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Incheon International Airport Corporation Green Report 2017

GREEN INSIGHT

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Incheon International Airport Corporation
Green Report 2017



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

IIAC's Green Report 2016 won the Platinum Award at the Vision Awards for the corporate social responsibility category held by the League of American Communications Professionals LLC (LACP).



About This Report

"Green Insight" a compound phrase consisting of "Green," a word that implies the environment, and "Insight" or perception, is a motto that the Incheon International Airport Corporation (IIAC)'s will to enhance sustainability by taking responsibility for climate change, energy saving, and resource related issues and creating new opportunity based on our forecast of the planet's future.

Purpose of the Report

IIAC continually has made efforts for Low Carbon, Eco-friendly Management, and published its annual Green Report since 1995 to share our achievement 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 2016 (Between 1 January and 31 December). Important data are reported for the recent three years to help 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 4th consecutive Platinum award in 2016 in the corporate social responsibility reporting category from the Vision Awards annually held by the U.S.-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 the resource waste in the course of design and printing.



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

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Contents

Overview

CEO message	02
Overview	04
Incheon Airport Green Map	06
Low carbon, Eco-friendly Management	08
2016 Spotlight	10
Carbon footprint	12
At a glance	14
Resource Use and Recycling Flow Map	18



Green Insight

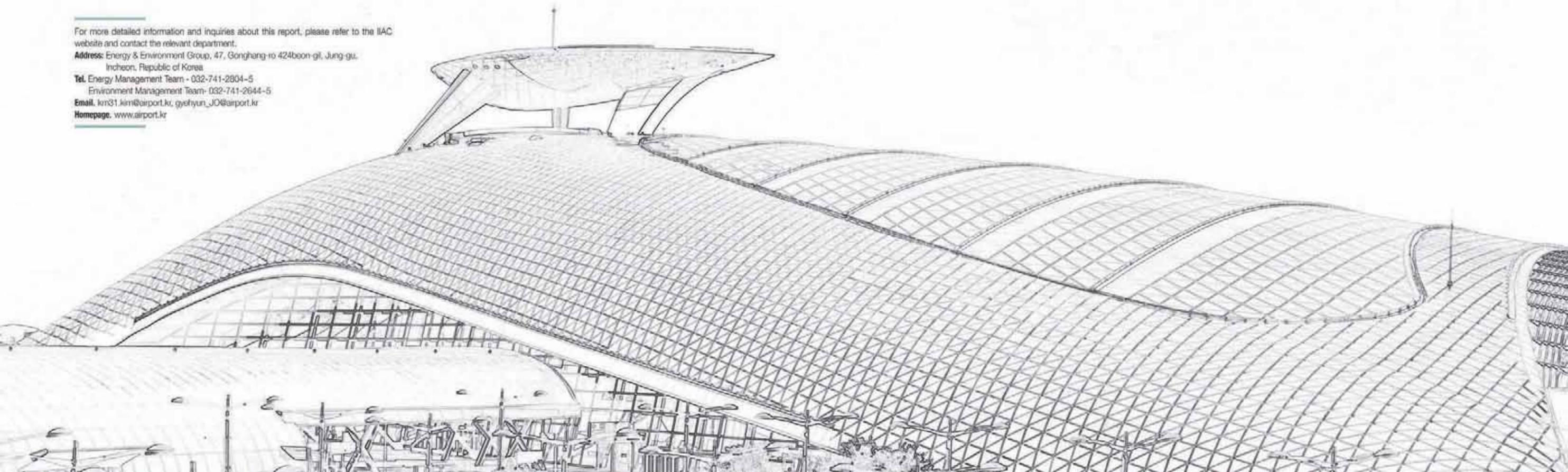
Advancement of Low carbon, Eco-friendly Management	
Reinforcement of eco-friendly management system	20
Expansion of environmental management training and PR	21
Energy Efficiency Improvement	
Establishment of comprehensive energy management system	23
Energy saving reinforcement plan	23
Operation of Building Energy Management System (BEMS)	24
Energy efficiency improvement activity	24
Enhancement of energy independence	25
Expansion of Low Carbon Management	
Reduction in the Airport GHG emissions	26
Operation of Air Craft - Ground Power Supply (AC-GPS)	28
Advancement of carbon neutrality	28
Reinforcement of Environmental Resource Management	
Advancement of environmental monitoring system	29
Resource recycling and minimization of environmental impacts	31
Living in harmony with the local community	34
Local environment clean-up activity	35
Resource consumption and recycling flow Graph	36

Talking Insight

Incheon International Airport Corporation	39
Seoul Regional Office of Aviation	40
Incheon municipal government	41
LSG SKY Chef Korea	42
SK Networks WALKERHILL	43

Appendix

Materiality test	45
Greenhouse Gas Emissions Verification Report	46
Third party verification statement	47
GRI INDEX	48



CEO Message

Dear Airport families,

2017 will be the very meaningful year for IIAC with finalizing its third phase of construction project. Having achieved the great success since the project launching in autumn in 1992, IIAC will firmly establish its position as the world best airport both in name and reality and raise the reputation as the representative state-owned company in Korea.

The demand for air transportation has grown gradually and it is not an exaggeration to say that science technology in the 21st century is concentrated in the aviation sector. The number of air passengers which has grown by 8% on annual basis in the past six year shows one aspect of the aviation industry development. IIAC has implemented the third phase of airport construction project since 2009, and is waiting to see the completion of the ever historic project in the near future. All members of IIAC, preparing for the new era to come, have been united together under the vision of "A New Leap Forward, Towards the Global Leading Airport."

IIAC could continue its success story of Eco-friendly Energy Management in 2016 with your efforts. We reduced GHG emissions more than 13.5% from the target, having maintained ACI Airport Carbon Accreditation Level 3 and improved energy efficiency by retrofitting with highly efficient LED lamps and highly efficient equipments. We also signed the second voluntary GHG reduction agreements thanks to active participation from our stakeholders who committed to make joint efforts with us for Low Carbon, Eco-friendly Management in the next three years.

Countries in the world including Korea firmly committed to deliver the Paris' climate change agreement. Through successful completion of the second passenger's terminal and the smooth operation, IIAC will advance Low Carbon Eco-friendly Management to protect the environment and meet the demand for air transportation as the North-east Asia Hub airport. This will be a new eco-friendly management paradigm for us to meet the diverse needs and expectations of our stakeholders and respond to the threats to our future such as climate change, excessive resource depletion, and destruction of the nature and ecosystem. Under our new global brand of Green, Eco, and Smart Airport, we will continue fulfilling our social responsibility.

Having been ranked as the global top in ASQ for the past twelve consecutive years and won the global best airport award for the past twelve consecutive years, IIAC achieved the world top position with the efforts by all aviators. IIAC, dreaming to fly again toward the world's sky, promises to become the global leading airport by actively responding to global warming through GHG reduction and proposing a new standard and direction. We ask for your continuous interest and encouragement for us to take one more step towards the Low Carbon, Eco-friendly Airport, along with the full operation of the second passenger's terminal.

“ IIAC will present new standards

and directions for the growth

and prosperity of

Incheon International Airport

as a low-carbon green airport. ”

CEO of IIAC JUNG, IL YOUNG

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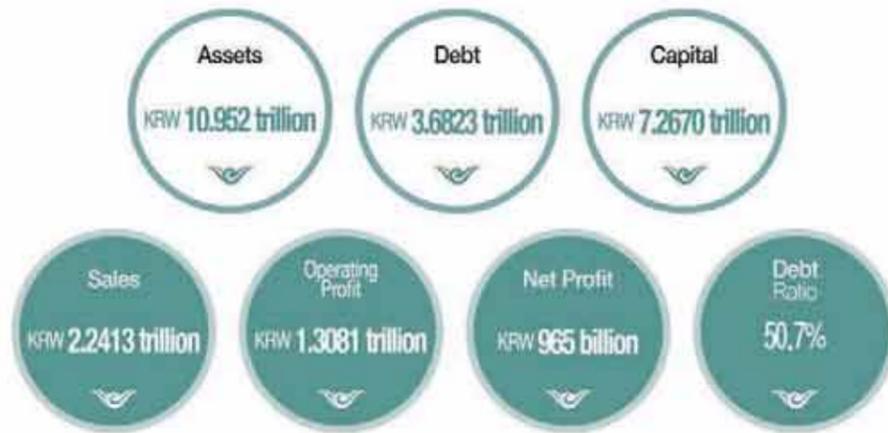
Company Profile

The purpose of establishment of Incheon Airport Corporation (IAC) is to facilitate air transportation and contribute to the development of the national economy through effective construction, maintenance, and operations of Incheon Airport by developing itself as a world-class airport corporation.

General Overview

[By December 30, 2016]

Date of Establishment	February 1, 1999
Headquarter location	47, 424-gil, Gonghangno, Jung-gu, Incheon
Organizational structure	4 Divisions, 3 Offices, 27 Groups, 114 Teams, 1,432 Employees
Annual Service Capacity	410,000 Flights, 54,000,000 Passengers, 4,500,000 tons of Cargo
Affiliated Company	Incheon Airport Energy Ltd and PT.Mitra Incheon Indonesia
Investor Company	Incheon Golf Club and Khabarovsk Novy Airport



Passengers/Cargo



Category	2015	2016	Compared to previous year
Flight (thousand)	305	340	11.5% increase
Passenger (10 thousands)	4,928	5,777	17.2% increase
Cargo (10 tons)	2,596	2,714	4.6% increase

2016. 07. 31 Reached 0.5 billion accumulated passengers
2016. 12. 06 Reached 0.5 billion accumulated cargos

2016. 11. 13 Reached 0.5 million accumulated passengers in year
2016. 03. 06 Won Airport Service Quality (ASQ) award for 11 consecutive years

Vision and Goals

IAC has been positioning itself as the hub of international air transportation in Northeast Asia offering the best air transport services to passengers and cargos. With our new vision: "A New Leap Forward, Towards the Global Leading Airport", IAC expects to open our second terminal (T2) and is ready to become an eco-friendly airport. Accordingly, we set four strategies and twenty-four sub-statements to become a global leading airport, contributing to the development of the national economy.



Key Business Areas

Our key business areas include constructing, operating and maintaining of the Incheon Airport. The construction involves development of the surrounding area utilizing technologies of civil engineering, architecture, electrical engineering, electronics, telecommunication, and environment while the operation and maintenance encompass transporting passengers and cargos, maintaining facilities within the Airport, offering various services to the customers, and conducting sales activities. In the near future, with the in-house knowledge and technology earned from our past experience, IAC will expand our business areas to construction, maintenance, and operation of the Airports in overseas.

Business Areas at Present	Business Areas in the Future
Construction and maintenance/operation of Incheon Airport	Business areas related to construction/operation of Incheon Airport
Development of surrounding area and government projects	Development of surrounding area and construction of infrastructures
Research on construction and maintenance/operation of the Airports	Maintenance/operation of Airports overseas and development of its surrounding area

Incheon Airport Green Map



1 Advancement of eco-friendly management

1. Reinforcement of eco-friendly management system
2. Establishment of comprehensive energy management system
3. Expansion of training and PR



2 Construction of eco-friendly airport

1. GREEN AIRPORT
2. ECO AIRPORT
3. SMART AIRPORT

3 Energy efficiency improvement

3 Energy efficiency improvement

1. Improvement of end-use energy efficiency
2. Construction in eco-friendly airport
3. Expansion of renewable energy

4 Expansion of renewable energy

1. Enhancement of energy independence
2. Operation of solar power plant
3. Operation of geothermal power plant

1 Reinforcement of eco-friendly management

4 Expansion of renewable energy

5 Expansion of Low Carbon Management

5 Expansion of Low Carbon Management

1. Establishment of eco-friendly transportation infrastructure
2. Reduction in the Airport's GHG emissions
3. Advancement of carbon neutrality

6 Reinforcement of Environmental Resource Management

1. Reinforcement of resource recycling and environmental monitoring
2. Creation of eco-friendly space
3. Minimization of environmental impacts

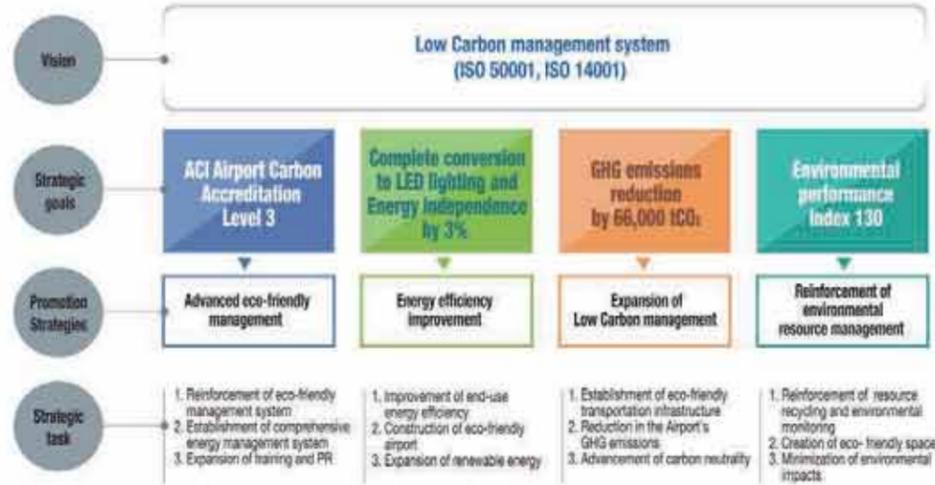


Enhance Low Carbon, Eco-friendly Management



Vision and Four Strategic Goals by 2020

Having "The Global Leading Low-Carbon, Eco-friendly Airport™" as our vision for environmental and energy management, IAC has played a leading role as an international airport company. We strives to fulfill its four strategic goals, including advancement of eco-friendly management, improvement of energy efficiency, expansion of low-carbon management, and reinforcement of environmental resources management.



