

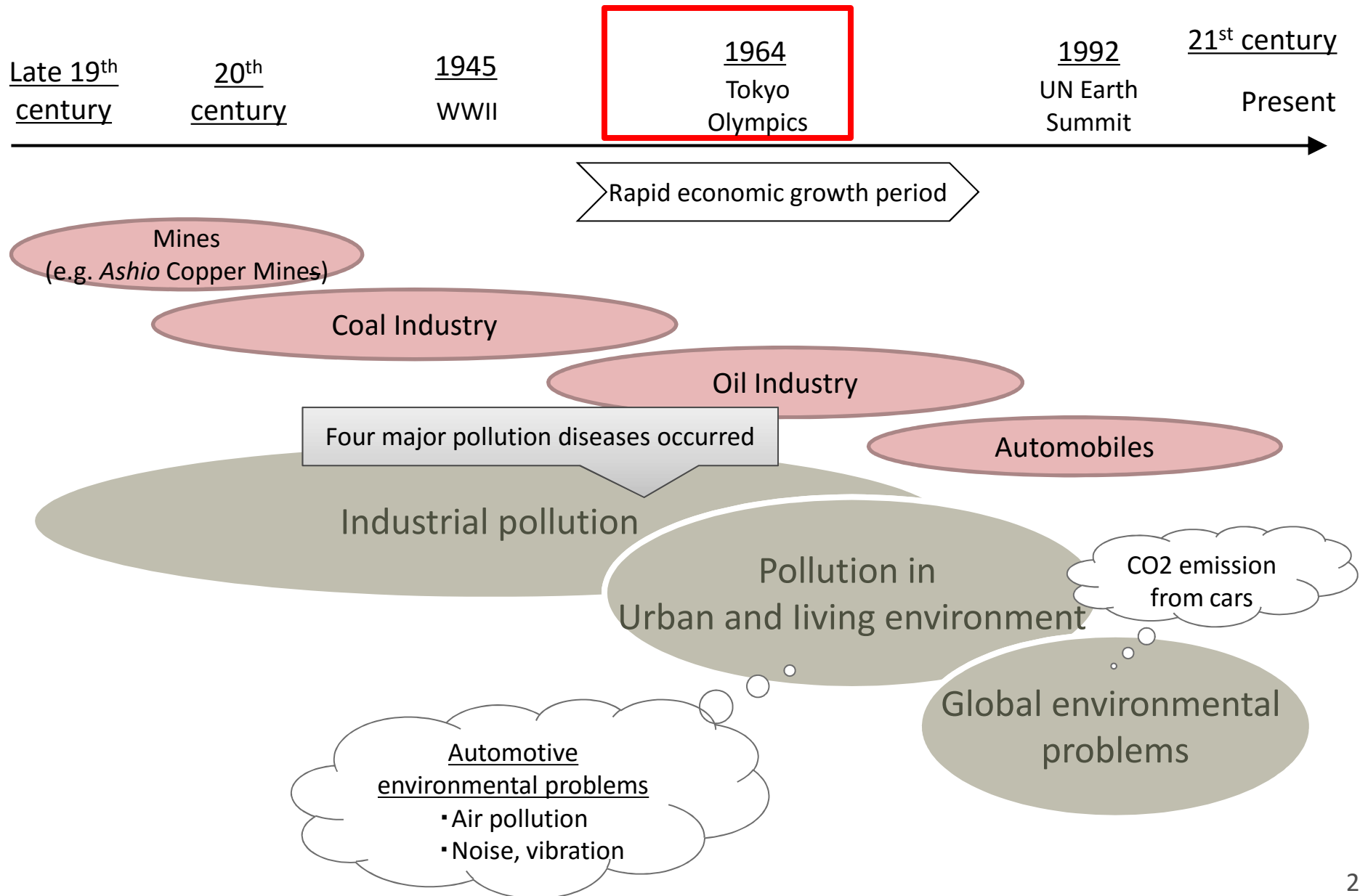
The progress of EST in Japan

~based on Japanese country report by MOE and MLIT~

October 5, 2018

Ministry of the Environment, Japan

History of Environmental Problems in Japan



History of Environmental Problems in Japan

Mid-1950s to the first half of the 1970s

~ Rapid economic growth period ~

Air pollution caused by sulfur oxides
due to industrialization



1962: Establishment of **the Smoke and Soot Law**

1968: Establishment of **the Air Pollution Control Act**

1970: The “Pollution Parliament”

