10-5: 東京都におけるWTE施設事例

10-5:
東京都におけるWTE施設事例

10-5-1 2022年12月3日

Online Tour
Suginami Incineration Plant

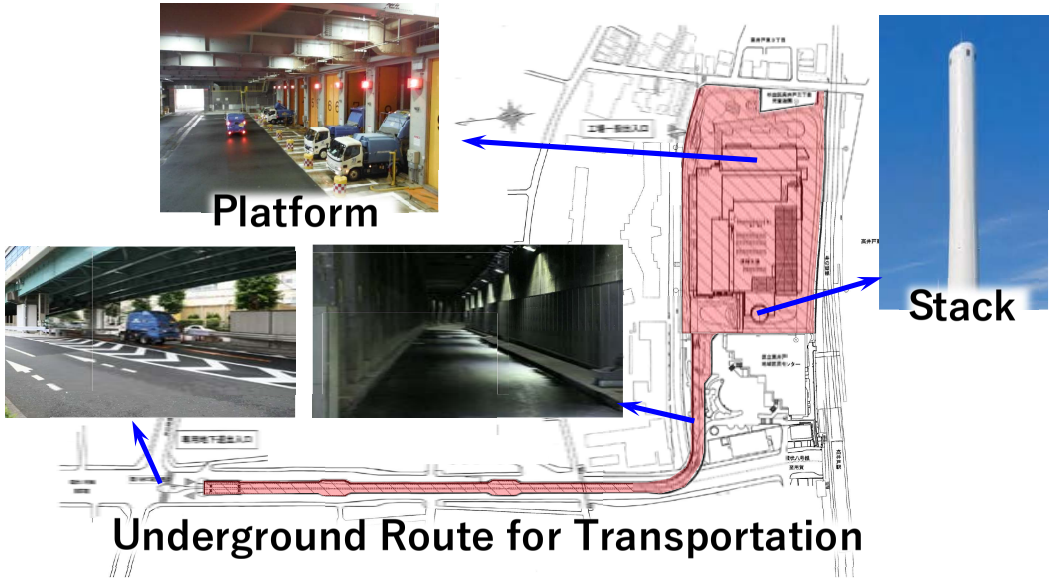
23
Clean Authority of TOKYO


Suginami Incineration Plant

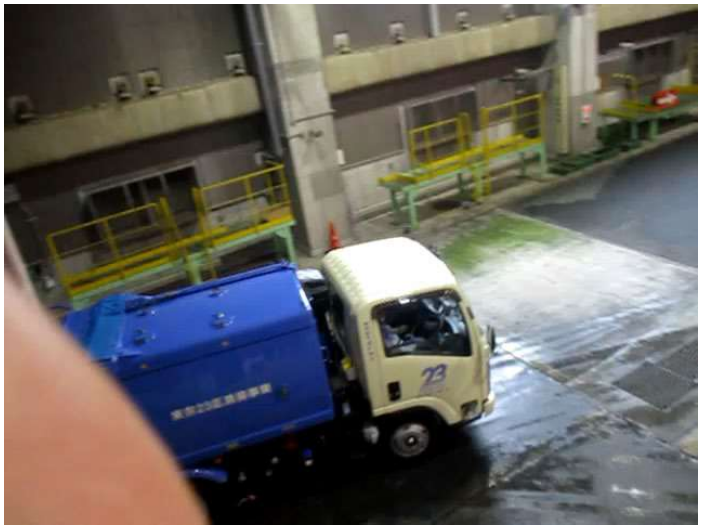
Promenade

Biotope

Underground Route for Transportation

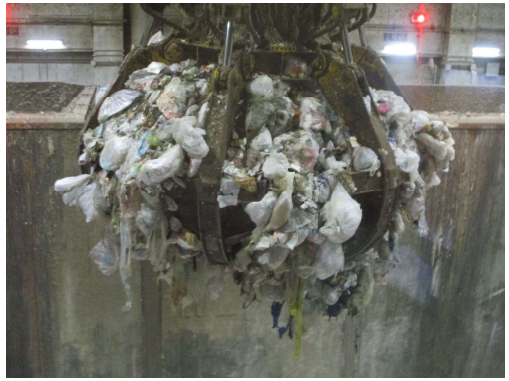


Platform



Platform
Video

Waste Bunker



Waste Crane

Waste Crane Video

Boiler

Inside the Incinerator

Inside the Incinerator Video

Central Control Room

Steam Turbine Generator

A Place for Environmental Education

Environmental Paintings
by Elementary School Student

Top the Stack

Inside the Stack

View from the Stack

Thank you

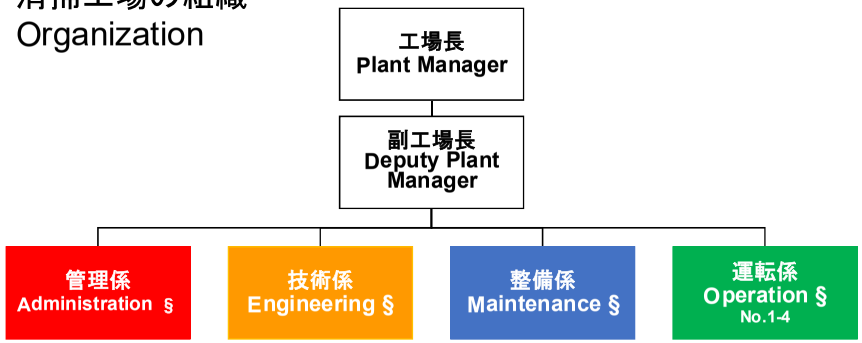
Environmental measures surrounding Suginami Incineration Plant

Clean Authority of Tokyo
Kobayashi Tomoki

自己紹介
Self-introduction

目黒清掃工場は建替えに伴い、平成29年2月から稼働停止
江戸川清掃工場は建替えに伴い、令和2年9月から稼働停止

清掃工場の組織
Organization



- Office clerks
- Mechanical, Electrical, Chemical engineers
- Facilities management technicians

Environmental measures in incineration plant

1. Construction of facilities and installation of equipment with structures that conform to technical standards
2. Prevention of hazardous substances generation through combustion control
3. Detoxification by each processing facility
4. Compliance evaluation through monitoring and measurement, and improvement of treatment processes

1 : Studied at the construction planning stage
2 & 3: Monitoring, operation, and inspection by operation staff
4 : Conducted by technical staff (chemical engineers)

Compliance evaluation through monitoring and measurement, and improvement of treatment processes

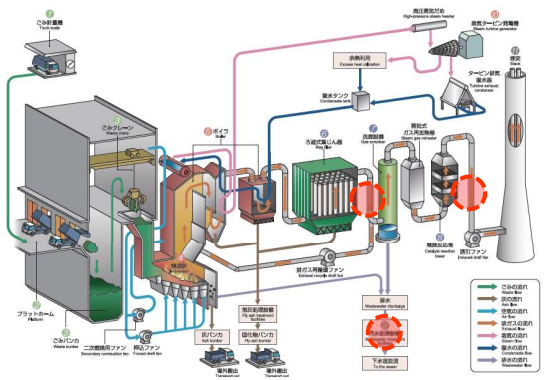
Measurement by continuous analyzer

Monitoring & Self-analysis of treatment process

Analysis and measurement by third-party organization

Measurement by continuous analyzer

- Periodic calibration and inspection
- Responding to equipment problems



Monitoring & Self-analysis of treatment process

- Checking the mixing of fly ash and chemicals

Monitoring & Self-analysis of treatment process

- Checking the coagulation and sedimentation of wastewater

Analysis and measurement by third-party organization

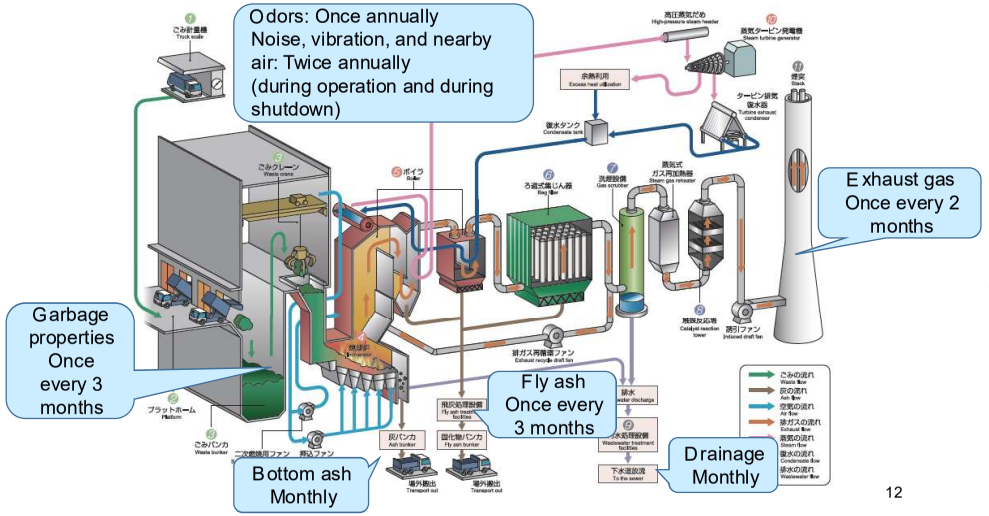
- Analysis by a registered measurement certification operator based on the Measurement Act

Exhaust gas

Drainage

Properties of waste

Analysis and measurement by third-party organization



Notifications and report to competent authorities

• Application for plant installation approval (environmental protection ordinance)	Suginami City
• Notification of establishment of waste processing facility (Waste Management and Public Cleansing Act)	Tokyo Metropolitan Government
• Notification of establishment of soot and smoke-generating facility (Air Pollution Control Act)	Tokyo Metropolitan Government
• Notification of establishment of mercury-discharging facility (Air Pollution Control Act)	Tokyo Metropolitan Government
• Notification of establishment of Specified Facility	
(Noise Regulation Act/Vibration Regulation Act)	Suginami City
(Water Pollution Prevention Act)	Tokyo Metropolitan Government
(Sewerage Act)	Tokyo Metropolitan Government
(Act on Special Measures against Dioxins)	Tokyo Metropolitan Government
Others	

Conclusion

As part of environmental measures taken at incineration plants, chemical engineers...

- Regularly check the treatment of exhaust gas and wastewater to prevent pollution and maintain public health;
- Strive to improve treatment processes to ensure legal compliance and cost effectiveness; and
- Fulfill their obligation to be accountable as government personnel (civil servants).

Thank you!

Do you have any question?

10-5:
東京都におけるWTE施設事例

10-5-2　2222年12月6日




Clean Authority of TOKYO

Introduction of waste management of Tokyo 23cities

≪MENU≫

Clean Authority of TOKYO

1. Overview of Tokyo 23cities

1. Overview of Tokyo 23cities

(1) Tokyo Metropolitan and Tokyo 23cities

		Tokyo Metropolitan	Tokyo 23cities
Area (㎢)		2,194	628
Population (million people)		13.86	9.57
Waste amount (million tons)	Total	4.385	3.251
	Amount of general waste		**2.754**

2018's figures

Local Government
Tokyo 23cities
&
Clean Authority of Tokyo
(CAT)

添付資料 10

1. Overview of Tokyo 23cities
(2) Tokyo Metropolitan and Tokyo 23cities

Waste

General waste
・・・Other than industrial waste

Industrial waste
・・・20 types stipulated by law of waste generated by business activities

【Legal obligation】
Proper processing by the municipality

23 Clean Authority of TOKYO

1. Overview of Tokyo 23cities
(2) The role of Clean Authority of TOKYO (CAT23)

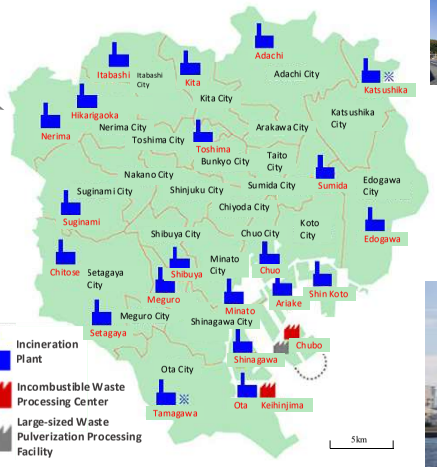
Waste management

Waste collection and transfer, Recovery of resources, etc.	Managed by **each of Tokyo 23 cities**
Intermediate waste treatment of waste (Incineration, pulverization), Night soil pretreatment, etc.	Managed by **Clean Authority of TOKYO (CAT)**
Final disposal(landfill)	Managed by **Tokyo Metropolitan Government** As consigned by Tokyo 23 cities and CAT

1. Overview of Tokyo 23cities
(3) Clean Authority of TOKYO（Local Government）

21 incineration plants
3 processing facility

Over 7,000 tons a day process



Nerima IP

Chuo IP

Toshima IP

Ota IP

2. About waste management of Tokyo 23cities

23 Clean Authority of TOKYO

添付資料 10

About waste management of Tokyo 23cities

(1) History of Tokyo 23cities

Former Conditions → **Present Conditions**

1930's
Fukagawa
Garbage
Treatment Plant

Shin-Koto
Incineration Plant

1960's
Bell collection
by handcarts1960

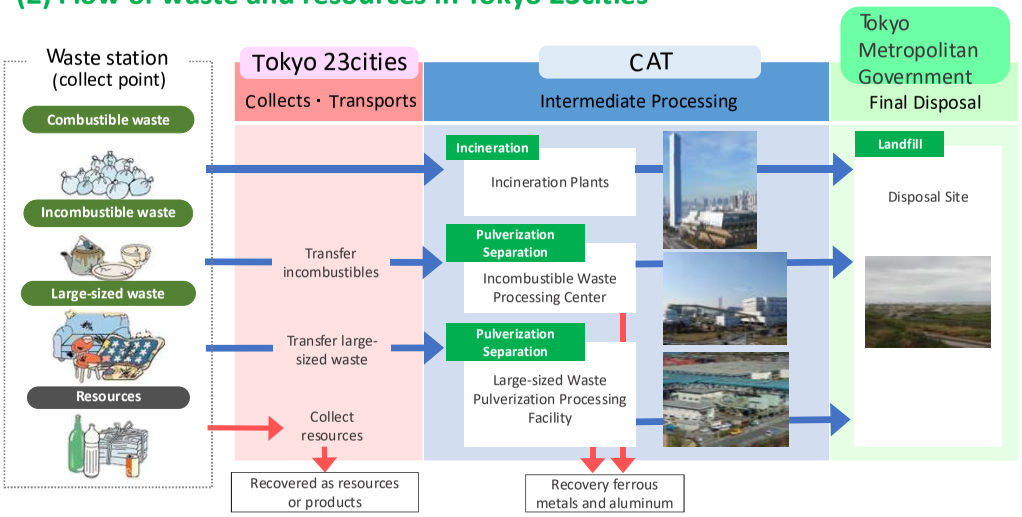
Waste collection

1970's
Direct landfill
disposal
of large-sized
waste

Landfill site

About waste management of Tokyo 23cities

(2) Flow of waste and resources in Tokyo 23cities



2. About waste management of Tokyo 23cities

(3) Effect of incineration

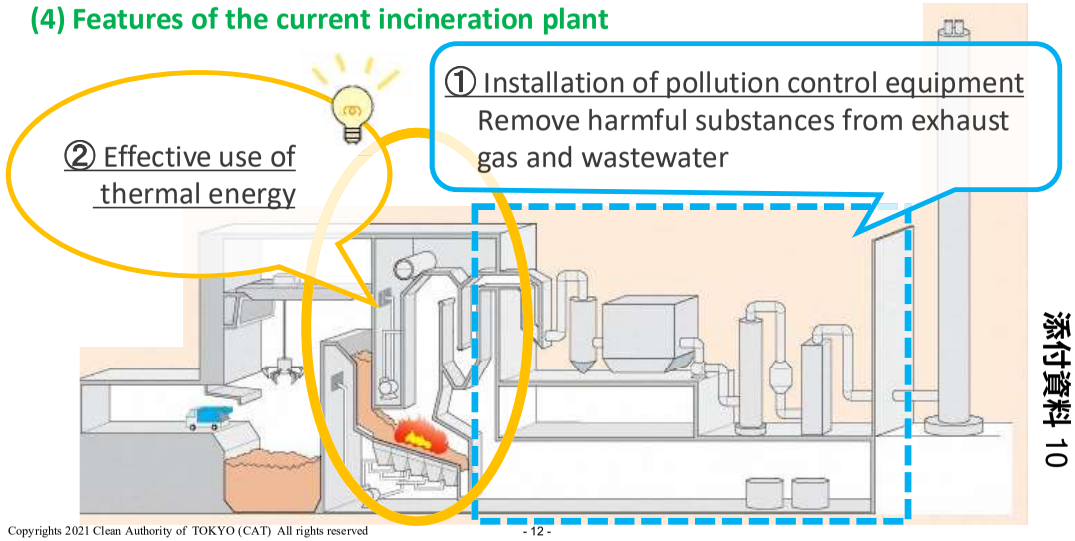
≪Effect of incineration≫

① Prevention of bacteria, vermin and foul odors
- Maintaining a sanitary environment

② Volume reduction of waste (approximately 1/20)
- Long-term use of landfill site
- Recycling a part of incineration ash

2. About waste management of Tokyo 23cities

(4) Features of the current incineration plant



添付資料 10

Thank you for your attention!

Consensus Building with Local Residents

CLEAN AUTHORITY OF TOKYO
INTERNATIONAL COOPERATION OFFICE FOR WASTE MANAGEMENT
Clean Authority of TOKYO

Table of Contents

1. Background

1. Background
Historical background (1)

1924
Incineration by first incineration plant begins

1933
Outcry over soot and smoke from the Fukagawa Waste Disposal Plant
Flies, foul odors, and spread of soot and smoke

Late 1950s
A series of opposition movements against incineration plant construction
Use of force by local residents and filing of administrative litigation

1965
Final disposal site (Yumenoshima)
(Left) Burning away the source of flies
(Right) Line of garbage trucks leading to the disposal site

1972
Blocking of garbage trucks by local residents
Residents oppose the construction of an incineration plant in their ward by forcefully blocking garbage trucks from a local disposal site.

