ECO-AIRPORT initiatives for reduction of environmental impact on airport in Japan

Civil Aviation Bureau (CAB),
Ministry of Land, Infrastructure, Transport and Tourism (MLIT)

30 November 2017

Contents

Background

- Large increase in CO_2 emissions from aviation sector is expected due to the rapid development of air transport.
- CO_2 emissions also come from airport operations.
- Aviation sector is expected to contribute to the measures against global warming.
- Air pollution, waste, water consumption in airports can have environmental impact from activities related to the airports.

Japan implements *"Eco-Airport initiatives"* for the reduction of environmental impact from airport

Concepts of Eco-Airport

Environmentally-friendly airport

- Voluntary environmental policies/measures at and around airports
- Improvement of the image of the country (an airport is the gateway to the country)

⇒ **Ecology**

- Reduction of operation costs by saving energy at airports

⇒ **Economy**

Double ECOs

Laws and Regulations related to Eco-Airport

Act

"Airport Act"

The environmental conservation shall be considered in the establishment and management of an airport.

Notice

"The basic policy for the establishment and management of an airport" (by Minister of MLIT) *Article 3, Airport Act*

The measures to promote the environmental conservation and good environmental creation shall be undertaken for the reduction of the environmental impact from airport operation.

Guideline

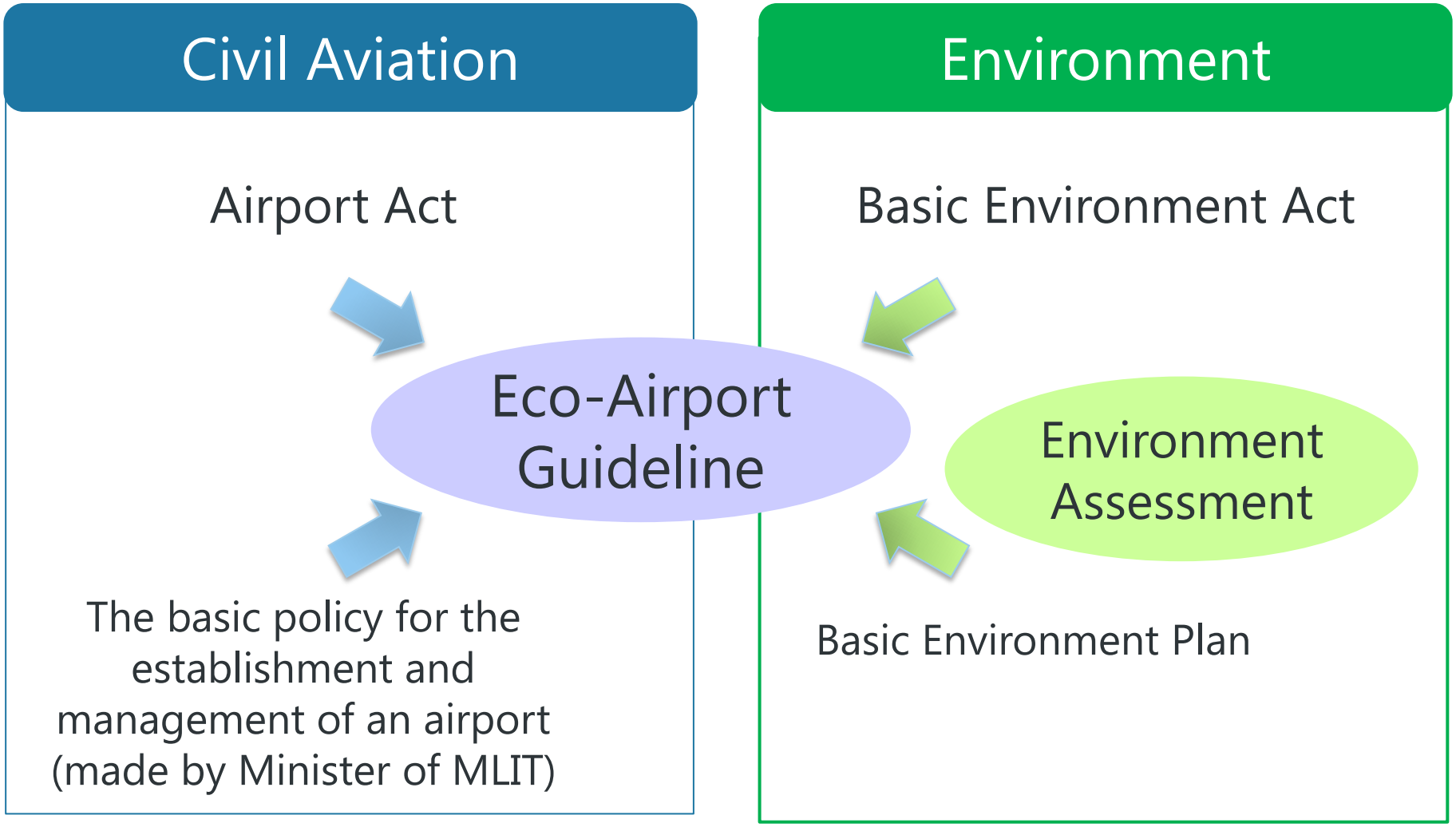
"Eco-Airport Guideline"

