11-1: ITWG会議

11-1-6 ：第6回ITWG会議

6th Inter-agency Technical Working Group (ITWG) Meeting

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

01 June 2022, Wednesday, 1:00 PM

(via MS Teams)

TENTATIVE PROGRAMME

TIME	ACTIVITY	SPEAKER
1:00 PM	Philippine National Anthem Prayer	*SWMD-Project Management Office (PMO)*
1:20 PM	Meeting Objectives, Tentative Agenda, & Acknowledgement of the ITWG Members and Sub-group Members	**Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD & Assistant Project Manager, SWMD-PMO*
Meeting proper will be presided by: **ITWG Chairman - Director William P. Cuñado,** *EMB-DENR* **ITWG Co-Chairman- Ms. Ruby B. de Guzman,** *REMB-BEMD, DOE* • Welcome Message/Call to Order • Adoption of the Agenda		
1:30 PM	**Project Output 1**: • Updates on the Project Activities under OP1 • Presentation & Discussion on the Draft Planning, Evaluation, Formulation, and Supervision (PEFS) Manual • Updates on the Discussion of NSWMC ExeCom regarding JET's Comments on the Annotated Outline for the Evaluation of the 10-year SWM Plan of LGUs • Updates/Status on the endorsement and approval of the following: a. Case Study Analysis for BAT and BEP Guidelines b. JAO on the Guidance Document for the Operation of WtE Facilities on Appropriately Controlled Combustion (ACC)	**Mr. Makoto Kosaka** *SWM-PPP Expert* **Ms. Juvinia P. Serafin** *OIC-Chief, SWMD & Project Manager, SWMD-Project Management Office (PMO)* **Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD & Assistant Project Manager, SWMD-PMO*
2:00 PM	**Project Output 2**: • Updates on the Project Activities under OP2 • Updates/Status of the partner LGUs' WtE Project implementation	**Mr. Takahiro Kamishita** *Chief Advisor, JET* **Representatives of partner LGUs:** • **Engr. Lakandiwa Orcullo** *CCENRO, LGU Davao City*

	• Updates/Status on the Approval/Signing of the Memorandum of Understanding (MOU) between DENR and partner LGUs	• **Engr. Editha Peros** *CCENRO, LGU Cebu City* • **Engr. Louie Sabater** *Planning Officer III, QCTFSWM* **Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD & Assistant Project Manager, SWMD-PMO*
2:30 PM	**Project Output 3**: • Updates of the Project Activities under OP3 • Progress of coordination with EMB-ERLSD	**Mr. Satoshi Miyaichi** *EMP/ESC, JET*
3:00 PM	**Project Output 4**: • Updates/Status of the Project Activities under OP4	**Ms. Kyoko Kimura** *Public Enhancement/Training Arrange/Coordinator, JET*
3:30 PM	***Open Forum** (10 mins.)*	
3:40 PM	Wrap-up (Issues/Agreements/Way Required Actions/Timelines)	**Ms. Andrei Mallare** *Project Assistant, JET*
4:00 PM	Closing Remarks	**Ms. Ruby B. de Guzman** *Chief, Biomass Energy Management Division, REMB, DOE*
Master of Ceremonies		**Engr. Roxanne Barcenas** *Technical Assistant, EMB-SWMD-PMO*

6th ITWG Meeting
Updates of Output 1

Output1 "National government's capacity on supporting and coordinating LGUs' WTE projects is enhanced."

1st June 2022

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

Overview on OP1 as of June 2022

- On-going Activities
- Preparation of the PEFS Manual and Model Procedure of WTE Development (Activity 1-6, 1-7)
- Review on the Evaluation Criteria of 10-year SWM Plan (Activity 1-6)
- Investigation of the Current Practice of Residual Ash Treatment in SWM Facilities (Activity 1-8)
- Way forward;

Progress of each activity under Output 1,

Activities under Output 1		Progress
1-1:	Prepare Best Available Technique (BAT) / Best Environmental Practice (BEP) guideline	100%
1-2:	Study policy & mechanism to promote WTE projects	100%
1-3:	**Hold seminar to disseminate WTE technology** (1: 03June, 2: August)	**30%**
1-4:	Prepare draft technical standards for WTE facility focused on waste incineration with power generation	100%
1-5:	Prepare manual for management of bottom & fly ash discharged from WTE facility	100%
1-6:	**Prepare manual for planning, evaluation, formulation & supervision for WTE projects (PEFS Manual),** and **prepare evaluation criteria for EMB on 10-year SWM plans**	**70%**
1-7:	**Illustrate model procedure to introduce WTE facility** (To be finalized by end of June)	**70%**
1-8:	**Review and update the existing regulations of sanitary landfill for municipal solid waste where incineration ash will be disposed of** (ITWG SGMTG in July)	**70%**

Activity 1-3: Hold seminar to disseminate WTE technology

1st WTE Technology DISSEMINATION SEMINAR
3 JUNE 2022, FRIDAY, 1:00PM-5:00PM
DISCOVERY SUITES HOTEL
CLERMONT FUNCTION HALL

2 nd Seminar will be held in Aug2022

TIME	TOPIC	SPEAKER
1:00-1:15	Registration	-
1:15-1:30	Welcome Remarks Opening Remarks Introduction of the TCP and the Program of seminar	Engr. William P. Cuñado, OIC-Director, EMB, DENR Mr. Yo Ebisawa, Senior Representative, JICA Philippines Office Ms. Juvinia Serafin, OIC-Chief,SWMD-EMB
1:30-2:00	**(1) SWM Planning for WTE**	Mr. Takahiro Kamishita, JICA Expert Team
2:00-2:30	**(2) Technical Features of Appropriately Controlled Combustion Technology**	Mr. Satoshi Higashinakagawa, JICA Expert Team
2:30-3:00	**(3) Institutional and Financial features of WTE**	Mr. Makoto Kosaka, JICA Expert Team
3:00-3:15	QA	
3:15-3:30	Tea break	
3:30-4:00	**(4) WTE related technical standards**	Mr. Makoto Kosaka, JICA Expert Team
4:00-4:30	**(5) Good practice of SWM other than WTE**	Ms. Kyoko Kimura, JICA Expert Team
4:30-4:45	QA	
4:45-5:00	Closing Remarks Picture-taking, egress	Ms. Elvira Pausing, Assistant Project Manager, EMB-SWMD/PMO