1997
Incineration of all combustible waste

添付資料 10

Source: "Tokyo-to Seiso Jigyo Hyakunenshi" (Tokyo Environmental Public Service Corporation, 2000)

1. Background
Historical background (2): Operations Agreement

Resident opposition

Tailored to meet residents' demands

Dialogue/promises (agreement) with local residents

Incineration plant construction

Regulatory items under the Operating Agreement

Relating to bringing in garbage
- Restriction on amount brought in
- Restriction on garbage brought in from other areas
- Restriction of routes used to bring in/carry out

Relating to incineration
- Restriction on incinerated amounts and items

Relating to pollution prevention
- Stiffer pollution prevention regulations than required by law

1. Background
Historical background (2): Operations Agreement

Regulation of incineration amount (Hikarigaoka Incineration Plant)

Daily volume: 300 tons
(150 tons x 2 incinerators)

Regulation of amount brought in/carried out
(Ariake Incineration Plant)
Waste brought in:
Daily average of 300 tons; effort to reduce number of garbage trucks as much as possible

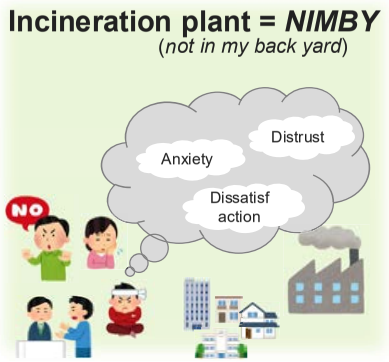
Regulation of harmful substances in exhaust gas
(Hikarigaoka Incineration Plant/Ariake Incineration Plant)

Item	Hikarigaoka Incineration Plant		Ariake Incineration Plant	
	Legal regulation	Self-imposed regulation	Legal regulation	Self-imposed regulation
Soot and dust (g/㎥N)	0.08	0.02	0.04	0.01
Sulfur oxide (ppm)	34	20	140	10
Nitrogen oxide (ppm)	86	70	87	50
Hydrogen chloride (ppm)	430	15	430	10

1. Background
The Significance of Consensus Building

The government cannot construct and operate incineration plants on its own.

Consensus (=understanding, cooperation, and participation) **with local residents is essential!**



2. Implementation of Consensus Building

2. Implementation of consensus building Local opinion (1)

Local opinion

Anxiety	• It's a dangerous facility, isn't it? • Won't the smoke contain harmful substances and cause health problems? • Won't road traffic increase and harm the environment?
Distrust	• The incineration plant and local government could be hiding things they don't want us to know. • The national and local governments decide things without our knowledge.
Dissatisfaction	• It will harm people's image of the area around the construction site. • I understand the need for an incineration plant, but I don't feel that it should be located in my neighborhood (NIMBY).

Response

Building peace of mind
Pollution prevention initiatives
Full information disclosure

Cultivating trust
Holding explanatory briefings
Setting up a council

Consideration for the community
Facility design that is harmonized with the community
Supplying heat and returning other benefits to the community

Peace of mind

Trust

2. Implementation of consensus building Local opinion (2)

	Response	Facility and neighborhood development	Resident explanations and information disclosure
Anxiety	**Building sense of ease**	• Pollution prevention initiatives	・Full information disclosure
Distrust	**Cultivating trust**		・Holding explanatory briefings ・Setting up a council
Dissatisfaction	**Consideration for the community**	• Facility design that is harmonized with the community • Supplying heat and returning other benefits to the community	

2. Implementation of consensus building Information disclosure

Information disclosure at an incineration plant site

Real-time display of measurements taken at the plant entrance, etc.

2. Implementation of consensus building Information disclosure

Information disclosure via a website

Periodic updates of reconstruction

A web page prepared for each plant

2. Implementation of consensus building Information disclosure

Reporting of environmental measurements and recent condition of incineration plants

Main contents
- Environmental policy
- Information on maintenance and management

(Control of air pollutant emissions, prevention of water pollution, prevention of odors, etc.)
- Calls for public cooperation in garbage sorting
- Information on incineration plant tours, etc.

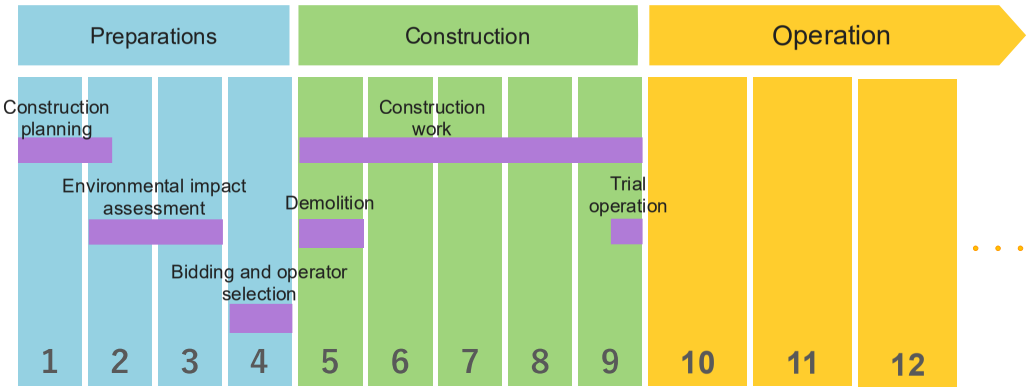
2. Implementation of consensus building Information disclosure

Guided tours of incineration plants

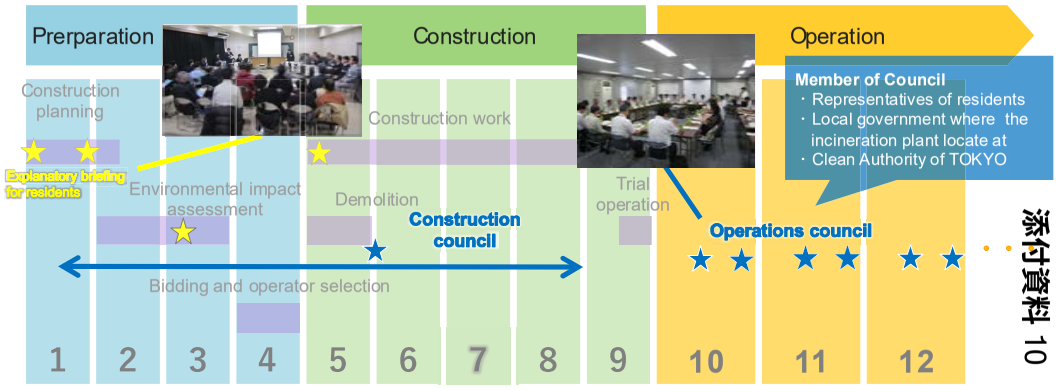
Designed to accommodate a wide range of visitors

Deepening visitors' understanding of the waste incineration plants and safety through the visitor centers which is design to be understandable for the visitors

2. Implementation of consensus building Consultations with local residents



2. Initiatives Consultations with local residents



3. Summary

3. Summary
Key points in building a consensus with local residents

Safe and secure facility

Facility design that brings sense of ease
(Pollution prevention)

Harmony with the surrounding environment
(Use of remaining heat, greening)

Transparent operation

Full information disclosure
(Disclosure of numerical values, plant tours)

Providing opportunities for resident participation
(Briefings, council meetings)

Thank you for your attention

URL/link：https://www.union.tokyo23-seisou.lg.jp.e.de.hp.transer.com/

Separation (Promotion of Waste Reduction and 3R Promotion)

CLEAN AUTHORITY OF TOKYO
INTERNATIONAL COOPERATION DEPARTMENT
FOR WASTE MANAGEMENT

Table of contents

1. Generators' responsibilities and the role of local government

1. Generators' responsibilities and the role of local government

(1) Responsibilities of generators

Generator	Responsibility
Residents	**Waste reduction** Cooperation with national and local government measures
Businesses	**Waste reduction** Cooperation with national and local government measures Proper disposal Ensuring that products can be disposed of properly when they become waste

1. Generators' responsibilities and the role of local government

(1) Responsibilities of generators: waste reduction

Waste separation

Waste reduction

R100 Recycled paper pulp content: Made with 100% recycled paper

Waste recycling

Reuse by transferring to others

1. Generators' responsibilities and the role of local government

(1) Responsibilities of generators: waste reduction

Separation

- Disposal according to local government rules
- Efficient collection of resources
- Minimizing the items that become garbage
- Improper disposal
  → Damages garbage trucks and incineration plants

Waste reduction

Endeavoring to avoid producing waste
Examples:
- Reducing leftover food
- Using products that can be used repeatedly
- Repairing and using products

1. Generators' responsibilities and the role of local government

(1) Responsibilities of generators: waste reduction

R100 古紙パルプ配合率100％再生紙を使用

Waste recycling

Purchasing products made from recycled materials
Example: Products bearing a "made with recycled materials" logo
(e.g., recycled paper, plastic bottles, etc.)

Reuse by transferring to others

Transferring unwanted items to others who want them rather than disposing of them as waste, etc.

1. Generator's responsibility and the role of local government

(1) Generator's responsibility - Why is waste separated?

1. Generator's responsibility and the role of local government

1. Generator's responsibility – Necessity of separation

(1) Waste reduction by resource collection and mitigation of environmental impact

- Effective Utilization of Resource
- Mitigation of Environmental Impact by reduction of the waste to be incinerated
- Extension of lifetime of landfill site

(2) Reduction of the workload for Incineration plant

- Prevention of equipment breakdown in the plant by incombustible waste and proper incineration

(3) Secure of safety for collection workers

- Fire accident of waste collection vehicle
- Risk of infection by interfusion of infectious waste

1. Generators' responsibilities and the role of local government

(2) Role of local government

To establish a municipal solid waste disposal plan

To collect, transport, and dispose of waste according to the plan

To raise awareness among residents and businesses

Awareness-raising activities Discharge guidance (person-to-person guidance)

Guidance for large businesses

Awareness-raising activities

Environmental learning

Source: Katsushika City

Source:Shinjuku City

Information transmission

Source: Nakano City

Discharge guidance (person-to-person guidance)

Discharge guidance

Person-to-person guidance (*fureai shido*)

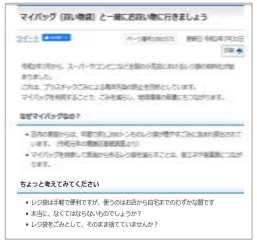
Source: Setagaya City

2. 3R Initiatives

2. 3R Initiatives
(1) Reduce

ENCOURAGING PEOPLE TO USE THEIR OWN SHOPPING BAGS

Presenting the background for using reusable shopping bags and sharing the reusable bag concept

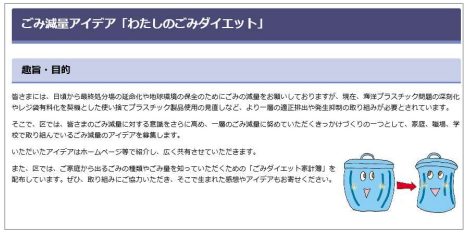


Source: Katsushika City

2. 3R Initiatives
(1) Reduce

“GARBAGE DIET” HOUSEHOLD ACCOUNTS BOOK

Providing a record book for waste reduction



Source: Koto City

2. 3R Initiatives
(2) Reuse

Effective use of bulky waste

Repair and resale of collected bulky waste and tableware

Source: Nerima City

2. 3R Initiatives
(2) Reuse

Promoting the use of reusable tableware

Subsidizing loaning and rental fees for reused tableware

Source: Minato City

2. 3R Initiatives
(3) Recycle

Compost

Information on using kitchen waste

Source: Itabashi City

2. 3R Initiatives
(3) Recycle

Group collection

Supporting voluntary recyclables collection by community groups

Source: Taito City

Summary

(1) In Japan, the roles of the national government, local governments, businesses, and residents are clarified.

(2) Waste generators have the responsibility to reduce the amount of garbage they produce.

(3) Local governments strive to raise awareness of waste among their residents.

Thank you for your attention

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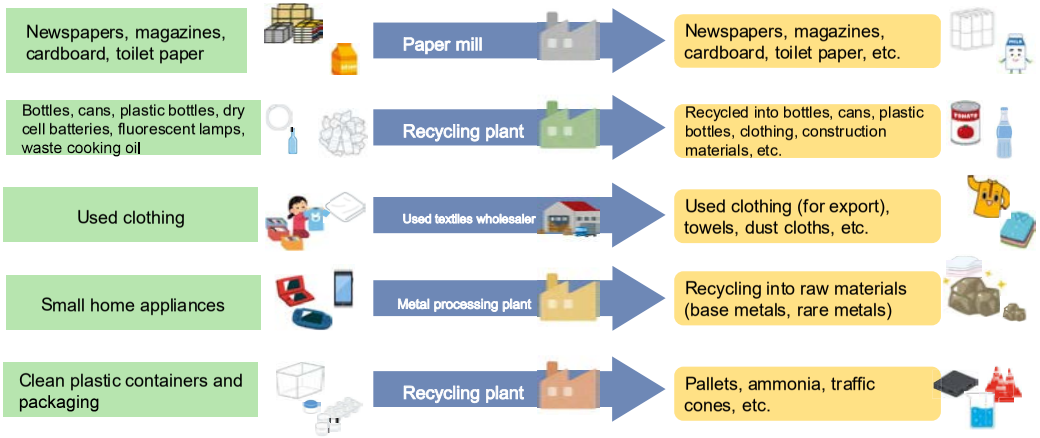
3R Initiatives (Recycling Routes)



Operation of Incineration Plant

CLEAN AUTHORITY OF TOKYO
INTERNATIONAL COOPERATION DEPARTMENT
FOR WASTE MANAGEMENT

Clean Authority of TOKYO

Table of contents

1. Power Generation from Waste

Why is Waste Incinerated?

(1) Protection of public health

Incineration prevents germs, pests, and foul odors.

→ Maintaining a hygienic urban environment

Why is Waste Incinerated?

(2) Reduction of waste volume

Incineration reduces waste to about 1/20 of its original volume.

→ Effective use and longer life of landfill sites

1997: The Edogawa Incineration Plant starts operation

→ Incineration of all combustible waste

Why is Waste Incinerated?

(3) Changing landfill disposal sites

Around 1994

Now

Power Generation from Waste

(1) Effective use of heat energy

Power generation from waste effectively uses heat energy.

→ The generated electricity is used within the facility to operate the incineration plant. The excess electricity is sold to electric power companies.

Power Generation from Waste

(2) Reduced burden on the environment

The effective use of heat energy and energy conservation help lessen impacts on the environment.

→ Better power generation efficiency as incineration plants are reconstructed

Power Generation from Waste

(3) Actual usage of power generated from waste (FY2018)

Total amount of power generated	**1,280.02 million kWh**
Amount of electricity sold	**777.53 million kWh**
Revenue from electricity sales	**10,599,110,000 Yen**
Amount of heat supplied (fees charged)	**329,000 GJ**
Revenue from heat sales	**139,520,000 Yen**

Around 4.65 billion Peso

Around 60.1 million Peso

Power Generation from Waste

(4) Power generation efficiency

Incineration plant	Year of completion	Size (tons x No. of Furnaces)	Incinerator capacity (tons/day)	Power output (kW)	Power generation efficiency (%)
Chitose	1996	600 x 1	600	10,000	14.3
Shinagawa	2006	300 x 2	600	15,000	17.9
Suginami	2017	300 x 2	600	24,200	24.4

Power generation from Waste

(4) Power generation efficiency

Efficient power generation=No suspension of incineration plant

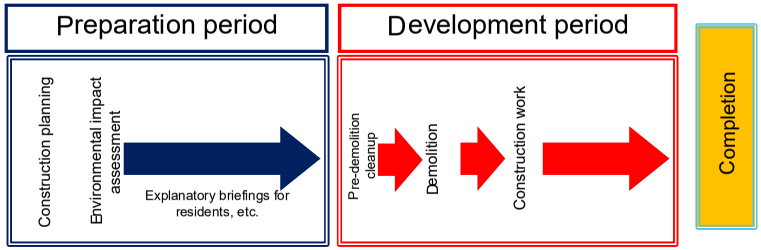
【To do so】

1) Continuous provision of separated waste with suitable quality
2) Stable operation in line with environmental standard
3) Reduction of breakdown by the inspection and overhaul in line with the maintenance plan

2. Facility development plan and cluster waste management

Facility Development Plans

(1) Preparation period for development and standard development period



・ Building an incineration plant takes about 11 years.
→The schedule must be set based on an accurate waste volume forecasts.

Facility Development Plans

(2) Incineration plant development schedule

・ The development schedule is prepared by taking into account the forecasted volume of waste, collection and transport efficiency, service life, and development period, with confirmation that the necessary processing capacity and surplus capacity can be secured each fiscal year.

Facility Development Plans

(3) Incineration plant development schedule (example)

Fiscal year	21	22	23	24	25	26	27	28	29	30	31
Plant A	Development										
Plant B		Development									
Plant C						Development					
Plant D							**Development**				
(Actual figures may vary)											
Processing capacity (10,000 tons)	309	311	311	320	321	321	322	324	313	317	313
Waste volume forecast (10,000 tons)	276	276	279	278	278	279	279	278	277	277	276
Surplus capacity (%)	12	12	12	15	15	15	15	16	13	15	13

Clustered Waste Management

(1) Uniform standards and operation

Unifying standards is important.

→ Identical standards makes it possible to operate in a wide area.

(2) Improved collection and transport efficiency

Reduce transport costs and implement joint use of garbage trucks.

(3) Decentralization of intermediate processing and final disposal

Establishing multiple facilities allows facilities to complement each other during shutdowns.

Establishment of Acceptance Criteria

Types and properties of items that are prohibited at incineration plants

Items that are prohibited at incineration plants are as follows:

(1) Human waste (sewage)
(2) Dead animals
(3) Hazardous items
(4) Liquid items
(5) Powdery or granular materials that could become dispersed
(6) Incombustible materials such as metal, glass, stone, ceramics, soil, sand, and concrete

Types and properties of items that are prohibited at incineration plants

(3) Hazardous items

Infectious waste

Aerosol spray cans

Types and properties of items that are prohibited at incineration plants

(5) Incombustible materials such as metal, glass, and ceramics

Non-burnable garbage processing center

Shapes and sizes of items that are prohibited at incineration plants

The following items must meet established waste size standards for acceptance at an incineration plant.