Roadmap to achieve the strategic goals

Strategy	Action Items	2014	2015	2016	2017	2020
Advancement of eco-friendly management	Systemization of eco-friendly management	Airport Carbon Accreditation and ISO 50001 certification		Designated as a green corporation		Advancement of the energy management system
	Establishment of comprehensive energy management system	Operation of the Energy Conservation Promotion Committee and tightened supervision of energy management to tenant companies and subcontractors				
	Expansion of training and PR	e-Learning	Construction of a PR hall	Expert training		Energy consulting for overseas airports
Energy efficiency improvement	Improvement of end-use energy efficiency	Energy audit	Replacement of freezer	LED 75%	Conversion to LED lamps	LED 100%
	Construction of eco-friendly airport	Construction of an airport with the 1st grade in energy efficiency and greenness				
	Expansion of renewable energy	PV 500kW	PV 240kW	PV 380kW	4,124kW in 3 steps: 5,250kW of Geothermal energy	PV 1,970kW
Expansion of low carbon management	Establishment of eco-friendly transportation	hydrogen bus project	Incentives for eco-friendly vehicles	Expansion of battery charging facilities	Introduction of hydrogen-fueled vehicles and battery charging stations	
	Reduction of airport's greenhouse gas emissions	Low carbon hubs	Replacement with AC-GPS (200 units) and PC-AR (44 units) manufactured in Korea			
	Advancement of carbon neutrality	Carbon mileage	Signing voluntary GHG reduction agreement with tenant companies	Plan for the afforestation project in forestry		
Reinforcement of environmental resources management	Reinforcement of resource recycling and environmental monitoring	Reduction of pollution through more active waste recycling and monitoring				
	Creation of eco-friendly space	Improvement of the landscape of the terminal entrances		Project for the creation of the World Peace Forest	Project for the creation of a multi-cultural space	
	Minimization of environmental impact	Training and audit for minimization of environmental impacts				

Low Carbon, Eco-friendly Management Implementation Structure

Organizational structure for energy management

IAC established and operates a corporate-wide organizational structure for energy management to successfully implement energy management strategy. IAC'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. The structure enables fast decision making process and implementation at corporate level in the responsible area. The Working-level Committee for Energy Management and Energy guards operated under the Energy Management team carefully deliver the work together.

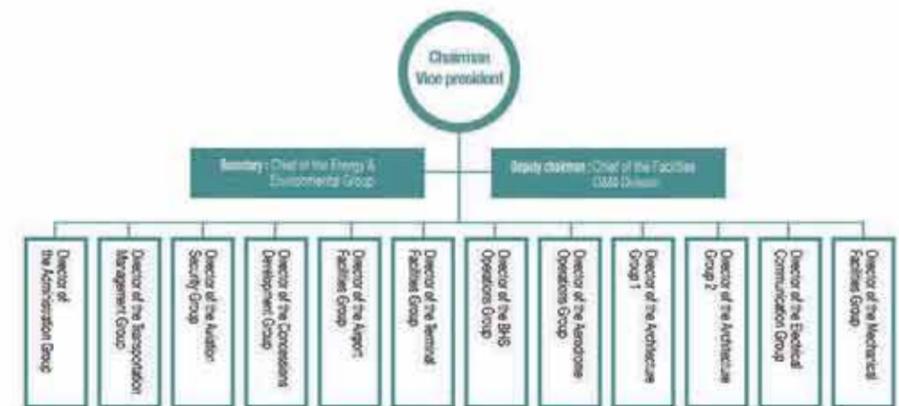


[Main achievement]

- Analysis of the warm and hot water consumption, reduction in energy consumption and the cost.
- Renewal of the Level 3 AOD Airport Carbon Accreditation
- Renewal of the Energy Management System (ISO 50001)
- GHG reduction, analysis of the energy saving performance, and identification of support work to be delivered by each department
- Selection of action items for Low Carbon, Eco-Friendly Airport
- Establishment of the measure to respond to the Emissions Trading System (ETS) in advance implemented by the government.

Greenhouse Gas Emissions Reduction and Energy Conservation Promotion Committee

Following the Regulation for the Act on Rationalization of Energy-use in Public Organizations, IAC 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 12 bureau directors. As the CEO's advisory body, the committee is held once in each quarter on a regular basis to discuss future plans on how to deliver the action items of Low Carbon, Eco-friendly Management and analyze the performance.



[Main achievement]

- Communication of the corporate compliance status of the GHG Emissions Trading System
- Communication of energy target and the performance by each department
- Communication of energy saving performance by each department and identification of future action items

Working-level Committee for Energy Management

IAC 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 composes of six members from energy-related departments in order to facilitate communication and cooperation between departments.

2016 Spotlight

Renewal of ACI Airport Carbon Accreditation Level 3

Taking the global leadership in climate change issue, IIAAC is implementing Low Carbon, Eco-friendly Management. Our Low Carbon, Eco-friendly Management system was accredited with Airport Carbon Accreditation-Level 3, which shows successful operations of energy management system. Continual accreditation of Level 3 proves that Incheon International Airport is a world-class airport in the eco-friendly management as well as in airport service.



* Accreditation body : WSP, a British verification company (Williams Sales Service, The firm supported IIAAC with ACI Airport Carbon Accreditation)

IIAC's Green Report won Platinum from US LACP

IIAC's Green Report was listed as the Platinum Winner again in 2016 in the corporate social responsibility reporting category from the Vision Awards held by the U.S.-based League of American Communications Professionals (LACP), which recognized IIAC's Low Carbon Eco-friendly Management performance and the effectiveness in communication with stakeholders. IIAC has won the grand award for the past four consecutive years.



IIAC's Green Report won ARC Awards from US MerComm

IIAC's Green Report won the Silver Award in the environmental reporting category of the ARC Awards organized by MerComm, a U.S.-based annual report assessment organization. The decision was made upon evaluation of 2,000 annual environmental reports submitted from 70 countries. IIAC was awarded again in the two consecutive years followed after the ARC Grand Award 2015, proving that IIAC is the global leader in environmental management as well as sharing and advertising the achievements with its stakeholders.



Won Green Awards from the Green Organization (UK) (2 Categories)

IIAC was awarded with Green World Awards and Green Apple Awards from the Green Organization, a world famous environmental NGO based in UK. The Green Awards were officially endorsed by the European Union, Royal Society of Arts, and the UK Environmental Agency, and over 500 organizations have participated in the Green Awards every year since 1994. The organization awards companies, governments, and regional governments which demonstrated world best green practices, produced positive impacts, and improved sustainability.



* Awarded for operation of carbon offset program (Silver award), ISO 50001 and ACI carbon accreditation (Green Apple Awards)

Grand prize for public sector from 2016 Global Standard Management Awards (Korea Management Association) in the past four consecutive years

GSMA, which has been held 15 times up until 2016, is hosted by KMS and KMS Registrations and Assessment, to undertake comprehensive assessment every year and award organizations with excellent management system and performance. Awards are given from 9 categories including sustainability report award. Winning GSMA's award in the 4 consecutive years proves that IIAC's report is excellent in reporting quality and effectiveness in the communication.

The 2nd voluntary GHG reduction agreement



Signed companies: Korean Air, LSG SKY Chef Korea, KAL Hotel Network, SKY72, Asiana Development, Asiana Airport, Asiana Airlines, AMB Incheon Logistics, Incheon International Logistics Center, Korean Airport Service Co. Ltd., Stats ChipPAC Korea, and Nest Hotel

Because the share of emissions produced by tenant and partner companies is 35% of the total Airport emissions, IIAC needs a separate management system to reduce GHG emissions. tenant and partner companies in a good relationship with IIAC signed a voluntary reduction agreement effective for 3 years and have tried to reduce the emissions since then. As two companies additionally joined the 2nd voluntary agreement in

November 2016, total number of participating companies is 12 which committed to make joint efforts for eco-friendly management of reducing GHG emissions by 1% in the next three years up until November 2019.

Reinforcement of cooperation with governmental organizations



Four governmental organizations located in the Incheon municipal area such as Incheon municipal government, IIAC, KOGAS, Incheon Port Authority, and Sudokwon Landfill Site Management Corporation, have signed the agreement for "Incheon Clean Authority Meeting" in March 2016 and are

implementing environmental project to improve air quality. Following the agreement, IIAC is implementing projects to reduce GHG emissions from aircrafts, vehicles and machines and ensures eco-friendly airport operation and construction. We have formed a basis for mutual communication and strong cooperation through the Incheon Energy Network participated by twelve energy related agencies in Incheon city. We are making continuous efforts to contribute to the local community through discussion and development of energy cooperation projects.

Special Highlight

Carbon Footprint of Incheon International Airport

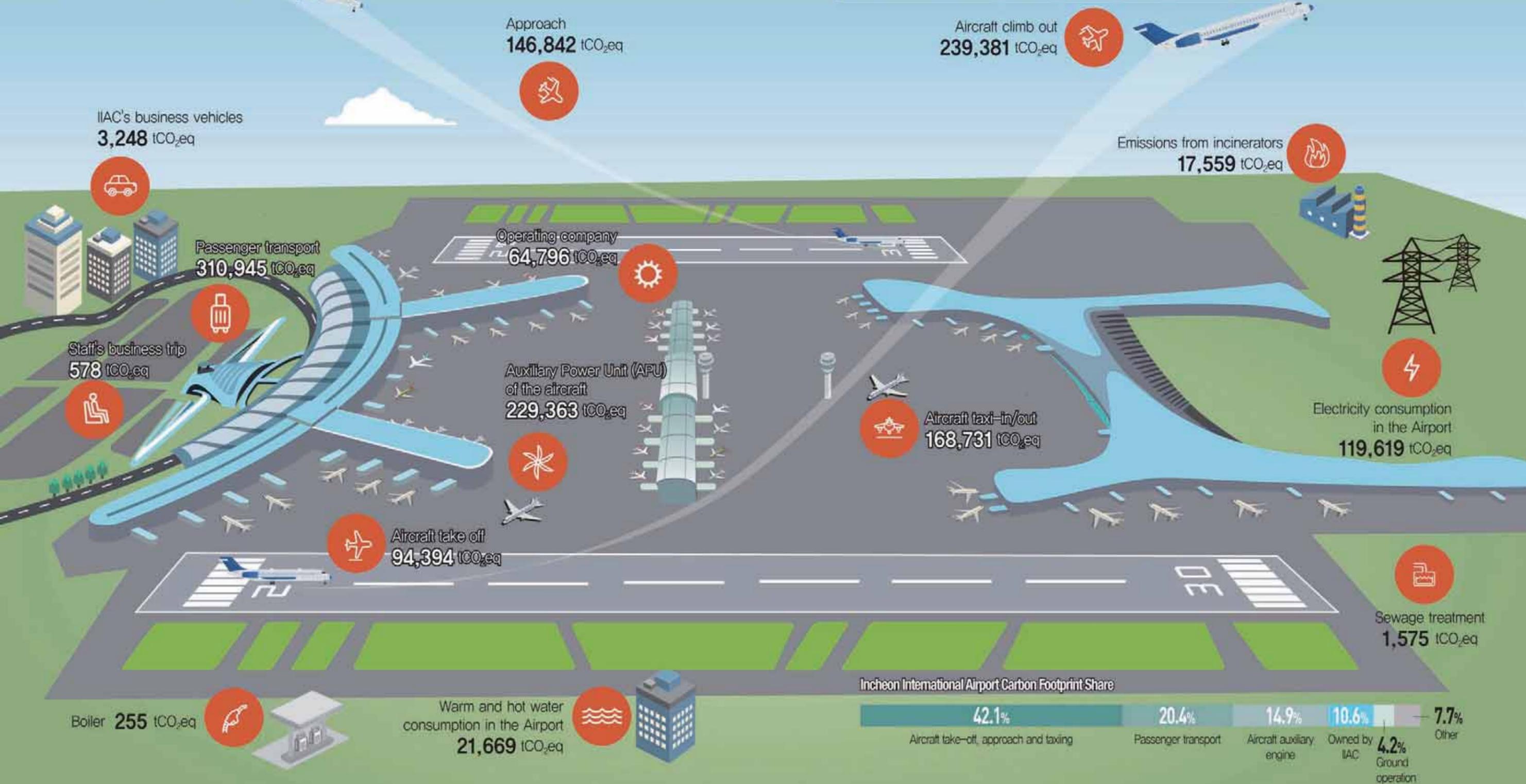
IIAC identifies and manages GHG emitted both directly and indirectly from the operation of Incheon International Airport.

Total GHG Emissions from the Airport area

Emissions as of 2014 (Unit: tCO₂e)

SCOPE	Category	2012	2013	2014	2015	2016
1	Owned by IAC	18,141	19,823	20,964	20,922	22,637
2	Indirect energy use (electricity, warm and hot water)	136,016	133,281	134,755	134,987	141,288
3	Tenant company	1,051,124	1,104,186	1,172,383	1,240,359	1,377,678
	Airlines					
	Operating company					
	Passenger transport					
Total CO ₂ emissions from the Airport		1,205,281	1,257,290	1,328,102	1,386,268	1,541,603

Scope 1- Direct GHG emissions. GHG emitted from the sources owned and controlled by the company
 Scope 2- Indirect GHG emissions. GHGs emitted from the electricity and steam purchased and consumed by the company (electricity, warm and hot water)
 Scope 3- Other indirect GHG emissions. It is the result of business activity, but emitted from operation of facilities not owned or controlled by the company (aircraft emissions, passenger transportation, aircraft ground support vehicles, and transportation of the Airport staff and managers).



At a glance



Construction of Eco friendly, Smart Airport



The demand for air transportation has grown at 8% on the annual average in the recent six years (2010~2015), and the IAC's operational capacity is expected to reach its limit in 2017. To respond to the problem, the second passenger's terminal is currently constructed in North-Western part of the first passenger's terminal, which will be ready to operate in the end of 2017. The second passenger's terminal, in the form of "Eco-friendly Smart Airport," will present the future airport model. "Green Airport breathing with the nature inside a park, Energy Efficient Eco-airport, and Smart Airport created from the convergence of industrial technologies" will be the new name of IAC in the future.



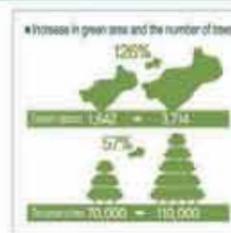
GREEN AIRPORT

- 1 Expansion of green space
- 2 Creation of waterfront
- 3 Creation of buildings where nature breaths inside

IAC will realize the Green Airport which is an eco-friendly airport harmonizing with the nature, culture and relaxation and an "Airport inside a Park" breathing with the nature, based on expansion of airport's green area, creation of waterfront area, and establishment of eco-friendly buildings.

Expansion of Green Airport

We will establish airport green space network for realization of green airport. We will increase green area by 126% from 1,642,000m² to 3,714,000m² and the number of trees by 40,000 from 70,000 to 110,000. We will increase the density of planted trees in major landscape area and maximize green area by expanding the area for street trees in the access road and green area in the median strip. We will create an eco-space by planting water biotopes and land biotopes, not only to provide a chance for observing, studying and experiencing the nature, but also enable diverse forms of lives to be preserved and restored later.



Creation of waterfront

We will introduce landscaped facilities, create an eco-friendly waterfront area, and utilize water resources more efficiently using grey and rainfall water. The waterfront reflecting the images of tidal channel of the second passenger's terminal, the cascade of the second transportation center, a eco-lake and spring, as well as an indoor garden in the waterfront space will offer a pleasant landscape and relaxation area to the Airport users.



Creation of buildings where the nature breathe inside

We will create an indoor landscape architecture in the second passenger's terminal wider than the first one. We will realize natural convergence between the building and ecosystem through establishing of landscape architectures both inside and outside the building, planting pollution cleaning plants, and installing landscaped facilities in order to create a green space in harmony with the building.