Necessary measures to promote "Eco-Airport initiatives"

Not passive but voluntary actions are required

Laws and Regulations related to Eco-Airport

CAB formulates “Eco-Airport Guideline” based on the laws and regulations related to not only civil aviation but environment



Basic Philosophy of Eco-Airport Guideline

1. Airport with global environmental perspectives
2. Airport harmonized with the community environment
3. Sustainable airport contributing to the development of Low-carbon society, recycling-based society and symbiotic society

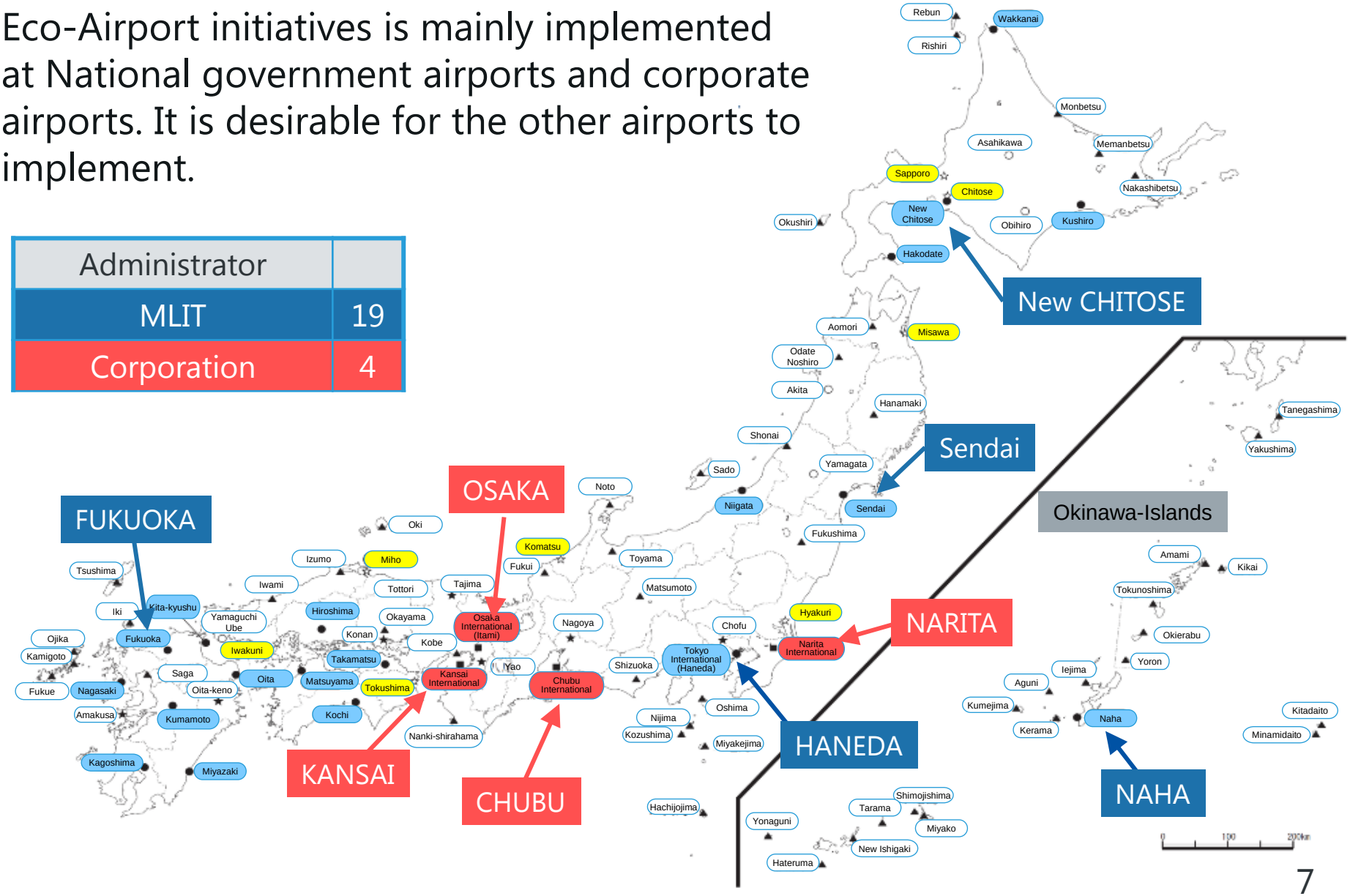
The airport administrator and airport-related business entities shall not only comply with the environmental standards but proactively take various environmental measures, such as energy conservation, the promotion of the 3R's (reduce, reuse and recycle) and the biodiversity conscious environmental creation.