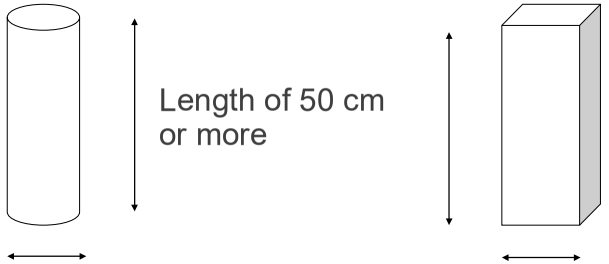
(1) Pillar- or rod-shaped objects

(2) Plank- or plate-shaped objects

(3) Box-shaped objects

Shapes and sizes of items that are prohibited at incineration plants

(1) Pillar- or rod-shaped objects

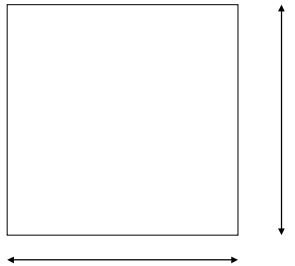


Diameter of 10 cm or more

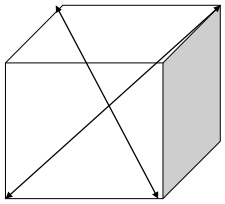
Square of 10 cm or more

Shapes and sizes of items that are prohibited at incineration plants

(2) Plank- or plate-shaped objects (3) Box-shaped objects



Single side length of 50 cm or more



Diagonal length of 50 cm or more

Inspection and guidance for items to be brought in

Inspection and guidance for items to be brought in

Inspection and guidance for items to be brought in

The types of inspection include the following:

(1) “Continuous carry-in inspection,” which is outsourced to a private contractor and conducted on a continuous basis

(2) “Simultaneous carry-in inspection” which is conducted on the same day at all incineration plants

(3) “Independent carry-in inspection” conducted by each incineration plant on its own as needed

Thank you for your attention

URL/link：https://www.union.tokyo23-seisou.lg.jp.e.de.hp.transer.com/

添付資料 11-1: ITWG 会議

11-1-1 ：第1回 ITWG 会議
11-1-2 ：第2回 ITWG 会議
11-1-3 ：第3回 ITWG 会議
11-1-4 ：第4回 ITWG 会議
11-1-5 ：第5回 ITWG 会議
11-1-6 ：第6回 ITWG 会議
11-1-7 ：第7回 ITWG 会議

11-1: ITWG会議

11-1-1 : 第1回 ITWG 会議

First Inter-agency Technical Working Group (ITWG) Meeting

DENR-JICA Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/Innovative Technologies

24 January 2020, Friday
Sulo Riviera Hotel, Quezon City

TENTATIVE PROGRAMME

TIME	ACTIVITY	SPEAKER
09:30 AM	Registration of ITWG members	SWMD Secretariat
10:00 AM	Philippine National Anthem	
	Invocation	
10:15 AM	Opening/Welcome Remarks	**Engr. William P. Cuñado** *OIC-Director, EMB*
10:30 AM	Introduction/Presentation of the ITWG Chairman, Co-Chairman and Members per approved Special Order 2019-347	**Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD*
10:45 AM	*Coffee Break*	
Meeting will be presided by DENR-EMB & DOE as ITWG Chairman & Co-Chairman, respectively.		
11:00 AM	Presentation of the Project Overview and its Basic Elements & Requirements	**Mr. Takahiro Kamishita** *Project Advisor, JICA Experts Team (JET)*
11:45 AM	Updates on the DENR Administrative Order No. 2019-21 Guidelines Governing Waste-to-Energy Facilities for the Integrated Management of Municipal Solid Wastes	**Engr. Nolan B. Francisco** *OIC-Chief, EMB-SWMD*
	Open Forum	
12:00 NN	**Lunch Break**	
1:30 PM	Creation of a Sub-group under the ITWG (*per output basis*): • Presentation of the Proposed Sub-group members and its Roles and Responsibilities • Confirmation of the identified Sub-group members *(as basis for the preparation of the Supplemental Special Order)*	**Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD* *To be facilitated by the ITWG Chairman & Co-Chairman*
2:30 PM	Presentation of the Final Inception Report (ICR) and discussion on the Project Schedule	**Mr. Takahiro Kamishita** *Project Advisor, JICA Experts Team (JET)*
3:00 PM	Presentation on the Criteria for the Selection of NGO and Industry Representatives	**Mr. Conrado Bravante** *Chief, Project Management Division, DENR-FASPS*
3:30 PM	Way Forward/Next Steps	ITWG Chairman & Co-Chairman
4:00 PM	Closing Remarks	**Ms. Mylene C. Capongcol** *Director, Energy Policy and Planning Bureau (EPPB), DOE*

DENR-JICA Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/Innovative Technologies

First Inter-Agency Technical Working Group (ITWG) Meeting

24 January 2020, Friday
Sulo Riviera Hotel, Quezon City

First Inter-agency Technical Working Group (ITWG) Meeting

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1:30 PM	Creation of a Sub-group under the ITWG (*per output basis*): • Presentation of the Proposed Sub-group members and its Roles and Responsibilities • Confirmation of the identified Sub-group members *(as basis for the preparation of the Supplemental Special Order)*	**Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD* *To be facilitated by the ITWG Chairman & Co-Chairman*
2:45 PM	Presentation of the Final Inception Report (ICR) and discussion on the Project Schedule	**Mr. Takahiro Kamishita** *Project Advisor, JICA Experts Team (JET)*
3:00 PM	*Coffee Break*	
3:30 PM	Presentation on the Criteria for the Selection of NGO and Industry Representatives	*To be facilitated by the ITWG Chairman & Co-Chairman*
3:30 PM	Way Forward/Next Steps	ITWG Chairman & Co-Chairman
4:00 PM	Closing Remarks	**Ms. Mylene C. Capongcol** *Director, Energy Policy and Planning Bureau (EPPB), DOE*

First Inter-agency Technical Working Group (ITWG) Meeting

DENR-JICA Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/Innovative Technologies

24 January 2020, Friday, Sulo Riviera Hotel, Quezon City

TENTATIVE PROGRAMME

TIME	ACTIVITY	SPEAKER
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Meeting will be presided by ITWG Chairman (DENR-EMB) & Co-Chairman (DOE)		
11:00 AM	Presentation of Project Overview and Basic Elements & Requirements of the Project	**Mr. Takahiro Kamishita** *Project Advisor, JICA Experts Team (JET)*
11:45 AM	Updates on the DENR Administrative Order No. 2019-21 Guidelines Governing Waste-to-Energy Facilities for the Integrated Management of Municipal Solid Wastes	**Engr. Nolan B. Francisco** *OIC-Chief, EMB-SWMD*
	Open Forum	
12:00 NN	**Lunch Break**	

添付資料11

Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/ Innovative Technologies

EMB Special Order No. 2019-347:

Creation of an Inter-agency Technical Working Group (ITWG) for the Full Implementation of the Technical Cooperation Project (TCP) for the Capacity Development on Improving SWM Through Advanced/Innovative Technologies in the Philippines

First ITWG Meeting
24 January 2020, Friday
Sulo Riviera Hotel, Quezon City

Composition of Inter-agency Technical Working GROUP (ITWG) Per Approved Special Order No. 2019-347

- Chairman - **Engr. William P. Cuñado**
  OIC-Director, EMB

  Engr. Vizminda A. Osorio *(Alternate)*
  Asst. Director, EMB

- Co-Chairman - **Ms. Mylene C. Capongcol**
  Director, Energy Policy and Planning Bureau (EPPB), DOE

  Mr. Patrick T. Aquino *(Alternate)*
  Director, Renewable Energy Management Bureau (REMB), DOE

Composition of Inter-agency Technical Working GROUP (ITWG) Per Approved Special Order No. 2019-347

AGENCY	DESIGNATED ITWG MEMBERS	
	PRINCIPAL	ALTERNATE
DOE- Energy Policy and Planning Bureau (EPPB)	**Ms. Lilian C. Fernandez** Chief, Energy Cooperation and Coordination Division (ECCD) **Ms. Ruby B. Guzman** Chief, Biomass Energy Management Division (BEMD), REMB	**Mr. Romeo M, Galamgam** Supervising SRS, BEMD, REMB **Ms. Letty G. Abella** Senior Science Research Specialist, ECCD **Ms. Albertcassy C. Masinas** SRS II, ECCD **Ms. Charisse Jane D. Pascual** SRS II, BEMD, REMB
DILG – Bureau of Local Government Supervision (BLGS)	**Atty. Odilon L. Pasaraba**, CESO IV, Director IV	**Atty. Maria Rodora R. Flores** Division Chief, Policy Compliance Monitoring Division **Mr. Carlo Mari Crisregienald C. Tan**, PDO IV, Manila Bay Clean-up, Rehabilitation and Preservation Program

Composition of Inter-agency Technical Working GROUP (ITWG) Per Approved Special Order No. 2019-347

AGENCY	DESIGNATED ITWG MEMBERS	
	PRINCIPAL	ALTERNATE
DOST-Industrial Technology Development Institute (ITDI)	**Engr. Reynaldo L. Esguerra** OIC-Deputy Director, Research & Development and Chief, Environmental & Biotechnology Division	**Engr. Rochelle L. Retamar** OIC, Senior SRS, Cleaner Production Section
NEDA-Industry Programming Group	**Ms. Kathleen P. Mangune** Director IV, IPG	**Mr. Francis Bryan C. Coballes** OIC-Director III **Mr. Aldwin U. Urbina,** Chief, Economic Development Specialist
Public-Private Partnership Center (PPPC)	**Ms. Justine E. Padiernos** OIC-Director III, PDS	**Ms. Maria Beatriz N. Quintos** Project Officer III, Policy Formulation, Project Evaluation and Monitoring Service **Ms. Billy Jane C. Cavinta,** PDO III **Ms. Samantha Gloria M. Sing**son PDO III **Ms. Gee Maurene G. Manguera**, PDO II

添付資料11

Composition of Inter-agency Technical Working GROUP (ITWG) Per Approved Special Order No. 2019-347

PARTNER LOCAL GOVERNMENT UNITS (LGUs)		
City ENRO LGU Davao City	**Atty. Dwight Domingo** Assistant Administrator	**Ms. Eliza Madrazo** Head WTE Project
City ENRO LGU Cebu City	**Atty. John Jigo Dacua** OIC- CCENRO	**EnP. Rhoderick Enolpe** Assistant Department Head **Engr. Glory Rose C. Manatad**, EMS II
City ENRO LGU Quezon City	Mr. Vincent Ferdinand, PDO III, EPWMD	**Mr. Paul G. Vinarao** PDO III **Engr. Luis S.** Sabater Planning Officer III

Composition of Inter-agency Technical Working GROUP (ITWG) Per Approved Special Order No. 2019-347

EMB CENTRAL OFFICE FOCAL PERSONS		
EMB-Environmental Quality Management Division (EQMD)	**Mr. Renato T. Cruz** Chief, EQMD	**Engr. Marcelino Rivera** Supervising EMS
EMB-Air Quality Management Section (AQMS)	**Engr. Jundy T. Del Socorro** Chief, AQMS	**Engr. Wyona Kay Rativo** EMS II
EMB-Planning, Policy and Program Development Division (PPPDD)	**Ms. Consolacion P. Crisostomo** Chief, PPPDD	**Ms. Mary Esther D. Ofiaza** PO III
EMB-Environmental Research and Laboratory Services Division (ERLSD)	**Ms. Ma. Fatima Anneglo R. Molina** Chief, ERLSD	**Mr. Sammy L. Aytona** **SRS II**
EMB-Solid Waste Management Division (SWMD)	**Engr. Nolan B. Francisco** Chief, SWMD	**Ms. Elvira S. Pausing** Supervising EMS, PPDS
EMB-Legal Division (LD)	**Atty. Carmelo R. Segui** Chief, LD	**Atty. John Edward T. Ang** Attorney III

Composition of Inter-agency Technical Working GROUP (ITWG) Per Approved Special Order No. 2019-347

DESIGNATED EMB REGIONAL OFFICES FOCAL PERSONS		
EMB-National Capital Region (NCR)	**Engr. Alma P. Ferrareza** Senior EMS	**Mr. Mikko M. Clemente, Jr.,** EMS II, Planning & Information System Management Unit (PISMU)
EMB-Region VII	**Mr. John Roy Kyamko,** Senior EMS & OIC-SWM Regional Coordinator	**Ms. Angelli Marie Jacynth Egar,** EMS I, SWM Section
EMB Region XI	Ms. Virginia B. Lobaton, Senior EMS	**Mr. Allan P. Justo**, Environmental Management Specialist (EMS)

DENR-FOREIGN ASSISTED AND SPECIAL PROJECTS SERVICE (FASPS)		
DENR-Foreign Assisted and Special Projects Service, FASPS	**Mr. Angelito Fontanilla** Director, FASPS	**Mr. Conrado Bravante,** Chief, Project Management Division **Ms. Marianica Philina Obmerga**, PEO II

SPECIFIC TAKS OF THE ITWG PER APPROVED SPECIAL ORDER NO. 2019-347

The *ITWG* shall serve as Core Group to undertake the following specific tasks and shall meet at least once a month:

1. Provide technical and operational guidance to the project;
2. Review and assess project reports and provide inputs to the reports submitted;
3. Review the reports submitted by JICA Experts and endorse to the Joint Coordinating Committee (JCC) for approval;
4. Review the appropriateness of the Project Design Matrix (PDM) including the Plan of Operation (PO) in the course of the Project and provide recommendations; and
5. Attend JICA missions and other project related meetings.

Composition of Inter-agency Technical Working GROUP (ITWG) Per Approved Special Order No. 2019-347

Other specific asks:

- The ITWG members shall ***create sub-groups*** within the members of the ITWG that would take a lead in the implementation of the project on a ***per output basis***.
- JICA Experts Team (JET) shall serve as ***resource persons*** and ***facilitators*** during the ***ITWG and sub-group meetings***.
- The Project Management Office (PMO) under the Solid Waste Management Division (SWMD) of the Environmental Management Bureau (EMB) shall serve as Secretariat to the ITWG & its Sub-groups.

THANK YOU

添付資料11

The Project for Capacity Development on Improving Solid Waste Management through Advanced/Innovative Technologies in the Republic of Philippines

Project Overview

JICA Expert Team

Background of the Project

- Ecological Solid Waste Management Act (RA9003), 2001
  - Final disposal sites shall be alternated to sanitary landfill instead of open and controlled dump.
  - Reduction of amount of disposed waste by 3Rs
  - LGUs' capacity on appropriate SWM is still limited because of technical and financial difficulties
  - No guidance for incineration because of Clean Air Act
- Clean Air Act (RA8749), 1999
  - Waste incineration was recognized to be practically prohibited
  - Decision by the Supreme Court of the Philippines in January 2002
  - DENR notified that "only incineration emitting hazardous & toxic gas shall be prohibited"
- Guidelines Governing the Establishment and Operation of WTE Technologies for MSW (NSWMC Resolution 669), 2016
  - Guidelines on environmentally-sound evaluation, establishments, operation and de-comissionning or closure of WTE technologies
  - WTE DAO (DNER) has been approved.

EJEC

Background of the Project (cont.)

- DENR requested for the Japanese Government on a technical cooperation project for Capacity Development on Improving Solid Waste Management through Advanced/Innovative Technologies
- Upon the request, basic framework of the project was discussed and examined by the JICA missions, and
- Record of Discussion (R/D) for implementation of the Project was signed by both sides on 7th November 2017, which gives basic conditions of TCP

What is JICA's "Technical Cooperation"?

◆It is **not a study**, but to assist you in **increasing your capacity** to tackle problems associated with specific aspects (e.g. solid waste management)

◆It is a **process** to help you **improve your capacity** within **a set time frame (project period)**, while the process for developing your capacity to achieve **your own goal** will take much longer.

◆People tend to look at only tangible outcomes, but **intangible (capacity) improvements** are more important.

◆Ownership!