Newly emerging business models to prevent pollutions and protect the environment such as carbon trading, renewable energy, hybrid and electric cars imply that eco-friendly alternatives are the main growth driver in the future. IAC has strengthened its reputation as an eco-friendly airport by reducing energy consumption by 10% from a wide application of LED lamps and reducing GHG emissions more than 2.2% from the target, by expanding renewable energy facilities based on solar PV and geothermal.

Passive design:
Eco-friendly construction method characterized by natural lighting and ventilation, as well as enhanced insulation.

Active design:
friendly construction method applying cutting edge Eco-friendly technology

Energy efficient Airport



To realize Low carbon, Eco-friendly Airport in the third phase construction of Airport construction, IAC will continuously make efforts to expand renewable energy based on solar and geothermal energy and increase energy efficiency by utilizing natural lighting and enhancing insulation. We pursue a low energy airport saving the terminals' energy consumption by 40% compared to the existing ones. Passive building design was applied in building the second terminal and the front facilities, in order to minimize resource and energy use needed for the operation. We will also save heat, electricity and water consumption required for the second terminal operation, front facilities, and auxiliary buildings based on the active building design.



GHG emissions reduction and expansion of renewable energy

We will save energy for the terminal operation by introducing highly efficient green technology, and expand renewable energy including installation of solar panels and geothermal based cooling and heating system for the third phase in IAC construction project. We expected to reduce 29,000 tons of GHGs every year, which is equivalent to planting 77,000 nut pine trees of thirty years old. We will also produce 5,350MWh by installing geothermal and solar power generators utilizing 80,000m² of idle area around the Airport, as well as PV and BIPV on the roofs of the second passenger's terminal and front facilities.



Category	Roof	Exterior Wall	Glass
Legal Standard	Thickness of the insulation material 15mm	Thickness of the insulation material 85mm	Thermal transmittance 2.1W/m ² -K
T2 application	Thickness of the insulation material 185mm	Thickness of the insulation material 100mm	Thermal transmittance 1.52W/m ² -K
Remark	70% enhanced	18% enhanced	34% enhanced



Category	Solar	
	PV	BIPV
T2	1,236	-
T2 Front facilities	-	402
Developing district	2,359	-
Total	3,595	402

We will supply part of the energy needed for cooling and heating of the second passenger's terminal through installing a geothermal energy system, which is highly efficient, eco-friendly, and carbon free. We expect to reduce 1,431tCO₂ from the installation. Applying various eco-friendly technology and optimizing energy performance of the three-step Airport construction, we expect to save 13.613 Tce in energy which is equivalent to 39.4% of energy reduction and 6,700,000,000 won of cost reduction per year.



You will meet the Smart Airport which will optimize the departure and arrival process and utilize the Airport resources efficiently based on cutting edge smart technology.

Smart Service

We will introduce Self zone in the middle of departure area for passengers to check-in and drop their bags by themselves, which will reduce passenger's waiting time and ease the crowdedness in the departure area. We will also prevent passengers from entering a wrong gate by introducing auto-departure gate and will allow passengers to check the Airport information based on Smart Signage servicing in verbal conversation type. The passengers' flow management system will increase passenger's convenience and maximize the Airport's operational efficiency.

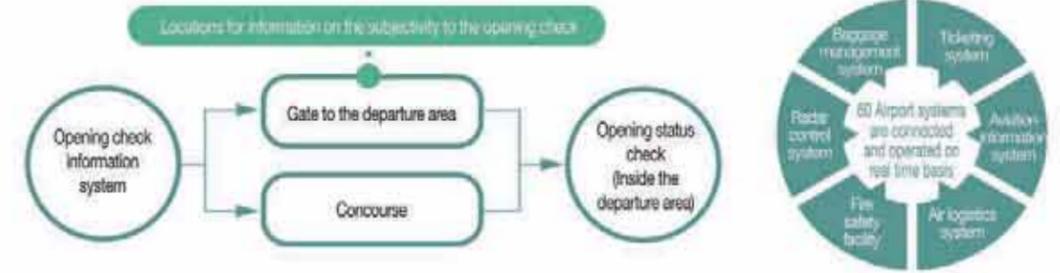
Increased Airport's softpower

We applied the next-generation artificially intelligent power monitoring system to the three steps of the Airport power system, enabling real time power control and 24 hours on-line check on potential system failures. Our cutting edge baggage drop system classifies passenger's bags speedily and accurately by its destination, and the security check system is enhanced applying detailed checks of all bags in search for bombs.

Enhanced ICT

We introduced an opening status information system, with which passengers can enter to the departure area directly without waiting nearby the check-in counter after dropping their bags. Passenger's convenience will increase as they are informed at the entrance of the departure area and concourse whether they are subject to the opening information check, and the opening status will be checked inside the departure area.

We also established an integrated information transfer hub-in system which organically connects all the Airport system. We will expand the number of connected systems from 45 to 60, and increase the message handling capacity from 1.3 million to 2.7 million cases per day. We will also introduce A-CDM through the third phase of Airport construction, an advanced cooperation system for aviation. A-CDM estimates flying time and manages target time through sharing aircraft flying information. It will enhance the punctuality of aircrafts' departure and arrival time, reduce aircraft's waiting time at the apron/taxiway, save aircraft's fuels and emissions, and enhance the operator's capability of handling events.



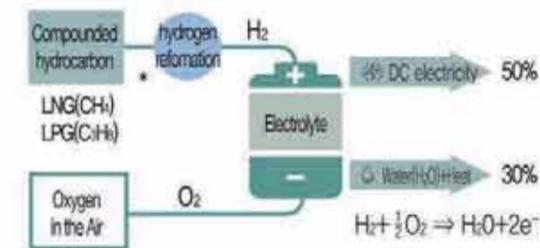
Renewable energy

The fuel cell power plant



We will establish a hydrogen fuel cell power plant in order to strengthen the power supply system of IAC and stabilize the steam supply to district energy companies in the Airport area. Connected to the national grid supplying power to KEPCO, the fuel cell plant will play the role as a decentralized power supply system. The produced steam along with power will be sold to district energy company which will enhance operational efficiency of the facility.

Principle of power generation from hydrogen fuel cell

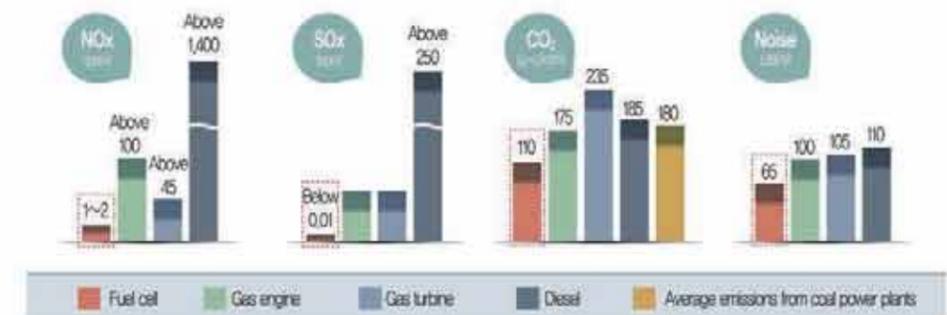


*Hydrogen Reformer: Conversion of natural gas, methanol, and petroleum into hydrogen. For reformer, high temperature heating method is normally applied.

Water is decomposed into hydrogen and oxygen if electrolyzed. Hydrogen fuel cell is electrochemical power generating system in an eco-friendly way using the reaction of hydrogen with oxygen. It generates electricity and heat by decomposing hydrogen from LNG heated with steam, and initiating electrochemical reactions with oxygen in the air.

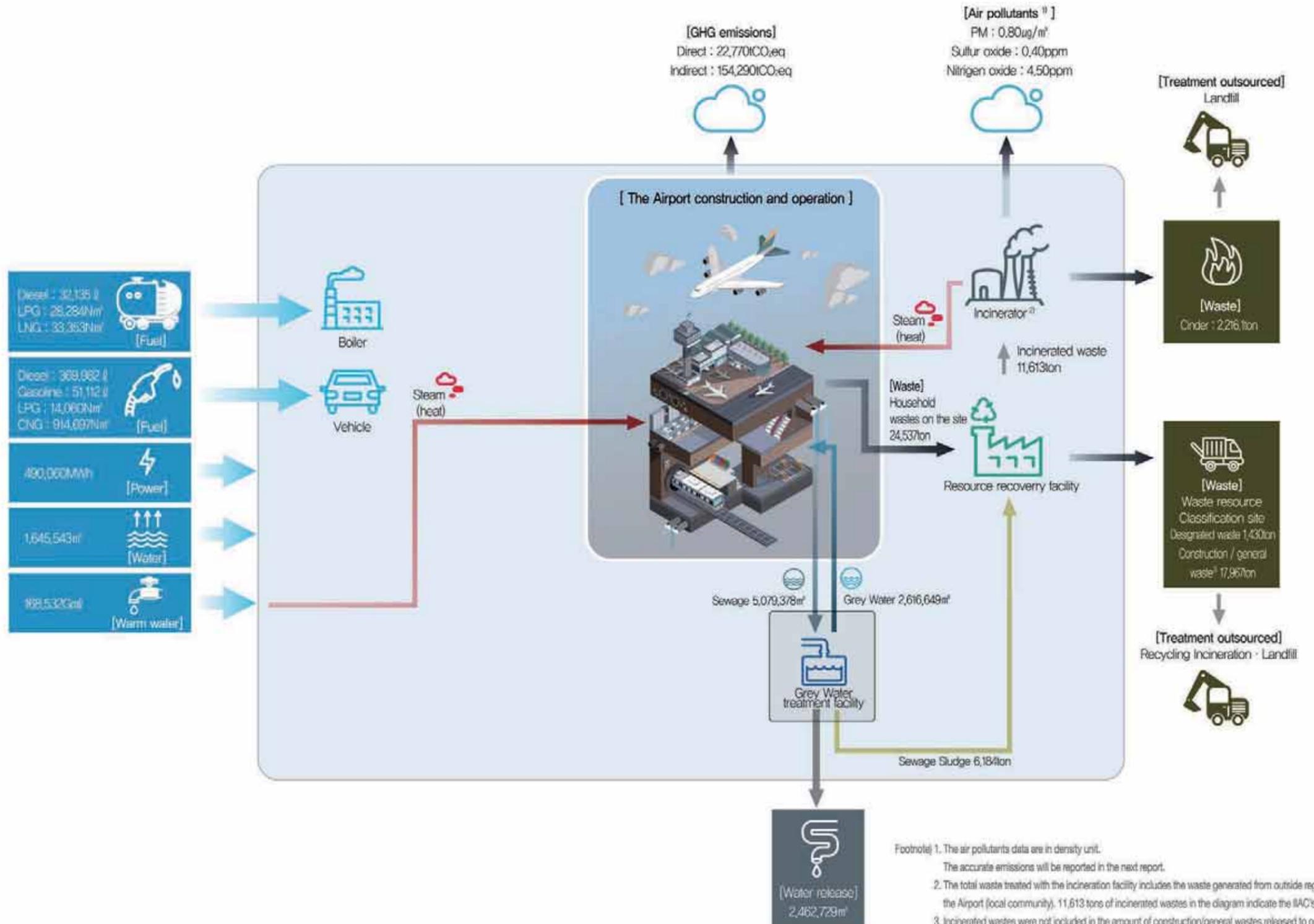
Eco-friendliness of hydrogen fuel cell power generation

The outputs of hydrogen fuel cell power system a purified water and electricity. Hydrogen fuel cell power system is appraised with its high economic and environmental performance, as the generation efficiency is 47% in total energy generation efficiency (electricity + heat) and up to 80% if heat efficiency is taken into account.



Resource Use and Recycling Flow Map

This flow map represents the resource recycling flow of IAC in 2016. This map was drawn based on the current data, and we will continually expand the data management scope.



Advancement of Low Carbon, Eco-friendly Management



IAC has achieved, complied and maintained internationally recognized environmental standards such as Energy Management System (ISO 50001), Environmental Management System (ISO 14001), and ACI Airport Carbon Accreditation Level 3 as the basic framework of our Low Carbon, Eco-friendly Management, which provide the basis for establishing and implementing our strategy and action plan.

Reinforcement of eco-friendly management system

Renewal of ACI Airport Carbon Accreditation Level 3

The number of international passengers has grown more than 18% on annual average in the past four years due to the expansion of global economy and technology development. The technology development in the aviation sector has enhanced operation of airport facilities more safely and easily. On the other hand, impacts of the Airport operation on the society and the global environment are ever growing. IAC has identified the threats to our future such as climate change, resource depletion, and environmental degradation, and established and implemented eco-friendly alternatives in order to meet the various stakeholder's needs and their expectations, which are getting diversified and complicated every day. 156 airlines from 50 countries in the world are participating in the Airport Carbon Accreditation program provided by Airports Council International (ACI) which provides guidelines for GHG reduction and implementation. IAC acquired ACA level 3 accreditation, asking the applicants to measure and manage not only the GHG emissions from the Airport facilities but also the one from the Airport area. We have made efforts to reduce GHG emissions continuously since the acquisition. We proved that we have the world leading eco-friendly management system by acquiring the level 3 accreditation in 2016 again. IAC will continue managing GHG emissions from the Airport operation and maintain our level 3 accreditation in the future.

[GHG reduction management items]

Category	Items for management
Level 1	• Measuring the direct emissions from IAC's boundary (fuel) + indirect emissions (electricity, warm and hot water)
Level 2	• Level 1 + establishment of carbon management process and the reduction plan, and the performance management
Level 3	• Level 2 + Measuring GHG emissions from the entire operational boundary of the Airport (aircrafts, tenant companies, and passengers)
Level 3*	• Level 3 + offset Level 1 GHG emissions by purchasing the equivalent allowance

Energy Management System(ISO50001)

Rise in oil price from resource depletion and climate change from GHG emissions are the challenges that all human society face today, the solution to which is required to be established as soon as possible. Companies which need to reduce their energy consumption, GHG emissions, and operating cost have to introduce Energy Management which is a essential management strategy even from a management perspective. As systematic energy management and the quality assurance system, Energy Management System provides the basic framework for energy and GHG Target Management System. In February 2012, IAC achieved pilot certification of Energy Management System (50001) on its buildings, which was the first time in record amongst airports in the world. We have complied with it since the official certification achieved in June 2014.