添付資料11

Activity 1-6/1-7 : PEFS Manual (1) Timeline

Original Timeline
Revised Timeline as proposal

Updated

Nov2021 – Dec2021

Introduction

- Introduction to Japanese **"Guideline for Planning and Designing of Waste Treatment Facilities (WTF) 2017"**

Jan2022 – ~~April2022~~ Feb2022

Discussion

- Discussions in ITWG SG Meetings under Output 1
- How to adopt Philippines Context
- Whose authority will be attached (DAO? MC? or EMB's guide?)

Today's Scope

~~April2022 – May2022~~ Feb2022 – May2022

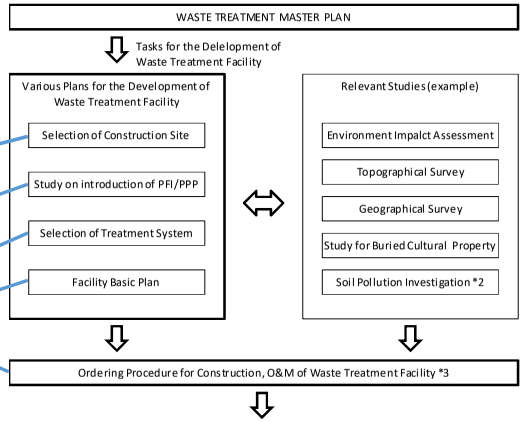
Drafting

- Drafting the Guidelines for Philippines,
- Once completed, distributing ITWG members for review (Email sent 15May2022)
  => Proposed deadline for comment; 31May

=> Final Draft would be completed within June2022

Activity 1-6/1-7 : PEFS Manual (2) Terms of Contents

Chapter	Table of Contents	Page
1	Rationale NEW	1
2	Positioning the Various Plans regarding the Development of WTFs UPDATED	12
3	The Selection of Candidate Construction Sites UPDATED	26
4	Study on the PFI/PPP Introduction UPDATED	47
5	Selection of Treatment Technology	55
6	Development of Facility Basic Plan (FBP)	57
7	Core Items in Waste Treatment Facility Design	102
8	Safety Measures	113
9	Dismantling of Incineration Facility	117
	Total	119



Note 1) Required in EIA rule and regulation both national and provincial government,
Note 2) Investigation required by Soil Pollution Control Law,
Note 3) There are cases conbined and/or separate contract of construction and O&M

Figure 4.1-1: The positioning of the various plans for the development of WTFs

Activity 1-6/1-7 : Refinement of Annotated Outline on 10 year SWM Plan

1. Progress and Updates

Dates	Updates
December 2021	JET reviewed the annotated outline and the related documents
January 13, 2022	Meeting with the evaluator of SWMD-EMB for 10-year SWM plan
January 21, 2022	JET submitted the comments on the annotated outline to SWMD-EMB
May 31, 2022	**JET explained the comments on annotated outline (below) at the Executive Committee of NSWMC**

2. JET comments on the Annotated Outline

- Recommend to illustrate "Waste Mass Flow Diagram",
- 10-year numerical data of SWM plan shall be given in the parts of investment cost, annual cost and funding options, while only 5-year data is required,
- To define "Diverted Waste" and "Diversion Rate",
  The rate shall exclude potential illegal dumping as self disposal from its calculation.

The following are recommended to include for WtE
- Description of WtE facility in "SWM of LGU"
- Waste Flow to reflect waste in (waste to be hauled) and out (residues) of WtE
- Environmental and Social Consideration for WtE

Activity 1-8 : Review and update the existing regulations of sanitary landfill for municipal solid waste where incineration ash will be disposed of

Interview Survey for TSD Facilities

Objectives;

- To collect data on actual industry-based practices related to the current ash waste management in the Philippines;
- To understand the roles of EMB ROs and TSD facilities in current landscape of ash waste management;
- To confirm applicability of national laws related to Sanitary Landfills (Municipal and TSD).

Target Interviewees; *Based on lists of Registered TSDs as of March 31, 2021 published on EMB Website

- EMB Regional Offices in CAR, III, IVA, VIII, and X,
- Registered TSD Sanitary Landfills
  - Metro Clark Waste Management Corporation (**MCWMC**) – Tarlac, Region III
  - Cleanway Environmental Management Solutions Inc. (**CEMSI**) – Cavite, Region IVA
  - Jorm Environmental Services Inc. (**JESI**) - Cavite, Region IVA
  - Cleanaway Philippines Inc. (**CPI**) – Leyte, Region VIII
- Ash Accepting Facility
  - Cement Factory (Republic Cement Batangas - RCB)
- Industrial Ash Generator
  - Power plant (Pagbilao Power Station - PPS)

添付資料11

Interview Survey for TSD Facilities

Findings:

