represents the resource recycling flow of IIAC in 2017.
This map was drawn based on the current data and we will continuously expand the data management scope.

Greenhouse gas emission
Direct : 23,346tCO₂eq
Indirect : 188,987tCO₂eq

Air pollutants ^{Note 1)}
Dust : 1.13µg/m³
Sulfur oxides : 0.17ppm
Nitrogen oxides : 2.77ppm

Boiler fuel (Ancillary building)
Diesel : 37,583ℓ
LPG : 23,952Nm³
LNG : 26,917Nm³

Medium temperature hot water
227,612Gcal

Electricity
570,439MWh

Clean water supply
4,550,215m³

Vehicle fuel
Diesel : 466,537ℓ
Gasoline : 65,557ℓ
LPG : 1,305Nm³
CNG : 1,122,784Nm³

Wastewater
5,232,007m³

Grey water
3,274,577m³

Business site waste ^{Note 2)}
32,780ton

Sewage sludge
7,191ton

Water release

Resources recycling facilities ^{Note 2)}

Incinerated Waste
12,493ton

Treatment outsourced
Landfill (incineration cinder) 1,179ton

Treatment outsourced
Recycling 19,108ton

Treatment outsourced
Recycling incineration - Landfill

- Note**
1. The air pollutants data are in density unit
 2. Incineration cinder treated at incineration facilities amounting to 1,179 tons include the waste from airport construction and the waste generated from outside regions of the Airport (local community). 12,493 tons of incinerated wastes in the diagram indicate the IIAC's amount of incinerated wastes from airport construction.
 3. The business site wastes disposed at waste resources classification and disposal site are the sum of general (17,481 ton), designated (1,402 ton) and construction (13,896 ton) wastes.

ECO INSIGHT

Eco-friendly Airport Company sharing growth toward the future

For the purpose of constructing eco-friendly airport, IIAC has realized its own brand identity through the fusion of Korean traditional culture with the 'Culture containing originality' in the shape of "Green airport in the park, low energy consumption type eco-airport, and smart airport reinforced with ICT technologies". Furthermore, IIAC will fulfill its social responsibility as the eco-friendly global airport company, establishing the paradigm for environment management which identifies the threatening factors in the future such as climatic change, excessive resources development, destruction of nature and ecosystem, etc.

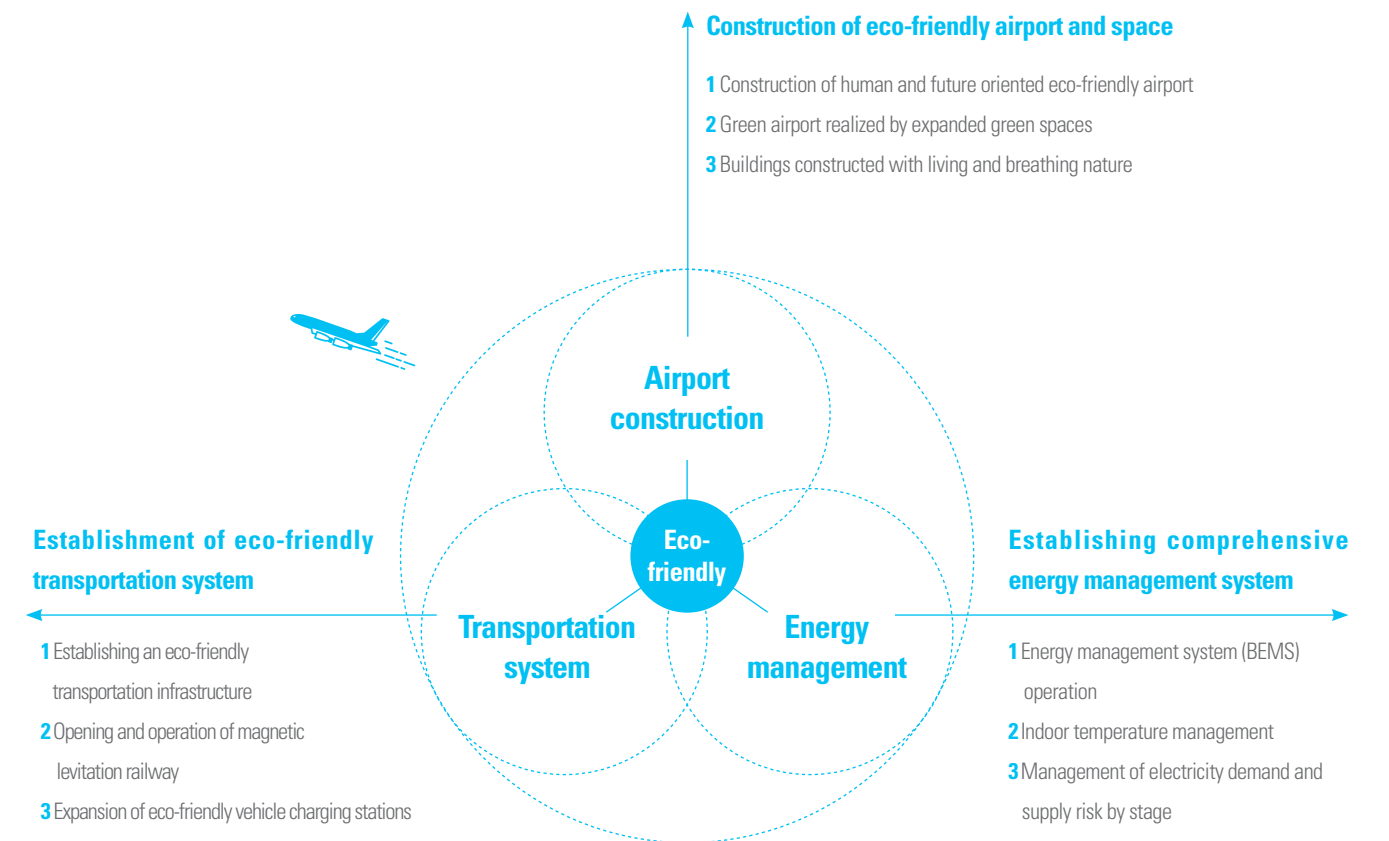
Implementing Eco-friendly Airport / Environmental Resource Management / Coexistence with the community / Resource Consumption and Circulation Flow Graph



Realization of eco-friendly airport

Low carbon, Low energy, management of Eco-friendly and Green airport

IIAC presents the alternative for a future airport as an eco-friendly airport converged with ecology, culture, and rest by expanding green airport area, creating waterfront space, construction of nature friendly building, etc. We realize Green Airport by operating a low energy consuming airport such as establishing eco-friendly transportation infrastructure and operating green cars, etc.



Construction of eco-friendly airport and space



Human and future oriented eco-friendly airport construction

Incheon International Airport successfully opened Passenger Terminal 2 in January 2018, which IIAC has been pushing forward as a part of the 3rd phase airport construction project since 2009 in preparation for the growing number of airport customers. Passenger terminal 2, which planned the harmonization of eco-friendly architectures comprised of culture, nature and state-of-the art technologies from its design concept, is facilities constructed on total floor area of 384,000m², with facilities accommodated at 2 basement floors to 5 ground floors and annual passenger capacity of 18 million.

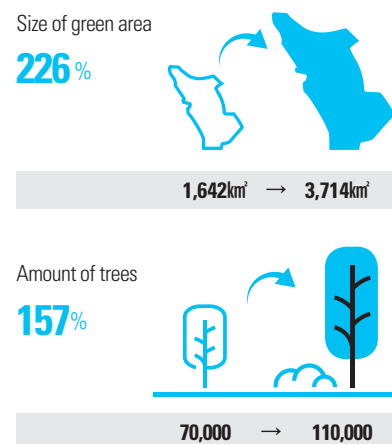
IIAC set up the construction plan with the motto of 'fusion between Green-Eco-Smart' & 'Culture'. According to the 'Green Airport' concept, large scale indoor garden (Node Garden) is installed, and the wall surface is decorated with green paintings for the purpose of vertical green connection, and boarding lounge is designed to be nature-friendly. Resting space is also landscaped at an identical level with the floor. Furthermore, convergence of culture and landscaping, and harmony of waterscape facilities (Pond) and landscaping are included in the concept.

From the 'Eco Airport' aspect, eco-friendly design factors were architecturally applied to ensure sustainability. Solar photovoltaic power generation facilities are installed at the terminal roof, and smooth natural lighting is induced through large luthern and roof louver. In addition, from the 'Smart Airport' aspect, IIAC planned to realize a state-of-the-art terminal with high-tech image and the latest technologies. IIAC introduced cutting edge technologies such as digital signage, etc. Especially in the eco-friendly plan in the 2nd transportation center, the system that completely absorbs solar photovoltaic power is applied in consideration of the fact that the site faces north. Therefore, IIAC constructed this terminal as a bright and open space.

Green airport realized by expanded green area

To realize Green Airport, IIAC built an airport green area network. The size of the green area is expanded from 1,642,000m² by 2.2 times to 3,714,000m². The amount of trees is expanded from around 70,000 trees by 1.6 times to 110,000 trees to create a forest connecting airport green network. At the landscaping area, the density of tree planting is raised and the volume of greens at the roadside tree section and median strip of T2 entrance road are maximized. Ecological spaces such as aquatic biotope and terrestrial biotope are created to provide opportunities for observation, learning and experience, and to contribute to maintaining an ecological environment enabling conservation and recovery of various organisms.

Increase in size of green area and amount of trees



Constructing architecture created with living and breathing nature

IIAC pursues 'Eco-friendly and sustainable green airport', 'airport within a park connecting customers' resting places with a network' with the concept of 'living and breathing airport, airport where there is rest'. For detailed landscaping plan, it consisted of two major themes. First is improving the landscape at the entry to Passenger terminal 1. Second is 'Making green airport' in the 3 staged landscaping project.

The landscaping theme at the entry road to T1 is the concept 'The road containing the nature of Korea' with expanded pine grove. Fortress Park of zelkova forest, Sky garden of forsythia garden, Welcome forest of welcoming plants, and Korean sound garden was constructed. In addition, the landscaping theme at the entry road to T2 is the concept of 'oriental phoenix soaring up to the sky,' planned as an eco-friendly space that can realize the future vision of Incheon International Airport with a Korean as well as a global image as it conforms to the architecture concept of Passenger terminal 2. Especially, Narae Park created a landmark landscaping space of Incheon International Airport with a landscaping plan which is in harmony with the front side facilities of T2. Vista Park is the space delivering a strong welcoming message by introducing vertically rising elements, applying Vista Park tall pine trees, and welcoming fountain in the median strip. IIAC installed not only landscaping but also nature-friendly waterscape facilities to create a resource-saving type waterfront space, and water resources are efficiently utilized by recycling grey water and rain water.