Expected outcomes of the system

- Energy cost saving, efficiency improvement, mitigation of environmental impacts
- Continuous and effective improvement based on the actual measuring of the energy performance
- GHG reduction based on quantitative measuring of the energy consumption, and responding to the Emissions Trading System
- Improvement in operational energy management activity (procurement, planning and use)
- Improvement in corporate image through increasing stakeholder's trust



Environmental Management System (ISO 14001)

IAC achieved Environmental Management System certification (ISO 14001) from the airport construction category in 1998, and airport operation category in 2002. We have maintained and improved environmental performance through on-going compliance with ISO requirements such as establishment of environmental goals, delivering major environmental impact assessment, carry out internal environmental performance review and training. We also deliver post-management evaluation every year and the renewal assessment once in three years by external accreditation body, to prove that our Environmental Management System is trustworthy. We also have operated a quantitative environmental performance evaluation system since 2012 in order for a successful implementation of the Environmental Management System and continuous improvement in the operation. IAC under the vision of realizing an Eco-friendly Airport, established a dedicated environmental management body to ensure an efficient delivery of environmental management work. The environmental management body consists of Environmental Management Team and Environmental Management Office. The Team is responsible for overall management of environmental issues such as waste treatment, water and air quality, and aircraft noise. Working with a professional company, the Office monitors the Airport's environment for 24 hours, such as checking and operating monitoring stations, analyzing the monitored data, and operation of environmental inspection vehicles.

Expansion of environmental management training and PR

Advertisement of the Low Carbon, Eco-friendly Airport



We participated in environmental industry exhibition held from 18 till 21 October 2016 at COEX in Samsung-dong in Seoul, in order to advertize our Low Carbon, Eco-friendly Management performance to our domestic and international stakeholders and reinforce our global eco-friendly corporate image. We also participated in the ECO-Expo Korea in 2016 which is the biggest-sized event in Korea. We installed an advertising booth to

introduce our transportation infrastructure which is our eco-friendly management performance and action strategy, the eco-friendly technology applied AC-GPS, PC-AR, and the third phase in the new airport construction. We also prepared and operated a separate seat for consultation on purchasing eco-friendly products.



Annual Green Report

We published the 'Green Report' to advertize our strategy and performance on Low Carbon, Eco-friendly Management to combat climate change and distributed it to domestic and international organizations. Green Report follows the Environmental Report Guidelines by the Ministry of Environment and GRI G4. Our Green Report submitted to the Grand Platinum organized by LACP and the Environmental Report organized by MerComm, won Silver award in ARC Award confirming that IAC is a global leader in Low Carbon, Eco-friendly Management. We distributed 1,800 reports to domestic and international organizations as well as public libraries to advertized our excellent performance on Low Carbon, Eco-friendly Management and allow the readers to use the report as training materials.



[e-Learning On-Line training screen]

Eco-friendly management training

In order to prevent environmental accidents in advance from airport construction and operation and manage the environmental and energy performance, we deliver both on-line and off-line training. The subject participants are management team and staff, partner companies, Public Private Partnership (PPP) project partners, environmental and energy management staff, and staff responsible for construction of the passenger's terminal and gentrification of the nearby area. On-line training is provided once in every quarter and off-line training once a year.



Energy guards

We designated 110 energy guards from IAC, partner companies and PPP project partners (voluntary agreement) and delivered workshops to promote the needs for energy saving in our daily life and improve the professional capability in energy management. The energy guards participated in-house energy trainings as well as workshops such as the LED and OLED electricity saving technology exhibition and 2016 Korea ECO-EXPO.



Implementation of ICAO accredited GHG management training course

Airport safety management training program co-developed by IAC, the Ministry of Land, Infrastructure, and Transport (MoLIT), and the International Civil Aviation Organization (ICAO) was finally endorsed as a training program for ICAO accreditation in 8 March, 2016. We were able to develop the program upon the global recognition by ICAO of Korea as the world leader in the aviation safety sector. We expect that the demand for this program will increase amongst staff working in the aviation sector who want to learn the newly developed safety management process, because this program provides safety level check on the ICAO signed countries and allows them to adopt and operate their optimized safety management system, as well as contains details of Procedure Air Navigation Service (PANS). This program is the secondly developed ICAO training Package in the world following the ICAO international guidelines, which is operated by the ICAO headquarter in Montreal, Canada and the human resource development center of IAC. This training program consists of 6 modules including GHG accounting, the quality assurance guide, and establishment of a mid-long term GHG reduction plan. In 2015, we provided the training on ICAO STP Airport GHG accounting and management to 10 developing countries, and produced global GHG accounting professionals through providing training on GHG accounting methods and Module 3. We invited students from 15 countries in Asia and Africa in 2016 to Airport Environmental Management training course and provided Airport Power & Energy training to a subsidiary company of the Beijing Airport which was highly appraised by the participants later.



Energy saving campaign

We internally communicated two main things for operating Energy Management System effectively and comply with the government's energy use rationalization policy. First, we communicated the indoor temperature regulation applied to public office buildings once in the summer season and winter season. Second, three organizations (IAC, the Incheon municipal government, Korea Energy Agency) delivered a energy saving campaign in the passenger's terminal and distributed hand-fans and lap blankets to draw the Airport users' interest. We promoted our eco-friendly airport image through the energy saving campaign across the passenger's terminal and the Airport office buildings.



Best energy saving practice contest

For two months from July 25th till September 30th, to effectively save energy and raise awareness of energy management during the summer time when energy consumption is the highest among all times, 'Cases of Energy Saving Contest' was held for employees, cooperating companies and residing staff of Incheon International Airport Corporation. The result is, ten excellent cases were selected, and 'The Grand Prize (1), Runner-Up Prize (2), and Normal Prize (7)' were awarded.

Awarding high energy saving performers

IAC provides 'Award to high performer in energy saving' to effectively deliver the strategic actions for the advancement of Low Carbon, Eco-friendly Management and encourage energy saving. The subject participants are staff of IAC and the partner companies. 1 person from IAC and 2 people from partner companies are selected amongst those who actively participated in GHG reduction and energy saving activities, and awarded by the CEO of IAC at the monthly meeting in December every year.

Energy efficiency improvement



Establishment of comprehensive energy management system

Corporate energy target and the performance

To reach the allocated amount of greenhouse gas emission, Incheon International Airport Corporation has set goals to save energy for each department in order to promote energy usage rationalization. As a result, it has used 3,289TJ of energy, which is 14.8% reduced from its goal (3,860TJ).

Category	Main energy using department						Energy Management team		Total	
	Machinical Maintenance Team	Plant Maintenance team	Logistics facility Team	Simulator Services & PFD Control Team	Terminal Electrical Team	Airport Electrical Team	Subtotal	Existing facility		Third phase
Target	836	388	235	152	384	29	2,034	911	915	3,860
Performance	943	477	280	171	379	14	2,264	997	28	3,289

Energy saving reinforcement plan

Indoor temperature management in summer and winter seasons

We operate the energy saving reinforcing plan to increase energy efficiency. Because energy demand rises in summer and winter seasons, IAC actively delivers energy saving actions following the indoor temperature control regulation.

Power supply risk management step by step

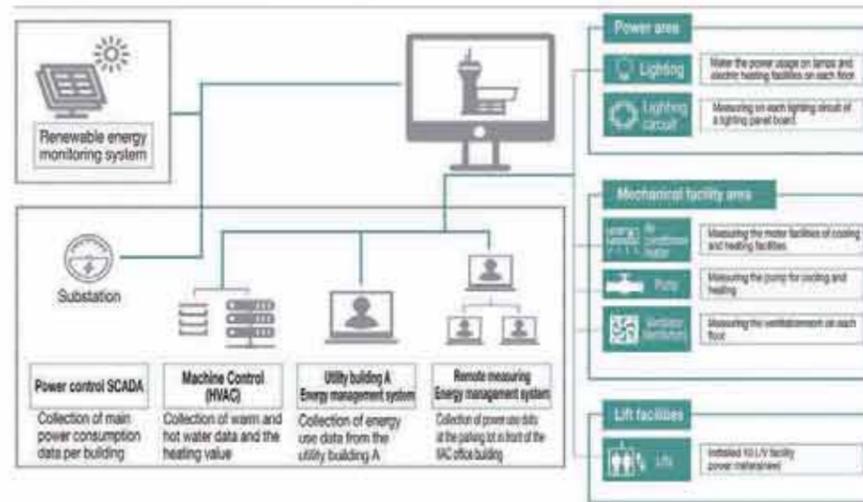
IAC, moving towards the world best service provider without a history of operation suspension since the opening, established a detailed risk management process to respond to power supply emergency and have the best risk management capability. We classified power supply emergent situations into 5 risk levels having the reserved power level as a baseline scenario. Expanded measures are taken as the risk level is elevated in order to ensure a continuous power supply across all the Airport area. We will verify and maintain our current operational system by continuously monitoring our energy consumption patterns in the future, and ensure our capability in power supply risk management at the best condition by actively checking the operational system considering changes in the flight demand and environmental resources.

Level	Reserve (10,000kW)	Applied Measures
Preparation	500~400	<ul style="list-style-type: none"> Switch to power saving mode on lamps and maintain the heating temperature Block unnecessary power use
Attention	400~300	<ul style="list-style-type: none"> Internal communication of the power supply emergency, operation of heating facility in alteration during peak time Alternative power generator operation (Utility building B), switching building lamps and ventilators off (passenger's facility)
Caution	300~200	<ul style="list-style-type: none"> Alternative power generator operation (Utility building A), suspension of heating facility operation in the auxiliary building Switching indirect lamps off and operation of ventilator in alteration
Alert	200~100	<ul style="list-style-type: none"> Operation of alternative power generator (IAC office building/transportation center), switching direct lamps off (passenger's facility) Operation of ventilator in turn and cease of moving walk/escalator operation (passenger's facility)
Danger	Below 100	<ul style="list-style-type: none"> Maintain the alert level

Operation of Building Energy Management System (BEMS)

Having established the optimized energy use plan, IAC maintains heating, ventilation system, power and lighting system at the optimized level based on the analysis of energy consumption with the Building Energy Management System (BEMS), which is installed in the utility building A and the office building. We expect to achieve the best optimized level of comprehensive energy management by applying the BEMS to the third phase construction of Airport construction (the second passenger's terminal), as well.

Layout of Building Energy Management System



Energy efficiency improvement activity

Energy saving performance

Category	Electricity	Machines	Information communication	Aircraft operation	Total
Number	14	20	4	2	40
GHG reduction [tCO ₂]	2,729	1,437	289	49	4,504
Saving effects [Million KRW]	560	319	75	6	960
Investment cost	3,775	2,877	-	1	6,453

Having acknowledged the serious impacts of climate change on the environment, the global community agreed through the Paris Agreement that all COP member countries deliver GHG reduction efforts starting from 2020 to the level suitable for their

own national conditions. IAC tries to reduce GHG emissions by reducing fossil fuels consumption based on systematic energy management. We reduced 4,504 tCO₂ in 2016 by improving the facility and operational methods.

Retrofit with LED lamps

Category	2014	2015	2016	2017	2018	2019	2020
The government's target	50%	60%	-	80%	-	-	100%
IAC's target	55%	65%	75%	85%	90%	95%	100%
Replaced lamps	Accumulated lamps	95,053	118,088	142,620	182,381	171,355	179,747
	This year	19,962	23,015	20,708	19,761	8,974	8,392
Project cost [Million KRW]	This year	2,523	4,000	2,951	2,941	3,500	3,500

LED lamps are appraised as 13~25% more efficient compared to CFL in power consumption and 1.3 times higher in lighting performance if applying the same luminous efficiency. LED lamps are eco-friendly because mercury and discharge gas are not used. IAC has replaced existing lamps with LED since 2009 to improve the end-use energy efficiency and has reduced 4,230kwh in power consumption by replacing 75% of the existing lamps with LED in 2016, which is equivalent to 1,973tCO₂ of GHG reduction.

Retrofit with highly efficient turbo freezers, motors and pumps

To save energy, IAC retrofits low performing equipments. IAC completely removes causes of wasting energy and maintains the most efficient status by checking our facilities every year, establishing and implementing retrofit plans on low performing equipments.



IAC replaced 3 turbo freezers in the utility building A with highly efficient ones, which will reduce 954 tCO₂ of GHGs per year.



IAC replaced an old conveyor motor of the bag filter dust collector with a highly efficient motor, which is expected to reduce 104.5 tCO₂ in GHG emissions per year.



IAC replaced 12 cooling pumps, 3 booster pumps, and grey water pumps in the utility building B and the office building with highly efficient pumps, which is expected to reduce 101.7tCO₂ in GHG emissions per year.

Enhancement of energy independence

Expansion of renewable energy

IAC expands eco-friendly renewable energy use in order to prevent resource depletion and reduce GHG emissions from fossil fuel consumption. We plan to expand solar power generation to 10,531 MWh/year and geothermal power to 3,609 MWh/year by 2020. We also have a plan to continuously expand solar and geothermal power plants in order to comply with the government's policy of expanding renewable energy share by 18% applied to newly constructed buildings.



Solar PV

Power production
10,531 MWh/year
GHG reduction
4,910 tCO₂/year

Period : 2011~2020
Size : 3MW



Geothermal

Power production
3,609 MWh/year
GHG reduction
1,882 tCO₂/year

Period : 2014~2020
Size : 960RT

Operation of solar PV power plants



Solar energy is limitless and a clean energy source. Economic feasibility of the carbon reduction effects from solar power plants which has been enhanced by recent technology development is now

well acknowledged. It is expected to be the rising energy source in energy production. IAC established a 96kW of solar power plant in the playground of the office building in October 2016. We designed the power plant to be harmonized with the beauty of the office building. The canopy design applied to the seats in the playground maximizes the space efficiency, providing shades in summer season and canopy in rainy days. We also expect to reduce 107MWh of energy, which is equivalent to 16 Million KRW in power cost and 50tCO₂ in GHG emissions.

Geothermal power plant operation

Geothermal energy, one of the renewable energy, can be utilized for heating and cooling by using the temperature difference in the underground heat and water. The big advantage of geothermal energy is that it does not alter the building design nor produce pollution, and the power generation cost is low because of the underground installation of the geothermal power generators. IAC newly established a 364kW of geothermal power plant in the second office building in 2016, expanding renewable energy share by 30% compared to 2015.

Category	2015	2016	Remarks
Human resource development center (525kw) Aviation training center (520kw)	455,257	734,831	
Fire station branch B (170kw)	60,407	42,173	
The second office building(364kw)	-	262,172	Newly introduced in 2016
Total	515,664	1,039,176	

(Unit : kWh) Geothermal power production : 1,039,176 [kWh] - Total geothermal power production capacity : 1,579 [kW]

Operation of energy storage system



We operate energy storage facility to store electricity from the Korea Electric Power Corporation (KEPCO) and supply it during the peak time or supply emergency power in case of national power emergency. We expect to save 130 Million KRW of power cost through improving end-use energy efficiency.