Revision of **the Air Pollution Control Act**

(Introduction of nationwide uniform emission control and direct penalty)

In addition, 13 other bills related to pollution (for a total of 14 bills), including amendment of the Basic Law on Environmental Pollution Control, passed in this parliament

1971: Establishment of the Environmental Agency



1960s: Many people suffered from asthma in Yokkaichi City

The progress of EST: "Avoid" Strategy

Goal Description	Examples of pilot projects and/or policies developed or under development
1. Land-use and transport planning 【Largely in Place】	(1) "Comprehensive urban and regional transport strategy" - <u>Toyama city</u> etc.
	(2) "Low Carbon City Plan" -based on "the Low Carbon City Act" established: 24plans (as of July 2018)
	(3)"Regional Public Transport Network Formation Plan" -based on "the Law on activation and regeneration of local public transport" established: 415plans (as of April 2018)

The progress of EST: "Avoid" Strategy (Toyama city)

- Implemented efforts to improve dead tram tracks and created Japan's first full scale LRT.
- The number of users increased 2.1 times for weekdays and 3.8 times for weekends compared to before the operations started.



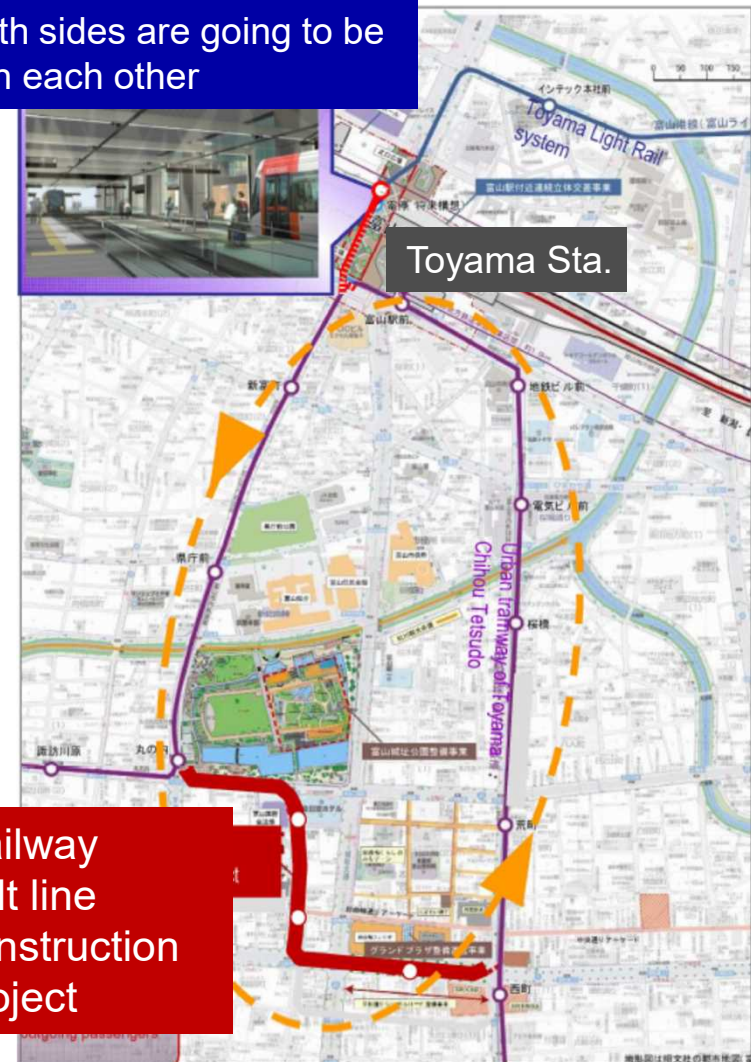
North and south sides are going to be connected with each other

Improvement of operation services

Schedule:	Every 30 to 60 minutes	➔	every 10 to 15 minutes
Operation Time	From 5 AM to 10 PM	➔	From 5 AM to 11 PM
Number of stations:	9 stations	➔	13 stations
Train vehicle:	Rolling stock	➔	all low floor trams