※ Eco-Airport Guideline has been periodically revised.

Airports in Japan

Eco-Airport initiatives is mainly implemented at National government airports and corporate airports. It is desirable for the other airports to implement.

Administrator	
MLIT	19
Corporation	4

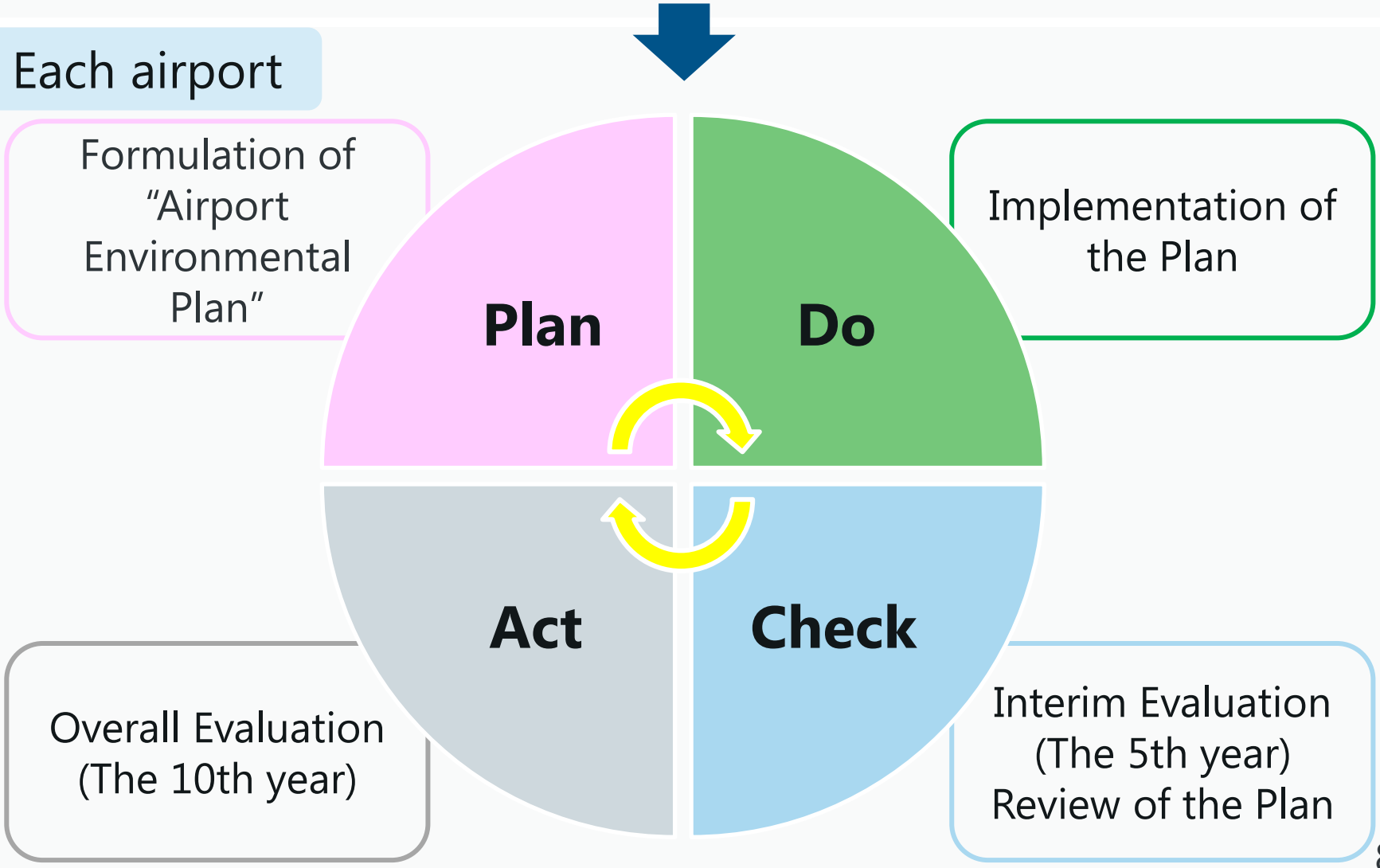


Procedure for Eco-Airport

Government

Formulation of "Eco-Airport guidelines"

Each airport



Eco-Airport Council

Eco-Airport Council consists of various stakeholders related to airport activities.

“Eco-Airport Council” members
Government
Airport authority
Airport building
Ground handling
Airlines
…

Airport Environment Plan → Interim Evaluation (The 5th year) → Overall Evaluation (The 10th year)

Publication

Publication

Airport environmental plan

- The plan should be developed according to the characteristics of each airport, such as scale, location and climatic conditions.
- Targets should be set for environmental elements, such as air quality, energy saving, noise/vibration, waste reduction and water consumption.