Currently, waterfront space and indoor garden such as the fountain symbolizing the tidal channel at Passenger terminal 2, cascade, ecological pond, and spring at the 2nd transportation center is providing pleasant scenery and resting space to airport users. At Passenger terminal 2, a small park within the airport is created in 6,500m² of landscaping area which is larger than Passenger terminal 1. Through the landscaping space inside and outside the building, we realized a natural convergence between architecture and ecology. Furthermore, we introduced contamination-purifying plants and waterscape facilities to complete a nature-friendly green space.

Establishing eco-friendly transportation system

Establishing eco-friendly transportation infrastructure

IIAC, as the center of various aviation industries, faces heavy demands for transportation of passengers and cargoes at home and abroad as well as within the neighboring area. IIAC is fulfilling its responsibility for social environment management by constructing an eco-friendly transportation infrastructure for airport users, related employees and residents in the vicinity. IIAC has paved a bicycle path extending to a total length of 18.4km between the airport and the new town, and is encouraging the use of bicycles rather than the usual vehicles with internal combustion engine. Furthermore, IIAC introduces and operates eco-friendly, low pollution vehicles such as electric vehicles, hybrid vehicles, CNG bus among IIAC's business vehicles. In addition, by developing and operating urban type maglev train which is low noise, low vibration, no dust means of transportation, we are closer to realization of an eco-friendly airport of the future.

Opening and operation of Maglev train

Increased airport users and incoming population to neighboring areas brought in the need for development of new towns. According to these changes, IIAC is enhancing its global brand value by operating maglev trains. 8 car train is running the line (double track) extending to 6.113km via 6 stations (Incheon International Airport Terminal 1 station ~ Yongyu station). In addition, for the convenience of users, we have extended the operating hours by 3 hours (7:30 ~ 20:30). Maglev train, which is an eco-friendly transportation infrastructure promoting the development of airport complex city, transports an average of 2,600 passengers per day.





Expanded eco-friendly vehicle charging stations

Toxic materials emitted from internal combustion engine vehicles are mostly CO₂, NO_x, PM (particle matter) mainly causing air contamination which takes up 68% of the total contamination. By introducing eco-friendly vehicles (electric-hydrogen vehicles), IIAC is exerting efforts to realize a low-carbon eco-friendly airport. In case of introducing new vehicles, IIAC applies the regulation for public institutions stipulating that more than 70% of business vehicles must be an eco-friendly vehicle. Patrol vehicles, operating for long hours for which electric vehicle is not suitable, will be replaced with hydrogen vehicles in order to continuously increase eco-friendly vehicles. Furthermore, in consideration of expanded electric vehicle operation, 23 units of charging stations have been installed and are currently in operation as of 2017. We are planning to enhance this infrastructure with 26 additional stations to be installed by 2020.

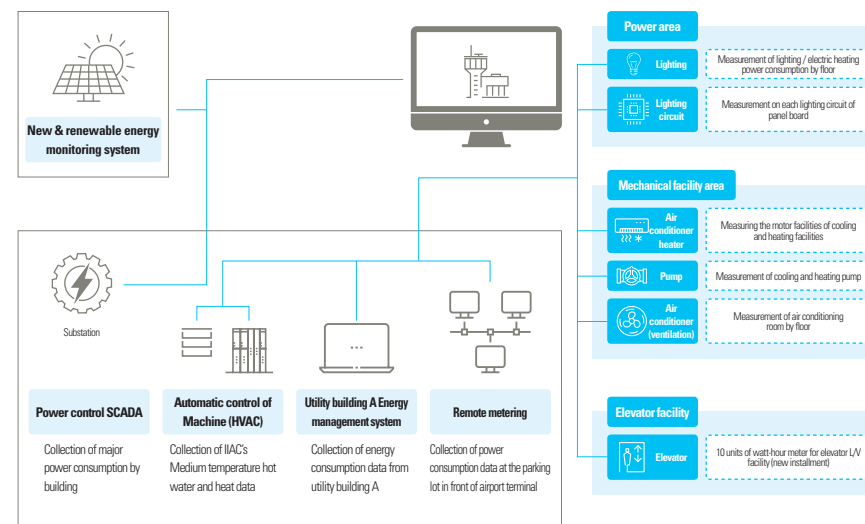
Installed Area	Boosting Charge	Normal Charge	Remarks
Airport terminal	2 units	9 units	As of 2017
Long term parking lot, etc.	11 units	1 units	

Establishing comprehensive energy management system

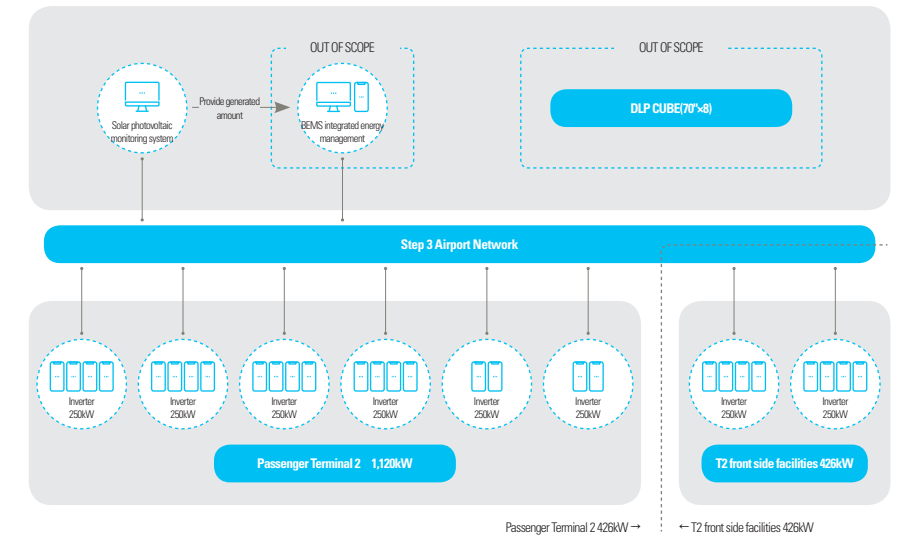
Operation of building energy management system (BEMS)

Having established the optimized energy use plan based on the analysis of energy consumption information collected through the Building Energy Management System (BEMS), which is installed in the airport terminal and utility building A in 2015, IIAC is maintaining heating, ventilation, power and lighting system at an optimized level. We have also established an electric power system comprised of electric device remote monitoring & control system, lighting control system, remote metering system, UPS and battery monitoring system, CCTV for monitoring of electricity room and UPS room, solar photovoltaic power generation monitoring system, energy management system (BEMS) in the third phase of the airport construction (Passenger terminal 2) for the purpose of efficient and stable airport management of Incheon International Airport 3rd phase construction (Passenger terminal 2) including major buildings such as Passenger Terminal 2, T2 front side facilities, etc. The energy management system (BEMS) shares electricity and heat consumption data in real time by connecting with major airport systems comprised of BHS, boarding bridge, elevator facilities, automatic machine control, T2 lighting control, remote metering, UPS Solar photovoltaic power, electricity SCADA system, etc. Using the data collected, Incheon International Airport analyzed various energy consumption patterns aiming for the direction of energy conservation, and achieved the optimal level of companywide integrated energy management.

<Passenger terminal 1 – Layout of building energy management system>



<Passenger Terminal 2 – Solar photovoltaic power monitoring system in connection with 3rd phase energy comprehensive management system>



Indoor temperature management

IIAC plans and operates a reinforcement plan for energy saving in order to enhance efficiency in energy use. Especially, since summer and winter are the peak seasons of energy usage, IIAC positively implements energy saving by the indoor temperature restriction regulation adopted by the internal committee for the sake of analyzing energy demand and supply prospect and providing a pleasant passenger service.

Management of electricity demand and supply risk by stage

IIAC, aiming for world's No.1 airport service with non-stop operation since its opening, has prepared detailed management process for electricity demand and supply and is equipped with excellent capacity for crisis management response. Emergency situation in electricity demand and supply is classified as 5 stages of risk based on backup power level. Actions are sequentially expanded at each stage in mobilization to ensure non-stop supply of electricity to the airport area. By continued monitoring of energy consumption trend in the future, we will verify and maintain the suitability of the current management system. We will proactively inspect the management system in consideration of the changes in aviation demands and environmental resources to secure the best condition in the crisis management capacity for non-stop electricity supply.

Stage	Backup ratio(10000kW)	Actions
Preparatory	500-400	<ul style="list-style-type: none"> Reinforcement of maintaining sensible lighting level and heating temperature Unnecessary power source cutoff
Concern	400-300	<ul style="list-style-type: none"> Crisis situation in electricity demand and supply propagated within company, heaters sequentially turned off at peak hours Emergency power generator (utility building B) activated, architecture lighting and window side air conditioner turned off (passenger facilities)
Caution	300-200	<ul style="list-style-type: none"> Emergency power generator (utility building A) activated, heater at ancillary building turned off Indirect lighting turned off and alternated operation of air conditioner (passengers facilities)
Warning	200-100	<ul style="list-style-type: none"> Emergency power generator (airport terminal/transportation center) activated, direct lighting turned off (passenger facilities) Alternated operation of air conditioner and moving walk/escalator turned off (passenger facilities)
Serious	100 or less	<ul style="list-style-type: none"> Warning stage maintained



Management of environmental resources

Management system carrying out improvement of environment

IIAC complies with domestic and international environmental regulations so as to minimize creation of pollutants with a thorough and sophisticated monitoring system on air, aircraft noise, water quality, indoor air quality, etc. Furthermore, IIAC expands its prevention oriented environmental system, and identifies and actively responds to the risk and the opportunity factors due to climate change.

Advancement of environmental monitoring system

Operation of environmental monitoring system

IIAC monitors air, aircraft noise, water, and indoor air quality for 24 hours. Environmental management center located in the Airport Integrated Communication Center (AICC) analyzes all the data received on real time basis, tracks and monitors any environmental changes in the Airport and the nearby area. Environmental measurement facilities are continuously performing performance checks in order to ensure compliance, and we are doing our best to monitor the environment by performing expansion and adjustment of installation location.