Fixed fare system: 200 yen

Smooth connection between bus and LRT



The progress of EST: "Shift" Strategy

Goal Description	Examples of pilot projects and/or policies developed or under development
<p>4. Non-Motorized Transport</p> <p>【Largely in Place】</p>	<p>(1) The Promotion of Upgrading Transport Nodes - Shinjuku St. etc.</p> <p>(2) Active Use of Bicycle - support the organizing program for bicycle network planning etc. - support community cycle business</p>
<p>5. Public transport</p> <p>【Largely in Place】</p>	<p>(1)Promotion of using public transportation - support for the adoption of LRT, BRT, etc.</p> <p>(2)Interoperation as well as expansion of various Public Transport IC Card</p>
<p>6. Transportation Demand Management</p> <p>【Largely in Place】</p>	<p>(1)To improve transport efficiency and standardize traffic volume - Park & Ride , enhancing the provision of information , etc.</p> <p>(2)TDM Operation Test - Promotion of using public transportation , improving the efficiency of distribution system in urban areas , etc.</p>
<p>7. Inter-city passenger and goods transport</p> <p>【Largely in Place】</p>	<p>(1)Support to promote the relevant measures - CO2 reduction measures in logistics sector - Low Carbonized large-sized vehicles etc.</p> <p>(2)Steadily construction of Shinkansen Network</p>

The progress of EST: "Improve" Strategy

Goal Description	Examples of pilot projects and/or policies developed or under development
8. Transport fuels and technologies 【Largely in Place】	(1) The Government aims to capture 50-70% of next-generation automobiles to total new car sales by 2030 -Supporting measures EVs integrated into urban development -Technological development of fuel cell forklifts, fuel cell waste collection vehicles and fuel supply stations -Taxations according to the environmental performance
9. Standards 【Largely in Place】	(1)The global harmonization of vehicle emissions regulations -Planning to Introduce WMTC and WHDC in 2016 , (2)Unified world harmonized light vehicles test procedure(WLTP) for passenger car is applied, since 2018
10. Inspection and maintenance 【Largely in Place】	(1)Vehicle Registration and Inspection System(Fully Completed) (2)Measures based on the Automobile NOx-PM Law
11. Intelligent Transportation Systems 【Largely in Place】	(1)ETC2.0 -expansion of new services such as utilizing the routing information gathered through ITS spots , adding to avoid traffic jams and safety drive supporting services.
12. Freight transport 【Largely in Place】	(1)ACT on Advancement of Integration and Streamlining of Distribution Business

The progress of EST: "Cross-Cutting" Strategy

Goal Description	Examples of pilot projects and/or policies developed or under development
13. Safety 【Largely in Place】	(1) Measures to prevent traffic accidents ex)Speed Bump etc. (2) Automobile liability security system
15. Air quality and noise 【Largely in Place】	(1)Constant monitoring of Air Pollution by Local Governments under Air Pollution Control Law (2) Constant monitoring of Motor vehicle Traffic Noise by Local Government under Noise Regulation Law
16. Global climate change and energy security 【Largely in Place】	(1)National Communication (2)GHGs Inventory
17. Social equity 【Largely in Place】	(1)Promotion of making public transport facilities and buildings barrier-free -Revision of traffic barrier-free standards and guidelines
19. Information and awareness 【Largely in Place】	(1)Promotion of "Smart Move", Eco-driving - <u>International cooperation (Co-Benefits approach)</u>
20. Institutions 【Fully Completed】	(1)Research for Reduction of CO2 Emissions in Road Transportation (2)Research of Implementation and Promotion of Life Cycle Assessment of Social Capital

The progress of EST: "Cross-Cutting" Strategy (Int'l cooperation)

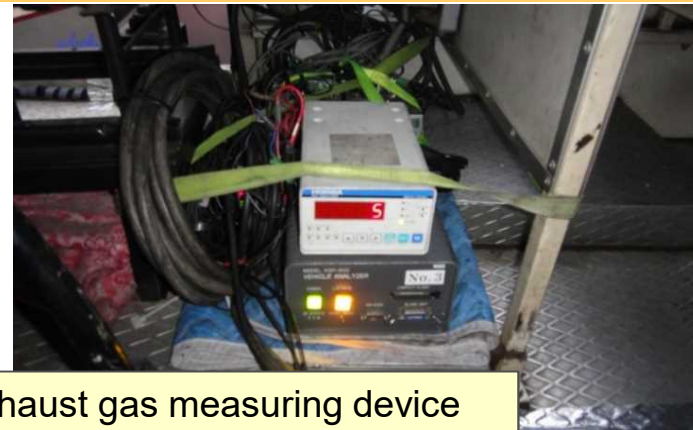
Japan is promoting co-benefits (common benefits) approaches which can simultaneously achieve measures to reduce greenhouse gas emissions effectively, as well as for environmental pollution control and climate change.