- Ash is not specified in Table 2.1 of DAO 2013-22, and hence must undergo TCLP to determine its classification.
  - Non-hazardous: Municipal Sanitary Landfill, Onsite Disposal, Reutilization
  - Hazardous: Stabilization on TSD -> TSD Sanitary Landfill
- The specific form of solid waste is not indicated in hazardous waste manifests; hence, tracking of ash waste is difficult.
- The Philippine EIS system plays a major role in identifying the minimum monitoring parameters for Ambient and Effluent Air and Water Quality.
- One of the major considerations in the current TSD permitting evaluation process is effluent quality. The same is true in evaluation of Discharge Permits and Permits to Operate.
- Cement Manufacturing Plants maintains two (2) separate permits for operating facility:
  - TSD Permit
  - Co-Processing Permit
- While Cement Plants could technically accept hazardous ash, the interviewed facility only accepts non-hazardous ash.
  - Ash are primarily utilized as an additive to cement (alternative raw material; added as is with no treatment done) which is limited by their Co-processing Permit.
  - Ash has low calorific value, hence is not cost effective to be treated in their TSD; Transportation of hazardous wastes must be done by an accredited hauler.
- Cement plants and ash producers like powerplants usually have contracts.
  - In the case of Pagbilao Power Station, they have previous and ongoing agreement with Republic Cement and other cement manufacturers.
  - Current contract includes 100% hauling (Bottom and Fly Ash).
  - Accepted fly ash are paid by cement factories.
- Cement plants has an internal/separate set of standards for accepting ash.
  - Non-hazardous (Quarterly TCLP, courtesy of suppliers)
  - Other Parameters: Moisture, SiO2, Al2O3, Fe2O3, CaO, MgO, SO3, K2O, Na2O (Per batch, courtesy of cement plant)
- TCLP is only done once quarterly on powerplant ash as a requirement of ECC.
- No distinction on bottom and fly ash with regard to testing.
  - No prior record of generated hazardous ash.
  - Heavy metals are monitored on ash lagoon effluents.

Site Survey for Sanitary Landfills

Name	Location	Category	Ownership	Date of Visit
San Pascual Muncipal Sanitary Landfill	San Pascual, Batangas	1	LGU	May 26, 2022
Bauan Solid Waste Management, Inc.	Malindig, Bauan, Batangas	2	Private	May 26, 2022
San Pablo City Sanitary Landfill	San Pablo City, Laguna	3	LGU	May 26, 2022
New San Mateo Sanitary Landfill	Guinayang, San Mateo, Rizal	4	Private	May 27, 2022
MetroClark Sanitary Landfill	Sitio Kalangitan, Capas, Tarlac	4 / TSD	Private	May 23, 2022

Way forward

- **PEFS Manual,** to be finalized by end of June based on the comments gathered in May
- JET's Comments on annotated outline is left to NSWMC,
- Result of **SLF regulatory gap analysis**, will be shared in SGOP1 scheduled in July.

Thank you for your attention!

添付資料11

6th ITWG Meeting
Updates of Output 2

Target LGUs' capacity on planning, evaluation, formulation & supervision of WTE projects is enhanced

1st June 2022

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

Overview on OP2 as of June 2022

1. Progress of activities of Output 2,
2. Activities with PPPC,
3. Way forward;

1. Progress of each activity under Output 2,

Activities under Output 2		LGU QC	LGU CC	LGU DC
2-1:	Review current situation on introducing WTE facilities in the target LGUs	100%	100%	100%
2-2:	Clarify current waste flow & amount, set target on waste reduction in the existing SWM 10-year plans	100%	100%	100%
2-3:	Evaluate LGUs' land use plan for WTE projects	100%	100%	100%
2-4:	**Analyze & verify candidate WTE projects** selected from the existing F/S, unsolicited/solicited proposals	100%	100%	100%
2-5:	Define points & issues to be addressed for formulating WTE projects in the target LGUs		100%	
2-6:	**Define proper responsibility of** the target LGUs in promoting **WTE projects under PPP scheme**		80%	
2-7:	**Formulate technical specification of WTE facilities in each target LGU**	0%	0%	0%
2-8:	Define points & issues to be addressed for **supervising WTE projects** in the target LGUs		30%	

Coordination with the Partner LGUs

LGU	Progress	Status
Quezon City	No progress	• Requested to defer meetings and coordination until progress is made in the activities.
Cebu City	Assignment of focal person/s is pending.	• JET visited Cebu City on March 17-18 and met with City Administrator (JVSC Chairperson), SWM Board members, and CCENRO. • JET is waiting for the official assignment of focal person/s in Cebu City for the coordination activities between Cebu City and DENR/JET. • Possible change of the LGU personnel in charge of communication with JET.
Davao City	Meeting held	• Davao City and JET had an online meeting on April 21st. • Both sides agreed to continue coordination during project period, and Davao City signified their need for technical support from JET. • JET is arranging a visit on June 7 to discuss the technical needs.

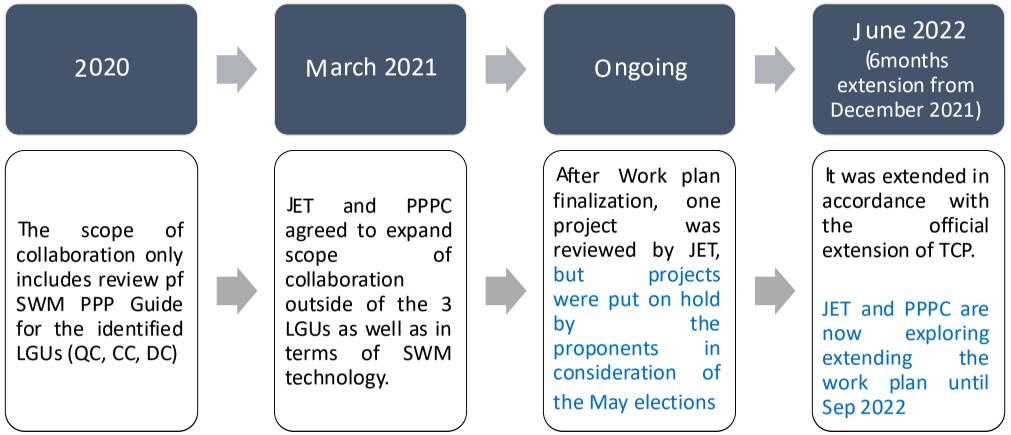
3. Activities with PPPC

Activity2-6: Define the proper responsibility (including financial responsibility) of LGU in promoting WTE project under PPP scheme.