Large-scale

Off-shore

Mountainous area

Seashore

Snowy area

1 Concept of Eco-Airport

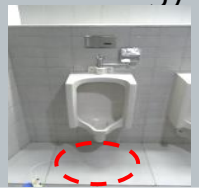
2 *Eco-Airport measures*

3 International cooperation

Image of Eco-Airport measures

Facility development

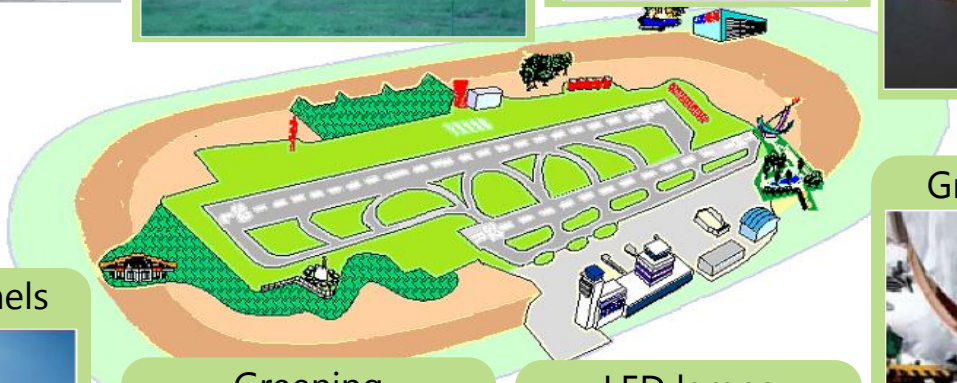
Photocatalyst technology



Effective use of cut grass

Electric vehicles

Rainwater utilization system



Recycling plant

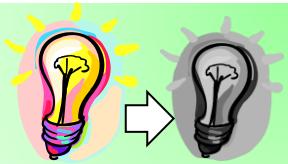
Solar panels

Greening

LED lamps

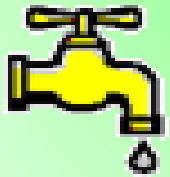
Ground power unit

Daily familiar efforts



Turn off lights when they aren't used

Idle reduction



Water-saving

Recycling

Subsidy system for reduction of CO2 emissions at airports

Energy Use Rationalization Business Support Program by METI※ Since 2007

◆ Promotion of introduction of GPU

One third of construction cost is subsidized when GPU is newly set up at the airport where GPU is not installed.