Operation of air conditioning and heating system for aircrafts



40,770 tCO₂ of GHG emissions

Auxiliary engine is operated to supply power for heating and cooling to the aircraft when the main engine is standstill when the aircraft is parked in the apron. Pre-Conditioned-Air (PC-Air) supplies power to the aircraft from external sources instead of operating the auxiliary engine, reducing aircraft fuels and GHG emissions from the Airport area. IAC operated 49 Pre-Conditioned-Air (PC-Air) in total, reduced

Operation of Green Cargo Hub and the performance

IAC started Green Cargo Hub project since 2009 to follow the government's vision of "The global best country in logistics leading the 21 century's green growth". We also have to pursue green growth to make our logistics sustainable. IAC invented and has operated 'Green Cargo Hub' brand for the first time in the world, based on the motto pursuing the green airport in logistics. We won the grand award in green logistics offered by Korea Green Logistics Research in 2014. Green logistics require continuous improvement in logistical activity management (third party logistics, joint transportation, the Energy and GHG Target Management System, the Emission trading system etc), diversification of transportation measures, and fuel efficiency. IAC's performance gives a significant meaning as we provide green logistics alternative in the domestic and international logistics market.

Air traffic flow control management

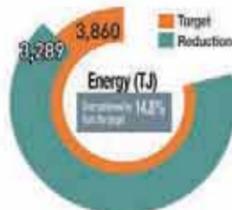
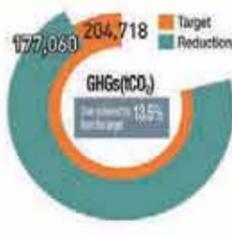


We will optimize our air traffic flow management function by establishing an integrated information system for air traffic control. This system forecasts aircraft flying time and manages target time by sharing information such as aircraft moving time, weather conditions around the flying routes, and the flying plan. We expect it will reduce energy consumption and GHG emissions if combined with the increased airport capacity, adjustment of pre-departure plan, fuel saving from reduced aircraft standby time and noise management, and optimization of resource management including equipment and operation staff.

Expansion of Low Carbon Management



Reduction in the Airport GHG emissions

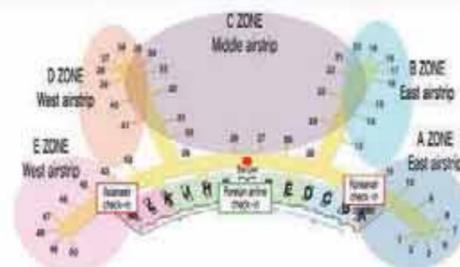


Achieving GHG reduction target

The average temperature of the earth in 2016 reached 15°C, the highest on the record since 1880. Having recognized climate change as our global common issue, IAC has made corporate wide efforts to respond to it. We over-achieved GHG emissions reduction by 13.5% 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 five consecutive years since the introduction of Energy and GHG Target Management System in 2011.

Low Carbon, Green Apron

Reflecting that usage of ramp and runway is different depending on flight routes, we operated 'Low Carbon, Green Apron' based on the analysis of aircraft's moving paths on the ground and reduced the fuel consumption by minimizing the driving distance. In 2016, we expanded it from 12 to 16 routes, reducing 14,446 kg in aircraft fuels and 45,504 tCO₂ in GHG emissions.



Establishment of eco-friendly transportation infrastructure

Demands to IAC for passenger's travel and logistics from the adjacent area and the outside world is large considering its central position in the diverse aviation industry. We fulfill our corporate social and environmental responsibility by establishing eco-friendly transportation infrastructure for the Airport users, the related workers, and community residents. We built 18.4km of bicycle roads between the IAC and the new town, and encourage bicycle riding instead of using internal combustion engine vehicles. We converted all business vehicles into light weighted vehicles except for the ones with special purpose. We also implemented a green car pilot project and operates low speed electric vehicles and hybrid vehicles. We are realizing our vision of eco-friendly airport for the future by developing and operating magnetic levitation train for cities, which is low in noise and vibration, pollution free and eco-friendly.

Operation of Air Craft – Ground Power Supply (AC-GPS)

Air Craft – Ground Power Supply

Power supply methods to the aircraft are three, which are operating auxiliary power unit based on the aircraft's own engine, operating ground power unit based on a mobile diesel vehicle, and operating AC-GPS which supplies power through cables. The most efficient way is the AC-GPS, reducing energy consumption by 98% compared to the APU method and 86%~90% compared to the GPU method. We can save aircraft fuels and reduce GHGs from the Airport area by replacing the APU with the AC-GPS and supplying power to the aircraft parked in the apron. IAC operates the AC-GPS to supply the required power to aircrafts, and continuously expands the application.

We currently operates 118 AC-GPS in total in 2016 and plan to increase it up to 150 by 2025.

[Operational performance]

Category	Specification	Quantity	Installed area
Passenger's terminal	C-D-E level 90KVA	29 Sets	C-D-E level for the boarding bridge in the apron (1~2 installations per each)
	120KVA	21 Sets	
	F level 90KVA	16 Sets	F level for the boarding bridge in the apron (4 installations per each)
Concourse	D-E-F level 90KVA	52 Sets	C-D-E level for the boarding bridge in the apron (1~4 installations per each)

Launch and operation of magnetic levitation train



IAC reinforces its position as the East-Asia hub airport thanks to the expansion of air logistics. Increase in the number of the Airport users and inflow of the population into the adjacent area initiate a new town development. Launch of the magnetic levitation train, the eco-friendly transportation method, will facilitate development of a airport city complex and increase the IAC's global brand value.

[Facility status]

- Route : 6.113km(double routes), operating 8 trains
- 6 stations (Incheon International Airport Station ~ Yongyu Station)
- Extend operational time by 1 hour for user convenience (9:00~19:00)

[Expected outcome]

Transportation of 2600 passengers a day and saving of fossil fuels

Expansion of battery charging stations for eco-friendly vehicles

Most of the hazardous substances produced from internal combustion engine vehicles are CO₂, NO_x, and PM, which are 68% of the total emissions and the main source of air pollution. IAC tries to realize Low carbon, Eco-friendly Airport by introducing eco-friendly vehicles. IAC will expand eco-friendly vehicles following the government's regulation applied to state owned companies, which obligates purchase of eco-friendly vehicles more than 50% of the newly purchased total (40% of the total with electric vehicles) and increased the number of battery charging stations considering the increased use of electric cars [Project details- Installation of 2 fast speed battery charging stations (50kW) for electric vehicles]



Installed area	existing	After installation	Remarks
IAC office building	2 low speed, 1 fast speed	2 low speed, 1 fast speed	2 fast speed chargers
Human resource development center	1 low speed	1 low speed, 1 fast speed	Additional installation

Advancement of Carbon Neutrality

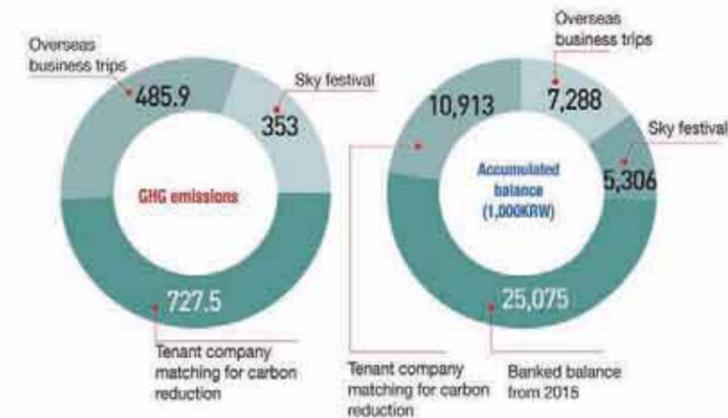
UN CDM Activity

It is called Clean Development Mechanism (CDM), a GHG reduction project jointly delivered by advanced and developing countries following the article 12 of the Kyoto protocol adopted in 1997 at the Conference of the Parties (COP) for mitigation of global warming. CDM allows financially effective GHG reduction, as advanced countries can implement GHG reduction projects by providing technology and capital to developing countries, register the accredited reduction as Certified Emission Reduction (CER), and use the performance to fulfill their national reduction target. Developing countries can expect sustainable development by introducing and operating eco-friendly technology based on advanced countries' capital and technology. CDM is a global joint project benefiting both advanced and developing countries by motivating participating

countries in investing GHG reduction projects and reducing GHG emission effectively, IAC has secured emissions permits by participating in CDM projects. We registered the outdoor lamp retrofit project with LED in 2012 and additionally the street lamp retrofit project with LED for the passenger's terminal in 2014 as UN CDM projects. We received partial emissions exemption equivalent to the registered reduction performance achieved from the CDM project by the Korean government.

Operation of carbon offset program

Having the responsibility of reducing GHGs emitted from the Airport operation, we introduced Carbon Offset Program in 2013 as part of our climate change response strategy. Carbon offset program is applied to activities including staff's overseas business trips, Sky Festival (our cultural festival), and tenant company matching program.



Total balance: 48.6 Million KRW = Staff's overseas business trips + events (Sky festival) + (tenant company matching program) + banked balance from 2015

Executed amount : Retrofit CFLs with LED lamps for the stores in the traditional market to support the Incheon traditional market revival movement

Subject to the funding : 5 traditional markets in Southern Incheon area

Reinforcement of Environmental Resource Management



Advancement of environmental monitoring system

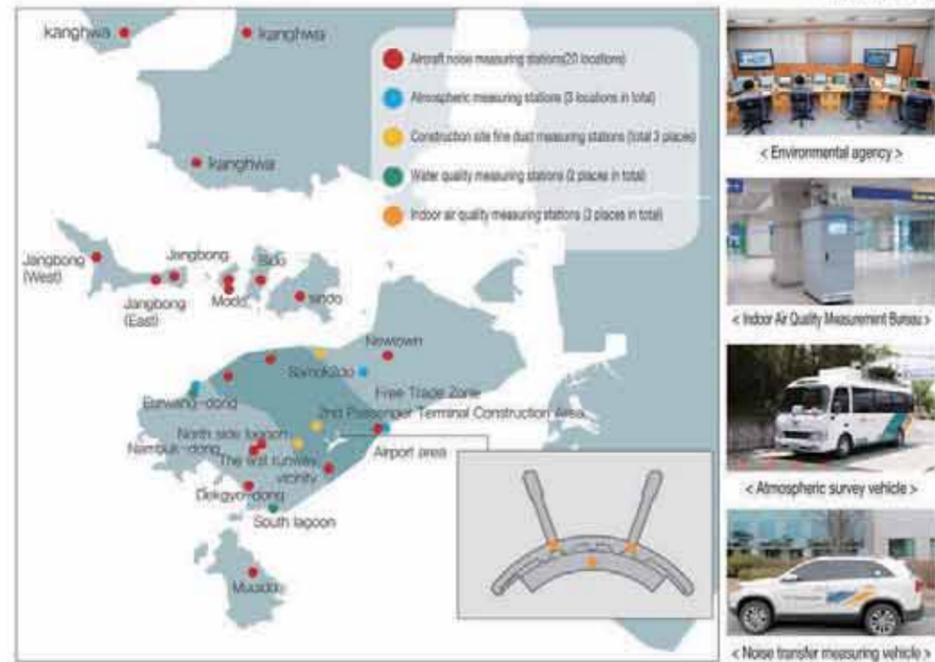
Operation of environmental monitoring system



IAC 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 monitoring facility status



Air quality control



IIAC operates a comprehensive air quality management system to manage air quality in the Airport area and monitors air pollutant generating facilities, vehicles and aircrafts.

[Mobile polluting sources] To minimize air pollution, we regularly check mobile polluting sources such as aircrafts and aircraft ground support equipment operated in the Airport area.

[Point emission sources] We operate incinerator, a large emitting source of many air pollutants, as a clean-

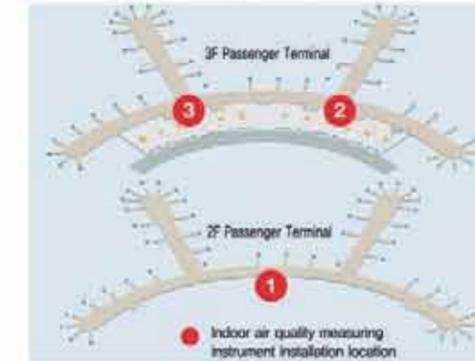
plant by controlling the air pollutants with emission gas treatment facilities such as spray drying absorber, back-filter type dust collector, selective catalytic reduction, and activated carbon input facility. We burn LNG for CHP operation which is a clean fuel producing very limited pollutants and use low-sulfur containing diesel as emergency fuel to minimize air pollutants such as fine dusts and sulfur oxide. We designed the incinerator such a way to create resource recycling effects as well as save fuels for electricity generation by establishing CHP nearby the incinerator and utilizing the waste heat recovered from it.

[Air quality monitoring]

Pollutant	Unit	Legal standard	2014	2015	2016
Sulfur dioxide(SO ₂)	ppm	0.0015	0.007	0.006	0.006
Carbon monoxide (CO)	ppm	7.0	0.5	0.4	0.4
Nitrogen dioxide (NO ₂)	ppm	0.030	0.020	0.019	0.019
Ozone(O ₃)	ppm	0.060	0.038	0.037	0.039
Particle matter(PM10)	ug/m ³	50	52(50)	51(45)	48(44)
Fine particle matter (PM2.5)	ug/m ³	25	-	30(29)	30(30)

Value in (): PM 2.5 has been measures since 2015 following the Basic Act on Environmental Policy
Days affected by yellow sand wind were not counted in the calculation of the PM10 and PM2.5 values
() In bracket.

Indoor air quality management



IIAC monitors indoor air quality on real time basis measured in three spots of the passenger's terminal. We also measure the indoor air quality in twenty spots inside the concourse and the passenger's terminal in every quarter, submit the results to the relevant government agencies (including the Incheon city), and disclose the results on the IIAC's website. IIAC controls indoor air quality with its internal standards stricter than the legal thresholds for nine items of standards on maintaining and recommending of indoor air quality in accordance with 'Indoor Air Quality Control in Public

Use Facilities, etc. Act.' To manage PM emissions, we have established a system to respond to yellow sand wind for each operational step. We also established an internal guideline to replace the ventilation filter and try our best to maintain the indoor air quality at the most optimized level.

[PM concentration in the indoor air]

Pollutant	Unit	Legal standard	2014	2015	2016
Passenger's terminal / Concourse	ppm	150	22	25	29
Indoor parking lot	ug/m ³	200	76	69	82

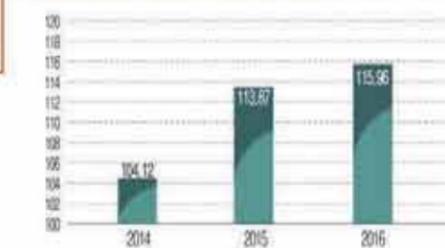
Acquirement of indoor air quality assurance



Results of the indoor air quality assessment of the Incheon International Airport showed that the contaminants in the indoor air were less than the legal standard for twelve evaluation criteria such as radon, asbestos, carbon monoxide, PM, carbon dioxide, nitrogen dioxide, ozone, and total volatile organic matters. We acquired the indoor air quality certification based on the excellent results from the general evaluation on the indoor air quality related facilities and management system as well.