1. Background
   - SWM PPP projects other than WTE are also promoted by the Government
   - PPPC takes an important role in supporting LGUs to develop PPP projects
   - PPPC faced difficulties to evaluate the SWM technologies in some cases
   - Shall provide guidance for SWMD in identifying possible PPP Projects and understanding how to handle and develop these projects.
2. Actual works
   - Review SWM PPP projects to check responsibilities of LGUs under PPP scheme
   - Evaluate SWM PPP projects in terms of technology, finance and social/environment
     * PPP projects discussed in LGUs other than the target LGUs can be selected
     * SWM technologies can be WTE technologies other than waste combustion
3. Expected person in charge
   - SWMD, PPPC with support by JET

3. Activities with PPPC

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



3. Activities with PPPC

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

JET's Technical Assistance	Specifics	Progress
Provide expertise on better management of SWM PPP Projects	Provide comments and inputs on the **development, evaluation, management and implementation** of solicited and unsolicited SWM PPP Projects	While JET/PPPC commented on a private proposal to LGU General Santos, the LGU did not respond to it and decided to put the project on hold in light of the elections. Same is also true for other projects in the PPPC pipeline
Provide inputs on tech-specifications for SWM PPP Projects	This includes providing inputs on the **template technical eligibility criteria, KPIs, MPSS**, etc.	MPSS (minimum performance standards and specifications) is being prepared by PPPC
Conduct capacity development activities	Facilitate **Knowledge Sharing Sessions (KSS)** and other relevant activities on SWM for PPPC, LGUs, and other implementing agencies	KSS was held in Nov. 2021. PMO and JET participated as resource persons.
Assist in the preparation of PPP Guide on Unsolicited JV WTE Projects	Provide comments in the **PPP Guide on Unsolicited JV WTE Projects for LGUs** that PPPC is currently drafting	JET commented on the draft Guide in Oct. 2021. PPPC to update the Guide and is scheduled to provide revisions within Q3

4. Way forward

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

- For the coordination with the partner LGUs
  - Continuation of communication with target 3 LGUs until the end of the project period
- For the collaboration with PPPC,
  JET expects;
  inputs of local context from the technical discussions in the on-going waste management PPP projects, and **outputs** as the PPP guidelines for the LGUs to evaluate unsolicited proposal, which may have some synergies with TCP "Activity 1-6 Manual for planning, evaluation, formulation & supervision for WTE projects" under Output 1

添付資料11

Thank you for your attention!

Agency	Item	Details
JICA Philippines	General	Add table of contents and pagination
JICA Philippines	General	Add Introduction which contains background and purpose of the booklet
DILG	General	An introduction showing the purpose of the booklet must be provided after the title page to properly apprise the ordinary laymen about the document
DILG	General	It is also recommended that a table of contents be included for proper guidance of the intended readers
JICA Philippines	General	There a acrnoyms which were not spelled-out the first time they appeared. Thus, better to put list of acronyms.
JICA Philippines	General	Add contact details should reader has questions and when the booklet is published
DILG	General	Kindly check existing environmental laws, rules, and regulations on whether the good practices enumerated in the document are already provided in the said rules. If the practice is already worded into law, the problem lies in its implementation, and the same practice may not be treated as a good practice for the same is a mandatory responsibility
DILG	General	Also check the applicability of each good practice in light of the context of the Philippines, and considering existing domestic legal limitations, technical capabilities of the implementing bodies, availability of materials, and necessity as applied to each LGU
JICA Philippines	References	Is that style for citing references appropriate for publication/sharing of the material?
JICA Philippines	1-1	For consistency, in the title, delete Portland. You can just add the countries in the caption of the photos. What is PAYT?

DILG	**1-2**	This may run contrary to existing laws which imposes upon the LGUs the responsibility to collect waste in their respective jurisdictions. The following are some laws providing for the said responsibility: - Sec. 10 of R.A. No. 9003 states that segregation and collection of biodegradable, compostable, and reusable wastes is the responsibility of the barangay. The collection of non-recyclable materials and special wastes shall be the responsibility of the municipality or city. - Section 17[c] of R.A. No. 9003 states that the barangay shall be responsible for ensuring that a 100% collection efficiency from residential, commercial, industrial and agricultural sources, where necessary within its area of coverage, is achieved. - Rule XVII of DAO No. 2001-34 states the role of the local SWM Board on the imposition of fees for the implementation of the solid waste management plan and collection and segregation of biodegradable, compostable and reusable wastes from households, commerce, other sources of domestic wastes, and for
JICA Philippines	1-4	In bullet 3, "for given"?
DILG	1-9	Sec. 17[c] of R.A. No. 9003 provides that the LGU recycling component shall describe methods for developing the markets for recycled materials. Is the practice referred to in this section only the supposed implementation of the law cited above?
JICA Philippines	2-1, 2-2, 2-5, 4-1,4-3, 4-4	In the title, remove comma after Japan
JICA Philippines	2-2	In the photo caption, are instead of is
JICA Philippines	2-4	What are convenience stations? In bullet 1, convenience stations repeatedly mentioned. In bullet 2, is it supposed to be "these facilities" if you refer to drop-off sites, convenience stations, and collections sites?
DILG	**2-7**	Sec. 17[c] of R.A. No. 9003 provides that the plan to be implemented by the LGUs shall describe methods for composting. Is the practice referred to in this section only the supposed implementation of the law cited above?
DILG	**2-9**	As part of ensuring 100% collection efficiency, Section 17 of R.A. No 9003 includes that the plan shall define specific strategies for the “provision of properly designed containers or receptacles in selected collection points for the temporary storage of solid waste while awaiting collection and transfer to processing sites or to final disposal”. Is the practice referred to in this section only the supposed implementation of the law cited above?
JICA Philippines	2-10	Country in the title is Japan but photos are in Malaysia and China?