Bilateral cooperation project in Sri Lanka

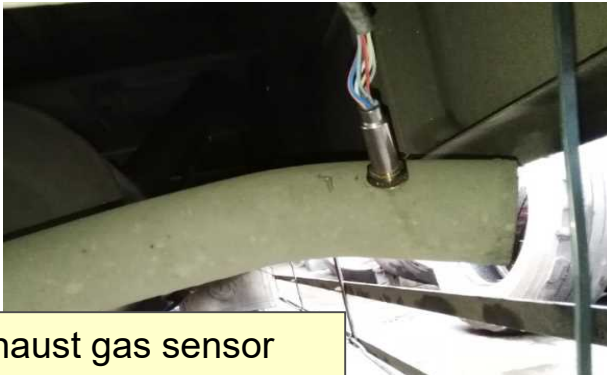
~ International development of co-benefit type environmental measures ~



Test vehicle (national bus))



Exhaust gas measuring device



Exhaust gas sensor



Drive recorder

■ Preparation for implementation

Installation of drive recorder equipped with Eco-drive support function and automobile exhaust gas measurement device.

The progress of EST: "Cross-Cutting" Strategy (Int'l cooperation)

Bilateral cooperation project in Sri Lanka

~ International development of co-benefit type environmental measures ~

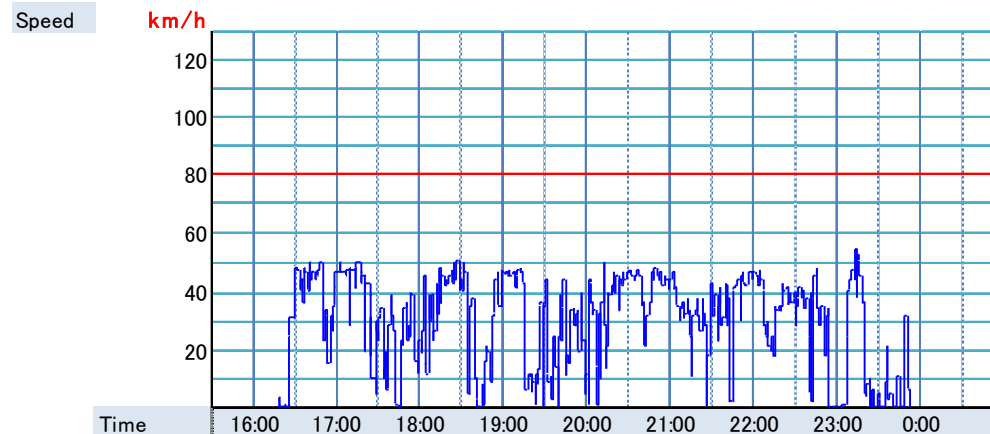
■ Implementation content

- Guidance on Eco-drive from results before implementation
- Driving dynamics etc. measured after Eco-drive implementation
- Implementation of Eco-drive training course

■ Initiative towards popularization (a planned act)

- Eco-drive diagnosis, preparation of implementation manual
- Implementation of Eco-driving training course for instructor

2018/xx/xx	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
Speed over									
Acceleration over		■							
Idling								■	
Long driving									



Safety Evaluation	Economic Evaluation	Total
55	45	50

Record of driving dynamics and Eco-drive diagnosis (example) score(example)

The Joint Crediting Mechanism (JCM)

- Facilitating diffusion of leading low carbon technologies through contributions from Japan and evaluating realized GHG emission reductions or removals in a quantitative manner to use them for achieving Japan's emission reduction target.
- Japan will address the high initial cost barrier of introducing advanced low-carbon technologies in the Partner countries (17 countries) through the JCM (GoJ implements several supporting schemes)