Situation of SWM in LGUs

- Struggling for management with increasing waste amount for years
- Limitation of resources and capacity of LGUs/barangays
  - Inappropriate segregation at source
  - Limited utilization of segregated waste
  - Incompleteness in sanitary disposal, leachate treatment
  - Limited human resources and facility
- Urgency for finding countermeasures, solutions, expectation to private sector

Rationales

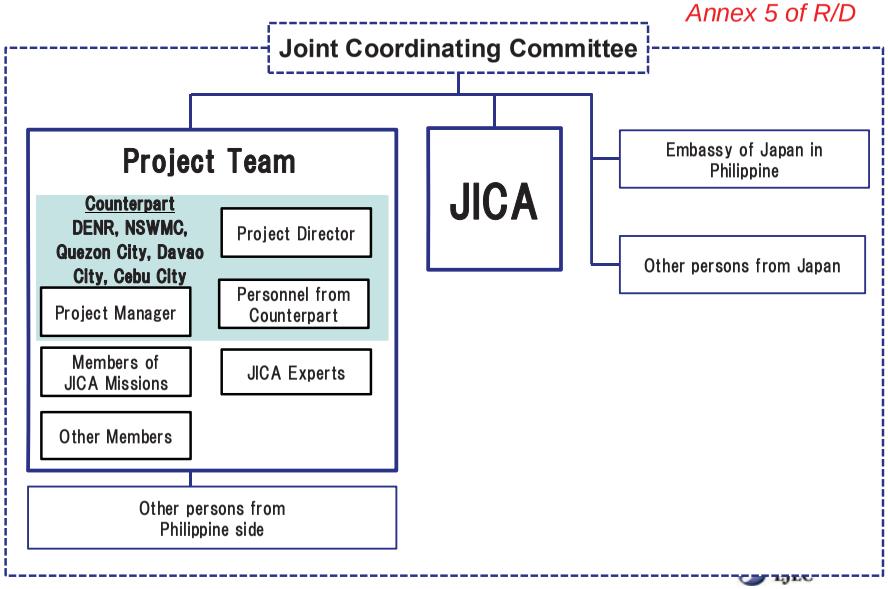
- LGUs faces difficulties to manage MSW
- Big cities seek for WTE (combustion) to solve their HUGE amount of waste (> 600-2,000 ton/day)
- WTE projects are being formulated in Quezon City, Davao City, Cebu City
- Required responsibility of National Government to control and lead LGUs' WTE project
- TCP supports NG to develop how to control/lead WTE projects in LGUs, LGUs to properly formulate WTE project in terms of technical, financial and social/environmental validities

Project outline

- Project period:
  from March 2019 to March 2022 (approx. 3 years)
- Counterparts of Philippines:
  - Implementing agency: DENR-EMB
  - Target LGUs: Quezon City, Davao City & Cebu City
  - Cooperating agency: NSWMC
- Target area
  - Whole the Philippines with special attention to Quezon, Davao and Cebu cities

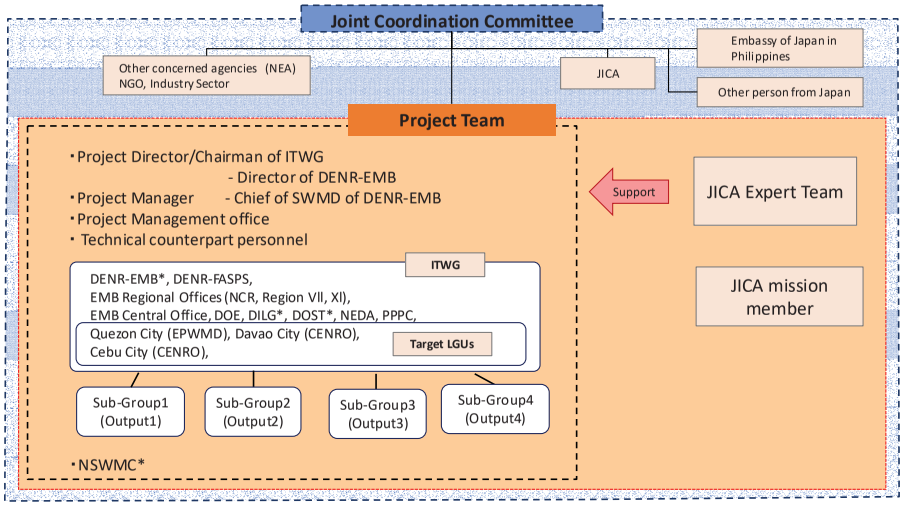
Implementation Structure given in R/D

Annex 5 of R/D



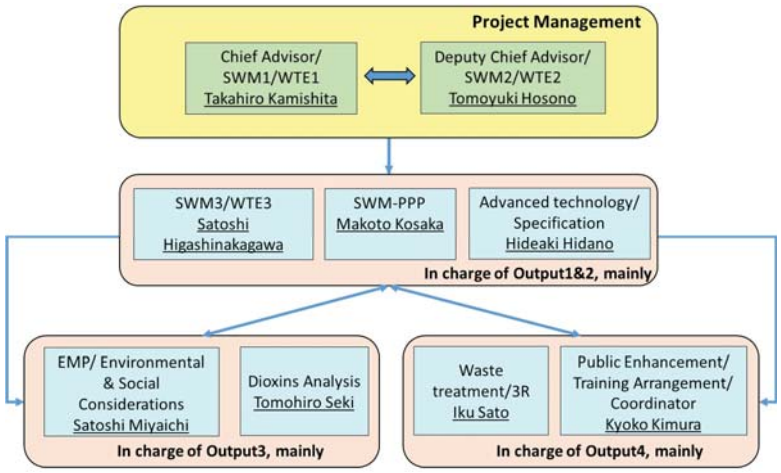
添付資料11

Project implementation structure (based on SOs)



*NSWMC: DENR, DOH, DA, MMDA, DOST, DILG, DPWH, DTI, TESDA, PIA, LCP, LMP, LPP, LnB, NGO, Recycling Industry, Manufacturing and Packaging Industry

JICA Expert Team structure



Project Design Matrix (PDM)

- Overall Goal:
  Improvement of Philippine SWM system through the adoption of WTE and other SWM technologies.

- Project Purpose:
  National government & target LGUs' capacity for improving solid waste management by utilizing WTE & other SWM technologies is enhanced.

Project Design Matrix

- Showing the logical inter-relationship of project components and strategy for achieving "Project Purpose"

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal			
Project Purpose			
Outputs			
Activities	Inputs		
			Pre-conditions

Description in PDM

Narrative Summery

- Overall goal
  Direction that the project should take next
- Project purpose
  Objective that the project should achieve within the project duration
- Output
  Strategies for achieving the Project Purpose

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal			
Project Purpose			
Outputs			
Activities	Inputs		
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Description in PDM

Narrative Summery

- Overall goal
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Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal			
Project Purpose			
Outputs			
Activities	Inputs		
			Pre-conditions

Description in PDM

- Activities
  - Specific actions taken to produce Outputs
- Objectively Verifiable Indicators
  - Standard for measuring project achievement
- Means of Verification
  - Data sources from which indicators are derived

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal			
Project Purpose			
Outputs			
Activities	Inputs		
			Pre-conditions

Description in PDM

- Important assumptions
  - Conditions important for project success, but that can not be controlled by the project
- Inputs
  - Personnel, materials, equipment, facilities, and fund required by the project
- Pre-conditions
  - Conditions that must be fulfilled before a project gets underway

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal			
Project Purpose			
Outputs			
Activities	Inputs		
			Pre-conditions

Outputs

- Output 1:
  National government's capacity on supporting and coordinating LGUs' WTE projects is enhanced.
- Output 2:
  Target LGUs' capacity on planning, evaluation, formulation & supervision of WTE projects is enhanced.
- Output 3:
  National government's capacity on environmental monitoring for WTE projects is enhanced.
- Output 4:
  National Government's & target LGUs' capacity to identify issues &provide suggestion/recommendation for SWM technologies other than WTE is enhanced.

Activities for Output 1

1-1: Prepare Best Available Technique (BAT) / Best Environmental Practice (BEP) guideline
1-2: Study policy & mechanism to promote WTE projects
1-3: Hold seminar to disseminate WTE technology
1-4: Prepare draft technical standards for WTE facility focused on waste incineration with power generation
1-5: Prepare manual for management of bottom & fly ash discharged from WTE facility
1-6: Prepare manual for planning, evaluation, formulation & supervision for WTE projects, and prepare evaluation criteria for EMB on 10-year SWM plans
1-7: Illustrate model procedure to introduce WTE facility

Activities for Output 2

2-1: Review current situation on introducing WTE facilities in the target LGUs
2-2: Clarify current waste flow & amount, set target on waste reduction in the existing SWM 10-year plans
2-3: Evaluate LGUs' land use plan for WTE projects
2-4: Analyze & verify candidate WTE projects selected from the existing F/S, unsolicited/solicited proposals
2-5: Define points & issues to be addressed for formulating WTE projects in the target LGUs
2-6: Define proper responsibility of the target LGUs in promoting WTE projects under PPP scheme
2-7: Formulate technical specification of WTE facilities in each target LGU
2-8: Define points & issues to be addressed for supervising WTE projects in the target LGUs

WTEs' Progress in Target 3LGUs

Quezon City; [unsolicited]
- As the result of Swiss Challenge, MPIC-JV was about to be selected,
- Modified BOO contracted would be closed after Notice of Award,
- 1,700tpd (Incineration + MBT) for 35 years

Davao City; [solicited]
- A half of Capex will be subsidized by Japan's grant. Other half will be procured by BOT (20years)
- 600tpd (Incineration) for 20 years,
- Consultant for FS and Transaction advisory has been procured

Cebu City; [unsolicited]
- ADB-TA evaluated various proposal to select ONE Unsolicited Proposer
- LGU is evaluating a proposal

WTEs' Progress in Target 3LGUs

LGU	M/P	Concept, F/S	Plan, B/D	RfP, ITB	Proposal	Contract	Const.	Operation
Quezon City	Unsolicited "Modified BOO" based procurement ADB (2018-2027)	Unclear	Unclear	Adopt Unsolicited Proposal 2017.3	Swiss Challenge 2018.10 -2019.3	Expected to be in 2019.3 [postponed]	?2020 -2023 (3yrs)	?2023-2058 (35yrs)
Davao City	Japan subsidized BOT 2008-2017	JICA (2016)	Consultant was procured in 2019	2020	2020	?2021	?2021-2023 (2yrs)	?2023-20xx (xxyrs)
Cebu City	Under Study 2017-2026	ADB-TA (2017-2019)	Not Yet Fixed					

Implementation Period of JICA TCP (2019.3-2022.3)

Activities for Output 3

3-1: Review current capacity & activities on monitoring, analysis & QA/QC of Dioxins and Furans (DXNs) in the central & regional EMBs

3-2: Analyze gap between present and required capacity of the central EMB Lab., and formulate training plan

3-3: Prepare Standard Operation Procedures (SOP) for sampling, analysis & QA/QC of DXNs in ambient air & emission gas

3-4: Conduct training on sampling, analysis & QA/QC in ambient air & emission gas for the central EMB

3-5: Prepare sampling plan (design) for DXNs in ambient air

3-6: Implement sampling, analysis & QA/QC of DXNs in ambient air & emission gas

Activities for Output 4

4-1: Grasp current situation by studying National SWM strategy & the 10-year SWM plans in the target LGUs

4-2: Identify current issues for other SWM technologies in the target LGUs

4-3: Collect information on "Good practice & Appropriate technology" of other SWM technologies in Japan & the third countries

4-4: Summarize & provide suggestion & recommendation to improve utilization of other SWM technologies in the target LGUs

4-5: Hold seminar to disseminate suggestion & recommendation

Activities related with all Outputs

0-1: Support to organize JCC & hold committee meetings
- Hold JCC meetings for 6 times during the project period

0-2: Prepare & submit Deliverables

0-3: Discuss & update PDM and PO

0-4: Public Relations
- Newsletters (twice a year), DENR & JICA Websites, etc.

0-5: Hold seminars
- Project kick-off seminar
- Kick-off seminar in the target LGUs
- Final seminar
- Technology dissemination seminar (as Activities for OP1 & OP4)

0-6: Capacity assessment

0-7: Training in Japan (twice in 2020-2021)

Deliverables

- Reports
  - Inception Report: ~~July 2019~~ →January 2020
  - Progress Report (1): March 2020
  - Progress Report (2): March 2021
  - Project Completion Report: March 2022
  - Monitoring Sheet (Ver. 1-6): Every 6 months (next one in Mar. 20)
- Technical Cooperation Materials
  1. BAT/BEP Guidelines of WTE technology
  2. Technical standards for WTE facility (incl. incineration control)
  3. Manual on planning, evaluation, formulation & supervision of WTE projects for LGUs officers
  4. Draft technical specifications of WTE facilities in the target LGUs
  5. Draft SOP for monitoring, analysis & QA/QC of Dioxins & Furans
  6. Others such as public relations materials

Notes of PDM

1. All target LGUs are complying the process which the WTE guidelines indicate though, the progress of WTE projects are different in each target LGU. Assess the actual situation and progress in each target LGU along with the activities for Output 2 at the beginning of the project.

2. Activity 1-1 in Output 1 and activity 2-1 and 2-2 in Output 2 shall cover various kinds of WTE technology. Target WTE technology in other activities (1-2 to 1-6 and 2-3 to 2-8) shall be an appropriately controlled combustion with power generation because this is the technology discussed in target LGUs for adoption in order to treat their huge volume of solid waste.

3. "Other SWM technologies" refer to technologies on "Recycling /Composting/Waste segregation/Improving MRF operation"

Treatment Capacity and Cost of WTE technologies

Type		Combustion		Melting		Pyrolysis	Fermentation	
		Grate	Fluidized bed	Direct	Fluidized bed	Plasma gasification	Wet AD	Dry AD
Cost*	EPC	1	1	1.4	1.2	2.4	0.7	1.6
	O&M	1	1.4	1.5	1.2	No info.	1.7	1.4
Capacity/line (max ton/day)		1,100	600	265	200	110?	100	50

* Figures are ratio to costs of Grate type combustion
Source: JEFMA

Project schedule assumed in March 2019

	1st Year Mar/'19 – Mar/'20	2nd Year Apr/'20 – Mar/'21	3rd Year Apr/'21 – Mar/'22
JCC	● ●	● ●	● ●
Monitoring sheets	◆ ◆ ◆	◆ ◆	◆
Reports	▲IC/R	▲PR/R1	▲PR/R2 PC/R▲
Seminar	◯◯◯Kick-off	◯Output1	Output1&4◯ Final◯
Output 1	• Technical standards for WTE facilities • Manual on bottom/fly ash management	• BAT/BEP Guideline • Evaluation criteria on 10-year SWM plans	• Manual for LGUs on WTE projects • Illustrate model procedure for WTE
Output 2	• Target setting for waste reduction • Analysis on WTE projects in LGUs	• Technical specification of WTE facilities in each target LGU	
Output 3	• Training plan for central EMB Lab.	• SOP for DXNs • Training	• Support sampling, analysis & QA/QC
Output 4	• Grasp current situation & identify current issues	• Good practice & appropriate technology	• Suggestion & recommendation

Undertaking of the Philippines' side

- Provision of documents and information possessed by DENR and the target LGUs necessary for the project;
- Appointment of counterpart personnel both in national governmental agencies and the target LGUs;
- Assistance for arranging interviews with concerned organizations such as national governmental agencies and LGUs;
- Conclusion of written agreements (MOA) among DENR and the target LGUs on cooperation for the Project;
- Provision of documents and information on the target LGUs' WTE projects;
- Provision of the latest safety information and security information in Philippines.

Thank you for your attention.

TECHNICAL COOPERATION PROJECT (TCP) FOR CAPACITY DEVELOPMENT ON IMPROVING SOLID WASTE MANAGEMENT (SWM) THROUGH ADVANCED/ INNOVATIVE TECHNOLOGIES

UPDATES

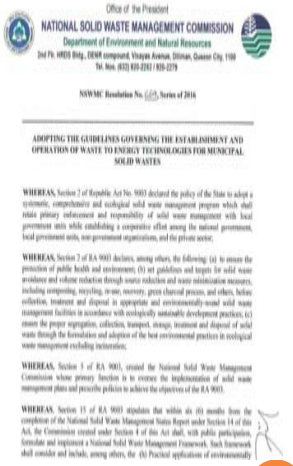
DENR ADMINISTRATIVE ORDER NO. 2019-21 GUIDELINES GOVERNING WASTE-TO-ENERGY FACILITIES FOR THE INTEGRATED MANAGEMENT OF MUNICIPAL SOLID WASTES

FIRST ITWG MEETING
24 JANUARY 2020, FRIDAY
SULO RIVIERA HOTEL, QUEZON CITY

BACKGROUND

- Adoption of the NSWMC of the *Resolution No. 669 Series of 2016: Guidelines Governing the Establishment and Operation on Waste to Energy Technologies for Municipal Solid Waste*
- Public Consultations of the NSWMC guidelines

REGION	DATE	LOCATION	PARTICIPANTS
Luzon	May 18-20, 2016	Mandaluyong City	EMB Regional Offices (ROs), Local Government Units (LGUs), Private sector and Non-government Organizations (NGOs).
Visayas	May 13, 2016	Cebu City	
Mindanao	May 12, 2016	Davao City	


Office of the President
NATIONAL SOLID WASTE MANAGEMENT COMMISSION
Department of Environment and Natural Resources

ADOPTING THE GUIDELINES GOVERNING THE ESTABLISHMENT AND OPERATION OF WASTE TO ENERGY TECHNOLOGIES FOR MUNICIPAL SOLID WASTES

WHEREAS, Section 2 of Republic Act No. 9003 declared the policy of the State to adopt a

WHEREAS, Section 2 of RA 9003 declares, among others, the following: (a) to ensure the

WHEREAS, Section 5 of RA 9003, created the National Solid Waste Management

WHEREAS, Section 15 of RA 9003 stipulates that within six (6) months from the

BACKGROUND

- Conversion of the NSWMC guidelines into a DENR Administrative Order.
- Activities undertaken (CY 2018-2019):
  - Presentation of the DAO to the EMB Technical Working Group
  - Endorsement of the DAO to the DENR Policy Technical Working Group for further review.
  - Presentation of the final draft of DENR AO on Guidelines Governing Waste-to-Energy (WtE) during the DENR PTWG Meeting on 7 December 2018.
  - Endorsement of the DENR AO to the DENR Undersecretaries and Assistant Secretaries for vetting prior to the signing of the DENR Secretary

UPDATES

- **Approval of the DENR Administrative Order on Waste to Energy (WtE)**
  - 26 November 2019 – Approval by the DENR Secretary of the *DENR Administrative Order No. 2019-21: Guidelines Governing Waste-to-Energy (WtE) Facilities for the Integrated Management of Municipal Solid Wastes.*
- **Way Forward (CY 2020)**
  - Capacity Development Training of Regional DENR and EMB field offices on the implementation of the newly approved DENR AO on Guidelines Governing WtE Facilities for the Integrated Management of Municipal Solid Wastes

添付資料11

THANK YOU

Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/ Innovative Technologies

Working Paper: Proposed members of the Sub-Groups per project output

First ITWG Meeting
24 January 2019
Sulo Riviera Hotel, Quezon City

Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/ Innovative Technologies

Four (4) Sub-Groups per project output

Project Output 1: Sub-group for the enhancement of National Project Government's capacity for supporting and coordinating of LGU's WTE project

Project Output 2: Sub-group for the enhancement of Target LGUs' capacity for Planning, Evaluation, Formulation and Supervision of WTE project.

Project Output 3: Sub-group for the enhancement of the National government's capacity of environmental monitoring for WTE project

Project Output 4: Sub-group for the enhancement of the National Governments and target LGUs' capacity to identify issues and provide suggestions/ recommendations for other SWM technologies other than WTE.

Output 1. National Government's capacity for supporting and coordinating of LGU's WTE project is enhanced.