Resource recycling and minimization of environmental impacts

Environmental performance indicator



[Environmental performance indicator]

IIAC introduced an environmental performance evaluation system in order to increase the corporate participation in environmental management activities and continuously has made efforts to improve our environment. Our environmental performance evaluation which is used as a process of setting up the future direction for improvement is based on the results of comparing the current performance with the past. It conforms with the 2006 Environmental Performance Evaluation Guidelines

by the Ministry of Environment and ISO's standard, and uses forty two environmental performance indicators developed in 2012 reflecting the Airport's special features. In order to avoid simplification of the evaluation process and result distortion, we continuously develop the best indicator by studying. IIAC's environmental performance evaluation consists of three indicators, which are environmental condition indicators related to environmental changes in the Airport adjacent area, environmental management indicator checking the factors potentially influencing environmental performance, and operational performance indicator checking the factors related to facility operation such as inputs and outputs. The result of 2016 environmental performance evaluation shows that we are closer to our target of 130 in the environmental

performance, as the environmental condition indicator improved from 16.01 to 13.90, the environmental management indicator from 38.38 to 44.74, and the operational performance indicator from 61.48 to 59.52. We will continuously improve our environmental management performance by setting 2020 target to 130 points.

We also provide objective environmental information systematically to our stakeholders, in order to ensure the transparency in our environmental management.

Waste management

We treat waste from the Airport operation by recycling, incineration, and landfill. Recycling is a measure of treating wastes through destroying, selecting and processing which is applied to construction waste, plastic waste, and waste battery. Non-recyclable wastes are either land filled or incinerated. IAC maximizes recycling rate by classifying wastes by contents at the resource classification site. Wastes to be burned by ourselves are incinerated at the resource recovering facility (incinerator).

Resource recovery facility



Resource recovery facility classifies recyclable wastes from the Airport operation, incinerates combustible wastes, recovers the waste heat, measures and discloses the air pollutants status to local residents through Tele-Monitoring System on real time basis.

[The measured results by the Tele-Monitoring System of the resource recovery center]

Pollutant	Unit	Legal standard	2014	2015	2016
Particle matter(PM)	µg/m ³	20	0.99	1.05	0.80
Sulfur oxides (SO ₂)	ppm	30	0.31	-	0.40
Nitrogen oxide(NO _x)	ppm	70	5.55	7.08	4.50
Carbon monoxide(CO)	ppm	50	4.88	6.07	7.00
Hydrogen chloride(HCl)	ppm	20	1.17	1.21	1.30

Resource classification center



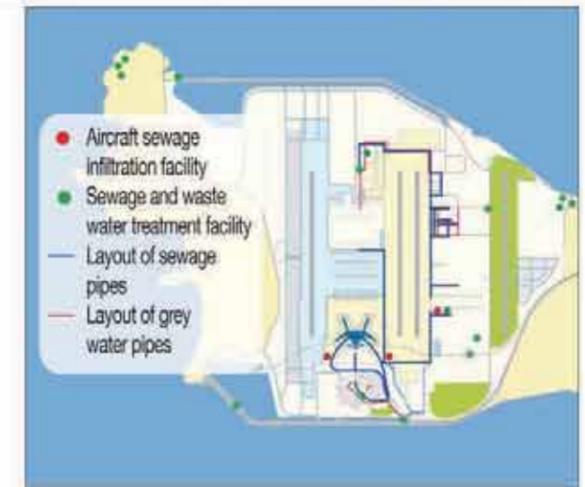
It is a facility built to integrate and manage normal business wastes that can't be disposed at resourcescollection facility and designated wastes that are hard to dispose, and it is operated from 2010. From carrying in wastes to taking them out, by closely monitoring each stage, it classifies wastes into types and manages the amount made and disposed.

Environmental impact assessment and post-environmental impact evaluation

Before starting airport construction, in order to minimize environmental effect from building the airport, we conduct environmental effects evaluation so we can predict the change in environment before and after the construction, and to reduce the environment effect of proceeding with the construction. Postenvironmental Impact Assessment is consigned to a professional external organization to raise its professionalism and objectivity, and water quality of reservoir and seawater, odor, jamming and soil contamination examinations are executed. The investigated contents during postenvironmental impact assessment are written into reports and submitted to related organizations such as Han River Basin Environmental Office once a year.

Water resource management

Wastewater and sewage are treated through the wastewater reclamation and reusing system with 30,000 tons of treatment capacity which is installed in the international business district. The grey water treated from the facility is reused as toilet flushing water, cooling/cleaning water for machinery facility and landscape water, while part of it is released to the ocean through retarding basin. We installed and operated five initial rainfall facilities in order to treat oil contaminated rainwater flowing from runway and apron when rain falls, thereby making a full preparation for water resources protection.



[Monitoring of grey water pollutants]

[Unit : ppm]

Pollutant	Legal standard	Internal standard	2014	2015	2016
COD	20	10	3.00	4.00	4.10
BOD	10	6	0.90	1.50	0.70
SS	10	6	0.80	1.20	0.70
TN	20	10	4.97	5.42	3.98
TP	2	1	0.25	0.34	0.19

Preservation of biodiversity

IAC delivers post-environmental impacts evaluation on ocean and land ecosystem in every quarter, and has checked narrow-mouth frog, leopard cat, mongolian racerunner (2013), libellula angelina selys, European hobby, and Fabriciana nerippe (2014) living in the Airport area. We rescued Libellula angelina Selys which is designated as the second level endangered wildlife and released to adjacent area (2604-4 Il-won, Woonseo-dong, Jung-gu, Incheon municipal city). Having newly discovered 1 species of eagle owl (the natural monument) which was found in the adjacent area of the free trade zone, we preserve the habitat and deliver proper protection measures through continuous monitoring such as submitting a plan to the approving authority and consultation agencies for establishing damage prevention measures in regard with building a business complex in the free trade zone (second stage).



Soil management

Soil pollution proceeds gradually in a long time, but soil is difficult to be restored once polluted and the damage is severe because of the wide scope of the indirect impacts. IAC delivers regular checks on the facilities producing soil pollutants in every year as well as on the soil in the Airport's adjacent area following the legal check period. We make our best efforts to prevent oil leakage through regular checks on aircraft fuel supply facilities and alternative power generators in particular which are subject to management by the law.

Asbestos management

IAC gradually removes asbestos materials from airport facilities by establishing asbestos removal and management plans every year, in order to provide a comfortable environment for airport staff and users, and to ensure zero environmental hazards. In 2016, we removed asbestos based building materials of about 5,000m² such as walls and ceilings. In addition, we conduct hazard assessments on asbestos buildings every six months to protect users' health and create a comfortable living environment. We also prohibit the use of building materials containing asbestos when building various new facilities and delivering maintenance in the Airport area.



Management of hazardous chemical substances

For healthy airport environment, IAC is doing its best to manage chemical substances by systematically organizing, recording, and keeping usage status of chemical substances every year, by furnishing MSDS(Material Safety Data Sheets) on site, and by observing the chemical substance management standards so it can prevent environmental accident. Also, in preventing accidents, to minimize the effects on surrounding area and to protect the environment, it is planning to conduct external effect evaluation on facilities handling chemical substances within legal time limit.

De-icing and anti-icing treatment

De-icing is a process of removing ice or frosts as they disturb the aircraft operation by sticking to the aircraft surface during aircraft's take-off and reducing the aircraft's lifting power in winter season. We installed de-icing PAD in twenty one areas (eight locations) in total inside the Airport such as southern part of the passenger's terminal, northern part of the aircraft repair center, and northern and southern parts of the cargo terminal. Waste de-icing liquid is recovered, stored into a storage tank, and treated by a professional company. We continuously check the status on a regular basis in order to manage it not to create environmental impacts from the de-icing process.

Living in harmony with the local community

Noise management

We designed our Airport as an off-shore airport from the construction design stage in order to minimize the impacts of aircraft noise and reduced the area affected by the noise. We also established and operate an in-house monitoring system to continually reduce aircraft noise and hold Aircraft Noise Reduction meetings with airline companies to discuss measures to reduce aircraft noise. We search for measures to reduce noise from the Airport operation by implementing noise countermeasures following the relevant regulation, organizing the Aircraft Noise Countermeasure Committee on a regular basis and listening to opinions from various sectors.

Noise countermeasure projects



[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	24,186
Total	34,131

[Region] Ongjin-gun and Jung-gu

Regional environment cleaning activity

IAC implements aircraft noise countermeasures in the northern part of the noise affected area. We installed soundproof and cooling facilities in the noise affected area, supported the local community with the television license fee, and continually implement noise countermeasures and provide local resident supports based on operating the Aircraft Noise Countermeasure Committee consisting of relevant stakeholders and experts in aircraft noise as well as the local residents.

Strengthening relationship with the local community in the noise affected area

Not only enforcing noise countermeasures to reduce noise damage from airplanes and continuously executing community support programs, Incheon Airport is putting a lot of effort to communicate with residents around the airport and to strengthen its connection with them. As a part of strengthening relation project, it has provided a total of 200 million won in giving academic support fund and funeral service expense, and supporting community facilities and community events.

IAC organized a environment clean-up event in the area of the Southern retarding basin park to commemorate the World Environment Day.

Environment clean-up activity commemorating the 'World Environment Day'



The environment clean-up event was co-organized with the Incheon Free Economic Zone Authority, participated by 100 managers and staff from both organizations, IAC's partner companies, Korea Land & Housing Corporation, Incheon Development & Transportation Corporation, Kyungjung training center and Nest hotel. The participants had an environment preservation resolution event to raise awareness in environmental preservation

and strengthen their will to act, and delivered environment clean-up activities such as picking up household wastes in the Southern retarding basin, the park, and the Airport area. We will continually fulfill our corporate social responsibility as an eco-friendly airport, make efforts to preserve the environment in the local regions, and raise environmental awareness.

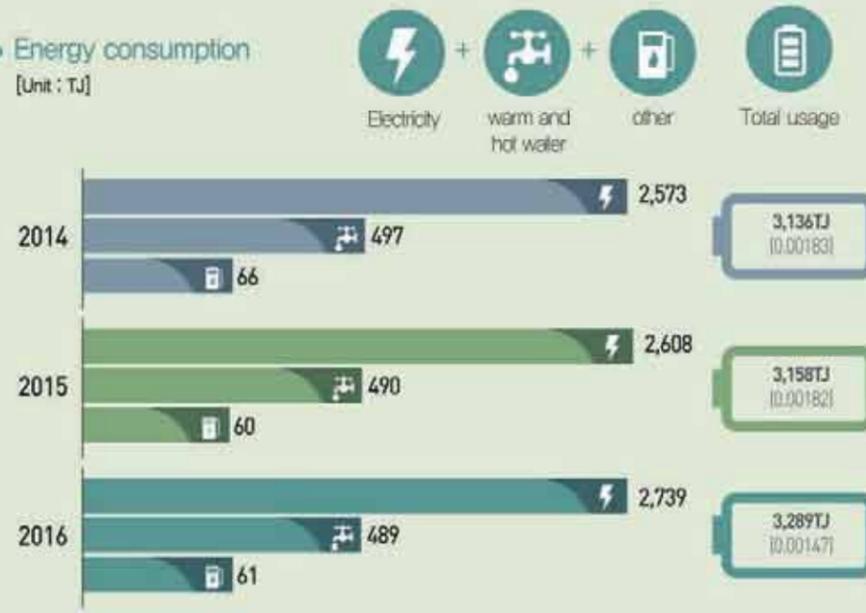
Creating the World Peace Forest

IAC implements 'Creating a World Peace Forest' project around the Southern retarding basin which is located nearby the Incheon International Airport, the representative gate to Korea. The forest that we have taken care of since the signing of the agreement with NGO in 2007 will not only reduce GHG emissions, but also provide noise-proof and blocking functions as well as relaxation space to the local residents. The 'World Peace Forest' which will be created in the area of 47,000m² based on three-steps until 2017, will provide a study site on ecosystem, preserve the natural ecosphere and contribute to improving the local environment.

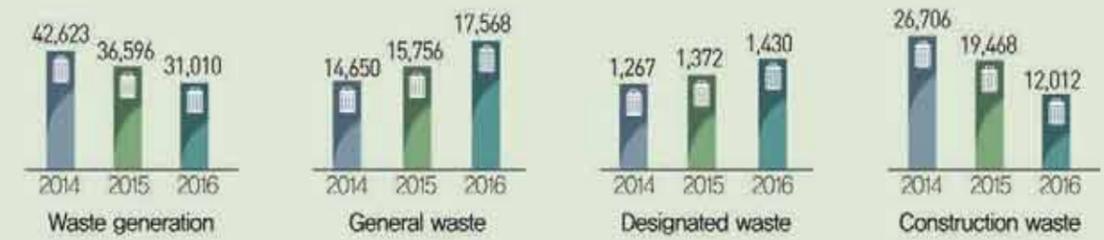


Resource consumption and recycling flow Graph

• Energy consumption [Unit : TJ]



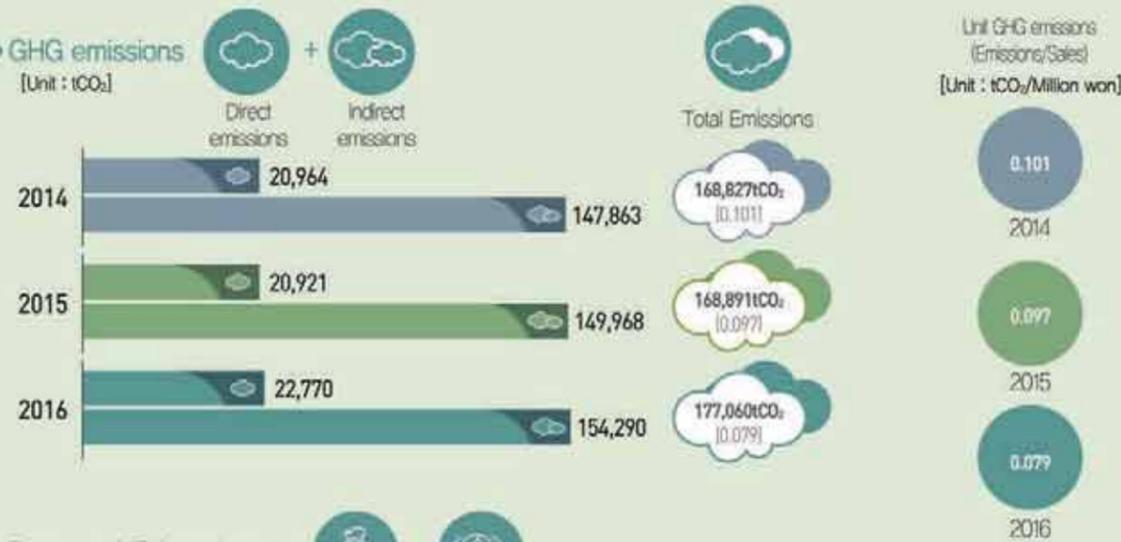
• Waste generation status [Unit : ton]



• Waste treatment status [Unit : ton]



• GHG emissions [Unit : tCO₂]



• Water consumption status [Unit : m³]



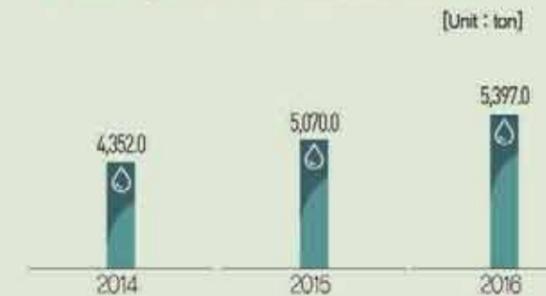
• Revenue VS investment in environmental management [Unit : 100 million KRW]



• Water resource recycling status [Unit : ton]



• Ice-manufacture and anti-icing waste fluid disposal status [Unit : ton]



The Insights of Stakeholders | Airport family interview |

IAC actively reflects stakeholders' opinions on our corporate strategy of Low Carbon, Eco-friendly Management, business operation and evaluation. In order to successfully deliver corporate social responsibility and create profit which is the company's goal, we have to understand our stakeholder's social demands and their expectations. For that, IAC frequently listens to stakeholder's opinions. In this report, we included various opinions collected through interview with stakeholders and will meet their expectations by reflecting their opinions in operating our business and fulfill our corporate social responsibility.