Environmental agency



Indoor Air Quality Measurement Bureau

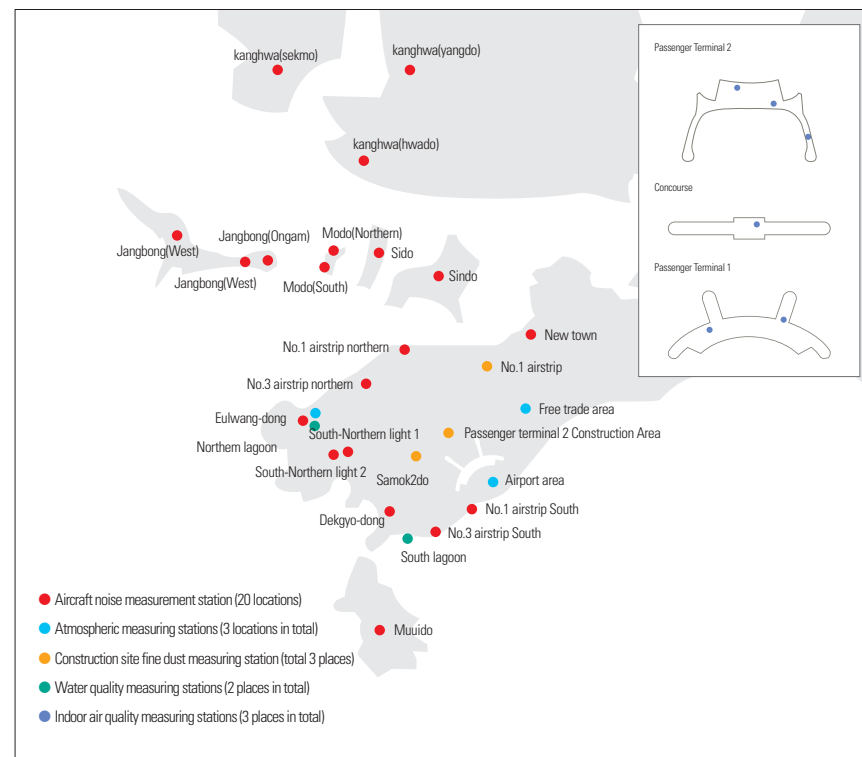


Atmospheric survey vehicle



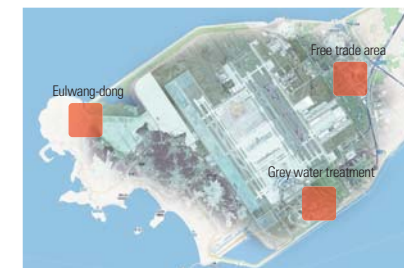
Noise transfer measuring vehicle

<Environmental monitoring facility status [By December 2017]>



<Status of the noise affected area>

Airport	Reported status (area : km ²)
Group 1 area	5,943
Group 2 area	4,002
Group 3 area	24,187
Total	34,132



Noise management

Incheon airport was designed as an offshore airport from the planning stage of construction, minimizing the area under influence of aircraft noise. Furthermore, IIAC establishes and operates independent monitoring system for sustainable reduction of aircraft noise. Based on the measurement result, IIAC is running the aircraft noise reduction council to discuss the measures to reduce noise with airlines. Through this council, Delta Air, United Air suspended the operation of the B747-400 aircraft model that has a high noise level and replaced it with A350, B787 aircraft models with a low noise level to reduce the operation of aircrafts with loud noise.

Promotion of responding measures to the area under influence of noise, and good neighbor program for residents

IIAC is promoting the responding measures to aircraft noise in Yongyu-dong, and Bukdo-myeon area which are within the area under the influence of noise. IIAC not only established soundproof and cooling facilities and provided subsidy for TV license fee and air conditioner electricity bills in the noise countermeasure area of Bukdo-myeon (20 households) and Yongyu-dong (4 households), but also operates the airport noise countermeasure committee composed of persons concerned with aircraft noise area, specialists and representatives from local residents in order to continuously implement noise countermeasures and support projects for residents.

Furthermore, IIAC is sparing no efforts to communicate with residents neighboring the airport and to strengthen relations with them. As a part of the relationship strengthening project in the noise countermeasure area, IIAC provided monetary support of 200 million won for scholarship, funeral service expenses, as well as community facilities and residents' events.

Air quality management

IIAC operates real time monitoring facilities at the airport, 3 neighboring places and 3 construction sites to manage the air in the airport area, and implements comprehensive air quality management on facilities, vehicles and aircrafts creating air polluting materials.

[Mobile pollution source] By regular inspection on vehicles, ground airport equipment under operation within the airport facilities area, air pollution from mobile pollution sources is minimized.

[Point pollution source] In case of resource recovery facilities (incinerating facilities) emitting a large amount of air pollutants, exhaust gas treatment facilities such as semi-dry wash tower, back filter dust collection facility, selective catalytic reduction device, and activated carbon input facility are installed and operated according to the Clean-Plant concept to control pollutants at the pollution source. In case of the cogeneration plant, the plant uses LNG as a clean fuel with minimal creation of air pollutants. This plant was designed to use low sulfur diesel as emergency fuel, minimizing creation of air pollutant materials such as dust, sulfur oxides, etc. The cogeneration plant and the incinerating facility were created on the same plot of land, designed not only for saving power generation fuels such as use of waste heat created from incinerating facilities, but also for reaping the effect of resource recycling.

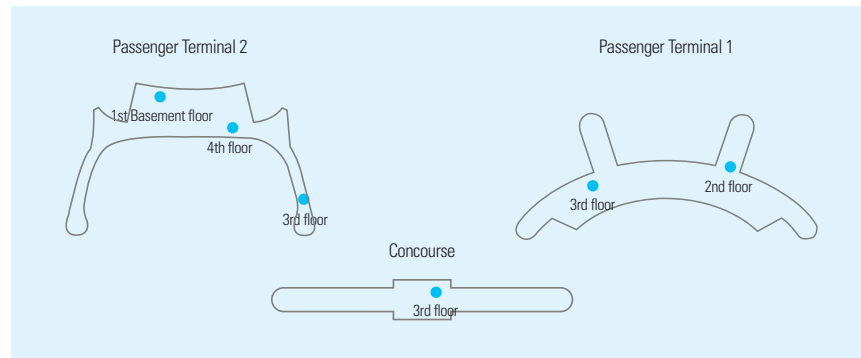
<Air monitoring result at airport and surrounding areas
(Average of the measurement result at 3 real time air monitoring points)>

Pollutant	Unit	Legal standards	2013	2014	2015	2016	2017
Sulfur dioxide (SO ₂)	ppm	0.015	0.006	0.007	0.006	0.006	0.006
Carbon monoxide (CO)	ppm	7	0.47	0.5	0.4	0.4	0.4
Nitrogen dioxide (NO ₂)	ppm	0.03	0.018	0.020	0.019	0.019	0.018
Ozone (O ₃)	ppm	0.06	0.036	0.038	0.037	0.039	0.038
Particle matter (PM10)	µg/m ³	50	52(51)	52(50)	51(45)	46(44)	46(45)
Fine particle matter (PM2.5)	µg/m ³	25	-	-	30(29)	30(30)	27(26)

※ PM2.5 was measured from 2015 in accordance with the Framework Act on Environmental Policy.

※ () figure at PM 10, PM2.5 were computed excluding the days with yellow dust.

Indoor air quality management



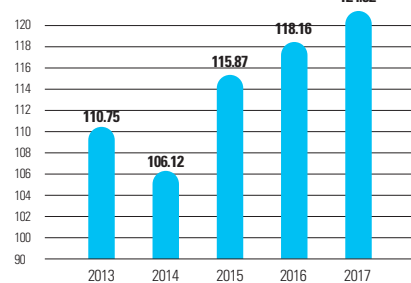
IIAC is conducting real time monitoring of air by installing indoor air quality measurement devices at 6 points within Passenger terminals 1, 2 and concourse. Furthermore, IIAC measures indoor air quality at 20 points in passenger terminals and concourse every quarter, and the result is submitted to relevant authorities (including Incheon city) and is also disclosed transparently through IIAC's website. IIAC applies stricter standards than the 10 items of 'Standards and recommendations for maintaining indoor air quality' in accordance with the 'Indoor Air Quality Control Act' and 'Airport environment control standard'. In case of fine dusts, IIAC adopted a phased operation system in preparation for yellow dust. In addition, we are doing our best to maintain optimal indoor air quality such as introducing internal replacement standards for air conditioner filters, etc.

<Measurement result on the concentration of fine dust in indoor air>

Pollutant	Unit	Legal standards	2013	2014	2015	2016	2017
Indoor parking lot	µg/m³	200	76	76	69	82	89
Passenger terminal and concourse	µg/m³	150	23	22	25	29	31

Resource recycling and minimized environmental impact

Environmental performance indicator



Environment performance index

IIAC has introduced and operates environmental performance assessment system to induce companywide participation in environmental management activities, and to seek continued improvement of environment. The environmental performance assessment applies '2006 environmental performance assessment guideline' by International Organization for Standardization (ISO) and the Ministry of Environment. We use environmental performance indicators (42 indicators) developed in 2012 to suit the characteristics of the airport. For simplification and prevention of distortion in assessment procedures, we continue conducting researches to develop the best indicator. Currently, IIAC's environmental performance assessment is comprised of 3 indicators: environmental condition index related to environmental change in the areas surrounding the airport; environmental management index for management of issues that may affect environmental performance; and operation performance index dealing with matters related to facilities operation such as inputs and outputs. According to the results of environmental performance assessment in 2017, overall improvements were made with environmental condition index up from 13.60 to 16.00, environmental management index up from 34.76 to 40.75, and operation performance index up from 51.64 to 67.57. Therefore, the environment performance index drew closer to the target of 130. The environmental index in year 2020 is set for 130 points with the plan to continuously enhance the level of environmental management. Furthermore, in order to ensure transparency of environmental management, we provide objective and systemic environmental information in real time on the website to stakeholders.



Environmental effect assessment and post environmental impact assessment

IIAC implements assessment of environmental impact, before commencement of airport construction including the construction of Passenger terminal 2, working hard to predict the environmental change before and after construction and to minimize the environmental impact due to airport construction. Furthermore, post environmental impact assessment is entrusted to an external specialty organization in order to enhance professionalism and objectivity, and reservoir and sea water quality investigation, bad smell investigation, jamming investigation, soil contamination investigation are concurrently implemented. In addition, the investigation results from post environmental impact assessment are prepared as a report to be submitted to a related organization such as Han River Basin Environmental Office once a year.