◆ Promotion of eco-car for GSE vehicles

One third of vehicle price is subsidized when the fuel efficient GSE vehicles are introduced.

- 2007 total 15 vehicles
- 2008 total 1 vehicle

※METI：Ministry of Economy, Trade and Industry

Introduction of hydrogen energy

- The utilization of hydrogen energy has been considered in order for the visitors to realize the hydrogen society in the Tokyo 2020 Olympic & Paralympic Games.
- Demonstration project for the utilization of hydrogen energy for service and industrial vehicles is scheduled to be performed from 2017 to 2020 at Haneda Airport.

Subsidy from Tokyo Metropolitan Government

・Construction of Hydrogen station　50%　（Upper limit 150 mil. yen）
・Management of Hydrogen station　1,000 mil. yen per year（until 2020）

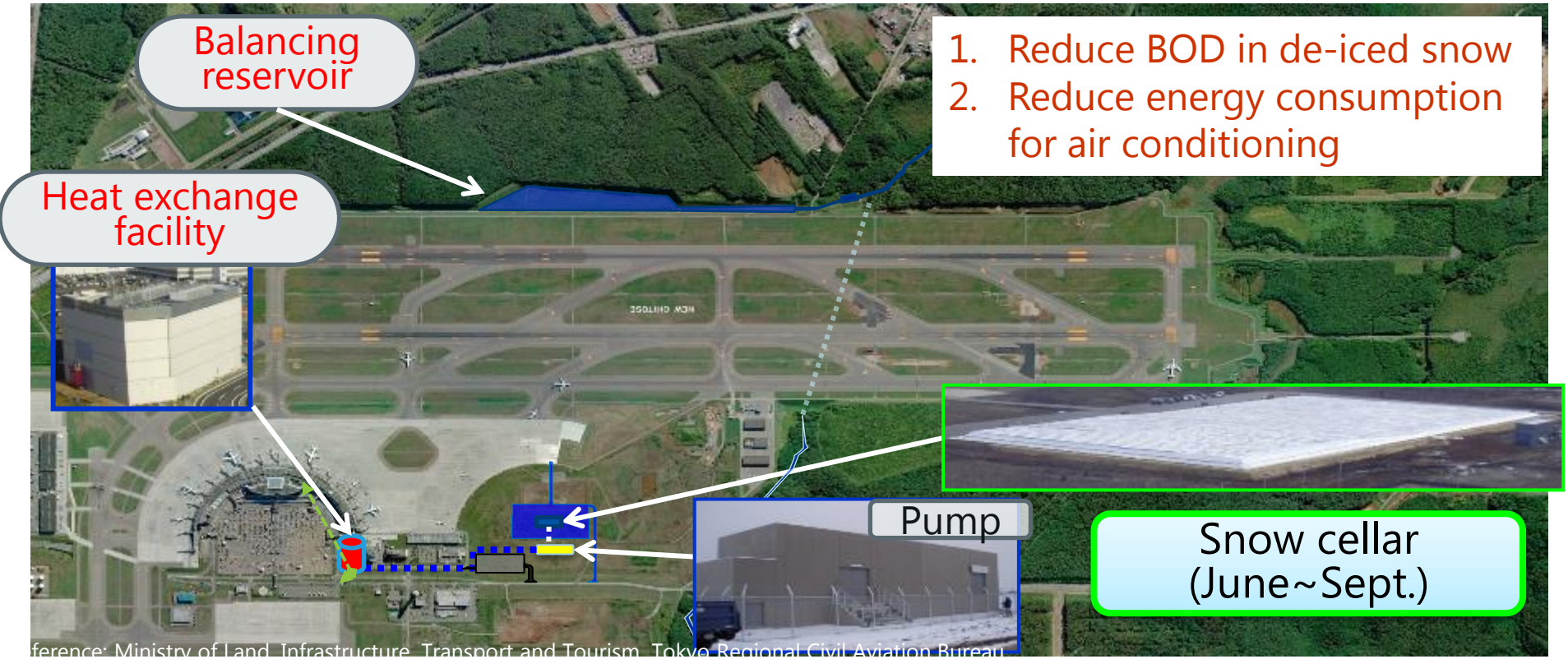
Source: URL https://www.toyota-shokki.co.jp/news/release/2016/07/26/001318/