Facility O&M Division, IAC
Director KIM Young Gyu



Director of Airport Facility Bureau of Seoul Regional Office of Aviation
Director Lee Bo Young



Director of the Environmental Green Space Bureau of Incheon City
Director Lee Sang Beom



LSG SKY Chef Korea
CEO Garath Lycett



SK Networks Walkerhill
Manager Choi Chang Won

Airport users Interview

Incheon International Airport Corporation got ASQ Winner for 12th consecutive year. Could you give us your first impression of Incheon Airport?
 Firstly, what I faced at Incheon Airport is a bright and kind smile. And I was impressed by many people of various nationalities since the world-class international airport is just here. Vitality, dynamic, youthful and beautiful appearances are the characteristics of Korea. And wherever I use my smart-phone brand new, there is no any trouble or communication speed. Most of all, the Airport is the cleanest I have ever had and I like it the most.

Incheon International Airport Corporation positively copes with the climate change, depletion of resources, destruction of nature and ecosystem by low-carbon eco-friendly management goals. What is the future airport of your dream?
 Listening to your words like climate change, resource depletion, I just think about my family, friends and colleagues who I love very much. All of people have a dream of sweet time with those who they are loving. Is it right? And I'd love to do. The natural environment preservation is a precondition for happiness we're saying. Our environment surrounding us has to be preserved as nature. Future airport is in nature itself, non-biohazardous airport and smart & high-tech airport which comes out the Star Wars Movie series. I think that the future of Incheon International Airport would be a greater and more gorgeous than our imagination. I can't wait to find out the future of it.

Facility O&M Division, IAC
 Director KIM Young Gyu

I know that IAC makes great efforts for environmental and energy management. What are your vision and implementation strategy?

In order to achieve the environmental and energy vision as Global Leading Low Carbon, Eco-friendly Airport, IAC established four big strategy such as advancement of eco-friendly management, energy efficiency improvement, expansion of Low Carbon Management, and reinforced environmental resource management. We selected 12 strategic actions, specified our strategy, established strategic goal by each strategy and made them indicators of business operation, agreed corporate management direction with our staff, and concentrated our capacity. In brief, we will maintain AQ Airport Carbon Accreditation Level 3 in order to realize advancement of eco-friendly management. We are replacing 100% of all lamps with LED. We also target to reduce 66,000tCO₂e of GHGs by reinforcing energy independence, and achieve 130 on environmental performance indicator. We will strengthen our position as the global leading airport company by strengthening environmental resource management capability, minimizing environmental impacts and realizing low carbon, Eco-friendly Airport.

Renewable energy is ideal energy to combat climate change. Please tell us your past performance related to renewable energy and the future plan

The easiest way to respond to climate change is reducing GHG emissions. This is possible by reducing fossil fuel consumption. Renewable energy, as you said, is clean, limitless, and very eco-friendly as it does not use fossil fuels in generating electricity. Advanced EU countries have a plan to expand renewable energy share by 20% in 2020. IAC will expand solar power generation by 10,531 MWh/year, geothermal power generation by 3,609 MWh/year by 2020 and operate 2MWh of energy storage system in order to utilize renewable energy by 100%. We also have a plan to implement hydrogen fuel cell power generation project in 2017 to secure stable supply of power and heat in emergency. Hydrogen fuel cell, converting chemical energy into electric energy, has a high energy efficiency without producing air pollutants a lot. In the future, IAC will realize Low Carbon, Eco-friendly Airport by strengthening the basis for energy independence by expanding renewable energy.

What are the shape of the new airport as a Green, Eco, and Smart Airport which IAC will build?

We believe IAC, as the North-East Asia hub airport in the world, is the representative gateway to Korea and our pride. Proved by the fact that IAC has been ranked as the world best in Airport Service Quality assessment in the past 12 consecutive years, it is not an exaggeration to say IAC has maintained the world top position as the global leader in airport operation, based on the cutting edge infrastructure and management technology. However, the increasing demands for the aviation industry and from the market continually lead us into new challenges. Now IAC wants to propose a new future airport model as Eco-friendly Smart Airport. We know that growth-focused strategy based on science cannot ensure our future. The model that we propose is Green Airport like a park breathing with the nature. Eco-Airport minimizing GHG emissions by reducing energy consumption. High-end Smart Airport maximizing user's convenience based on convergence of cutting edge science technologies. IAC, the global leader in international airports, promises to become the central airport in eco-friendly futuristic aviation technology industry cluster based on cutting edge technology convergence.

Director of Airport Facility Bureau of Seoul Regional Office of Aviation
Director Lee Bo Young

What do you appraise the most amongst the environmental and energy performances achieved by the Airport Facility Bureau of Seoul Regional Office of Aviation and IAC?

One of the successful cases of cooperation with IAC in the area of aviation environmental management which is one of the main work area of Seoul Regional Office of Aviation, is making continuous efforts on expanding infrastructure to support economic flying such as reducing aircrafts departure and arrival time and doubling the airways. Airport Facility Bureau of Seoul Regional Office of Aviation provided various policy support and cooperation from the planning stage of the third phase of airport construction, for IAC's second passenger's terminal to become low energy consuming saving 40% of energy compared to the conventional terminal, low carbon and renewable energy based airport and realize Green, Eco, Smart Airport in constructing the second passenger's terminal which will be completed in 2017. We introduced I-PMS system for integrated management of the construction project from March 2013 when the third phase construction project was launched, and pay close attention to prevent environmental accidents on construction site not only by managing safety on the construction site, but also delivering construction quality check and process management, managing the discussion points in regard with environmental impact assessment as well as waste and air pollutants in a integrated manner. Seoul Regional Office of Aviation will continue our mutual cooperation on GHG reduction and eco-friendly management with IAC, and create best partnership strategy with a public corporation.

Please say a word if you have any wish to IAC taking the leap with construction of the second passenger's terminal commencing in 2017.

First of all, I congratulate IAC taking the leap with the commencing of the second passenger's terminal in the end of 2017. I expect IAC's capacity in air transportation of passengers and logistics will increase as the airport capacity expands, and it will strengthen the Airport's position as the hub airport in the North-Eastern region. Capacity expansion of the Airport means increase demand for environmental protection from the impacts of the Airport operation. It will increase the needs for effective actions to minimize environmental impacts, and the scope of consideration has also to be expanded as environmental pollution is generated from the Airport and the adjacent area. Because IAC is the world leading airport, you should look for various ways to live in harmony with the local society. Because users of passenger's terminal will be dispersed followed by the commencement of the second passenger's terminal, the transportation system has to be dualized. Please make efforts to enter into normal operation minimizing the user's inconvenience by considering passenger's confusion at the operation preparation stage. Successful commencing of the second passenger's terminal will be the start of IAC's new era, which will be the timeline reminding IAC as the world leading airport to the people in the world. Seoul Regional Office of Aviation, as a success partner of IAC, congratulates opening of the honorable era of IAC which will newly start again, and request IAC to become the representative gate to Korea and a leading public company.



Director of the Environmental Green Space Bureau of Incheon City
Director Lee Sang Beom

What is the environmental policy of main focus that Incheon city implements?

Having faced the Incheon sovereignty era in the 2nd half of the last year, we have claimed environmental sovereignty, established a environmental policy paradigm, and proposed it to civil society. Incheon have accepted social infrastructure such as coal power plants, industrial complex, metropolitan landfill site, Incheon International Airport, and Incheon port, to support the national economic development which is heavy and chemical industry oriented and Seoul focused growth strategy. Incheon people under the situation of going through various environmental problems such as odor, particulate matters, highly toxic materials, and noise. However, Incheon citizens consider the quality of living prior to economic growth and demand for "a Pleasant and Healthy Green Environmental City" as the new future image of Incheon. Environmental sovereignty expresses the City's will to meet the demand of the civil society from policy perspective. Environmental sovereignty is divided into recovering Incheon's right in the relation with the nation, other cities and provincial governments and environmental right assured by the article 35 of the constitution, i.e. the right to live in healthy and pleasant environment. We deliver the agreement signed by four parties on the metropolitan landfill site, aid to harms caused by aircraft noise, adjustment of regional resource facility tax such as coal power plants, and improvement of water use levy policy. We also implement projects to ensure healthy and pleasant environment in the areas of air, water, park, green space, and sustainable development, in order to restore and increase citizen's environmental rights.

IAC established reinforced environmental resource management as our eco-friendly management strategy and expands resource recycling, delivers environmental monitoring, creates eco-friendly space, and minimizes environmental impacts. Please say a word on IAC's eco-friendly management in line with the Incheon city's environmental policy.

IAC's continuous efforts for eco-friendly management means significant as it proposes environmental and energy management solutions. The impacts of the ever increasing demand for air transportation on our environment is a point for us to consider together with economic growth. The purpose of environmental management is people. I believe the environmental improvement project co-implemented by four stated owned corporations including Incheon city and IAC is a good example of environmental cooperation. The sources of environmental pollution by the four SOCs are relatively large, but have been out of regulation so far. I believe acknowledgement of creating pleasant and clean air as our mutual responsibility and making joint efforts to fulfill the responsibility is the best example of environmental governance. As far as I know, IAC is introducing aircraft GHG reduction facility, driving establishment and operation of the system, strengthening the resource recycling facility operation management guidelines, reducing GHGs from vehicles and equipments, building and operating eco-friendly airport. The City's political will is not sufficient to stabilize environmental sovereignty. It is possible when various stakeholders such as civil society, private companies, state owned companies, and public agencies voluntarily participate in the process. It is possible to solve complex environmental problems when we put our ideas together, provide productive criticism as well as our own opinions, and fulfill our duties for environmental protection based on the sense of community. IAC's environmental management strategy is in line with Incheon city's vision of creating a sustainable global green city. We hope IAC will continually expand eco-friendly management practice.



LSG SKY Chef Korea CEO Gareth Lycett

What do you think about our Low Carbon, Eco-friendly Management? How does LSG SKY Chef Korea apply eco-friendly management into your business?

I think that climate change, global warming, and strange climate phenomenon such as drought, floods, and hurricanes as the results have clear co-relations. LSG SKY Chef uses natural resources and inevitably emits greenhouse gases such as carbon dioxide. Therefore, the Company has the responsibility to actively respond to the impacts of the business operation on the environment. LSG SKY Chef acknowledges this deeply and joined the efforts to reduce GHGs in cooperation with our global branches to fulfill our responsibility. We established energy management system, analyze energy consumption patterns, invest in energy related technology, and improve work process to increase efficiency to save energy.

LSG SKY Chef Korea participates in the voluntary GHG reduction agreement with IAC. What kind of activities do you deliver?

LSG SKY Chef Korea saved energy by more than 1% every year through introducing LEAN process in the past 3 years. Investing in new energy such as LED lighting, and continuous checks on energy management practices. We will reduce power consumption by establishing an unused power control facility by 2019 to save energy in the future, and reduce dependency on fossil fuels by introducing electric vehicles for business operation. We will also reduce warm and hot water consumption and improve energy efficiency by retrofitting old heat based cooling systems. One of the major changes that we have made so far is priority in purchasing business equipment. We used to consider price as the most important factor in the past, but now energy efficiency as the top priority. As a corporate citizen acknowledging the corporate social responsibility, we want to fulfill our role as a protector of the planet which will be handed over to the next generation. LSG SKY Chef Korea has won the "Best Energy Saving Award" provided by IAC, which is our big pride. As the world best on-board food producer and the consumer of the earth's resources, we understand that the energy saving award as a recognition of our efforts to preserve our planet for the next generation and promise we will fulfill our responsibility in the future.

*LEAN process: Improving resource use process by identifying waste factors without reduction in production



SK Networks Walkerhill Manager Chol Chang Won

Walkerhill was selected as the leading energy saving company amongst tenant companies. Please introduce your energy management.

To become a future oriented hotel with our domestic brand, Walkerhill, we actively implement eco-friendly energy management practices. We can say "Eco-friendly Energy Management Participated by Everyone", if I express Walkerhill hotel's eco-friendly energy management in a word. Member's participation is the most important factor in eco-friendly energy management. Considering our business features of providing customer services and consuming hotel products, we cannot avoid the increase in energy consumption caused from the revenue increase. At the corporate level, we provide trainings in every quarter to our members to raise their awareness in energy management and saving practices. We share and disseminate the energy related training contents provided by IAC, SK Networks headquarter office in everyday energy meetings to raise member's awareness. Main delivered actions are turning off unused electricity, lamps, and heating facilities, establishment of energy saving system, placing emphasis on energy saving with living in the member's dormitory, and encourage energy saving both in home and workplace. On the aspect of facility performance management, the Hotel is replacing CFL lamps in the transit hotel rooms with LED. We replace high energy consuming kitchen facilities such as fridge and freezer with highly efficient products, and emphasize energy saving in every life by marking the energy use status. We will show our Walkerhill brand pride from the eco-friendly energy management aspect as well by fulfilling our corporate social responsibility.

Please tell us your proud areas in term of Walkerhill's eco-friendly management.