JICA Philippines	2-11	In title, for consistency, "Seattle, Washington; San Diego, California." In bullet 2, sires to sites?
JICA Philippines	2-12	In bullet 3, capitalize M in first word
DILG	3	For the title, it is recommended that the term “3R” is fleshed-out to be understood by ordinary laymen.
DOE	3-3	Identified example 3-3, where a WtE utilizing rice husks was described, and questioned why it is included in the booklet given that it only spans good practices and good technologies other than WTE
JICA Philippines	3-5	For the table, which country is being referred?
JICA Philippines	3-6	What office/organization in Region 4A is implementing?
JICA Philippines	3-7	The table is same with what appears in 3-5?
JICA Philippines	3-9	In bullet 1, delete "include" since there is "such as" already
JICA Philippines	3-12	In bullet 4, discussion on waste treatment suddenly appear. It was not mentioned in previous bullets.
JICA Philippines	3-16	In bullet 1, change "a" to "an" overall in last sentence.
JICA Philippines	4-6	In bullet 3, capitalize I in first word
JICA Philippines	5	There should be a comma after information and education: Information, Education, and Communication.
JICA Philippines	5-1	In bullet 1, change has to have.
JICA Philippines	5-11	Please provide title/caption in the pie charts
JICA Philippines	5-12	In the second bullet, the usage of "but" means contradiction based on what is found on website. The sentence sounds uncertain.
JICA Philippines	6-2	Put comma between Indiana and USA in the title
JICA Philippines	Section J (Waste Management Technology of Japanese Companies)	Is this supposed to be Section 7 based on the previous sections? See also titles J-1m J-2, etc.
JICA Philippines	J-2	Pellet (in figure) vs. pallet in bullet 2. Better spell out C02.

JET response to comments

JET aligns with the recommendation and shall be incorporated in the revision.

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JET aligns with the recommendation and shall be incorporated in the revision.

JET has consulted with PMO and will coordinate on what office to designate as contact for the Booklet.

JET understands that some examples are mandated duties of the LGUs; the reason why these examples are still included in the booklet is to provide other LGUs an idea on how to better implement the programs based on measures that work for these cited examples.

This booklet is prepared for the fulfillment of Activity 3-3. The succeeding activity, 3-4, is the one aimed towards localizing the practices to the target LGUs based on criterion including their technical capability, financial capacity, social acceptance, environmental compliance, among other things. Given this, this comment shall be addressed by Activity 3-4 instead.

JET aligns with the recommendation and shall be incorporated in the revision; An APA citing format shall be observed for the document

Portland was covered in the identified examples pictured in this section, so JET plans to keep it in the description.

We have noted the remark on the inclusion of the definition of PAYT and shall include this in the revision

JET understands that some examples are mandated duties of the LGUs; the reason why these examples are still included in the booklet is to provide other LGUs an idea on how to better implement the programs based on measures that work for these cited examples.

JET aligns with the recommendation and shall revise the document accordingly.

JET understands that some examples are mandated duties of the LGUs; the reason why these examples are still included in the booklet is to provide other LGUs an idea on how to better implement the programs based on measures that work for these cited examples.

JET aligns with the recommendation and shall revise the document accordingly.

JET aligns with the recommendation and shall revise the document accordingly. These convenience stations have the same function as the drop off sites; in order to avoid confusion, this term will just be omitted and shall fall under the umbrella term drop off site instead.

JET understands that some examples are mandated duties of the LGUs; the reason why these examples are still included in the booklet is to provide other LGUs an idea on how to better implement the programs based on measures that work for these cited examples.

JET understands that some examples are mandated duties of the LGUs; the reason why these examples are still included in the booklet is to provide other LGUs an idea on how to better implement the programs based on measures that work for these cited examples.

The cited examples, although situated in Malaysia and China, are actually transfer yards employing Japanese technologies which is why the header indicates Japan. Nevertheless, we have noted this comment and will make necessary updates to the file.

JET aligns with the recommendation and shall revise the document accordingly.

JET aligns with the recommendation and shall revise the document accordingly.

JET aligns with the recommendation and shall revise the document accordingly.

The identified example is a small-scale WTE facility employing the use of rice husks as feed. In order to clarify its inclusion to this booklet, we will be making revisions to highlight the recycling part of this practice more than its WTE nature.

This table shows Philippine data. But noting that the Ecobrick Alliance operates in different parts of the country, JET will do away with the table and just indicate explicitly that the organization scopes not just the Philippines now but is also present in other countries.

We have noted this comment and will look into it for the revision of the document

This table pertains to Sta. Rosa, Laguna. A table caption shall be added in this table as well as for the rest of the document to clarify the data being described.

JET aligns with the recommendation and shall revise the document accordingly.

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JET aligns with the recommendation and shall revise the document accordingly.

JET will consider the renaming of this section to be uniform with the rest of the booklet.

JET aligns with the recommendation and shall revise the document accordingly.

11-1: ITWG会議

11-1-7 ：第7回ITWG会議

7th Inter-agency Technical Working Group (ITWG) Meeting

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

18 November 2022 | 1:00 PM | Friday

Virtual Meeting Setup

TENTATIVE PROGRAMME

TIME	ACTIVITY	SPEAKER
1:00 PM	Philippine National Anthem Prayer	*SWMD-Project Management Office (PMO)*
1:20 PM	Meeting Objectives, Tentative Agenda, & Acknowledgement of the ITWG Members and Sub-group Members	**Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD & Assistant Project Manager, SWMD-PMO*
Meeting proper will be presided by: **ITWG Chairman - Director William P. Cuñado,** *EMB-DENR* **ITWG Co-Chairman- Ms. Ruby B. de Guzman,** *REMB-BEMD, DOE* Welcome Message/Call to Order Adoption of the Agenda		
1:30 PM	**Project Output 1**: • Updates on the Project Activities under OP1 • For approval: Manual for Planning, Formulation, Evaluation, and Contract Management (PFEC) of WTE Project in the Republic of the Philippines. • Updates/Status on the endorsement and approval of the following: a. Case Study Analysis for BAT and BEP Guidelines b. JAO on the Guidance Document for the Operation of WtE Facilities on Appropriately Controlled Combustion (ACC)	**Mr. Makoto Kosaka** *SWM-PPP Expert* **Ms. Juvinia P. Serafin** *OIC-Chief, SWMD &* *Project Manager, SWMD- PMO*
1:50 PM	**Project Output 2**: • Updates on the Project Activities under OP2 • Updates/Status of the partner LGUs' WtE Project implementation	**Mr. Takahiro Kamishita** *Chief Advisor, JET* **Representatives of partner LGUs:** **Mr. Lakandiwa Orcullo** *CCENRO, LGU Davao City* **Mr. Arlie Gesta** *CCENRO, LGU Cebu City*
2:10 PM	**Project Output 3**: • Updates on the Project Activities under OP3 • For approval: ERLSD Laboratory SOPs	**Mr. Satoshi Miyaichi** *EMP/ESC, JET*