Source: URL http://www.iwatani.co.jp/jpn/downloads/images/img34.jpg

The Cool Project

New-Chitose Airport

Using snow for a portion of the terminal building's air condition



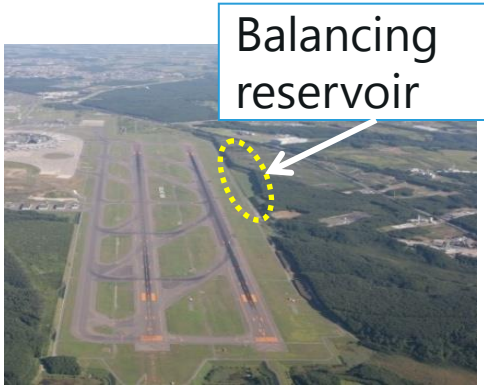
- Subsidy from New Energy Promotion Council (Ministry of Economy, Trade and Industry) in 2009
- Business owner：CENTRAL LEASING SYSTEM Co.,LTD.
- Subsidy for installation of cool energy utilization facilities
- Amount of subsidy：One-third of expense

The Cool Project

BOD Reduction in melting snow

De-icing

Snow cleared from airport surfaces is collected to be piled up mountain-high.

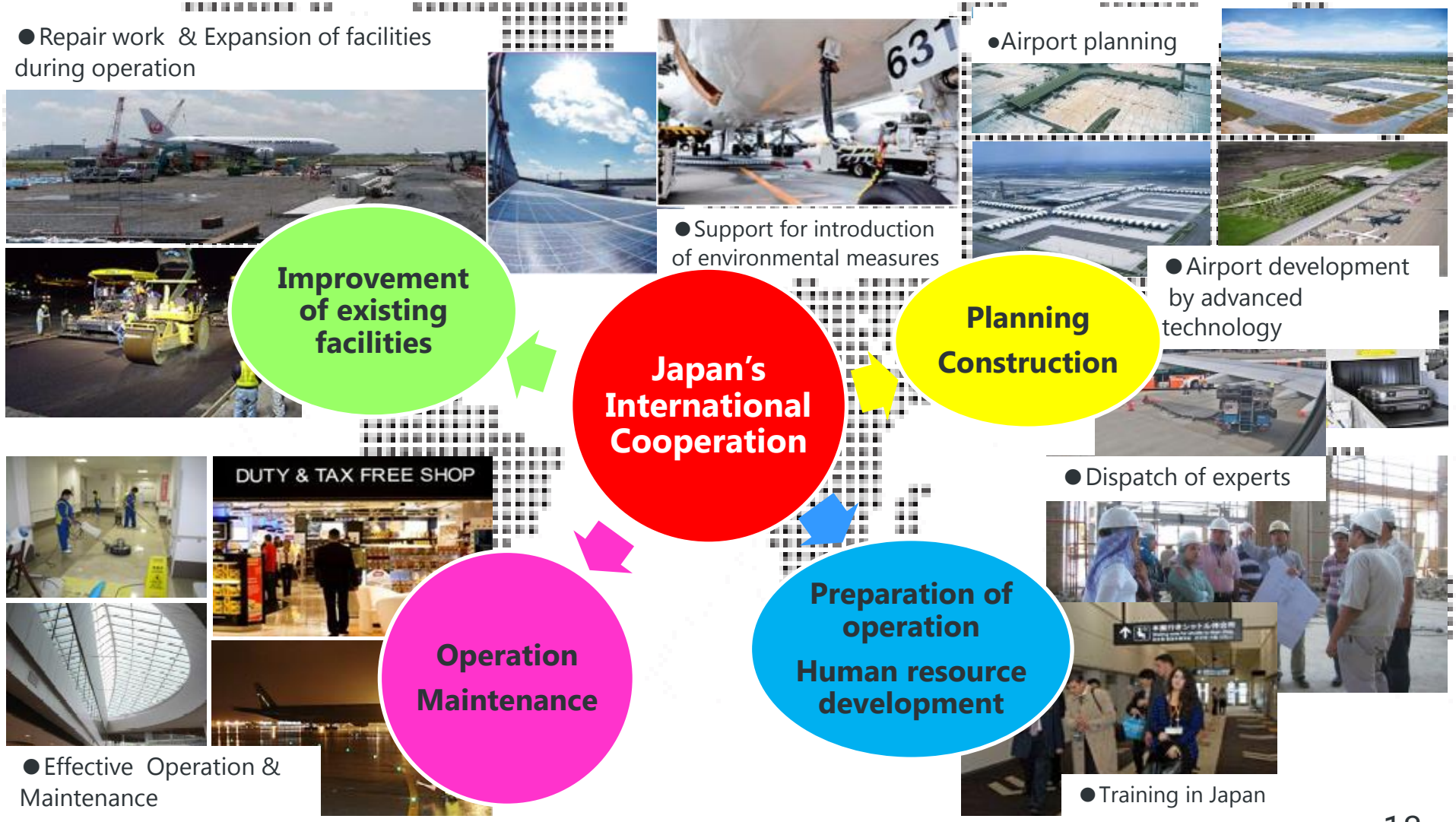


Water for melting snow is stored in the balancing reservoir to reduce BOD.