SPECIFIC ACTIVITIES	DELIVERABLES	COORDINATORS	SUB-GROUP MEMBERS
1.1 Prepare BAT/BEP Guidelines based on the information of good practices and technologies of WTE in neighboring countries	• Project report • BAT/BEP Guidelines • Manual for Planning, Evaluation, Formulation, and Supervision of WTE project	• EMB-SWMD • EMB-PPPDD • JET	• DOST • DOE • DILG • LGUs • EMB Central Office (CO) Focal persons
1.2 Prepare Technical Standard for WTE facility including installation and O&M of WTE facility referring the information from neighboring countries			
1.3 Prepare Manual for Planning, Evaluation, Formulation, and Supervision of WTE project based on the information from Output 2 and neighboring countries, including evaluation criteria of EMB for 10-year SWM Plans			

Output 1. National Government's capacity for supporting and coordinating of LGU's WTE project is enhanced. (continuation)

SPECIFIC ACTIVITIES	DELIVERABLES	COORDINATORS	SUB-GROUP MEMBERS
1.4 Prepare manual for management of incineration ash and fly ash referring the information in neighboring countries	• Project report • BAT/BEP Guidelines • Manual for Planning, Evaluation, Formulation, and Supervision of WTE project	• EMB-SWMD • EMB-PPPDD • JET	• DOST • DOE • DILG • LGUs • EMB Central Office (CO) Focal persons
1.5 Study policies and mechanism to promote WTE in neighboring countries including cost sharing scheme			
1.6 Illustrate model procedures to introduce WTE facility in accordance with WTE guidelines including environmental and social aspects			
1.7 Conduct seminar to disseminate the WTE technology			

添付資料11

OUTPUT 2. Target LGUs' capacity for Planning, Evaluation, Formulation and Supervision of WTE project is enhanced.

SPECIFIC ACTIVITIES	DELIVERABLES	COORDINATORS	SUB-GROUP MEMBERS
2.1 Review current situation for introducing WTE in each target LGUs 2.2 Clarify the current waste flow/amount, set the target of reducing volume carried to final disposal site and estimate amount of solid waste through WTE facility and other method in the 10-year SWM plan of target LGUs 2.3 Evaluate the land use plan for WTE projects	• Project Report • Updated 10-year SWM Plan which reflected the waste volume reduction target and plan is approved by the NSWMC in each target LGU *(i.e. Quezon City, Cebu City, & Davao City).* • Compiled experiences of target LGUs' WTE project in PPP scheme are reported to the NSWMC.	• SWMD • PPPC • JET	• DOE • DILG • EMB Regional Offices (ROs) • EMB CO Focal Persons • 3 partner LGUs

OUTPUT 2. Target LGUs' capacity for Planning, Evaluation, Formulation and Supervision of WTE project is enhanced. (continuation)

SPECIFIC ACTIVITIES	DELIVERABLES	COORDINATORS	SUB-GROUP MEMBERS
2.4 Analyze and verify the candidate WTE project selected from the existing FS, unsolicited/solicited proposal and others 2.5 Define the points and issues to be addressed for formulating WTE project 2.6 Define the proper responsibility (including financial responsibility) of LGU in promoting WTE project under PPP scheme 2.7 Formulate the technical specifications of WTE facility for each target LGU 2.8 Define the points and issues to be addressed for supervising WTE project	• Project Report Updated 10-year SWM Plan which reflected the waste volume reduction target and plan is approved by the NSWMC in each target LGU *(i.e. Quezon City, Cebu City, & Davao City).* • Compiled experiences of target LGUs' WTE project in PPP scheme are reported to the NSWMC.	• SWMD • PPPC • JET	• SWMD • PPPC • JET

OUTPUT 3. National government's capacity of environmental monitoring for WTE project is enhanced.

SPECIFIC ACTIVITIES	DELIVERABLES	COORDINATORS	SUB-GROUP MEMBERS
3.1 Review the current capacity/activities for monitoring/ analysis/QA/QC of Dioxins and Furans in ambient air, and other media (Soil/Surface water/Sediments) in Central and Regional EMB 3.2 Analyze gap between the present capacity of the central EMB and required capacity for proper monitoring/analysis/QA/QC of Dioxins and Furans in ambient air, and other media (Soil/Surface water/Sediments) and formulate the training plan 3.3 Prepare SOP for sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas	• Project Report • SOP for monitoring, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas • Training reports	• EMB-ERLSD • SWMD • JET	• DOE • DOST • EMB ROs • EMB EQMD (AQMS,WQMS)

OUTPUT 3. National government's capacity of environmental monitoring for WTE project is enhanced. (continuation)

SPECIFIC ACTIVITIES	DELIVERABLES	COORDINATORS	SUB-GROUP MEMBERS
3.4 Conduct training of sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas in central EMB 3.5 Prepare Sampling Plan (Design) for the collection of D&F in ambient air samples 3.6 Implement sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas by central EMB at existing SWM facilities based on SOP in output 3.3.	• Project Report • SOP for monitoring, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas • Training reports	• EMB-ERLSD • SWMD • JET	• DOE • DOST • EMB ROs • EMB EQMD (AQMS,WQMS)

OUTPUT 4. National Governments and target LGUs' capacity to identify issues and provide suggestion/recommendation for other SWM technologies than WTE is enhanced.

SPECIFIC ACTIVITIES	DELIVERABLES	COORDINATORS	SUB-GROUP MEMBERS
4.1 Grasp the current situation by National SWM strategy and 10 year SWM Plan in the target LGUs 4.2 Identify the current issues for other SWM technologies in the target LGUs 4.3 Collect the information of "Good practice/Good technology" of other SWM technologies in Japan/third countries	• Project report • Identified current issues of other SWM technologies • Identified "Good practice/Good technology" • Summary of suggestions/ recommendations to improve utilization of other SWM technologies to target LGUs • Activity reports	• SWMD/PMO • JET	All ITWG members/ Core Group

OUTPUT 4. National Governments and target LGUs' capacity to identify issues and provide suggestion/recommendation for other SWM technologies than WTE is enhanced. (continuation)

SPECIFIC ACTIVITIES	DELIVERABLES	COORDINATORS	SUB-GROUP MEMBERS*
4.4 Summarize and provide suggestions/recommendations to improve utilization of other SWM technologies to target LGUs 4.5 Conduct seminar for disseminating suggestion/recommendations	• Project report • Identified current issues of other SWM technologies • Identified "Good practice/Good technology" • Summary of suggestions/ recommendations to improve utilization of other SWM technologies to target LGUs • Activity reports	• SWMD/PMO • JET	All ITWG members/ Core Group

NOTE: *The assigned Lead/Co-Lead per Sub-group will present the outputs of the group during ITWG meetings*

Proposed tasks of the sub-group members

The *Sub-group members* shall serve as Technical Group to undertake the following specific tasks on a ***per project output basis*** and shall meet *at least once a month*:

1. Provide technical assistance to the DENR-EMB and JICA Experts Team (JET) in data gathering and preparation of the necessary requirements of the project on a per project output;
2. Review and assess the reports submitted by JICA Experts Team and provide technical inputs;
3. Endorse to the ITWG technical reports for further review prior to the endorsement to JCC for approval;
4. Attend Sub-group and other project related meetings, as necessary.

THANK YOU

添付資料11

The Project for Capacity Development
on Improving Solid Waste Management
through Advanced/Innovative Technologies
in the Republic of Philippines

Inception Report of the Project

JICA Expert Team

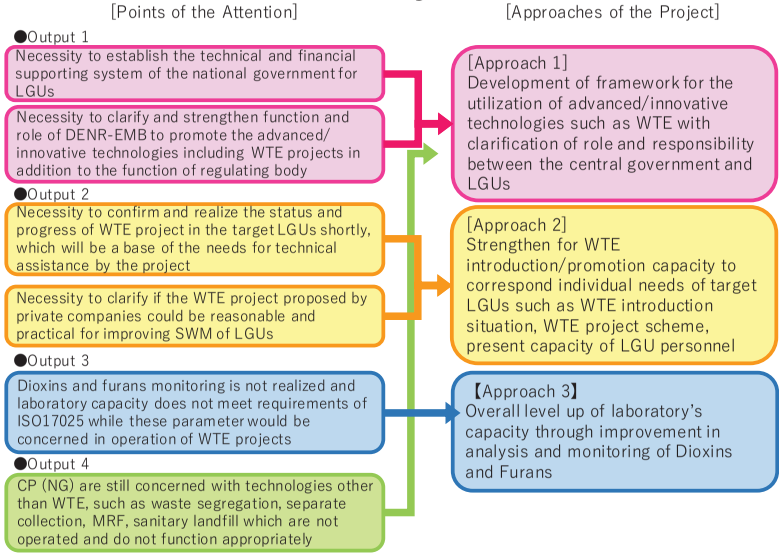
History of updates on the ICR

1. March 2019:
   Review/modify the draft ICR with PMO/FASPS
2. April 2, 2019: Sharing the draft at the Kick-Off meeting held at DENR
3. June 6, 2019:Sharing the draft at the Pre-JCC meeting held at DENR, inviting candidates institution off JCC
   →Revisions based on the comments from institutions which participated in pre-JCC meeting (completed on July 5, 2019)
4. November 20, 2019: Issue of SO to create ITWG
   →to update implementation structure and member of ITWG
5. November 28, 2019: Issue of SO to create JCC
   → to update JCC members

Outputs

- Output 1:
  National government's capacity on supporting and coordinating LGUs' WTE projects is enhanced.
- Output 2:
  Target LGUs' capacity on planning, evaluation, formulation & supervision of WTE projects is enhanced.
- Output 3:
  National government's capacity on environmental monitoring for WTE projects is enhanced.
- Output 4:
  National Government's & target LGUs' capacity to identify issues &provide suggestion/recommendation for SWM technologies other than WTE is enhanced.

Approaches to the project



Approach 1

- Development of framework for WTE utilization with clarification of role and responsibility between the central government and LGUs
  - Clarification of role and responsibility between the central government and LGUs
  - Technical support to LGUs: Preparation and officializing technical cooperation materials
  - Financial support to LGUs: Discussion on financial supporting scheme
  - Enhancing discussion on necessity of WTE

Conditions for adoption of WTE in LGUs

- The maximum amount that can be managed by waste treatment technology is determined by the present treatment capacity of barangay (by other technologies than WTE).
- Waste beyond the capacity of reuse/recycling shall be landfilled at the sanitary landfill. Possibility to secure final disposal site depends on the situation of LGUs and surrounding areas.
- The urgency of waste reduction will further increase if the final disposal site can not be secured. Waste generation never stop.
- Compare the waste reduction effect of waste treatment other than WTE technology and WTE technologies.
- Upon proper understanding of the current situation of LGU, urge them to decide a way to resolve the problem.
- The project team will summarize “the situation to discuss adoption of WTE".

Approach 2

- Strengthen for WTE introduction/promotion capacity to correspond individual needs of target LGUs such as WTE introduction situation, WTE project scheme, present capacity of LGU personnel
  - Support in accordance to LGU’s needs
  - Issues and possible supports
  - Close cooperation and communication with LGUs’ C/MSWMB members
  - Capacity Development of NG through experiences to support the target LGUs

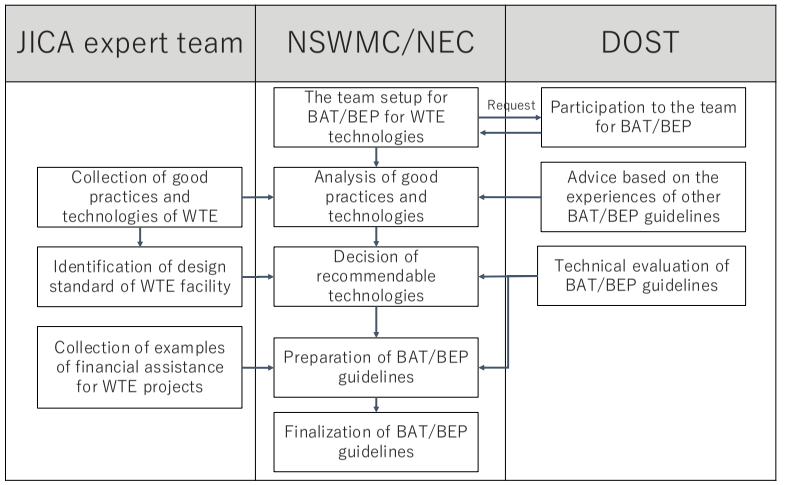
Approach 3

- Overall enhancement of laboratory’s capacity through improvement of analysis and monitoring of Dioxins and Furans
  - Specifying and preparing the essential equipment through clear recognition of current status
  - Formulation of framework for quality improvement

Activities for Output 1

1-1: Prepare Best Available Technique (BAT) / Best Environmental Practice (BEP) guideline
1-2: Study policy & mechanism to promote WTE projects
1-3: Hold seminar to disseminate WTE technology
1-4: Prepare draft technical standards for WTE facility focused on waste incineration with power generation
1-5: Prepare manual for management of bottom & fly ash discharged from WTE facility
1-6: Prepare manual for planning, evaluation, formulation & supervision for WTE projects, and prepare evaluation criteria for EMB on 10-year SWM plans
1-7: Illustrate model procedure to introduce WTE facility

Procedure to prepare BAT/BEP guidelines



Technical standards for WTEs

- WTEs (combustion) are developed by LGUs same like SLFs,
- To lead LGUs, EMB shall have minimum technical guidelines in its structure/function and operation of WTE same like DAO2010-06 (GL for SLF),
- Samples of MOEJ's standards (functional);
  1) Furnace shall equip to combust MSW more than 800 dC for 2 seconds,
  2) Facility shall equip to cool the combusted gas to 200dC before inlet to emission control facilities,
  3) Facility shall equip the separate discharge /storage function of fly/bottom ash, etc.

Treatment/disposal of bottom/fly ash

- How to categorize the residuals from WTE such as bottom/fly ash in Philippines,
- RA6969, DAO1992-29, DAO2004-36, DAO2013-22,
- DAO2004-36 (Procedural Manual for HW),
  ●Table1-1:Class D "Waste with inorganic chemicals" =>TCLP determines hazardous or non-hazardous,
  ●Table1-1:Class K "Immobilized Waste" => Hazardous?,
  ●Table1-2 "Exempted Waste" ＝> SLFs?
- Hazardous waste shall be disposed at TSD Facility, while Non-hazardous waste can be disposed at SLFs?
- In Japan, fly-ash which contains heavy metals, if it is chelated/immobilized, can be disposed at SLFs w LTP,
- Standard for SLFs (incl. effluent), TSD facility,

Activities for Output 2

2-1: Review current situation on introducing WTE facilities in the target LGUs

2-2: Clarify current waste flow & amount, set target on waste reduction in the existing SWM 10-year plans

2-3: Evaluate LGUs' land use plan for WTE projects

2-4: Analyze & verify candidate WTE projects selected from the existing F/S, unsolicited/solicited proposals

2-5: Define points & issues to be addressed for formulating WTE projects in the target LGUs

2-6: Define proper responsibility of the target LGUs in promoting WTE projects under PPP scheme

2-7: Formulate technical specification of WTE facilities in each target LGU

2-8: Define points & issues to be addressed for supervising WTE projects in the target LGUs

WTEs' Progress in Target 3LGUs

LGU	M/P	Concept, F/S	Plan, B/D	RfP, ITB	Proposal	Contract	Const.	Operation
Quezon City	ADB (2018-2027)	Unclear	Unclear	Adopt Unsolicited Proposal 2017.3	Swiss Challenge 2018.10 -2019.3	Expected to be in 2019.3 [postponed]	?2020 -2023 (3yrs)	?2023-2058 (35yrs)
Davao City	2008-2017	JICA (2016)	Consultant was procured in 2019	2020	2020	?2021	?2021-2023 (2yrs?)	?2023-20xx (20yrs ?)
Cebu City	2017-2026	ADB-TA (2017-2019)	Not Yet Fixed					

Unsolicited "Modified BOO" based procurement

Japan subsidized BOT

Under Study

Implementation Period of JICA TCP (2019.3-2022.3)

Issues and assistant idea in JICA T/C for WTE Procurement in Quezon City

LGU	M/P	Concept, F/S	Plan, B/D	RfP, ITB	Proposal	Contract	Const.	Operation
Quezon City	ADB (2018-2027)	Unclear	Unclear	Adopt Unsolicited Proposal 2017.3	Swiss Challenge 2018.10 -2019.3	Expected to be in 2019.3 [postponed]	?2020 -2023 (3yrs)	?2023-2058 (35yrs)

Unsolicited BOT based procurement

ISSUE 01
Private proposal is fully conformed with City's SWM policy? (Procurement conditions were well-argued?)
Idea
Support LGU to figure out the "conditions" to private concessionary.

ISSUE 02
Are the guarantees/ conditions required in the RfP/Proposal well deliberated?
Idea
Support LGU to concrete how to check them and how to indemnify in case of unachievable.

ISSUE 03
Are there appropriate design and construction supervisory method?
Idea
Support LGU to consider whether it needs Supervisory consultant or not (Share Japan's case).

ISSUE 04
Appropriate risk evaluation for super long term (35yrs) BOT project
Idea
Support LGU to check the maintenance plan of concessionary, contract condition at the end of concession period.

Review the existing contract conditions, and support in the supervision for appropriate and practical PPP and Risk balancing.

Issues and assistant idea in JICA T/C for WTE Procurement in Davao City

LGU	M/P	Concept, F/S	Plan, B/D	RfP, ITB	Proposal	Contract	Const.	Operation
Davao City	2008-2017	JICA (2016)	Consultant is conducting F/S	2020	2020	?2021	?2021-2023 (2yrs)	?2023-20xx (xxyrs)

Japan aid based

ISSUE 01
Private proposal is fully conformed with City's SWM policy? (Procurement conditions were well-argued?)
Idea
Support LGU to figure out the "conditions" to private concessionary.

ISSUE 02
Steady implementation of Japanese grant based procurement
Idea
Support LGU to deliberate "reasonable" contract conditions between LGU and BOT contractor

ISSUE 03
Are there concrete idea of the facility operation after DBO period?
Idea
Support LGU to clarify the responsibility of BOT contractor upon the completion of BOT period

Sorting out the facility plan, contract conditions in LGUs and risk balance review.

Issues and assistant idea in JICA T/C for WTE Procurement in Cebu City

LGU	M/P	Concept, F/S	Plan, B/D	RfP, ITB	Proposal	Contract	Const.	Operation
Cebu City	2017-2026	ADB-TA (2017-2019)	Not Yet Fixed					

Under Study

ISSUE 01
As of Dec2018, ADB TA is still studying whether LGU pursue "Solicited" or "Unsolicited".

Idea

Support LGU to identify appropriate and preferable facility planning conditions.