	1. Determination of Polychlorinated Dibenzo p-dioxins (PCDDs), Polychlorinated Dibenzofurans (PCFs) in Ambient Air by High Resolution Gas Chromatography with Magnetic Sector Mass Spectrometer 2. Determination of Polychlorinated Dibenzo p-dioxins (PCDDs), Polychlorinated Dibenzofurans (PCFs) in Stationary Source Emissions by High Resolution Gas Chromatography with Magnetic Sector Mass Spectrometer	**Mr. Roger Evangelista** *DENR-ERLSD*
2:40 PM	***Open Forum*** *(30 mins.)*	
3:10 PM	Wrap-up (Issues/Agreements/Way Required Actions/Timelines)	**Ms. Andrei Mallare** *Project Assistant, JET*
3:20 PM	Closing Remarks	**Ms. Ruby B. de Guzman** *Chief, Biomass Energy Management Division, REMB, DOE*
Master of Ceremonies		**Engr. Roxanne Barcenas** *Technical Assistant, EMB-SWMD-PMO*

1. Updates on the Project Activities under OP1

- The following activities are conducted since last ITWG meeting
  - **Activities 1-6**：Prepare manual for planning, evaluation, formulation and supervision for WTE projects and improve evaluation criteria of EMB for 10-year SWM plans
  - **Activities 1-7**：Illustrate Model Procedure to Introduce WTE Facility
  - **Activities 1-8**：Review and update the existing regulations of sanitary landfill for municipal solid waste where incineration ash will be disposed of

1. Updates on the Project Activities under OP1

- 13th Subgroup meeting for Output1 (October 5, 2022)
  - **The Manual for Planning, Evaluation, Formulation, and Supervision of WTE project was presented** including model procedure to introduce WTE facility, which had been updated based on the comments from SG member (Activities 1-6, 1-7)

    →JET to respond to NEDA comments.
    The meeting between NEDA and JICA was held on November 2 to confirm manual modifications for NEDA comments
  - **Recommendations was shared** on the existing regulations of sanitary landfill (as results of Activities 1-8).

    →No technical comment was provided from SG members.
    No comment from EMB/HWMS while the recommendation was shared with EMB/HWMS for their review, which was suggested by Ms. Raquel Reyes.

*WTE: Waste-to-Energy with Appropriate Combustion Control

Activity 1-6

To prepare the Manual for Planning, Formulation, Evaluation and Contract Management of WTE project (PFEC Manual Ver. 6.0)

ITWG November 2022

Makoto KOSAKA, SWM-PPP Expert

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

Today's contents

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

1. ***Chronology of manual development,***
2. ***Comments from Subgroup Members under Output 1,***
3. ***Contents of manual version 6.0, approved by Subgroup 1,***
4. ***NEDA comments #2 and Update Plan for Ver.6.1,***
5. ***Next Step,***

1. Chronology of manual development,

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

Updated

1. Chronology of the Activity1-6

Timeline	Updates
November 4, 2021	9th OP1 Subgroup Meeting, Introduction of "Japanese WTF dev. Guide"
January 12, 2022	10th OP1 Subgroup Meeting, Request SGOP members to review "Japanese WTF dev. Guide"
January 31, 2022	Deadline for accepting comments to Sections 1 and 2
February 22, 2022	11th OP1 Subgroup Meeting / Obtained comments – JET was required to adopt Philippines context.
May 17, 2022	12th OP1 Subgroup Meeting / Shared v4.0 (Converted to adopt Philippines Context) and solicited comments – No comments
October 7, 2022	13th OP1 Subgroup Meeting / Shared v5.0 (Restructured by chronological order). It was endorsed to ITWG subject to address NEDA comments #1 ~ 9.
November 2, 2022	Bilateral meeting between NEDA and JET / NEDA agreed JET's revision plan to v.6.0 and differed item #2 selection method of the consultant to ITWG.
November 18, 2022 (Today)	7th ITWG Meeting / Ver. 6.0 (reflect NEDA comments except #2) for the endorsement to JCC meeting => Today's agenda 4 proposes update plan to Ver.6.1 how to reflect NEDA's comment #2.
November 25, 2022 (Next Week)	3rd JCC / Ver. 6.1 will be presented for approval

2. Comments from Subgroup Members under Output 1,

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

Updated

2. Comments from ITWG Subgroup members for Output 1

Date	Members	Comments
Feb '22	DENR-SWMD	No comments for Japanese Guideline; Comments will be reserved for the Philippine Guidelines once ready.
	DOE	No comments so far; shall focus their comments on the utilization of energy produced by WTE plants
	DOST, QC	No comments received
	PPPC	Harmonization with 10-year Plan, differentiate scope of each plan, technology finalization phase, review on current regulation, Restructuring to ease flow of discussion to chronological order, siting requirements could be itemized, list of regulations should localized, etc.
July '22	NEDA	Comments on the services, selection method, selection criteria of Waste Treatment Consultant, Target Waste Quantity Identification Procedure, Scoring sheet for site suitability analysis, etc.