Waste heat recovery in Cement Industry, JFE engineering, Indonesia



Eco-driving with Digital Tachographs, NITTSU, Vietnam



Energy saving at convenience stores, Panasonic, Indonesia



High efficiency air-conditioning and process cooling, Ebara refrigeration equipment & systems, Indonesia



High-efficiency Heat only Boilers, Suuri-Keikaku, Mongolia



Upgrading air-saving loom at textile factory, TORAY etc., Indonesia, Thai, Bangladesh



Installing solar PV system, PCKK, Palau Maldives



Amorphous transformers in power distribution, Hitachi Materials, Vietnam



Co-generation system at factory, Toyota, Nippon Steel & Sumikin Engineering, Indonesia, Thai



High efficiency air-conditioning system, Hitachi, Daikin, Vietnam



Solar PV System at Salt Factory, PCKK, Kenya



Waste to Energy Plant, JFE engineering, Myanmar



High efficient refrigerator, Mayekawa MFG, Indonesia



Regenerative Burners in industries, Toyotsu Machinery, Indonesia



LED street lighting system with wireless network control, MinebeaMitsumi, Cambodia

The Joint Crediting Mechanism (JCM)

Eco-driving by Utilizing Digital Tachograph System

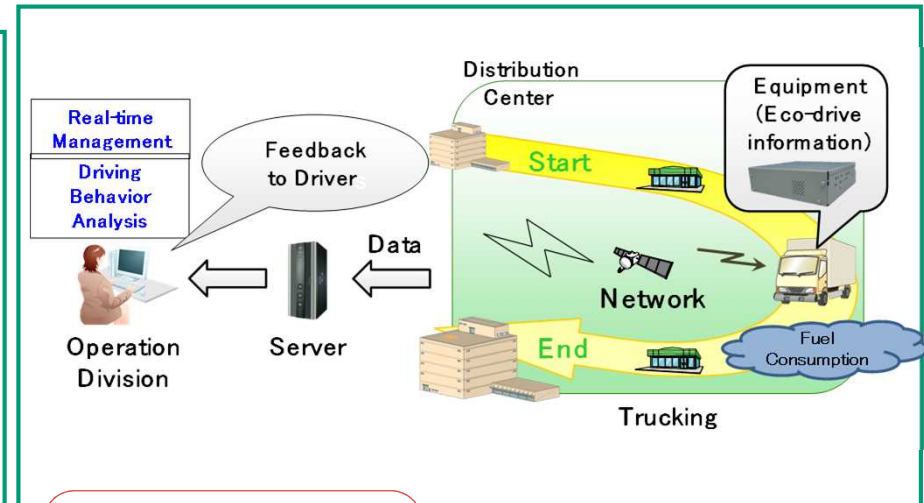
~NIPPON EXPRESS (VIETNAM)~

Outline of GHG Mitigation Activity

In this project, 130 trucks in use by NIPPON EXPRESS (VIETNAM) will be fitted with eco-drive improving system using digital tachographs, so that the quantity of fuel consumption, running distance and relevant data on driving behavior of drivers will be continuously analyzed with cloud network in Binh Duong and Hanoi city, Vietnam.

The drivers will be given advice in order to improve their driving behavior based on the analyzed data, and feedback linked to the training outcome will be provided for further improving the driving behavior.

This project contributes to realize improvement of transportation quality as well as fuel efficiency which is directly linked with reduction in CO₂ emissions.

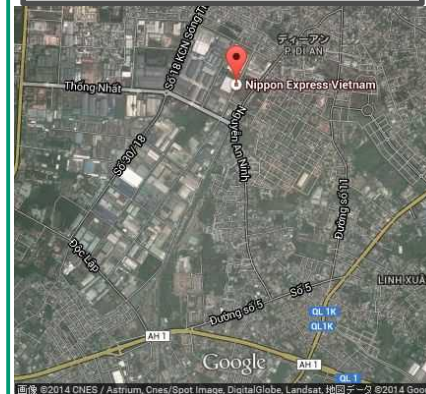


Sites of Project

1) Binh Duong Province

2) Hanoi City

Song Than Logistics Center



21km to HCMC

Quang Minh Warehouse



Noi Bai International Airport

Expected GHG Reductions

294tCO₂/year

(Reference Fuel Consumptions – Project Fuel Consumptions) x Emission Factor (EF)

Thank you for your attention.