ISSUE 02
Limitations of composting and reduction of biodegradable waste in Barangay level.

Idea

Support LGU to formulate realistic and quantitative MSW flow

ISSUE 03
LGU presently contract with private hauler incl. final disposal. Proper disposal is not secured.

Idea

Support LGU to establish the ideal MSWM with WTE facility without high dependent on private entities.

⇨ Before judging whether let private work or not, LGU shall have "procurement conditions" for WTE.

WTE Project to be identified in 10 years SWM plan

- Requirement by NSWMC resolution and WTE-DAO

The following shall be discussed in the plan

- How to treat combustion ash, emission from WTE
- Environmental standards to follow for operation
- Consistency with LGU's land use/development plan
- Financial inputs necessary for the implementation of plan

Risk allocation in PPP

- SWM must remain as a responsibility of LGUs
- Feasibility of private business
- Uncertainty in operation
  - operational performance by private operator
  - operational performance of technology and facility
  - violation of environmental standards

  →Any case of suspension of operation will damage SWM of LGUs which may result in health risk of people
- Guarantee by LGUs (if applicable): waste amount (as feed stock), waste quality (calorific value etc.)

WTEs' Progress in Target 3LGUs

Quezon City;

- As the result of Swiss Challenge, MPIC-JV is selected,
- Modified BOO contracted will be closed in July(?) 2019,
- 1,700tpd (Incineration + MBT) for 35 years,

Davao City;

- A half of Capex will be subsidized by Japan's grant. Other half will be procured by BOT (20years)
- 600tpd (Incineration) for 20 years,
- Consultants for FS and Transaction advisory will be procured shortly,

Cebu City;

- ADB-TA evaluated various proposal to select ONE Unsolicited Proposer

Activities for Output 3

3-1: Review current capacity & activities on monitoring, analysis & QA/QC of Dioxins and Furans (DXNs) in the central & regional EMBs

3-2: Analyze gap between present and required capacity of the central EMB Lab., and formulate training plan

3-3: Prepare Standard Operation Procedures (SOP) for sampling, analysis & QA/QC of DXNs in ambient air & emission gas

3-4: Conduct training on sampling, analysis & QA/QC in ambient air & emission gas for the central EMB

3-5: Prepare sampling plan (design) for DXNs in ambient air

3-6: Implement sampling, analysis & QA/QC of DXNs in ambient air & emission gas

Structure and Contents of SOP (tentative)

Volume	Contents
Quality manual	- Definition of quality policy, organization, responsibility and authority, document architecture, etc.
Procedure	- Regulating procedure of quality control, internal audit, corrective action, qualification of in-house training, management of chemical reagent, project implementation and process control, etc.
Operation procedure (analysis)	- Regulating procedures for operation of analysis. - Each document will be prepared corresponding to required method of each target media.
Operation procedure (equipment management)	- Regulating procedures for operation of essential daily/periodic inspection for main equipment/devices. - Regulating procedures for calibration for the equipment/devices which requires international traceability.

Activities for Output 4

4-1: Grasp current situation by studying National SWM strategy & the 10-year SWM plans in the target LGUs

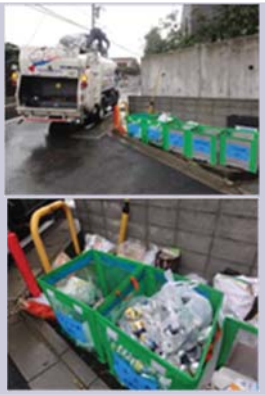
4-2: Identify current issues for other SWM technologies in the target LGUs

4-3: Collect information on "Good practice & Appropriate technology" of other SWM technologies in Japan & the third countries

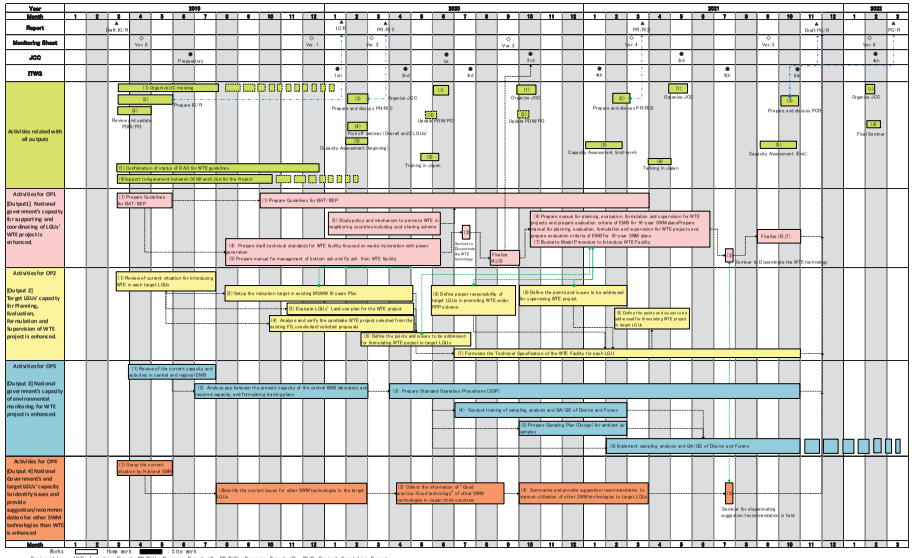
4-4: Summarize & provide suggestion & recommendation to improve utilization of other SWM technologies in the target LGUs

4-5: Hold seminar to disseminate suggestion & recommendation

Good practice and technologies (examples)

Collection of segregated waste on the designated day of the week, Japan	Resource sorting plant, Nicaragua	Sanitary landfill, Thailand
		

Modification of activities schedule



Activities related with all Outputs

0-1: Support to organize JCC & hold committee meetings
0-2: Prepare & submit Deliverables
0-3: Discuss & update PDM and PO
0-4: Public Relations
0-5: Seminars
- Project kick-off seminar
- Kick-off seminar in the target LGUs
- Final seminar
- Technology dissemination seminar (as Activities for OP1 & OP4)

0-6: Capacity assessment
0-7: Training in Japan (scheduled in Oct. 2019 & Nov. 2020)

Public Relations

- Newsletters (twice a year)
  - To disseminate and share the progress of the project
  - To share the products of the project (such as manuals)

- DENR & JICA Websites, etc.
  - To disseminate and share the progress of the project

1st Newsletter

- Collection of articles: by February 14
- Issue of 1st NL: March 27
- Contents and persons responsible for articles: (tentative)

		Page	Writer in charge
	Cover	1	JET/PMO
	Greeting	1	-
1.1	Greeting from PMO	0.5	EMB
1.2	Greeting from JET	0.5	JET
	Outline of SWM-AIT Project	5	-
2.1	About TCP	0.4	JICA
2.2	About SWM-AIT TCP	0.4	PMO
2.3	PDM	0.2	JET
(1)	Article related to Output 1	1	Sub-Group1
(2)	Article related to Output 2	1	Sub-Group2
(3)	Article related to Output 3	1	Sub-Group3
(4)	Article related to Output 4	1	Sub-Group4
	The Menber of SWM-AIT Project	1	JET
3.1	Implementation structure		-
	Total	8	

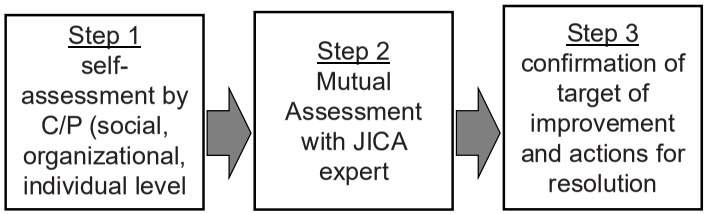
添付資料11

Seminars

- Project kick-off seminar (February 2020)
- Kick-off seminar in the target LGUs (February 2020?)
  →Need discussion on timing and necessity
- Technology dissemination seminar (Activities for OP1 & OP4)
  – 1st: July 2020
  – 2nd : July 2021
- Final seminar: February 2022

Capacity Assessment

- Assessment at social, organizational, individual level
- 3times of assessment (the beginning, mid-term and end of the project)



Training in Japan

- Twice in 3 years, 2 weeks/time
  – 1st: May 2020
  – 2nd: April 2021
- Trainees: 10 trainees/time
  – SWM/WTE Group： DENR-EMB, target LGUs (about 7 trainees/training)
  – Dioxins Analysis Group：DENR-EMB Laboratory (about 3 trainees/training)

Training in Japan: Tentative Program

Curriculum	Objectives	Training contents	Lecturer
Common	Understand policies of SWM and its background	Waste management policy in Japan, role of national and local governments in waste management administration, ・Supports to municipalities by the National Government	MOEJ
	Understand situation of WTE introduction in Japan	Institution and measures to promote introduction of WTE technology	MOEJ/ JEFMA
	Understand policy and system of Dioxins and Furans control	Outline of policy and system of Dioxins and Furans control in Japan	MOEJ/ NIES
WTE/SWM	Understand PPP procurement of WTE of municipalities in Japan	PPP procurement case of WTE facilities in Japan, the role of municipality in PPP	JEFMA
	Obtain hints to solve issues in WTE project of target LGUs	(to be set according to progress, situation of WTE project in LGUs)	Municipality / consultant
	Understand waste treatment technologies used in municipalities in Japan other than WTE	Background and situation of adoption of intermediate processing technologies other than WTE in municipalities	Municipality
Dioxins analysis	Understand the situation of Dioxins analysis in municipalities in Japan	Efforts to manage dioxins and furans by municipalities Laboratory visit, understand status of management and execution	Laboratory of municipality
	Understand management in Japanese laboratories	Dioxins sampling, pretreatment, analysis (including surface water, groundwater, soil, sediment) Laboratory visit, understand status of management and execution	Private laboratory

Thank you for your attention.

NIPPON KOEI

NIPPON KOEI

Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/ Innovative Technologies

Working Paper: Proposed Criteria for the Selection of Non-Governmental Organization (NGO) and Industry Sector Representatives

First ITWG Meeting
24 January 2020, Friday
Sulo Riviera Hotel, Quezon City

Proposed Criteria for the Selection of Non-Governmental Organization (NGO) Representative

The Joint Coordinating Committee (JCC) representative from the NGO shall be selected by the JCC members and shall be based on the following criteria:

1. Represent an active NGOs in the country;
2. Capacity to Demonstrate experience and interest in the field of capacity development and waste-to-energy matters;
3. Possess familiarity, interest and has involvement in waste-to-energy projects;
4. Principal purpose is to promote protection of air, land and water quality; and
5. Possess the capacity, strategy and determination to communicate with its members/member organizations and partners within the framework of technical cooperation.

Proposed Criteria for the Selection of Industry Sector Representative

The Joint Coordinating Committee (JCC) representative from the Industry Sector shall be selected by the JCC members and shall be based on the following criteria:

1. Provide or facilitate expert assistance in the modeling of solid waste management facilities;
2. promote recycling and the protection of air and water quality;
3. Engage in practical applications of environmentally sound techniques of waste minimization such as, but not limited to, resource conservation, segregation at source, recycling, resource recovery, including waste-to-energy generation, re-use and composting; and
4. Capability to implement recycling programs for the recyclable materials, such as but not limited to glass, paper, plastic and metal.

THANK YOU

添付資料11

Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/ Innovative Technologies

NEXT STEPS/WAY FORWARD

First ITWG Meeting
24 January 2020, Friday
Sulo Riviera Hotel, Quezon City

Preparatory Activities

- Draft Memorandum of Understanding (MOU) between DENR and the 3 project sites (i.e. Quezon City, Davao City & Cebu City).
  - Coordination and Consultation meetings with the participating LGUs of Davao City, Cebu City and Quezon City on 11-14 February 2019 & 7 March 2019 respectively, including representatives from the DENR-EMB Regional offices.
  - The MOUs were already reviewed by the respective Legal Offices of DENR and LGUs. However, the concerned LGUs will sign the MOU once the WTE guidelines is approved.
- Issuance of Memorandum to the concerned EMB Regional Offices regarding instruction to require the concerned LGUs to submit completed MOUs.

Next Steps/Way Forward

- **Upcoming Meetings (CY 2020)**
  - PMO meetings & internal discussions – once a month
  - ITWG meetings (quarterly)- starting 3rd week of January 2020
  - Sub-group meetings (monthly) - per project output
  - JCC meetings (Semi-annual) – June and October 2020 (to be confirmed with JET)
- **Kick-off Seminars**
  - Project Launching (Metro Manila)
  - Three (3) seminars for the 3 LGUs
- **Japan Training**: *May & October 2020 (to be confirmed by JET)*

THANK YOU

添付資料11

Meeting Record

Title	**First Inter-Agency Technical Working Group (ITWG) Meeting**
Date and Time	10:00 AM, 24th January 2020
Place	Sulo Riviera Hotel, Matalino St, Diliman, Quezon City, 1100 Metro Manila
Organizer	DENR-EMB/SWMD/PMO & JICA Expert Team
Participants (name & title)	**Selected Government Agencies** [DOE-Energy Policy and Planning Bureau, EPPB & REMB] Ms. Ruby B. de Guzman, Chief of Biomass Energy Management Division, BEMD Ms. Charisse Jane D. Pascual, Science Research Specialist II, BEMD [DILG-Bureau of Local Government Supervision (BLGS)] Ms. Marla Clarisol L. Agas, PDO II [DOST-Industrial Technology Development (ITDI)] Mr. Dante Vergara, Representative [NEDA-Investment Programming Group (IPG)] Mr. Aldwin U. Urbina, Chief Economic Development Specialist Atty. Gilbert V. Kintanar, Senior Economic Development Specialist [Public-Private Partnership Center (PPPC)] Ms. Justine E. Padiernos, OIC-Director III of PDS **Local Government Units (LGUs)** [EPWMD-Quezon City] Mr. Vincent Ferdinand Paul G. Vinarao, PDO III [Cebu CENRO] Atty. Junine Aragones (Absent) [Davao CENRO] Atty. Tristan Dwight Domingo (Absent) **EMB Regional Offices** [EMB-NCR] Engr. Alma P. Ferrareza, Supervising EMS [EMB-Region VII] Ms. Angelli Marie Jacynth Egar, EMS I, SWM Section [EMB-Region XI] Ms. Maria Socorro A. Mallare, Supervising EMS (Absent) [DENR-Foreign Assisted and Special Projects] Mr. Conrado Bravante, Chief Project Management Division Ms. Marianica Philina Obmerga, PEO I **EMB Central Office** [Office of the EMB Director] Engr. William P. Cuñado, Director Ms. Ma. Lorema Mercedes G. Reyeg, PMEO Mr. Dennish S. Lara, AA IV

	[EMB-Legal Division] Ms. Fatima E. Millan, Senior Investigator III [EMB-EQMD-AQMS] Ms. Wyona Kay C. Rativo, EMS II, EQMD Mr. Jedidiah M. Mangubat, EMS I [EMB-PPPDD] Ms. Mary Esther D. Ofiaza, PO III Ms. Consolacion Crisostomo, Chief, PPPDD [EMB-EIAMD] Engr. Esperanza Sajul, Chief, EIAMD Mr. Mark Anthony C. Tuliao, EMS II [EMB-Solid Waste Management Division (SWMD)/PMO] Ms. Elvira S.Pausing, Supervising EMS, PPDS Ms. Nelie A. Dimer, EMS II Ms. Rodeth F. Antonio, MO **JICA Philippines** Mr. Christian Vic Perez, Program Officer Ms. Momoko Otsuka, Assistant Representative **JICA Expert Team** Mr. Takahiro Kamishita, Chief Advisor Mr. Makoto Kosaka, SWM-PPP Ms. Kyoko Kimura, Public Enhancement Training Arrangement Coordinator Ms. Cynthia Rose C. Faylogna, Project Assistant Mr. Eric Cea, Secretary
Main contents of the meeting	The First ITWG meeting started at 10:00 AM with Engr. William P. Cuñado, the EMB Director and the Project Director of JICA Technical Cooperation Project (TCP), welcoming all the participants and declaring the official opening of the meeting. Director Cuñado stressed the importance of the meeting as a jumpstart of the works and that it requires efforts, time and sharing of experiences in order to comply with the commitments of the project. He also emphasized the need to pursue sustainable solid waste management as a multi-dimensional concept encompassing the economic, social, institutional and physical elements of development. Also, he urged everyone to continue to strengthen the capabilities and move on to a more dynamic and active implementation of the project. **Presentation & Introduction of ITWG members** ▪ Ms. Elvira S. Pausing, Supervising Environmental Management Specialist, SWM Division and designated Assistant Project Manager of the Project Management Office (PMO) for the JICA TCP presented and introduced the ITWG Chairman and Co-Chairman, as well as the members of the ITWG as the Core Group for the implementation of the Project. ▪ Upon the presentation and introduction of the members of the ITWG and JET, Ms. Pausing turned over the floor to the designated Chairman (DENR-EMB) and Co-Chairman (DOE) of the ITWG. The Chairman asked the SWMD-PMO/Secretariat on the presence of a Quorum and Ms. Pausing, SWMD-PMO/Secretariat confirmed. Based on the Secretariat's report, the majority of the members of the ITWG were

already present, and that the meeting was duly convened. The presence of a Quorum was recognized by FASPS and seconded by EMB-PPPDD.

Approval and adoption of the Agenda

- The ITWG Chairman presented the tentative agenda for the meeting and asked for comments and inputs from the participants. The Agenda was adopted without any alterations from the ITWG members.

Comments/inputs and agreements on the Approved Special Order No. 2019-347

- The following revisions in the approved Special Order (SO) No. 2019-347 had been agreed upon during the meeting:
  (1) The NEDA **Industry** Programming Group shall be changed to NEDA **Investment** Programming Group.
  (2) The FASPS principal representative shall be changed from Ms. Lourdes Wagan to Mr. Angelito Fontanilla as the new FASPS Director.
  (3) The amendments for the approved Special Order for JCC and ITWG are as follows:
    - Frequency of the ITWG Meeting
      The meeting for ITWG shall be on a quarterly basis instead of once a month, and the exact dates shall be based on the discussion of the ICR.
    - No ITWG meeting and JCC meeting will be conducted on the same month.
    - Inclusion of JICA and Embassy of Japan as members of the JCC
    - The Special Order No. 2019-968 shall be amended to include JICA and Embassy of Japan as members of the JCC. The amendments shall be made before June 2020.