参考資料11

3. Contents of manual version 6.0, approved by Subgroup 1

1. ***Rationale:*** provides background and objective of formulation of this manual,
2. ***Planning Phase:*** whose main message is planning tagged with budgeting plan, is the most important factor to implement WTE/WTF project, so this chapter covers long-term MSW management master plan (10-year SWM plan), and specific project conceptual plan. One of the important elements of conceptual plan, selection of candidate site for WTE/WTF, is also discussed,
3. ***Formulation Phase:*** covers a lot of factors associated with the project formulation. Technology selection, target waste quantity/quality identification as the technical aspects, financial model and business scheme formulation as financial aspects, appropriate public-private role demarcation and value chain analysis are also important in the legal aspect. All of these aspect shall be sorted in the Feasibility Study before entering into the bidding process. Success of bidding process really depends on the quality of FS.
4. ***Evaluation Phase:*** is a break chapter where there is discussion on how to evaluate one or more unsolicited proposals raised from private entities.
5. ***Contract Management Phase:*** covers how LGUs shall supervise the design and construction works to be done in the construction sub-phase as well as monitor the operational performance in the operation sub-phase. Considering most of WTE projects will be done by BOT/BOO scheme, it is also important to know how much intervention can be appropriate for the investor's specification documents to the EPC/O&M contractors.
6. ***Dismantling of WTE-ACC:*** shows the explanation of dismantlement of WTE facility in Japanese case. It is 15 to 20 years from now so just show the example in Japan.
7. ***Appendix:*** contains a lot of examples and suggestable issues associated in the development of this guide.

Chapter 1. Rationale: Background and Objective

❖***LGUs in the Philippines don't have the experience*** *to plan, formulate, procure, contract and monitor a WTE-ACC facility,*

❖*Objective: To provide a* ***practical guide*** *to LGUs who don`t have the experience, and enable them to* ***address such challenges,***

❖*It discusses* ***how to evaluate unsolicited proposals*** *for WTEs,*

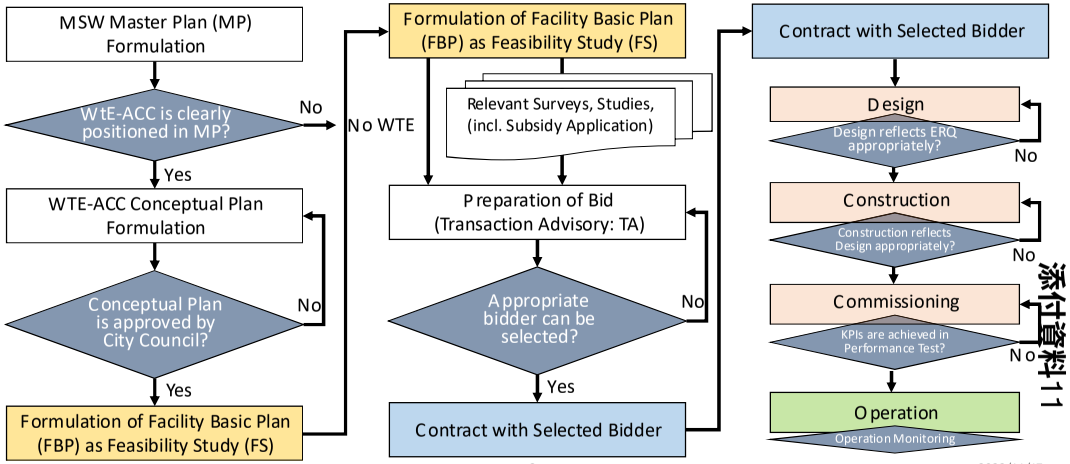
Chapter 1. Rationale: Overall Timeline (in the case of Japan)

- ❖ The table shows the typical timeline for the introduction of WTE facility in the case of Japan.
- ❖ Construction of WTE usually takes 3-4 years including the design, construction and commissioning stages. Afterwards, commercial operation can start.
- ❖ The total process from Master Plan to commercial operation usually takes 10 years. However, if necessary surveys, studies, and decisions can be done in parallel and appropriately, some portion of the time can be shortened.

	Year	1	2	3	4	5	6	7	8	9	10	11	Remarks
New Facility	MSW Treatment Master Plan (MP) (10 year SWM Plan - Chapter 2)												Reviewed once every 5 yrs
	Facility Conceptual Plan												Decision on renewal & site
	F/S (Facility Basic Plan - Chapter 3)												Decision on processing method
	Business Scheme Study (PFI/PPP Applicability Study - Chapter 3)												Decision on business scheme
	Topographic Survey												Reflected in facility basic plan
	Geological Survey												Reflected in facility basic plan
	Environmental Impact Assessment												1.5-4 yrs
	Bid/ Selection of Winning Bidder												standard 2 yrs
	Construction Work (Chapter 5)							Construction					standard 3-4 yrs
	Operation (Chapter 5)											Start	

1. Planning Phase
2. Formulation Phase
3. Contract Management Phase
+ Unsolicited Proposal

Chapter 1. WtE Standard Project Procedure – as Activity 1-7



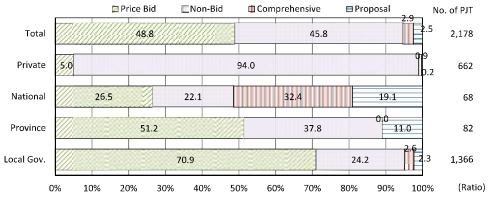
添付資料11

4. NEDA comments #2 and Update Plan for Ver.6.1,

	Chapter/Table of Contents (In Ver.4)	Section (of Ver.4)	Page Number(s) (of Ver.4)	NEDA-IS Comments	JET Response	Remark
2	Chapter 2: Positioning the various plans regarding the development of waste treatment facilities (WTFs)	2.4 Role of Waste Treatment Consultants for development of plans	24	*Item No. 2: Features of Selection Methods* • Considering that the proposed framework for the selection methods of procuring consultants is based on laws established by the Japanese Government, **JICA may be requested to conduct an assessment of the framework** whether it is in agreement with or relevant to the Government Procurement Reform Act (GPRA). • The coverage of selection methods may be expanded to include allowable and alternative modes of procurement consistent with the national laws and regulations other than the Japanese methods.	Thank you for your comment. We agree on it. However, most of this section is moved to "Appendix A CONSIGNMENT OF PROFESSIONAL ENGINEER" in Ver. 5 as the reference information in Japan. So considering limited project period, we are not able to conduct the gap analysis at this time.	• Not Addressed (we defer to DENR/ the Secretariat to determine if such comment is still needed in the final output)