On 20 January this year, Walkerhill hotel opened Darak Hyu in the 1st floor of the transportation center, the first capsule hotel in Korea. This is a project to reinforce IAC's competitiveness, developed to provide convenience to transit passengers, local travelers, and night traveler. From the development stage, of the capsule hotel, we integrated eco-friendly energy saving and eco-friendly services applied eco-friendly construction technology and manufactured the hotel furniture with eco-friendly materials. Based on the smart service sourced from the Keyless system connecting internet of things using IT technology, users can manage all services such as booking and check-in and out, LED lighting and temperature control on their smart phone. We also established noise prevention system utilizing new material technologies, keep the noise level under 40db although located inside the Airport where travelers are moving around, and maintain silence equivalent to the one of library. We proudly say that this is lower than the level of 50-60 db which is normally applied to resident houses and hotels, which will be the right service in line with the IAC's class. We will firmly maintain our position as the global leading eco-friendly management airport hotel in the future.



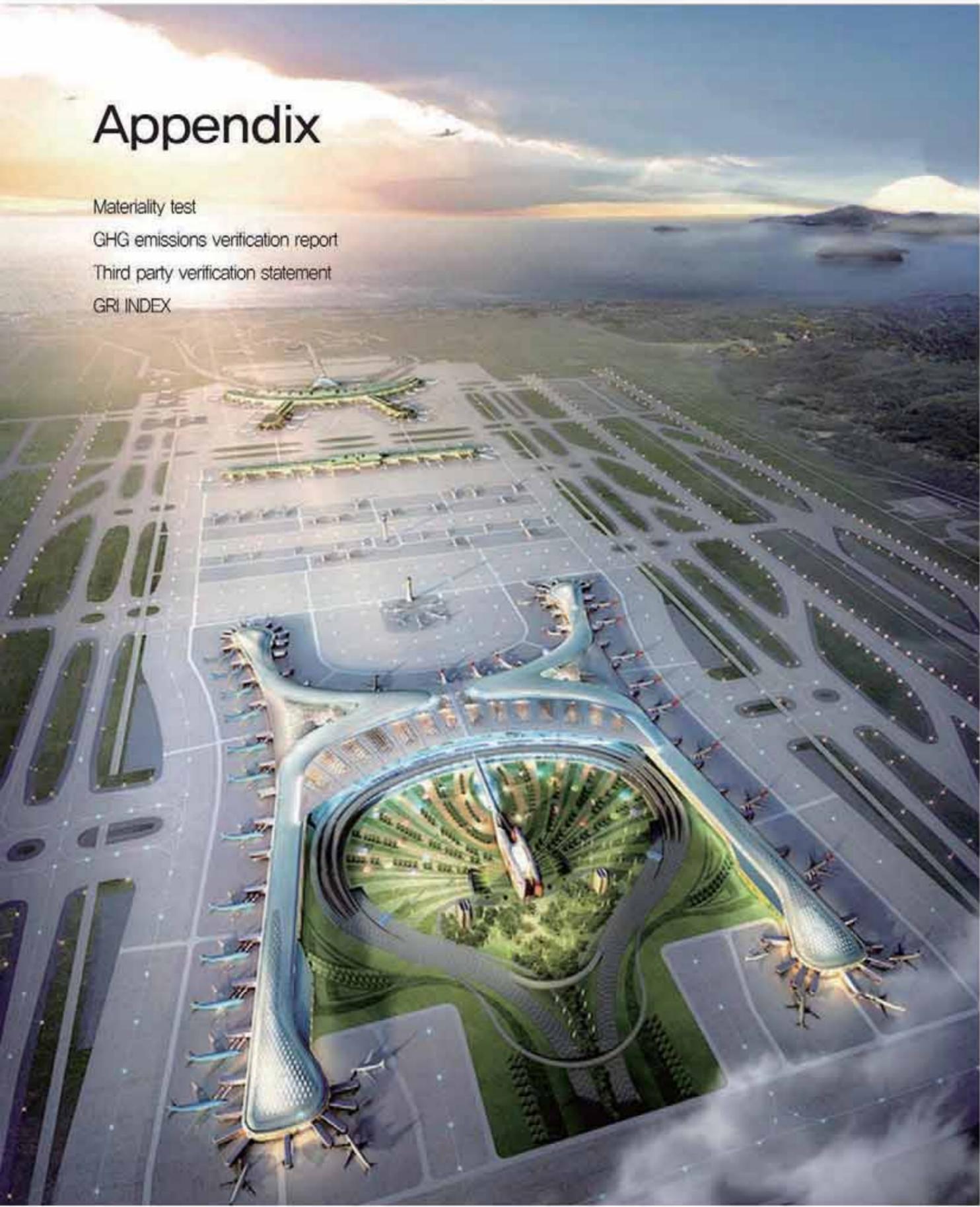
Appendix

Materiality test

GHG emissions verification report

Third party verification statement

GRI INDEX



Materiality test

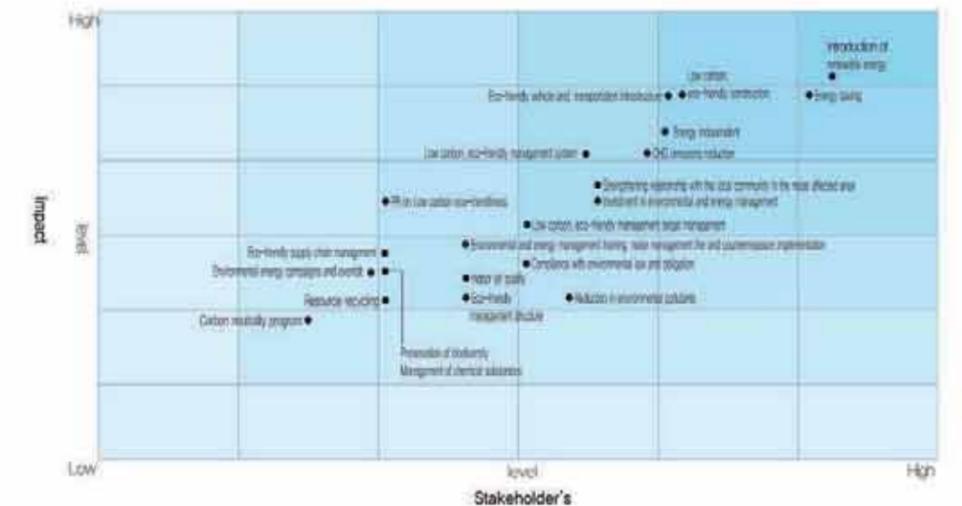
The key issues reported in this document were drawn from the materiality test. Key issues were decided based on selection and evaluation of issues among Low carbon, Eco-friendly issues, which are highly interested by stakeholders and influencing management activity.

Materiality test process



IAC's key Low carbon, Eco-friendly Management Issues

Based on the test results, IAC is highly interested in introducing renewable energy, energy saving, eco-friendly vehicles and transportation infrastructure, and low carbon, eco-friendly construction. This is thought to be the result of reflecting the importance of 'steady reduction in GHG emissions in all 195 countries' adopted through the Paris climate change agreement, i.e. UN climate Change Conference COP21, and the acknowledgement in hydrogen fuel cell power generation to be introduced in 2017. It is through that GHG reduction efforts driven by stakeholder's awareness will lead to implementation of active form of strategy such as enhanced energy independence through renewable energy expansion and fossil fuel reduction in the future.



Greenhouse
Gas Emissions
Verification Report

Verification Report on the Statement of IAC's Greenhouse Gas Emissions and Energy Consumption in

2016 Verification Subject

The Korean Foundation for Quality performed the verification of the "Statement of IAC's Greenhouse Emissions and Energy Consumption ('Statement' hereafter) in 2016."

Verification Scope

The subject to verification includes all greenhouse gas emitting facilities under IAC's control.

Verification Standards

The verification was carried out in accordance with Guidelines for the Operation of Greenhouse Gas and Energy Target Management (Notification of No. 2014-186 by the Ministry of Environment), Guidelines for the report on emissions trading and certification (Notification of No. 2014-154 by the Ministry of Environment), and Guidelines for the operation of the greenhouse gas emissions trading system (Notification of No. 2014-153 by the Ministry of Environment)

Verification Procedure

The verification was planned and carried in accordance with the "Guidelines for the Operation of Greenhouse Gas and Energy Target Management." The level of verification assurance satisfies the rational assurance level. Also, we conducted an internal assessment to ensure that each step of the verification was undertaken effectively.

Limit of Verification

The verification includes the limits of its own that can occur in the process of applying the standards and methods into the reality.

Verification Comment

We provide following conclusions in regard to the data on greenhouse gas emissions and energy consumption reported in the Statement.

- 1) The Statement of IAC's gas emissions in 2016 was written based on the guidelines for the Operation of Greenhouse Gas and Energy Target Management
- 2) Considering the conditions above, the result of the materiality test on IAC's greenhouse gas emissions and energy consumption in 2016 shows that the materiality satisfies below 5.0% of the total emissions based on a qualitative scale.
- 3) Therefore, we conclude IAC's greenhouse gas emissions and energy consumption in 2016 as appropriate.

Korean foundation for Quality

Yoo Byung-Taek, CEO



IAC proposed the vision of "Global Leading Low Carbon, Eco-friendly Airport" and implements a corporate wide actions based on four strategic goals such as advancement of eco-friendly management, energy efficiency improvement, expansion of low-carbon management, and enhanced environmental resource management, as well as the detailed actions.

IAC over-achieved the GHG reduction target in the past five consecutive years since 2011, and reduced GHG emissions by 13.5% more from the target in 2016. It was achieved through improving facility and operational performance such as retrofit with LED lighting, replacement of motors and pumps, and enhanced energy efficiency. IAC renewed ACI Airport Carbon Accreditation Level 3 and ISO 50001, operating eco-friendly management system. This was enabled through establishment of a well-organized system and continuous operation based on strong environmental management governance and leadership.

We believe that Green Report 2017 well demonstrates IAC's will and performance to make the Low Carbon, Eco-friendly Airport. We would like to provide suggestions as below in order for IAC's environmental management activities to be more effectively implemented and the performance to be better understood by stakeholders.

ISO 26000, the global guidelines on global corporate social responsibility, states that the two basic practices of delivering social responsibility are acknowledgement of the corporate social responsibility within the organizational boundary, identification of the organization's stakeholders and their engagement. The guidelines clarify that identification of stakeholders and engaging with them is the core of fulfilling the corporate social responsibility. In other word, communications with stakeholders is the main part of social responsibility.

IAC reports in this document the stakeholders' opinions on the IAC's strategy, business operation, and the performance evaluation on Low Carbon, Eco-friendly Management which were collected from interview. I think it is a desirable direction. However, IAC will embrace diverse stakeholders' opinions and strengthen the report's reliability, if opinions from local representative community organizations influencing the IAC's management activities and critical voices from NGOs are also included. I also believe that IAC's social responsibility will be strengthened by providing feedback through the report on the IAC's environmental management policy, reflection of stakeholders' opinions on IAC's business, the plan, timing, method and level of reflecting the opinions, and the reason if not reflected.

IAC needs to classify, manage, and review its Low Carbon, Eco-friendly Management issue pool and apply the key issues as constantly and continually as possible, which are identified through the annual materiality test (Example: comparison of key issues from Green Report 2016 and 2017). It will help IAC identify the needs and expectations of its internal and external stakeholders as well as changes in their thoughts, which will raise IAC's capability of respond to its stakeholder's needs as well.

Amongst all environmental issues, climate change caused from global warming is a joint issue that all human kind have to solve together. One of the big trends in the world's notable companies' GHG policy is engaging their suppliers. IAC tries to reduce GHG emissions having signed the 2nd voluntary agreement on GHG reduction with twelve tenant and partner companies last year. This is an essential policy reflecting that 35% of the IAC's emission is emitted by these companies. I hope IAC finds a method to fully engage its partner and tenant companies for GHG reduction. Also, I recommend IAC communicate its GHG reduction efforts with global stakeholders through participating in the Carbon Disclosure Project, the information disclosure initiative which 6000 companies across the world participate in.

IAC will propose the second passenger's terminal as a 'Eco-friendly, Smart Airport'. I wish all the best for IAC to grow as the number one airport, taking the global leadership in environmental management specially on climate change and fulfilling its corporate social responsibility with the sense of duty as a state-owned company.

Third-party
Assurance
Statement



Jong-oh Lee

Secretary of the Korea Sustainability Investing Forum
Secretary of the Korean commission for CDP

GRI INDEX

Code	GRI	Satisfaction	Page
Environmental Performance Indicators			
Raw Materials			
G4-EN1	Materials used by weight or volume	N/A	18-19, 33
G4-EN2	Percentage of materials used that are recycled input materials	●	18-19, 32, 37
Energy			
G4-EN3	Energy consumption inside the organizational boundary	●	18-19, 32
G4-EN4	Energy consumption outside of the organizational boundary	●	11, 28
G4-EN5	Energy intensity	●	18-19, 32
G4-EN6	Reduction of energy consumption	●	21, 32
G4-EN7	Reductions in energy demands in products and services	●	18-19, 32
Water			
G4-EN8	Total water withdrawal by source	●	18-19, 33
G4-EN9	Water sources significantly affected by withdrawal by water	●	18-19, 33
G4-EN10	Percentage and total volume of water recycled or reused	●	18-19, 33
Biodiversity			
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	●	33, 34
G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value	●	32-35
G4-EN13	Habitats protected or restored	●	32-35
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	●	33-35
Emissions			
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	●	18-19, 36
G4-EN16	Energy indirect greenhouse gas (GHG) emissions (scope 2)	●	18-19, 36
G4-EN17	Other indirect greenhouse gas (GHG) emissions (scope 3)	●	18-19, 36
G4-EN18	Greenhouse gas (GHG) emissions intensity	●	18-19, 36
G4-EN19	Reduction of Greenhouse gas (GHG) emissions	●	15, 26-29
G4-EN20	Emissions of ozone-depleting substances	●	29-32
G4-EN21	NOx, SOx and other significant air emission	●	29-32
Effluents and waste			
G4-EN22	Total water discharges by quality and destination	●	18-19, 33
G4-EN23	Total weight of waste by type and disposal method	●	18-19, 33
G4-EN24	Total number and volume of significant spills	●	29, 31
G4-EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel convention Annex I, II, III, and VII	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	●	33-35
Products and Services			
G4-EN27	Extent of impact mitigation of environmental impacts of products and services	●	12-13, 24-25, 28
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	●	12-13, 28, 34-35
Overall			
G4-EN31	Total environmental protection expenditures and investments by type	●	32
Assessment of supplier's environmental performance			
G4-EN32	Percentage of new suppliers that were screened using environmental criteria	●	8, 11
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	●	8, 10-11
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-AO4	Quality of rainfall water by reflecting applicable regulatory standards	●	30-33
G4-AO5	Ambient air quality levels according to pollutant concentrations in microgram per cubic meter (µg/m³) or parts per million (ppm) by regulatory regime	●	30
G4-AO6	Aircraft and pavement de-icing/anti-icing fluid used and treated by m³ and/or metric tonnes	●	41
G4-AO7	Number and percentage (%) change of people residing in areas affected by noise	●	29-31



Incheon Airport is committed to providing accurate and reliable information about eco-friendly activities to stakeholders. For further information or inquiries, please contact:

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