The ITWG Chairman conducted the formal meeting as set forth in the Notice of Meeting:

Project Overview and Basic Elements & Requirements of the Project

The Project Overview and Basic Elements & Requirements of the Project was presented by Mr. Takahiro Kamishita, the Project Advisor.

- The following issues and concerns were raised during the open forum:
  (1) The EMB-Legal Division inquired if the WTE-TCP project considers the environmental and social issues.
    - JET response: The Output 1 and 2 of the Project Design Matrix (PDM) shall address these issues.
  (2) The JICA Philippines asked how will the JET handle the adjustments on the schedule of the activities per LGU.
    - JET response: The technical assistance will be provided depending on the progress of the WTE project of target LGUs.
  (3) The EMB Director queried about the possibility of the inclusion of other LGUs except the 3 target LGUs.
    - JET response: The 3 target LGUs were considered as model cases in the Philippines. Thus, the experiences and lessons which will be acquired in these model LGUs shall be transferred to other LGUs under the supervision of EMB-DENR.
  (4) The NEDA asked what were the criteria in selecting the 3 target LGUs for the WTE Project.
    - JET response: The DENR together with the Ministry of Environment of Japan identified the 3 LGUs as key areas (for Luzon, Visayas, and Mindanao) in previous cooperation activities. These 3 LGUs have been discussing and working on the development of WTE facility to improve their solid waste management.

	(5) The EMB Director inquired about the acceptability of technology based on emission standards and how will the economic issue for the operation be addressed. ▪ JET response: The WTE is proven to be an acceptable technology in other countries under appropriate operation. ▪ The PPPC representative provided additional response that the LGUs will be assisted by Private Companies through PPP Scheme for Project Sustainability. The JET suggested that private companies need a financial input from the government for the project to be sustainable because of the nature of the entire solid waste administration that it does not generate financial profit in any case. **Updates on the DENR Administrative Order No.2019-21(Guidelines Governing the Establishment of Waste-to-Energy Facilities for the Integrated Management of Municipal Solid Wastes)** ▪ The ITWG Chairman requested the SWMD-PMO to present the updates of the DAO on WTE Guidelines. It was mentioned that the said DAO 2019-21 was approved on the 26th of November 2019, and that one of the next steps is for the EMB-SWMD to conduct Capacity Development to the EMB Central, Regional Offices and the partner LGUs by the first quarter of the year. Ms. Pausing recommended that the members of the ITWG should also be invited to the said capacity building organized by EMB-SWMD. (The schedule is still yet to be announced.) ▪ The DOE emphasized that the possible conflicts between the WTE DAO and the 2 Bills (Senate Bills which was introduced by Gatchalian and Tolentino respectively) will be discussed during the public hearing which was scheduled on January 28, 2020. **Creation of a Sub-group under the ITWG (per output basis)** ▪ Ms. Pausing presented the matrix of the proposed members of the Sub-groups on per project output basis. The following were suggested and confirmed as the Sub-group members for eventual preparation of the supplemental Special Order (SO) as part of the Institutional Arrangements: (1) For Sub-group Project Output 1 ▪ DOST-PCIEERD (Energy Division): Mr. Nonilo Peña ▪ DOE (Renewable Energy Management Bureau): Mr. Romeo Galamgam ▪ DILG (Bureau of Local Government and Supervision): Atty.Ms. Rhodora Flores, Alternate: Mr. Carlo Mari Crisregienald C. Tan ▪ EMB Central Office (PPPDD): Ms. Consolacion Crisostomo ▪ LGU Quezon City (TBA) ▪ PMO (EMB-SWMD: Engr. Nolan B. Francisco ▪ FASPS (will be included as coordinator): Director Angelito Fontanilla ▪ JET: Mr. Takahiro Kamishita (2) For Sub-group Project Output 2 ▪ DOST(ITDI): Engr. Reynaldo Esguerra ▪ DILG: Mr. Carlo Mari Crisregienald C. Tan ▪ PPP: Ms.Justine Padiernos ▪ DOE: Ms. Ruby De Guzman ▪ EMB Central Office: Engr. Jundy T. Del Socorro ▪ LGU Quezon City (TBA) ▪ LGU Cebu City: Atty. Junine Aragones ▪ LGU Davao City: Atty. Dwight Domingo

	▪ PMO(EMB-SWMD) Coordinator: Engr. Nolan, Alternate: Ms.Elvira Pausing ▪ JET: Mr. Takahiro Kamishita (3) For Sub-group Project Output 3 ▪ EMB-ERLSD: Ms. Ma. Fatima Anneglo R. Molina ▪ SWMD: Engr. Nolan B. Francisco ▪ DOE-ECCD (Environmental Monitoring Section): Ms. Letty Abella ▪ DOST(ITDI): Engr. Reynaldo Esguerra ▪ EMB Region VII: Engr. John Roy Kyamko ▪ EMB Region XI: Engr. Virginia Lobaton ▪ EMB NCR: Engr. Alma Ferrareza ▪ EMB-CO AQMS: Engr. Jundy T. Del Socorro ▪ EMB-EMS: Engr. Marcelo Rivera ▪ PMO(EMB-SWMD) Coordinator: Engr. Nolan, Alternate: Ms.Elvira Pausing ▪ JET: Mr. Takahiro Kamishita, Alternate: Mr. Satoshi Miyaichi (4) For Sub-group Project Output 4 ▪ DOST(ITDI): Engr. Reynaldo Esguerra ▪ DILG: Mr. Carlo Mari Crisregienald C. Tan ▪ PPP center: Ms.Justine Padiernos ▪ DOE: Ms. Ruby De Guzman ▪ EMB Central Office: Engr. Jundy T. Del Socorro ▪ LGU Quezon City (TBA) ▪ LGU Cebu City: Atty. Junine Aragones ▪ LGU Davao City: Atty. Dwight Domingo ▪ FASPS (will be included as coordinator): Director Angelito Fontanilla ▪ PMO (EMB-SWMD) Coordinator: Engr. Nolan B. Francisco, Alternate: Ms.Elvira Pausing ▪ JET: Mr. Takahiro Kamishita **Presentation of Final Inception Report (ICR) and discussion of the Project Schedule** ▪ The ITWG Chairman requested Mr. Takahiro Kamishita, Chief Advisor of JET to present the elements and requirements of the approved ICR. Mr. Kamishita explained the history of the revisions on the ICR and the adjusted implementation schedule and project activities. ▪ During the discussion, the following agreements had been defined: (1) The summary of the Project Schedule with Specific Outputs, Timelines and Responsible Agencies/Persons will be submitted to the OIC-Director of EMB. (2) The designated Coordinators will be responsible in selecting members to be sent for the training in Japan which will be endorsed to the EMB Director by May 17, 2020. The ITWG Chairman stressed that the arrangements must be made earlier in order to avoid uncertainties for the processing of travel documents. (3) The matters regarding the preparation of a Newsletter for the Project shall be discussed further with the concerned agencies and sub-group members. **Proposed Criteria for the Selection of NGO and Industry Representatives** ▪ Ms. Pausing presented and discussed the proposed selection criteria for the NGO and Industry Sector representatives. The ITWG Chairman suggested that the said criteria will be sent via email to all ITWG members for their comments and additional inputs. It was decided that the said selection criteria and the required comments will be discussed in the upcoming meetings and that the improvements

	for the criteria must be made first before inviting the NGO & industry representatives. **Discussions on the Signing of the MOU of DENR to the partner LGUs** ▪ The EMB-NCR clarified that they already received the Memorandum of Understanding (MoU) however, there had been an issue on to which of the two departments of LGU-Quezon City will be in charge for the matter. The QC-EPWMD (Climate Change Division) responded that they will coordinate with their LGU in order to come up with a decision. ▪ The representatives of the EMB Regional Offices assured the EMB Director to send the letters relative to the signing of the MOU to the three (3) LGUs by the end of January 2020. ▪ The signing ceremony will be scheduled after confirmation of acceptance from the three (3) LGUs. The schedules for Kick-off Seminars, and JCC, ITWG, Sub-group Meetings shall be discussed during the JET/PMO Meeting next week. **Other Matters** The ITWG Chairman requested a copy of the NEDA Feasibility Study of Appropriate Waste-to-Energy Technologies in the Manila Bay Region Covering 178 LGUs, (which will be shared to all of the ITWG members for information and reference) and the NEDA representative agreed. **Adjournment** There being no further important matters to discuss, that concludes the formal meeting. The ITWG meeting was adjourned at 4:10 PM.
Request by the Director to QC-EPWMD	▪ The information about the waste study re-updating due to the plastic ban of Quezon City shall be relayed to the Director after 2 weeks.
Request by PMO to NEDA	▪ The advanced copy of the WTE Feasibility study of NEDA shall be given to EMB-SWMD(PMO) by the 27th of January 2020.
References / Materials Presented	▪ Meeting Programme and presentations prepared by PMO(EMB-SWMD) ▪ Presentations prepared by JET
Prepared by	Ms. Cynthia Rose C. Faylogna
Reviewed by	Elvira S. Pausing Assistant Project Manager, SWMD-PMO Takahiro Kamishita Chief Advisor, JET
Noted by	Engr. Nolan B. Francisco OIC-Chief, SWMD

11-1: ITWG会議

11-1-2 ：第2回ITWG会議

2nd Inter-agency Technical Working Group (ITWG) Meeting

Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/Innovative Technologies

3rd December 2020, 13:00 PM – 16:30 PM

(*Via MS Teams*)

PROGRAMME

TIME	ACTIVITY	SPEAKER
1:00 PM	Philippine National Anthem Invocation	SWMD-Project Management Office (PMO)
1:15 PM	Opening/Welcome Remarks	**Engr. William P. Cuñado** *OIC-Director, EMB*
1:30 PM	Discussion of Objectives of the Meeting & Acknowledgement of the ITWG Members and Sub-group Members	**Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD & Assistant Project Manager, SWMD-PMO*
Meeting will be presided by: ***ITWG Chairman - Director William P. Cunado,*** *DENR-EMB* ***ITWG Co-Chairman- Director Mylene C. Capongcol,*** *EPPB, DOE*		
1:45 PM	Project Overview and Basic Elements of the Technical Cooperation Project (TCP)	**Mr. Takahiro Kamishita** *Chief Advisor, JICA Experts Team (JET)*
2:00 PM	Updates on the Implementation of the TCP for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/Innovative Technologies	**Ms. Maria Delia Cristina M. Valdez** *OIC-Chief, SWMD & Project Manager, SWMD-Project Management Office (PMO)*
2:15 PM	**Presentation on the Detailed Updates of the Major Activities and Accomplishments per Project Output** *(15 mins. per presentation)*	
	Project Output 1: • Preparation of BAT/BEP Guidelines • Preparation of Technical Standards for WtE Facility on Waste Incineration & Power Generation	**Mr. Satoshi Higashinakagawa** SWM3/WTE3, JET **Mr. Makoto Kosaka,** SWM-PPP, JET *(presentation by VIDEO)* **Both Speakers shall be supported by EMB-SWMD-PMO & all Sub-group members for OP1*
	Project Output 2: • Updates on WTE project • Points and issues to be addressed for formulating WTE project in	**Representatives of LGU's** **Mr. Takahiro Kamishita** *Chief Advisor, JET*

	target LGUs based on the analysis on the target LGUs' WtE projects	** Speaker to be supported by other Sub-group members for OP2*
	Project Output 3: • Training Plans on the sampling, analysis and QA/QC of Dioxins and Furans • Preparation of Standard Operation Procedures	**Mr. Satoshi Miyaichi** EMP/ESC, JET **Speaker to be supported by the EMB-ERLSD & EQMD & all Sub-group members for OP3*
	Project Output 4: • Collection of Good Practice/Good Technology of other SWM Technologies in Japan and other countries • Identification of current issues for other SWM Technologies of the target LGUs	**Ms. Kyoko Kimura** PE/TA Coordinator, JET **Speaker to be supported by SWMD-PMO & all Sub-group members for OP4*
3:30 PM	***Open Forum***	
3:45 PM	• Presentation on the Updated Project Schedules for CY 2021 • Presentation on the Identified additional activities under the TCP	**Mr. Takahiro Kamishita** *Chief Advisor, JET*
4:00 PM	Presentation and Updates on the Revised Memorandum of Understanding (MOU) between DENR and Target LGUs	**Director Angelito V. Fontanilla** *Director, FASPS*
4:15 PM	***Way forward/Next Steps*** • Discussion of JCC Meeting Agenda	**ITWG Chairman** **Director William P. Cuñado** *DENR-EMB* **ITWG Co-Chairman** **Director Mylene C. Capongcol** *EPPB, DOE*
4:20 PM	Wrap-up (*Issues/Agreements/Timelines*)	**Ms. Andrei Mallare** *Project Assistant, JET*
4:30 PM	Closing Remarks	**Ms. Momoko Otsuka** *Assistant Representative, JICA Philippines*
	Master of Ceremonies	**Ms. Raquel Rosario Reyes** *Senior EMS, EMB-SWMD*

The Project for Capacity Development on Improving Solid Waste Management through Advanced/Innovative Technologies in the Republic of Philippines

Project Overview and Basic Elements

JICA Expert Team

Project outline

- Project period:
  from March 2019 to March 2022 (3 years)

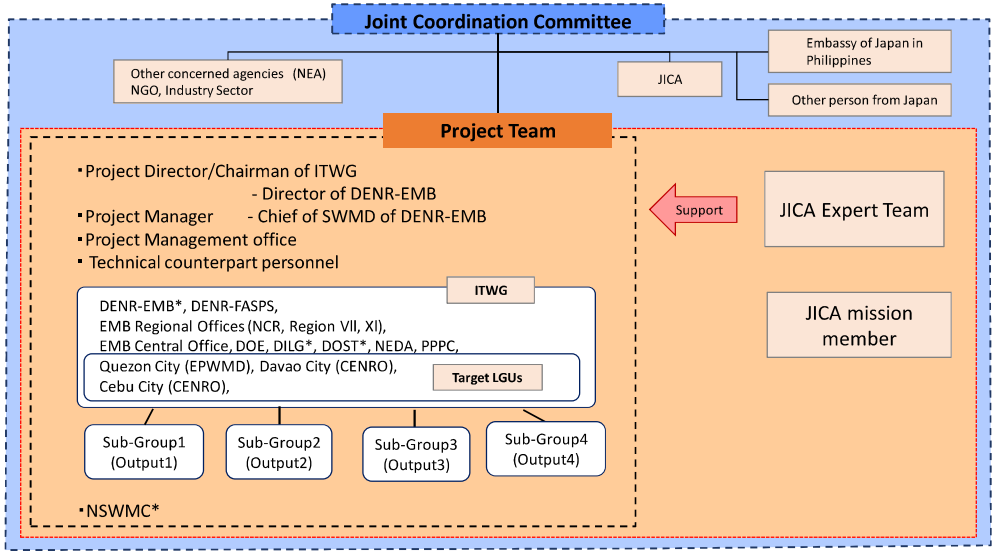
- Counterparts of Philippines:
  - Implementing agency: DENR-EMB
  - Target LGUs: Quezon City, Davao City & Cebu City
  - Inter-agency Technical Working Group (ITWG)
  - Cooperating agency: NSWMC

- Target area
  - Whole Philippines with special attention to Quezon City, Davao City and Cebu City

Related Official Orders

- EMB Special Order No. 2019-347:
  Creation of **ITWG** for the Full Implementation of the TCP, 19 Nov. 2019
- DENR Administrative Order N0.2019-21:
  Guidelines governing Waste to Energy (WtE) Facilities, 26 Nov. 2019
- DENR Special Order N0.2019-963:
  Creation of **JCC** for the TCP, 28 Nov. 2019

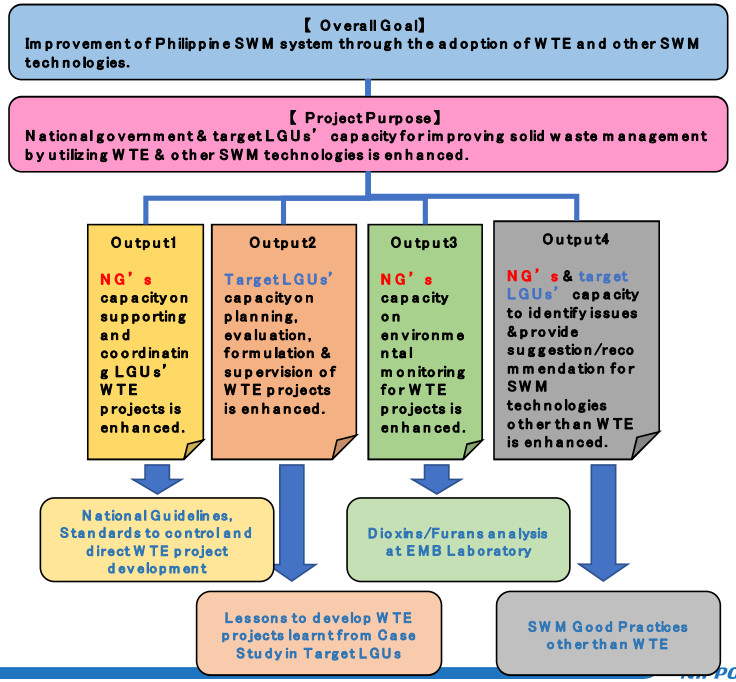
Project implementation structure (based on SOs)

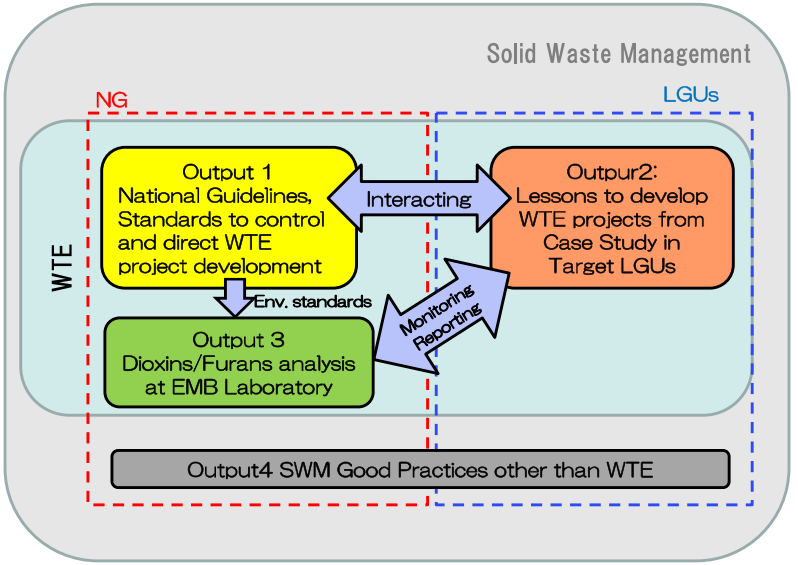


*NSWMC: DENR, DOH, DA, MMDA, DOST, DILG, DPWH, DTI, TESDA, PIA, LCP, LMP, LPP, LnB, NGO, Recycling Industry, Manufacturing and Packaging Industry

添付資料11

Project Design





Other issues to be noted

- WTE Bills: discussed in TWGs
- Urgent Problems of Plastic debris

Thank you!