Waste management

IIAC legally disposes of wastes by recycling, incinerating and reclaiming according to the type and form of wastes based on related laws and regulations of the Ministry of Environment. The wastes from airport operation in 2017 were 32,000 tons of which 19,000 tons were recycled. All wastes from airport facilities are carried into, processed in, and carried out of resource recovery facilities, heavy water treatment facilities, and resource classification and treatment site. Out of these, the wastes carried into the resource classification and treatment site located at the northern side of the airport site are managed based on consolidated waste operation management system. Wastes are measured, selected and stored according to the classification, and are carried out to the specialized waste disposers all over the country for control according to the quality and characteristics of the material. When processing wastes by entrusting it to an outside organization, IIAC considers the means to recycle all wastes with the highest priority according to the eco-friendly policies of IIAC.

Resource recovery facilities and resource classification and treatment site

Resource recovery facility collects some recyclable items from airport operation for recycling. The facility incinerates flammable wastes, and the waste heats obtained here are captured for reuse. Any air polluting material from incineration is treated through air pollution prevention facilities, and exhaust gases are measured in real time through the Tele Monitoring System and the result of the measurement is disclosed to the local residents. Resource classification and treatment site conducts consolidated operation and management on 30 kinds of various industrial wastes from airport operation that cannot be processed at the resource recovery facility from carrying in to measurement, separation, selection, storage, and carrying out. The resource classification and treatment site was installed in 2010 and is under operation thus far. IIAC is expanding its facilities in 2018, for vitalizing recycling and efficiently managing further diversified and increasing industrial wastes.

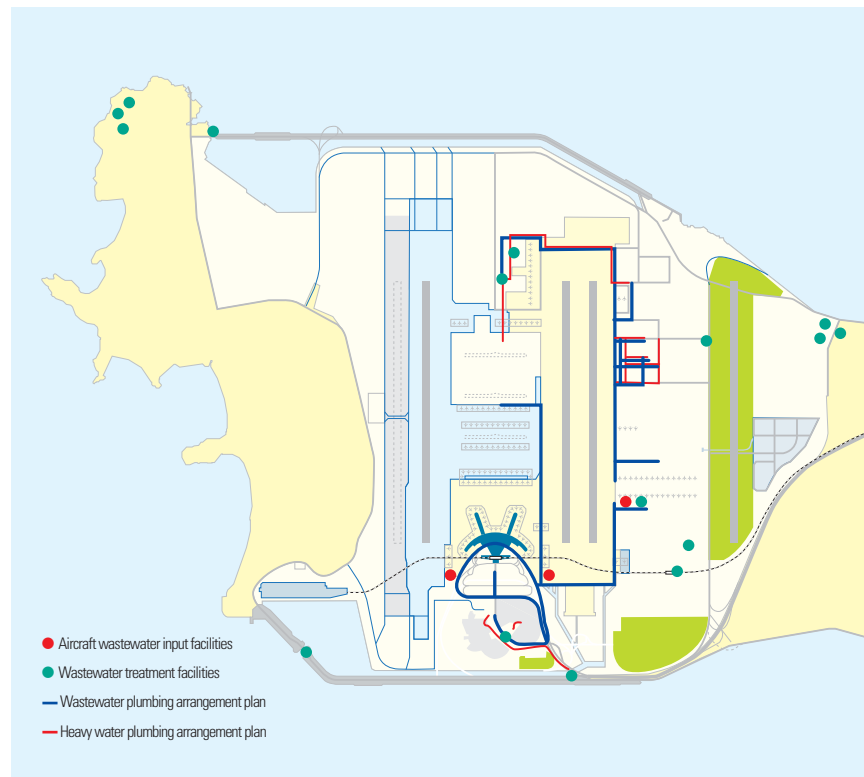
<The measured results by the TMS(Tele Monitoring System) of the resource recovery facility>

Metrics	Unit	Legal standards	2014	2015	2016	2017
Particle matter (PM)	µg/m³	20	0.99	1.05	0.77	1.13
Sulfur oxide (SO ₂)	ppm	20	0.31	0	0.39	0.17
Nitrogen oxide (NO _x)	ppm	50	5.55	7.08	4.44	2.77
Carbon monoxide (CO)	ppm	50	4.88	6.07	7.00	7.35
Hydrogen chloride (HCl)	ppm	15	1.17	1.21	1.32	1.86

<Utilization of waste heat of the resource recovery facility>

Division	Unit	2013	2014	2015	2016	2017
Waste heat production	ton	61,737	66,537	71,918	82,556	80,061
Cattle usage	ton	50,363	44,844	37,463	53,327	40,708
Sales rate	ton	11,374	21,693	34,455	29,229	39,353

Water resource management



The wastewater and sewage from the airport area are treated and recycled at the treated water supply facility located in the International Business Complex with a capacity of 30,000 tons (based on BOD 260mg/L) per day. Heavy water cleaned at treated water supply facility is recycled as water for toilet cleaning, water for cooling/cleaning machinery facilities and water for landscaping. Some excess heavy waters are discharged to the sea through the reservoir. Furthermore, we have installed and operate 5 initial rain facilities to treat rainwater mixed with oil at the runway and apron, ensuring the protection of water resources in the area.

<Monitoring result on grey water pollutants>

(Unit : ppm)

Pollutant	Legal standards	2013	2014	2015	2016	2017
COD	20	4.7	3.0	4.0	4.1	3.6
BOD	10	1.3	0.9	1.5	0.7	0.4
SS	10	1.0	0.8	1.2	0.7	0.7
TN	20	5.027	4.970	5.417	3.986	3.308
TP	2	0.270	0.251	0.339	0.197	0.155

Soil management

Soil contamination progresses over a very long period. But once contaminated, the recovery is very difficult and the area under indirect influence is wide. So soil contamination is regarded as an environmental contamination with serious damage. IIAC is conducting regular inspections on the facilities inducing soil contamination, and on the soil near the airport according to legal inspection cycle. Especially, IIAC is doing its best to prevent oil spills by conducting regular inspections on aircraft fueling facilities and emergency power generators that are designated as the target under legal management.



Management of asbestos and harmful chemical substances

IIAC continuously removes asbestos materials within some airport facilities where materials containing asbestos were used by establishing annual asbestos removal and management plan in order to provide a pleasant environment to use to airport resident staffs and users, and to achieve zero harm environment. According to the asbestos removal plan, we completed removal of approximately 589m² of asbestos materials from ceilings and walls in 2017, and currently are continuing to remove and replace with eco-friendly construction materials. Furthermore, we are working hard to protect the health of facilities users and create a pleasant living environment, through harm assessment on all buildings with asbestos every 6 months. In addition, we have banned any use of construction materials containing asbestos in the construction and repair of various facilities within the airport area. At the same time, IIAC performs systemic management on all chemical substances in use including investigation on all items used in order to identify harmful chemical substances (products) and use replacement products or reduce its content. At our sites, we furnish MSDS (Material Safety Data Sheets) and comply with the control standard in accordance with relevant laws, to prevent chemical accidents and to minimize the impact on the environment.

<Throughput of ice-making solution>

(unit : m)

2013	9,250.0
2014	4,352.0
2015	5,070.0
2016	5,070.0
2017	8,979.0

Ice removal and De-icing process at airport

De-icing means the work to remove ice or frost that hinders safe flight of aircraft by attaching to the surface of the aircraft and reducing lifting power when aircrafts take off during the winter season. To minimize the effect of de-icing upon the environment, IIAC has installed and is operating de-icing pads at a total of 25 places, including the south side of the passenger terminal, the north side of aircraft repair shop and south and north side of the cargo terminal within the airport. The waste de-icing fluid remaining after treatment are collected in a storage tank and disposed of under entrustment to a specialist processor. We implement regular and spot inspection to ensure no impact upon the environment due to de-icing.

Preservation of diversity in ecosystem

IIAC implements post environmental impact assessment every quarter including inspection on marine and land ecosystems. So far from the inspection activities on the ecosystem, narrow-mouthed toad (2010), wildcat, Mongolian racerunner (2013), Libellula Angelina Selys, Eurasian Hobby, Argynnis nerippe (2014) have been confirmed as endangered wildlife. Furthermore, in May 2017, we captured 2nd grade endangered wildlife, Libellula angelina Selys and transferred (released) it to a replacement habitat in the vicinity (vicinity of 2604-4 Unseo-dong, Jung-gu, Incheon city). In case of any discovery of endangered wildlife or natural monument, we will move it to a proper area and implement post monitoring for 3 years, and submit an action plan for the prevention of harm to wildlife to the approval agency or consulting organization to implement the means to preserve and protect the habitat of wildlife.





Living in harmony with the local community

Practicing the enterprise spirit, leading the social value

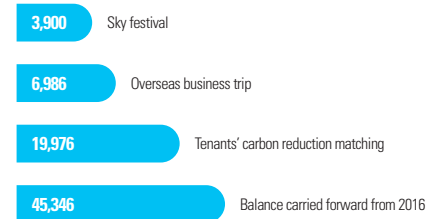
In order to lead the social value and grow together with the nation and the local community, IIAC assumes the responsibility on emitting greenhouse gas and works hard to become the top airport company through advancement activities on carbon neutrality as well as supporting local community residents and carrying out cleaning activities for the local community.

Advancement activities for carbon neutrality

Carbon emission



Accumulation (KRW 1,000)



- **Accumulated fund:** 76.2 million Won (Airport staff and managers' overseas business trip + events (Sky festival) + Tenants' carbon reduction matching + Balance carried forward from 2016)
- **Fund administration:** incandescent lamp at Incheon region traditional market is replaced by high efficiency LED, 2018 PyeongChang Winter Olympics and PyeongChang Winter Paralympics carbon offsetting fund contributed

UN CDM activities

The greenhouse gas reduction project system promoted jointly by developed countries and developing countries according to article 12 of the Kyoto Protocol adopted in the general assembly of the 1997 Climatic Change Convention for the purpose of mitigating global warming phenomenon is referred to as CDM (Clean Development Mechanism). IIAC is acquiring carbon emission rights through participation in CDM projects. We registered outdoor LED replacement project in 2012, and additionally registered LED streetlight replacement project at the passenger terminal with UN CDM in 2014. Upon submission of greenhouse gas statement, CDM registration result was acknowledged by Korean government and Incheon International Airport received equivalent reduction in emission by the quantity registered with CDM.