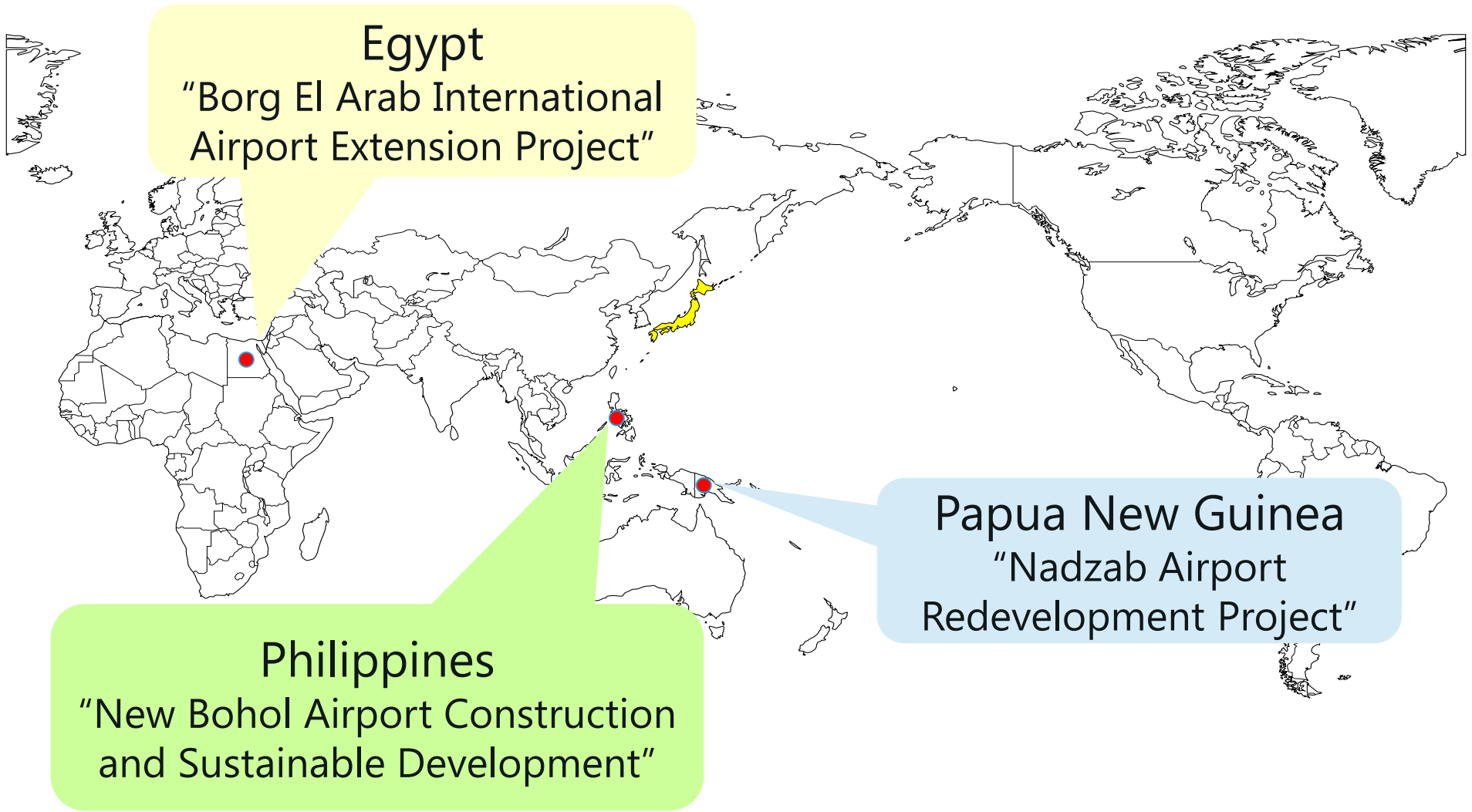
Contents

Japan's International Cooperation in the Airport Sector

Japan's assistance to foreign airports includes a wide variety of items



Japanese ODA Loan Projects for the realization of Eco Airport



Philippines
“New Bohol Airport Construction and Sustainable Development”

Signing Date

March 27, 2013

Executing Agency

Department of Transportation and Communications

Terms and Amount of Loan

Amount (mil yen)：10,782 (About 96 mil $)

Annual interest rate (%)：Project 0.20

Consulting Services 0.01

Payment Period (years)：40

Grace Period (years)：10

Procurement：Japan tied

Project Status

Under construction

Environmental considerations

- Coral reef conservation by taking measures against muddy water and red soil discharge during construction
- Introduction of energy saving technologies under Eco-Airport initiatives

Settling basin

Covering Sheet

Pictures at New-Ishigaki airport

Papua New Guinea
“Nadzab Airport Redevelopment Project”

Signing Date

October 14, 2015

Executing Agency

National Airports Corporation

Terms and Amount of Loan

Amount (mil yen)：26,942 (About 240 mil $)

Annual interest rate (%)：Project 0.10

Consulting Services 0.01

Payment Period (years)：40

Grace Period (years)：10

Procurement：Japan tied

Project Status

Detailed Design

Environmental considerations