添付資料11

Activities for Output 1

1-1: Prepare Best Available Technique (BAT) / Best Environmental Practice (BEP) guideline

1-2: Study policy & mechanism to promote WTE projects

1-3: Hold seminar to disseminate WTE technology

1-4: Prepare draft technical standards for WTE facility focused on waste incineration with power generation

1-5: Prepare manual for management of bottom & fly ash discharged from WTE facility

1-6: Prepare manual for planning, evaluation, formulation & supervision for WTE projects, and prepare evaluation criteria for EMB on 10-year SWM plans

1-7: Illustrate model procedure to introduce WTE facility

TECHNICAL COOPERATION PROJECT (TCP) FOR CAPACITY DEVELOPMENT ON IMPROVING SOLID WASTE MANAGEMENT (SWM) THROUGH ADVANCED/ INNOVATIVE TECHNOLOGIES

PROJECT IMPLEMENTATION UPDATES

(AS OF NOVEMBER 2020)

ITWG MEETING
03 DECEMBER 2020, 1:00 PM, THURSDAY
(VIA MS TEAMS)

AGENDA

- **Project Brief**
- **Project Accomplishments Update**
  - Output 1
  - Output 2
  - Output 3
  - Output 4
  - Execution of Memorandum of Understanding (MOU) between DENR and participating LGUs
- **Major Accomplishments**
- **Additional Project Activities/Components Proposed by JET**
- **Meetings Facilitated/Conducted**

PROJECT BRIEF

- **Project Title:** Capacity Development on Improving Solid Waste Management through Advanced/ Innovative Technologies
- **Funding Agency**: Japan International Cooperation Agency (JICA)
- **Implementing Agency:** DENR, Lead Office: Environmental Management Bureau (EMB)
- **Beneficiaries:** DENR-EMB (Central Office & Regional offices) & three (3) partner LGUs: Quezon City, Cebu City, Davao City
- **Project Budget**: USD 3.0 M (*no funds downloaded to DENR-EMB*)
- **Project Duration:** Three (3) years *(2019-2022)*

GOAL: Improvement of Philippine Solid Waste Management (SWM) system through the adoption of Waste-to-Energy (WtE) and other SWM technologies

PURPOSE: National government and target LGUs' capacity for improving SWM utilizing WtE and other SWM technologies is enhanced.

Project Outputs :

Output 1	National Project Government's Capacity for Supporting and Coordinating of LGU's WTE Project is Enhanced.
Output 2	Target LGUs' Capacity for Planning, Evaluation, Formulation and Supervision of WTE Project is Enhanced.
Output 3	National Government's Capacity of Environmental Monitoring for WTE Project is Enhanced.
Output 4	National Governments and Target LGUs' Capacity to Identify Issues and Provide Suggestions/ Recommendations for SWM Technologies Other than WTE is Enhanced.

添付資料11

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 1. NATIONAL PROJECT GOVERNMENT'S CAPACITY FOR SUPPORTING AND COORDINATING OF LGU'S WTE PROJECT IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
1.1 To prepare BAT/BEP Guidelines based from the information of good practices and technologies of WTE in neighboring countries	Collected a total of forty-six (46) cases – twenty (20) of which is from Japan, nine (9) from other Asian countries, and seventeen (17) from Europe and USA – as of the 6th Sub-group Meeting held last 14October2020. JET shared the BAT/BEP features during the 5th Sub-group Meeting held last 20 August 2020. Continuously collecting information on good practices and technology of WTE in Japan, Europe, USA and Asian countries Collection of BAT/BEP cases by Sub-group members is continuous until October 2020 to obtain the target total of cases sixty (60) cases prior to the finalization of the guidelines.	Consideration of implementation of questionnaire survey by delivering survey sheet to implementation organization or relevant stakeholders (Data collection until end of 2020). Continuous collection of BAT/BEP cases within the year. Per the revised Plan of Operation, the expected completion of the BAT/BEP Guidelines scheduled on March 2021.

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 1. NATIONAL PROJECT GOVERNMENT'S CAPACITY FOR SUPPORTING AND COORDINATING OF LGU'S WTE PROJECT IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
1.2 To study the policies and mechanism to promote WTE in neighboring countries including cost sharing scheme	Collected and analyzed the following information on policies: ▪ UNIDO report on financial mechanism ▪ WtE policies of EU Discussed during the 5th Sub-group Meeting held last 20 August 2020.	Continuous research for reference policies is expected from the Sub-Group Members.
1.3 To conduct seminar to disseminate the WTE technology	Technical Dissemination Seminar scheduled for July 2020 postponed due to Covid-19	Behind schedule. To be conducted July 2021

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 1. NATIONAL PROJECT GOVERNMENT'S CAPACITY FOR SUPPORTING AND COORDINATING OF LGU'S WTE PROJECT IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
1.4 To prepare the Draft Technical Standards for WTE facility focused on waste incineration with power generation	JET presented the progress of the preparations in the drafting of technical standards for WtE including the comparison of WTE Standards in Japan, EU and Philippines (DAO2019-21) during the 6th Sub-group Meetings for OP1 held last 14 October 2020. SWMD-PMO conducted a meeting with EIA on 24 August 2020 to discuss JET's additional clarifications on the DAO 2020-23 which were provided to JET.	Clean version of the draft DAO and a formal request for their comments was forwarded by JET to the Sub-group members on 15 October 2020.
1.5 To prepare the Manual for management of bottom ash and fly ash from WtE facility	JET presented the technical requirement for WTE ash treatment of WtE Ash Treatment during the Sub-group Meetings held last 07 July and 20 August 2020 and proposed to be incorporated in the Technical Standard which will be developed under activity 1-4 instead of a manual form. JET to submit a position paper to the EMB-HWMS on their recommendations to be included on the amendment of DAO 2013-22 by 11 September 2020.	Per the revised Plan of Operation, the expected completion of the Manual scheduled on October 2020.

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 1. NATIONAL PROJECT GOVERNMENT'S CAPACITY FOR SUPPORTING AND COORDINATING OF LGU'S WTE PROJECT IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
1.6 To prepare the Manual for Planning, Evaluation, Formulation, and Supervision of WTE project based on the information from Output 2 and neighboring countries, including evaluation criteria of EMB for 10-year SWM Plans	Implementation schedule: October 2020 to October 2021.	Prior to the finalization of this activity, a Technical Dissemination Seminar on the WtE technology. This activity was moved to November 2021 due to COVID-19 pandemic.
1.7 To prepare illustration model procedures to introduce WTE facility in accordance with WTE guidelines including environmental and social aspects	Implementation schedule: October 2020 to October 2021.	This activity will be conducted together with activity 1-6.

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 2. TARGET LGUS' CAPACITY FOR PLANNING, EVALUATION, FORMULATION AND SUPERVISION OF WTE PROJECT IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
2.1 To review the current situation for introducing WtE in each target LGUs	Completed activity as planned, but it is still necessary for JET to continuously monitor the progress of LGUs' WTE projects.	Progress of activities varies per LGU as the status of their WtE projects are different
2.2 To clarify the current waste flow/amount, and support to set-up the reduction target in existing MSWM 10-year plan of target LGUs	JET presented and discussed the current waste flow/amount of Cebu City and WtE Conceptual Plan during the 2nd Sub-group Meeting held last 16 July 2020. Based from the presented data, JET identified issues and provided some recommendations such as to consider incineration capacity based on ADB F/S study and current collected and disposal waste.	Awaiting updates from CCENRO regarding the additional and detailed information requested prior to the completion of analysis.
2.3 To evaluate the LGUs' land use plan for WTE projects	02 September 2020: CLUP from LGU Davao City evaluated and additional information on the Land Use Map received 20 August 2020: received CLUP of QC LGU CLUP for LGU Cebu City still to be submitted to JET for evaluation.	Continuous follow ups shall be conducted for the CLUP of Cebu City

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 2. TARGET LGUS' CAPACITY FOR PLANNING, EVALUATION, FORMULATION AND SUPERVISION OF WTE PROJECT IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
2.4 To analyze and verify the candidate WTE project selected from the existing FS, unsolicited/solicited proposal and others	JET shared the result of analysis, comments and technical inputs to the unsolicited proposal of LGU Cebu City during the 2nd Sub Group Meeting held last 16 July 2020. Draft JV agreement for LGU Cebu City's WTE project requested for JET's technical review – no updates as of 04 September 2020.	Follow-ups shall be conducted before scheduled meeting with LGU Cebu City on 16 September 2020, regarding further discussion to confirm and clarify information on the waste generation of Cebu City. PPPC and JET will have a separate meeting to discuss further concerns on the Cebu City's progress on its WTE project.
2.5 To define the points and issues to be addressed for formulating WTE project	JET provided draft recommendations based from the findings of LGUs' formulation of WTE projects. Identified points & issues were discussed during the 2nd Sub-group Meeting held last 16 July 2020.	Per approved Plan of Operation, the expected completion of this activity will be on June 2021.

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 2. TARGET LGUS' CAPACITY FOR PLANNING, EVALUATION, FORMULATION AND SUPERVISION OF WTE PROJECT IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
2.6 To define the proper responsibility of LGUs in promoting WTE project under PPP scheme	LGUs of Quezon City and Davao City presented and discussed their responsibilities in promoting WTE project under PPP scheme during the 2nd Sub-group Meeting held last 16 July 2020 .	This activity is expected to be completed by October 2020.
2.7 To formulate the technical specifications of WTE facility for each target LGU	JET provided recommendation on the proposed WTE project of Cebu City submitted by a private company. Technical recommendation is expected to be incorporated in the specification of the WtE facility of Cebu City.	Implementation schedule: July 2020 to June 2021.
2.8 To define the points and issues to be addressed in supervising WTE project	Implementation schedule: October 2020 to March 2021	

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 3. NATIONAL GOVERNMENT'S CAPACITY OF ENVIRONMENTAL MONITORING FOR WTE PROJECT IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
3.1 To review the current capacity and activities in Central and Regional EMB for monitoring/ analysis/QA/QC of Dioxins and Furans in ambient air, and other media (Soil/Surface water/Sediments)	Completed Activity. Report on the results of the review will be the basis in the preparation of the training plan.	Training plan currently being discussed with EMB-ERLSD prior to finalization.
3.2 To analyze the gaps between the present capacity of the central EMB and required capacity for proper monitoring/analysis/ QA/QC of Dioxins and Furans in ambient air, and other media (Soil/Surface water/Sediments) and formulate the training plan	Completed gap analysis. Conducted meeting with JET & ERLSD on 24 August 2020 to discuss the remaining deliverables of both sides.	Behind schedule as ERLSD's limited activities on the Operation & verification of GC/HRMS by the ERLSD-laboratory due to COVID-19 that may affect the implementation of this activity. Target resume of GC/HRMS operation verification is Mid-September 2020.

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 3. NATIONAL GOVERNMENT'S CAPACITY OF ENVIRONMENTAL MONITORING FOR WTE PROJECT IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
3.3 To prepare SOP for sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas	The SOP to be prepared by ERLSD will focus on the analysis of the samples of Dioxins/Furans and exclude sampling methods, which will be taken care of by EQMD-AQMS.	Expected completion date of the SOP: October 2021.
3.4 To conduct training of sampling, analysis and QA/QC of Dioxins and Furans in ambient air and source emission gas in central EMB	The first scheduled training canceled due to the COVID-19 Pandemic. SWMD-PMO proposed to accommodate more participants for the training.	Implementation schedule: October 2020 to May 2021.
3.5 Prepare Sampling Plan (Design) for the collection of D&F in ambient air samples	Implementation schedule: October 2020 to February 2021.	

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 3. NATIONAL GOVERNMENT'S CAPACITY OF ENVIRONMENTAL MONITORING FOR WTE PROJECT IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
3.6 To implement sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas by central EMB at existing SWM facilities based on SOP in output 3.3.	Implementation schedule: February 2021 to March 2022	

PROJECT ACCOMPLISHMENTS/UPDATES

OUTPUT 4. NATIONAL GOVERNMENTS AND TARGET LGUS' CAPACITY TO IDENTIFY ISSUES AND PROVIDE SUGGESTIONS/ RECOMMENDATIONS FOR OTHER SWM TECHNOLOGIES OTHER THAN WTE IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
4.1 To grasp the current situation by National SWM strategy and 10 year SWM Plan in the target LGUs	Completed activity. Presented the results of the review during the Sub-group meeting for Project Output 4 last 13 February 2020.	Completed as planned based from the Revised Plan of Operation (PO) of the Progress report.
4.2 To identify the current issues for other SWM technologies in the target LGUs	Completed activity. Presented the results of the review during the Sub-group meeting for Project Output 4 last 13 February 2020.	
4.3 To collect the information of "Good practice/Good technology" of other SWM technologies in Japan & other countries	Collected information were presented by DOST-ITDI, Davao City, Cebu City in addition to the basic methods discussed by JET during the 3rd Sub-group meeting held on 03 September 2020	The collected information will be compiled for the preparation of the booklet and shared through the EMB Website.

PROJECT ACCOMPLISHMENTS/ UPDATES

OUTPUT 4. NATIONAL GOVERNMENTS AND TARGET LGUS' CAPACITY TO IDENTIFY ISSUES AND PROVIDE SUGGESTIONS/ RECOMMENDATIONS FOR OTHER SWM TECHNOLOGIES OTHER THAN WTE IS ENHANCED.

Over-all Targets	Project Accomplishments (*January - December 2020*)	Status/Remarks
4.4 To summarize and provide suggestions/recommendations to improve utilization of other SWM technologies to target LGUs	JET proposed a format to consolidate the collected Good Practices Technologies.	Implementation schedule: *October 2020 to March 2021*
4.5 To conduct seminar for disseminating suggestion/ recommendations on SWM technologies		Implementation schedule: *February 2021 to March 2022*

PROJECT UPDATES

EXECUTION OF MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN DENR AND PARTICIPATING LGUS

- Memorandum to the EMB Regional Offices (i.e. NCR, Regions 7 & 11) signed by the EMB Director informing them of the approved DAO and providing instruction to require concerned LGUs to submit completed MOUs on the TCP.

- LGU Quezon City response dated 31 January 2020: *"EPWMD supports the project as it would further capacitate our technical personnel on WtE technologies. However, as the MOU mentioned a counterpart funding component, please note that any disbursement would have to undergo the standard budgetary procedures for Local Governments, as this Project was not included in the 2020 Budget of the Department. Moreover, we respectfully request that a termination date be specified in the proposed MOU."*

- 02 September 2020 : SWMD-PMO provided inputs and comments to the MOU and sent to DENR-FASPS for review prior to finalization.
  : SWMD-PMO sent another follow-up to the concerned EMB Regional offices regarding the requirement to submit completed MOUs (copies of the Memo and revised MOU provided). No response received as of 07 September 2020.

ADDITIONAL PROJECT ACTIVITIES/COMPONENTS PROPOSED BY JET UNDER THE PROJECT

- Proposed Activities to be included in the TCP:
  - OP1 (new activity) : Review and modification of SLF regulations
  - OP2 (under 2-6) : Support to SWM PPP projects to clarify responsibilities of LGUs under PPP scheme
  - OP3 (under 3-4) : Reinforcement of the software operation of DXN analysis equipment
- Approved by JICA - paperwork is yet to be finalized.
- Activities will be incorporated in the PDM and shared with NEDA once presented and approved by the ITWG and JCC.
- SWMD-PMO requested that the changes must be formally endorsed to DENR as it will include additional work demands and schedule changes.

MAJOR ACCOMPLISHMENTS

(JANUARY - DECEMBER 2020)

APPROVAL & PUBLICATION OF THE MEMO CIRCULAR 2020-23 ON THE CLARIFICATION ON THE REQUIREMENTS OF WASTE-TO-ENERGY (WTE) PROJECTS RELATIVE TO ECC APPLICATION PURSUANT TO DAO 2019-21

28 May 2020 : Approval of the EMB Memorandum Circular No. 2020-23

23 July 2020 : Publication of the MC 2020-23 (The Manila Times)

APPROVAL OF THE REQUIRED SPECIAL ORDER FOR THE CREATION OF SUB-GROUP GROUPS FOR THE IMPLEMENTATION OF THE TECHNICAL COOPERATION PROJECT (TCP)

- ***Supplemental Special Order*** *for the Creation of the four (4) Sub-groups per Project Output approved by the EMB Director on 12 July 2020.*

MEETINGS FACILITATED/CONDUCTED

(JANUARY - DECEMBER 2020)

Group Meetings	*Accomplishment*
PMO **Meetings**	• 19 August 2020 • 24 August 2020 • 01 September 2020 • 06 October 2020 • 05 November 2020
Sub-group Meetings	
• Project Output 1	• 18 February 2020 • 05 March 2020 • 04 June 2020 • 07 July 2020 • 20 August 2020 • 14 October 2020
• Project Output 2	• 13 February 2020 • 16 July 2020
• Project Output 3	• 10 February 2020
• Project Output 4	• 13 February 2020 • 24 June 2020 • 03 September 2020

添付資料11

MEETINGS FACILITATED/CONDUCTED
(JANUARY - DECEMBER 2020)

Group Meetings	*Project Accomplishment*
ITWG Meeting	• 24 January 2020 • 03 December 2020
JCC Meeting	-
Kick-off Seminar	• 27 February 2020

THANK YOU