Operation of carbon offsetting program

Having a sense of responsibility on the CO₂ emitted from management activities, IIAC introduced the carbon offsetting program as the strategy to respond to climatic change in 2013. According to the carbon offsetting program, the carbon emitted from overseas business trip by airport staff and managers, international and domestic events, and Sky Festival as the cultural festive event are accredited to a Fund to be used for activities such as tenants' matching program. IIAC set up the carbon offsetting program implementation in 2013, expanded implementation plan in 2014. In 2015 and 2016, we expanded the Green Fund accumulated from the carbon offsetting program, and we conducted the traditional market LED lighting campaign and provided support to installation of LED in 2017.

Furthermore, in February 2018, at the '2018 PyeongChang Winter Olympic and PyeongChang Winter Paralympic carbon offsetting fund contribution ceremony' hosted by Climatic Change Center Foundation, we delivered donations equivalent to 634tCO₂, contributing to successful 'Carbon zero' PyeongChang Winter Olympics. By this donation to the PyeongChang Winter Olympics, IIAC contributed to the preparation of the Olympics as well as reduction of greenhouse gas emitted in the course of preparation and operation of the games, realizing the vision of low-carbon eco-friendly management.



Living in harmony with local community and related institutions

Environment cleaning activities



IIAC held 'Spring Environment Cleaning Event' at the area adjacent to the retarding reservoir to the South of the airport, together with spring routine environmental rearrangement on March 30, 2017. The area adjacent to the retarding reservoir to the South of the airport is the place where illegal trash dumping occurs regularly. IIAC and staffs of environmental monitoring facilities management and maintenance service collected wastes at the area adjacent to the retarding reservoir to the South of the airport and engaged in activities that cleaned up the environment, starting from adopting a resolution for environment protection.

'Runway of hope' local community service



IIAC implemented a voluntary service on cleaning activities for the beach on July 7, 2017 in preparation for the summer holiday season. Yongyu Island beach is the nearest beach from Seoul Metropolitan city, boasting its scenery at sunset with various Marine Festivals held in early August. 60 people including IIAC staffs and members from the local resident's group including Yongyu-dong New Village Movement Council participated in the volunteer activities for environmental clean-up. They collected wastes from the beach extending to around 1,200m and cleaned up the surrounding environment.

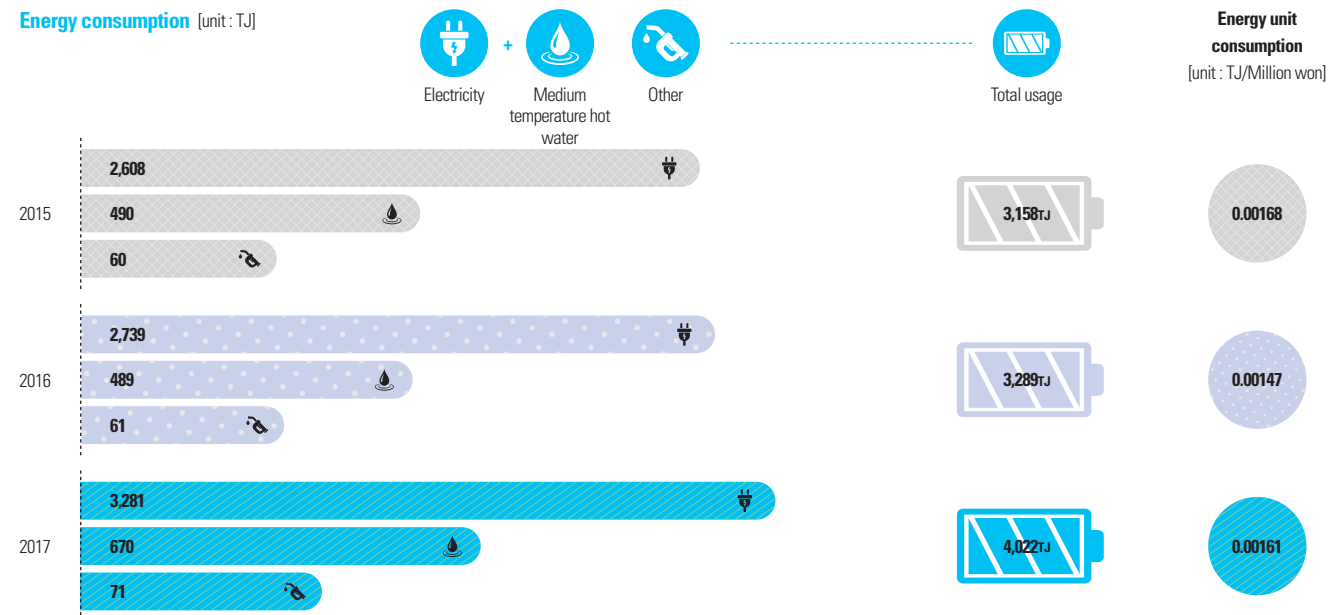
Creating 'World Peace Forest'



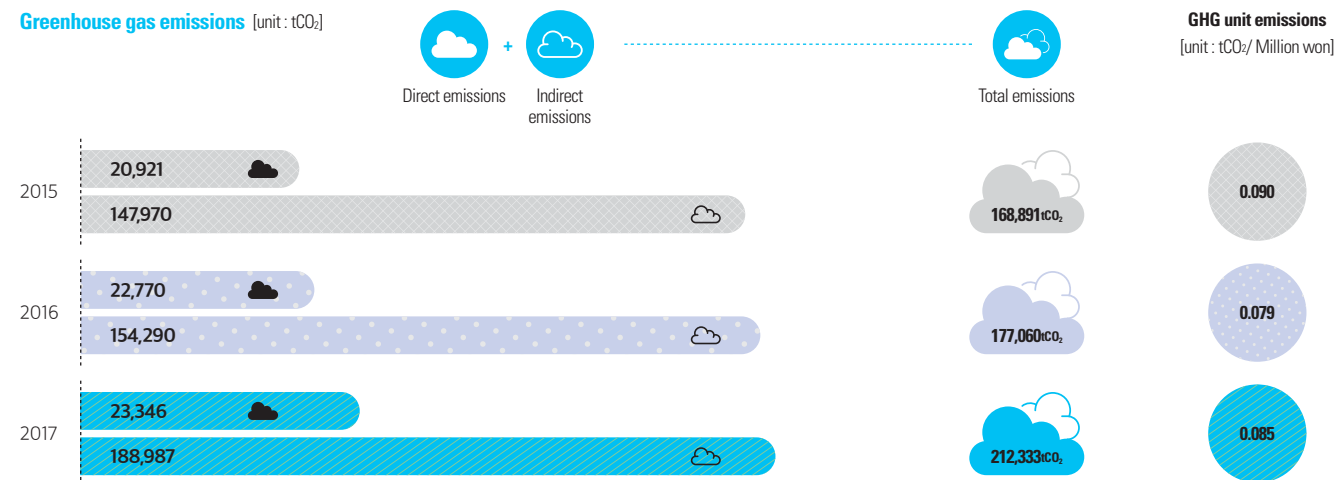
IIAC has sponsored the 'Creating World Peace Forest' project which has been implemented around the retarding reservoir park adjacent to the Incheon International Airport, the representative gate to Korea, for 10 years from 2007 to 2017. The forests with the size of about 470,000m² that have been created jointly by IIAC, Forest of Life Foundation and Incheon Jung-gu office, not only reduces greenhouse gas and absorb sound but also functions as a resting space and walkway for the citizens. 'World Peace Forest' is anticipated to function as an eco-experience site, preserve the natural ecological system, and contribute greatly to the improvement of the local community environment in the future.

Resource consumption and recycling Flow Graph

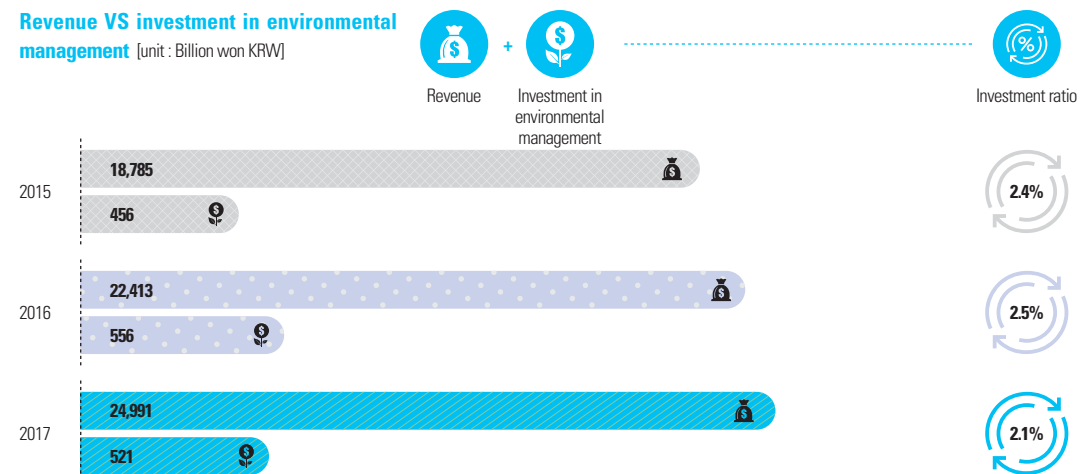
Energy consumption [unit : TJ]



Greenhouse gas emissions [unit : tCO₂]



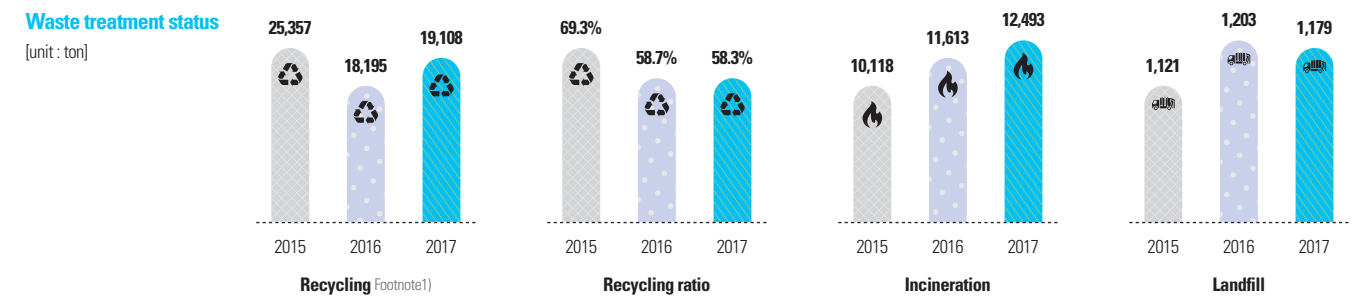
Revenue VS investment in environmental management [unit : Billion won KRW]