- LED illumination and energy-saving air conditioning and water systems
- Introduction of energy saving technologies under Eco-Airport initiatives

Project items

- Construction of passenger terminal building
- Cargo terminal building
- Rehabilitation of Control Tower
- Expansion of Runway, Apron, taxiway

ASEAN-Japan Cooperation on Eco-Airport

Technical support for promotion of Eco-Airport
in ASEAN countries

The needs of technique of airport environment

Provide technical information

・Japan-ASEAN Eco-Airport Project
・JICA seminar

ASEAN-Japan Cooperation on Eco-Airport features

Objectives

Development of critical policies and measures for improvement of operations and environmental quality of airports in the ASEAN region.

Activities

2004	Adoption of an ASEAN-Japan Airport Study Project as one of the AJTP*) project
2005-2008	Eco-Airport was selected and implemented as the project theme.
2008	Endorsement of the ASEAN-Japan Eco-Airport Guidelines
2009-2011	JICA seminar on Eco-Airports - JICA Training Course "Airport Development Planning for Environmental Considerations" -
2012	JICA follow-up seminar on Eco-Airports (Vietnam)
2013-2014	Survey on the ASEAN Eco-Airport progress - Questionnaire and field survey -
2017	Eco Airport Training Program by CAB in Japan

*AJTP：ASEAN-Japan Transport Partnership

Thank you for your attention!