Waste generation status [unit : ton]

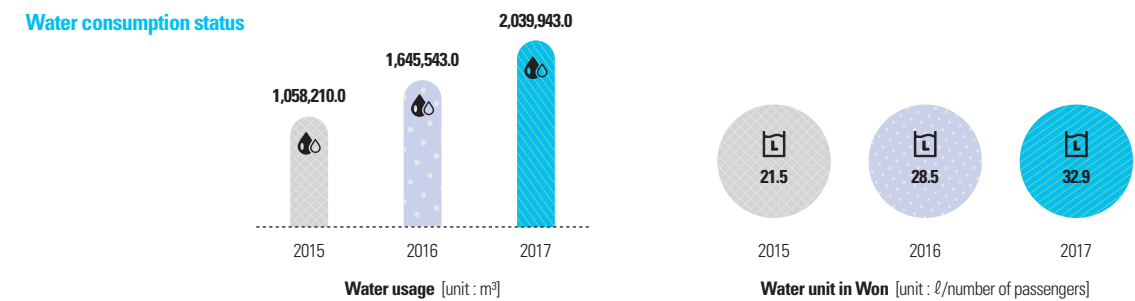


Waste treatment status [unit : ton]

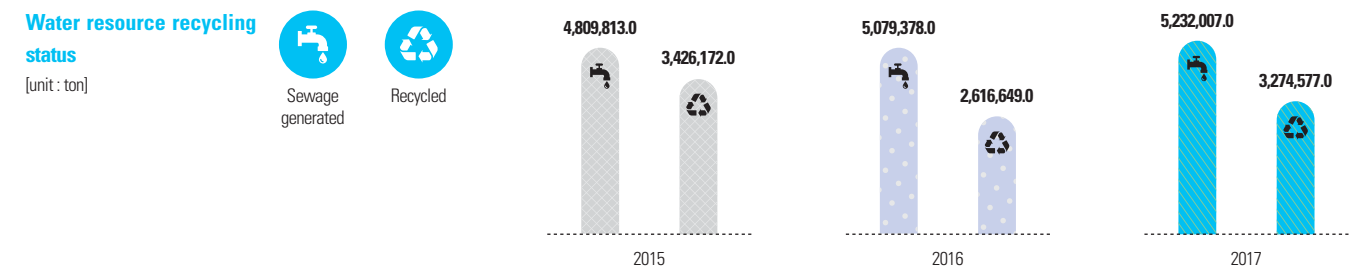


※ Note1) Construction Wastes are fully recycled and are excluded from computation.

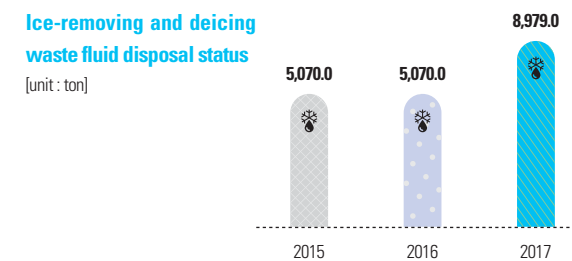
Water consumption status



Water resource recycling status [unit : ton]



Ice-removing and deicing waste fluid disposal status [unit : ton]





The Insights of Stakeholders

We will be together to realize an Eco-friendly airport.

IIAC actively reflects the opinion of stakeholders on establishing strategies on low-carbon eco-friendly management, business operation and assessment. In order to pursue profit as the corporate aim as well as successfully fulfilling social responsibilities, IIAC is listening to the opinion of stakeholders at any given time. We shared various opinions through interviews with stakeholders. We will continue to actively respond to the expectations of the stakeholders by reflecting their opinion in the practice of business proceedings, and will do our best to become the airport company that leads the social value and grows together.



Incheon International Airport Corporation Executive Vice President **Lee Kwang Soo**



Seoul Regional Office of Aviation Administrator **Kim Wan Joong**



Incheon Municipal Government, Energy policy division, Division head **Park Young Gil**



Korea Western Power Co., Ltd. Director **Lee Yeo Joon**



Aekyung Ind. Co., Ltd Team Leader **Choi Jae Yeok**

IIAC is regarded as exerting continued effort on eco-friendly and energy management. What is the most special change in 2017 and what is the future direction you will take?

IIAC, in revision of strategic tasks for 2017, selected "realization of low carbon eco-friendly airport" as the core of corporate management and is executing the vision of energy management. Especially in 2017, we concentrated all our efforts for the successful opening of Passenger terminal 2. We are proud that the successful opening ahead of PyeongChang Winter Olympics brought not only praises from the athletes' groups and government officials who used Incheon airport, but also enabled us to contribute greatly to the success of the Olympics. Passenger terminal 2 was constructed as Green 1st grade building from design stage with improved energy efficiency by around 40% than existing architectures, laying the groundwork for eco-friendly airport operation through eco-friendly building materials, natural skylight, and facilitation of green space, LED lighting and spectacular independency in eco-friendly energy.

Though eco-friendly management and development of new & renewable energy are part of the governmental tasks, some difficulties must ensue. What are the difficulties in the process and what would have to be resolved for sustained developments?

Concurrently with sustained growth of the aviation industry, Incheon airport has completed up to 3rd phase construction project in preparation for increased airport users, and is getting ready for the 4th phase construction. According to the government's plan for expanding eco-friendly energy, any new building shall be furnished with a certain mandatory power generation with new & renewable energy. But the new & renewable energy such as photovoltaic power and wind powers require large size of lands. Hence, in consideration of future expansion of airport facilities, our excess lands cannot be deemed sufficient for photovoltaic or wind power. Therefore, we are in the position to think hard about other new & renewable energy sources suitable for the airport. Though we have installed new and renewable energy source focused on photovoltaic or wind power up until the 3rd phase construction, from now on we are considering introduction of facilities like fuel cell facilities that can generate energy with high output stably without requiring a large land size in comparison to photovoltaic power.

The recently opened Passenger terminal 2 obtained the top grade in Green architecture certification. IIAC is drawing the sight of a future airport in the image of 'eco-friendly airport'. What is your long term plan?

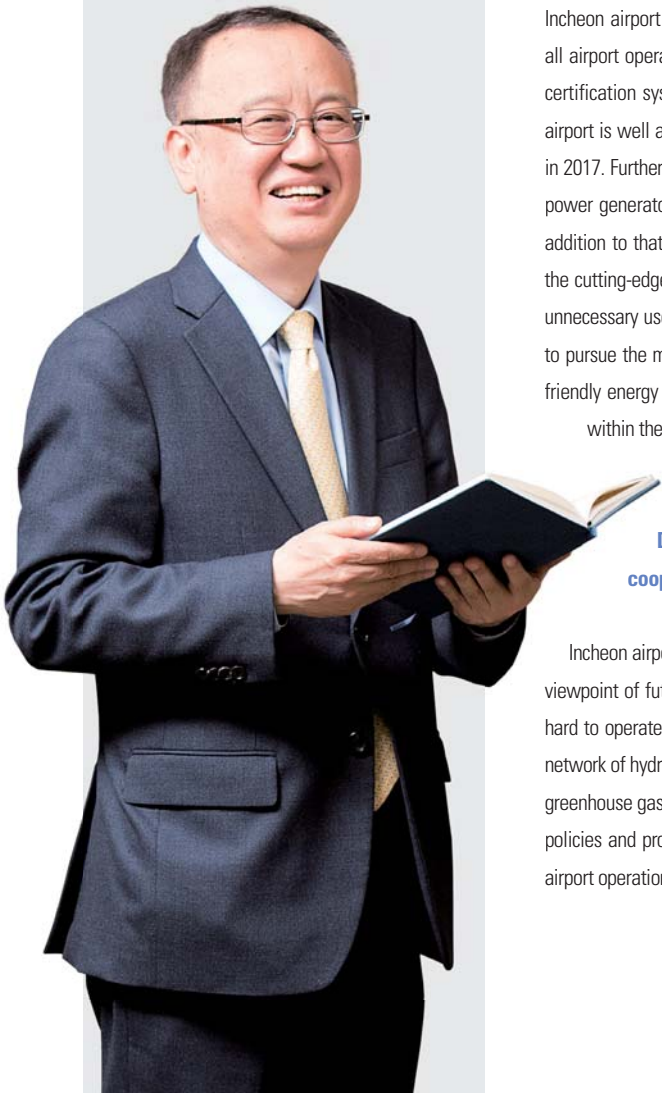
As mentioned before, Passenger terminal 2 has been constructed and operated as eco-friendly building with enhanced energy efficiency in comparison to the existing terminal. We will further exert due and proper efforts as the nation's representative airport from now on such as introduction of new & renewable energies, etc. Especially, as social role of public institutions is recently emphasized, IIAC is also interested in and will invest in airport area environment, so as to realize the social value. As government tries to expand distribution of eco-friendly vehicles as part of the responding measures to fine dust reduction, replacement of vehicles operating within the airport would reduce GHG emission greatly. In addition, in the long term, we will cooperate with the government and local governments to replace the buses entering the airport with eco-friendly buses to contribute to making Incheon airport and its surrounding areas as a clean area without exhaust gases.

66
Eco-friendly
"Green Airport"
getting ahead of future
99

Incheon International Airport Corporation Executive Vice President
Lee Kwang Soo

66
Win-win development
by assistance for the
realization of low
energy consumption
type low-carbon airport

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Seoul Regional office of Aviation Administrator **Kim Wan Joong**

What cooperation are the Seoul Regional office of Aviation and IIAC engaged in for the operation of eco-friendly airport?

Seoul Regional office of Aviation spared no policy assistance and cooperation to IIAC so that the recently and successfully opened Passenger Terminal 2 could obtain the top grade in Green architecture certification and to become the low energy consumption type airport with possible savings of around 40% in comparison with the existing terminal. Furthermore, Incheon airport is active in low-carbon airport operation by installing and operating new & renewable energy facilities by each year, such as photovoltaic power generation facility, geothermal facility, etc. Seoul Regional office of Aviation is also actively engaged in cooperation with IIAC for the purpose of fostering new national growth engine and realization of eco-friendly airport.

How does Seoul Regional office of Aviation view IIAC's eco-friendly management activities, and what kind of personal idea would you add to these activities?

Incheon airport is equipped with world class airport GHG reduction system that engages not only IIAC but also all airport operators comprised of airlines and operating companies through the operation of ACI airport carbon certification system and energy management system (ISO50001). IIAC's effort to minimize GHG emission from airport is well appreciated, as GHG emission increased by only 5.8% while airport passengers increased by 7.5% in 2017. Furthermore, IIAC operates aircraft Ground Power Supply device that can replace use of aircrafts' internal power generator engine, and this contributes significantly to the reduction of GHG emitted from the aircraft. In addition to that, IIAC's activities in reduction of GHG from the aircraft is regarded as really diversified, including the cutting-edge A-CDM (Airport Collaborative Decision Making) system established in the 3rd phase, minimizing unnecessary use of engine on the taxiing path commencing from the aircraft's gate until takeoff. I would like IIAC to pursue the measures to operate the airport in a clean and eco-friendly way such as expediting supply of eco-friendly energy from photovoltaic power generation facility, geothermal facility, and replacing vehicles operating within the airport area by airlines and operating companies with electric cars or hydrogen cars.

Do you have any comments to IIAC for eco-friendly airport operation regarding the cooperative relationship with Seoul Regional office of Aviation?

Incheon airport is the representative airport of Korea, and eco-friendly airport operation should be seen from the viewpoint of future competitiveness. In consideration of the fact that advanced airports in the world are working hard to operate an energy independent eco-friendly airport by using new & renewable energy and establishing a network of hydrogen as a new energy source, Incheon airport should cooperate with the government, and minimize greenhouse gas emission under the participation of airlines, tenant companies, etc. For this purpose, I think various policies and programs for clean airport should be prepared to enable IIAC to become competitive in eco-friendly airport operation.

What are the environmental policies Incheon city is focusing on such as energy management and new & renewable energy?

In recent days, significant change in energy policy on environment and safety is required such as fine dust, safety of nuclear power generation, etc. Incheon city is exerting efforts to respond positively to the Government's energy conversion policy and to establish sustainable energy user system as the basis for the 4th industrial revolution. The city is constructing 600MW offshore wind power complex and 100MW floating solar photovoltaic power generators in the West Sea, smart energy factory in Incheon industrial complex, and eco-friendly energy independent island in island areas such as Baeka island and Sojjak island. In addition to that, in order to expand the supply of citizen-participating type new & renewable energy, the city is focusing its efforts to expand supply to the public sector such as residential solar photovoltaic power generation, supporting loans to power producers, and social welfare facilities, and is focusing on expanding supply of eco-friendly vehicles targeting about 6 thousand units by year 2020. Besides this, the city is engaged in energy welfare projects for vulnerable social groups such as a customized energy cost subsidy by living sector, energy voucher for facilities improvement, reduction in city gas fee, free replacement of high efficiency lighting devices, collective provision of LPG to agricultural and fishery towns, etc.

Incheon city and Incheon International Airport Corporation are engaged in environment cleaning activities as local win-win project. What are the major activities and what merits have been witnessed?

Incheon city and Incheon airport try to realize social value with the local community through constructing industrial-academic convergence complex for developing the aviation industry, and through supporting the Incheon United Football Team. Furthermore, both institutions pursued the LED lighting replacement project in the Incheon regional traditional market through the energy network, and tried to induce national interest on the environment through energy saving activities such as holding a traditional fan exhibition and engaging in a campaign at the Incheon airport passenger terminal. From now on, our city is planning to cooperate in the fuel cell power generation project being carried out by Incheon International Airport to participate in activities to protect the vulnerable social class from the worsening fine dust conditions that is recently attracting heightened attention and to participate in the government's policy to expand new & renewable energy to reduce greenhouse gas, and will cooperate with the airport to continuously explore new & renewable energy projects that can be realized.

Could you tell us what you wish for with regard to the perspective of connecting the green energy policy of Incheon city with the eco-friendly management of Incheon International Airport Corporation? And give us your opinion on what direction should be taken.

I know Incheon Airport is working hard to improve the environment of the airport area through cooperating with Incheon city and Incheon Clean Public Company Association, and is engaged in various activities such as operating aircraft ground power supply device(AC-GPS) to reduce greenhouse gas emission from the aircraft, stepping up the standard for operating and managing resource recycling facilities, and expanding new & renewable energy in order to realize an eco-friendly airport. These activities conform to our city's policy intention for implementation of greenhouse gas reduction and the policy goal of Incheon city, "To establish a sustainable clean energy city". Resolution of complex environmental issues would be possible when the local government, public institutions and regional representative companies share various policy suggestions, overcome mutual conflict of interest, and perform individual obligations flexibly for such a resolution. Incheon city is planning to provide active support to grow together and present a model case of cooperation between a local government and a public institution.

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Incheon city and
Incheon airport to
realize social value and
establish a sustainable
clean energy city
together

99



Incheon Municipal Government,
Energy policy division, Division head **Park Young Gil**

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 Synergy created through sharing know how on managing new & renewable energy and through cooperation
 99



Korea Western Power Co., Ltd. Director **Lee Yeo Joon**

IIAC and Korea Western Power Co., Ltd. recently entered into an agreement on developing new & renewable energy. What are the details?

On October 2017, IIAC and Korea Western Power Co., Ltd entered into an agreement on joint development of new & renewable energy such as fuel cell and solar photovoltaic power projects. First of all, the new & renewable energy development project using Incheon airport's idle land is the construction of 60MW fuel cell power generation facilities in the land adjacent to the cogeneration plant in the airport area. Feasibility study is currently underway for the fuel cell project. At the same time, solar photovoltaic power generation project is also under development. Solar photovoltaic power generation project is currently under discussion with the local government in order to secure acceptance from residents and to obtain change of land usage.

What kind of change is anticipated in the realization of eco-friendly airport by grafting the know-how in new & renewable energy management of Korea Western Power Co., Ltd. as the representative power generation specializing public corporation to airport management?

Currently as of 2017, Korea Western Power Co., Ltd. is operating about 678MW comprised of fuel cell, solar photovoltaic power, wind power, IGCC, etc. We own the most new & renewable energy facilities among domestic power generation companies. As such, by grafting the know-how in new & renewable energy management of Korea Western Power Co., Ltd to the realization of eco-friendly airport by Incheon International Airport, we were able to achieve synergetic effects. Construction and operation of new & renewable power source with eco-friendliness and no fine dust at the Incheon International Airport, the representative gateway to Korea, would highlight the image as the world class eco-friendly international airport to be benchmarked by overseas companies, and we expect such power source will not only be helpful to the international airport operation capability but also enhance the national brand of Korea.

What means of cooperation would be available for further efficiency and more stable operation in government projects through cooperation between public corporations?

Especially, the purpose of the agreement is to actively participate in the government's new & renewable energy expansion policy to switch over to a safe and clean energy, and at the same time, to shift the airport operation paradigm from energy consumption type to energy independent type using eco-friendly energy. In order to actively respond to the government's new & renewable energy 3020 roadmap and eco-friendly management policy, Korea Western Power Co., Ltd and IIAC will share the capabilities and know-hows to obtain consent from the resident society that inevitably accompanies the development of new & renewable energy, and obtain licenses and permits from the government and local governments, as well as securing confidence on the facilities, and we will strengthen mutual support so that the project would continue successfully.

What are the activities of IIAC aimed for strengthening tenants' energy management?

IIAC held the explanatory session on Incheon airport's energy management for the staffs of the tenants within Incheon airport to share the direction on energy management and to provide training on energy management, energy saving techniques, etc. We provide not only explanatory session but also guidance and inspection on energy saving as well as assessment on the level of voluntary performance to our tenants. This assessment is implemented semi-annually on tenant airlines and commercial facilities with relatively large electricity consumption, and we provide incentives such as group prize to tenants with superior energy saving performances. Therefore, tenants are active in the direction of energy saving management provided by IIAC. For this purpose, each facility designates and operates independent energy guard or energy manager.

Please tell us about Aekyung Ind. Co., Ltd.'s policy on energy saving or eco-friendly management.

All executives and employees participate in energy saving through regular energy management training. The furniture at commercial facilities and offices are of course products with high efficiency energy apparatus, replaced with products with first grade in energy consumption efficiency rating. Furthermore, we installed standby power disconnecting device to prevent the abuse of electricity. In summer, all executives and employees participate in wearing cool business attires to follow the proper indoor temperature guideline. Last of all, we voluntarily participate in green management activities, proposing eco-friendly, innovative ideas and pursuing the activities to realize such ideas. In order to foster experts in environment, we provide internal training, working hard to realize smart green management.

What are the tasks for IIAC to develop further into an eco-friendly airport in cooperation with tenant companies, and what are the means of cooperation with tenants for such purpose?

IIAC is anticipated to launch an active introduction of new & renewable energy, keeping pace with the 'Implementation plan for renewable energy 3020' recently announced by the government. According to this plan, a certain percentage of the total energy consumption is going to be generated as new & renewable energy. In this regard, IIAC is anticipated not only to use idle lands within the airport, but also to promote photovoltaic power generation project on tenants' buildings to be built on airport land. We, as a tenant, will implement energy saving methods according to the strategy of IIAC. Installation of new and renewable energy facilities as planned, and sustained reduction of carbon emission in the future, would cement the image of Incheon airport as an eco-friendly airport at home or abroad, and the competitive position of the airport will be enhanced. Furthermore, the fruits of these efforts would come back to us as tenants as a little benefit to our corporate activities and competitiveness.

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 Voluntary participation in comprehensive energy management and operation, sharing efforts for the goal
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Aekyung Ind. Co., Ltd Team Leader **Choi Jae Yeok**

APPENDIX

Materiality test / Greenhouse Gas Emissions Verification Report
Third party verification statement / GRI INDEX



Materiality test

Major issues covered in the Incheon International Airport Corporation's green report have been derived through the materiality test process. Major issues are those to which stakeholders are highly interested and are influential to the management activities according to the assessment and hence were selected out of internal & external low-carbon eco-friendly issues.

Materiality test process

Process



External issue

Identify low-carbon eco-friendly management issues inside & outside the corporation

- Global guideline GRI G4
- Domestic guideline by Ministry of Environment (Environment Report Guidelines)
- Media analysis (Jan. 1, 2017 ~ Dec. 31, 2017)
Contents of domestic & overseas media reports

Analysis on materiality of issue and prioritization

- Guideline 1. Stakeholders' interest level
- Guideline 2. Importance of business
- Priority determined based on scores summed up from Guideline 1 and 2

Report on assessment result

- Review by corporate internal & external experts
- Review by management and working level
- Third party review of Green Report

Reflect the assessment results

- Preparation and publishing of the report
- Organize quantitative indicators of the report

Internal issues

- Incheon International Airport Corporation
- Mid to long term strategy and policy
- Progress status of low-carbon eco-friendly management
- Review issues of previous year's report

Emphasized issues in low-carbon eco-friendly management by Incheon International Airport Corporation

According to the result of materiality test, issues of introduction of new & renewable energy, energy saving, eco-friendly vehicle and transportation infrastructure, low-carbon eco-friendly construction are highly attended to by the public. This is regarded as due to wider recognition on the importance of the mission that 'All 195 member countries must gradually reduce greenhouse gas emissions' adopted through the 'Paris climate change conference', i.e. 'Conference of the parties in 21st United Nations Framework Convention on Climate change(COP21)' in December 2015, as well as the 'Fuel cell power generation plan agreement' pursuant to Korean government's 'Renewable energy 3020 implementation Plan'. Thanks to heightened interest from stakeholders, the effort to reduce greenhouse gas will be upgraded to active type of promotion strategies which anticipate such as reduction in the use of fossil fuel, reinforcement of energy independence groundwork through expanded introduction of new & renewable energy in the future.

High		<ul style="list-style-type: none"> Reduction in greenhouse gas emission Expansion of eco-friendly transportation infrastructure and facilities Aviation transportation flow management 	<ul style="list-style-type: none"> Expansion of new & renewable energy such as photovoltaic power Introduction of fuel cell power generation facilities Improvement of energy efficiency and reinforced independence
level	<ul style="list-style-type: none"> Win-win between community and related institutions Operation of eco-friendly management organization and system 	<ul style="list-style-type: none"> Establishing comprehensive energy management system Reinforcement of eco-friendly PRI and training Expansion of replacement to high efficiency LED lighting 	<ul style="list-style-type: none"> Creation of landscaping and waterscaping space
	<ul style="list-style-type: none"> Environment management and minimization of environmental impacts Expansion of green apron operation Expansion of carbon offsetting program 	<ul style="list-style-type: none"> Reinforcement of reuse of resources and resources recycling Reduction in emission of contaminants 	
Low		level Stakeholder's Interest	High



Greenhouse Gas Emissions Verification Report

Verification opinion on Incheon International Airport Corporation's greenhouse gas emission and energy consumption statement in 2017

Verification subject

Korea Foundation for Quality performed verification on Incheon International Airport Corporation's greenhouse gas emission and energy consumption statement in 2017 (hereinafter referred to as 'statement').

Scope of verification

All facilities emitting any greenhouse gas under operation and control by Incheon International Airport Corporation.

Verification standard

We performed verification based on the Guideline on reporting and certification on emission under greenhouse gas emission right trading system (Notice No. 2017-169 of the Ministry of Land and Transportation), Verification guideline for management of greenhouse gas emission right trading system (Notice No. 2017-12 of the Ministry of Strategy and Finance).

Verification procedure

Verification was planned and performed according to the procedure stipulated in the Guideline on reporting and certification on emission under greenhouse gas emission right trading system. The verification was performed to satisfy a reasonable guarantee level. Furthermore, our internal review confirmed that all procedure for the entire verification was performed effectively.

Limitation in verification

The verification contains limitations that are peculiarly involved in the course of applying the guidelines and methodologies, etc.

Verification opinion

Through our verification, we present the conclusion on greenhouse gas emission and energy consumption data on the statement as follows;

- 1) Incheon International Airport Corporation's greenhouse gas emission and energy consumption statement in 2017 was prepared according to the guideline on management and operation of greenhouse gas and energy target, etc.
- 2) In consideration of the abovementioned conditions, according to the result of the materiality test on Incheon International Airport Corporation's greenhouse gas emission and energy consumption in 2017, materiality as quantitative standard satisfies the requirement of 'less than 5.0% of total emissions'.
- 3) Therefore, we conclude Incheon International Airport Corporation's greenhouse gas emission and energy consumption in 2017 as appropriate.

Verification agency : Korea Foundation for Quality

CEO : Yoo, Byung Taek



Third party verification statement

Green Report 2018, which is the environmental report by the Incheon International Airport Corporation (hereinafter referred to as 'IIAC'), contains the environmental vision and strategy, implementation and performance of the IIAC, in order to share the environmental management performance of the IIAC in 2017 with the stakeholders. The IIAC selected the issues attracting high interest from stakeholders and exercising significant influence on managerial activities (introduction of new & renewable energy, reduction of energy consumption, eco-friendly vehicle and transportation infrastructure, construction of low carbon eco-friendly airport) through materiality test, and implements such issues within the IIAC's vision of 'Realization of low carbon eco-friendly airport'.

Especially Green Report 2018 adopted a new subject of 'Realization of eco-friendly Airport' that enhances the communication with stakeholders by integrating the issues that used to be scattered in multiple reports into a single report.

Green Report 2018 summarizes the performance of 'Realization of low carbon eco-friendly Airport' through 'Incheon International Airport Corporation carbon footprint' (16~17 page) and 'Resource consumption and recycling Flow Graph' (46~47 page), and we performed our review with the following methods. However, we could not perform design or operation of internal control system to derive any information or any verification at site.

- Review of related documents to understand IIAC's environmental strategy and implementation structure
- Verification of related statements on major numerical information, especially greenhouse gas emission
- Analytical review by question and year, and verification of the consistency in the report

Our emphasis or recommendations from the review result of Green Report 2018 are as follows;

As disclosed in the Incheon International Airport carbon footprint, the percentage of greenhouse gas emission from IIAC's supply network (87.4%) such as passengers, airlines or tenant companies (Scope 3) is comparatively higher than the percentage (12.6%) of IIAC's direct or indirect emission of greenhouse gas emission (Scope 1, 2). Especially airlines' greenhouse gas emission takes up 55.5% of the overall emissions.

- The issues of 'eco-friendly vehicle and transportation infrastructure' selected from materiality test can be assessed as the IIAC's anticipatory responding strategy that can reduce the emission from passengers. In addition to this strategy, we propose the selection of carbon reduction activities connected to airlines that have a high percentage in emission within IIAC's supply network, as the main task for environmental management.
- IIAC has established a systemic organization for the realization of eco-friendly Airport. 'Greenhouse gas reduction & energy conservation promotion committee' and 'working-level committee for energy management' are major structures of this organizational system. It is necessary to include external stakeholders including airlines in the committee to enhance communication with them. Communication with the airlines that are preparing for the carbon neutrality or carbon emission offsetting in the aviation sector recently adopted at the General Assembly of the ICAO (International Civil Aviation Organization) is important for establishing the overall direction of IIAC's environmental strategy.

Kang, Dong-ho A verification examiner

Past. **Deloitte**, Sustainable service, Standing director

Present. Electricity charges Verification Committee

Heating charges Verification Committee Member

Korea East-West Power, Risk Management Committee Member



GRI INDEX

Code	GRI	Satisfaction	Page
Environmental Performance Indicators			
Raw Materials			
G4-EN1	Materials used by weight or volume	N/A	-
G4-EN2	Percentage of materials used that are recycled input materials	●	30-31, 42, 44
Energy			
G4-EN3	Energy consumption inside the boundary	●	19, 30-31
G4-EN4	Energy consumption outside of the boundary	●	22-23, 44
G4-EN5	Energy intensity	●	46
G4-EN6	Reduction of energy consumption	●	26-27, 46
G4-EN7	Reductions in energy demands in products and services	●	26-27, 46
Water			
G4-EN8	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	●	30-31, 47
G4-EN9	Water sources significantly affected by withdrawal by water	●	No affected water source
G4-EN10	Percentage and total volume of water recycled or reused	●	30-31, 47
Biodiversity			
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	●	43
G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value	●	41-43, 45
G4-EN13	Habitats protected or restored	●	41-43, 45
G4-EN14	Total number of IUCN red list species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	●	43
Emissions			
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	●	16-17, 30, 46
G4-EN16	Energy indirect greenhouse gas (GHG) emissions (scope 2)	●	16-17, 30, 46
G4-EN17	Other indirect greenhouse gas (GHG) emissions (scope 3)	●	16-17, 30, 46
G4-EN18	Greenhouse gas (GHG) emissions intensity	●	16-17, 30, 46
G4-EN19	Reduction of Greenhouse gas (GHG) emissions	●	21, 24-25, 44
G4-EN20	Emissions of ozone-depleting substances	●	38-41
G4-EN21	NOx, SOx and other significant air emission	●	38-41
Effluents and waste			
G4-EN22	Total water discharges by quality and destination	●	30-31, 42
G4-EN23	Total weight of waste by type and disposal method	●	30-31, 41-43
G4-EN24	Total number and volume of significant spills	●	41, 43
G4-EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel convention Annex I, II, III, and VIII	N/A	-
G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water	●	43-43, 45
Products and Services			
G4-EN27	Extent of impact mitigation of environmental impacts of products and services	●	16-17, 20, 24-26, 44
G4-EN28	Percentage of products sold and their packaging materials that are reclaimed by category	N/A	-
Compliance			
G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	○	-
Transport			
G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members	●	16-17, 24-26, 38-43
Overall			
G4-EN31	Total environmental protection expenditures and investments by type	●	48
Assessment of supplier's environmental performance			
G4-EN32	Percentage of new suppliers that were screened using environmental criteria	●	19, 22-23
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	●	19, 22-23
Environmental Grievance Mechanisms			
G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	○	-
Additional Indicators for Airport Operators			
G4-A04	Quality of rainfall water by reflecting applicable regulatory standards	●	42
G4-A05	Ambient air quality levels according to pollutant concentrations in microgram per cubic meter (µg/m³) or parts per million (ppm) by regulatory regime	●	39
G4-A06	Aircraft and pavement de-icing/anti-icing fluid used and treated by m³ and/or metric tones	●	43, 47
G4-A07	Number and percentage (%) change of people residing in areas affected by noise	●	39



Incheon International Airport Corporation exercises the utmost effort to provide accurate and reliable information on IIAC's eco-friendly activities to all stakeholders. For more information, please contact the number below.

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