Comment #2: Selection methods of procuring waste treatment consultant
(1) Features of selection methods
There are four types of selection methods for Waste Treatment Consultants: Proposal, Comprehensive evaluation (or Quality and Cost Based Selection as QCBS), Competitive bidding (Price Bid), and no-bid contract (negotiation).
According to Figure 7-1, at LG level in Japan, competitive bidding accounted for about 71% of all selection bids, and no-bid contracts accounted for about 24%. However, in recent years, the method of comprehensive evaluation system (QCBS) is gradually increasing.

Update plan for Ver.6.1;
- To assess RA9184 (Government Procurement Reform Act (GPRA)) and its IRR,
- Section 33 of GPRA IRR introduces Quality-Cost-Based Evaluation (QCBE) and QBE (Quality-Based Evaluation) for the highly-specialized types of consulting services,
- JET's evaluation and recommendation will be supplemented;



Note: Based on the Projects implemented by 42 firms affiliated in JWMCA (FY2014)

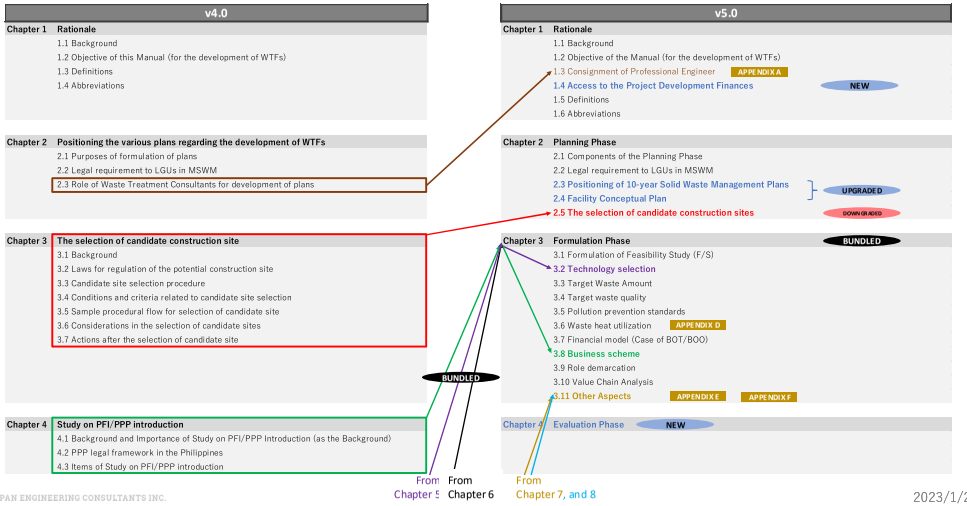
Figure 7-1: Selection method of waste treatment consultant in Japan (2014)

5. Next Steps

Activity	C/O	Deadline
Approve PFEC Manual v6 and proposed update plan for v6.1 and endorse to the JCC	ITWG Members	November 18, 2022
Prepare PFEC Manual v6.1 based on the update plan	JET	November 23, 2022
Disseminate PFEC Manual v6.1 to the JCC members	EMB-SWMD-PMO	November 23, 2022
Present PFEC Manual v6.1 to JCC members for approval	JET	November 25, 2022

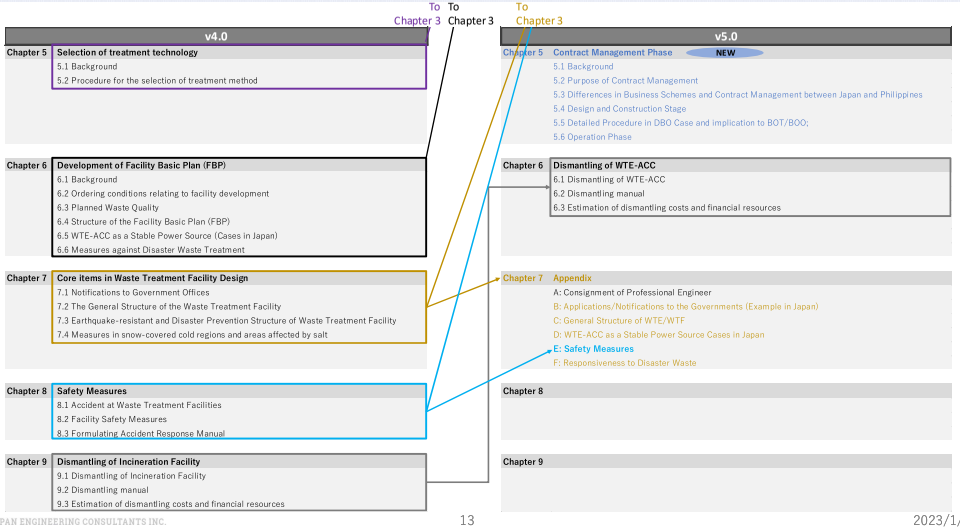
Attachment

Restructuring of Chapters



添付資料11

Restructuring of Chapters



Draft Manual for the Planning, Formulation, Evaluation and Contract Management of WTE Projects

EJEC

1. Rationale

2. Planning Phase

3. Formulation Phase

4. Evaluation Phase

5. Contract Management Phase

6. Dismantling of WTE-ACC

Appendix

Chapter 1 Rationale
- 1.1 Background
- 1.2 Objective of the Manual (for the development of WTFs)
- 1.3 Consignment of Professional Engineer
- 1.4 Access to the Project Development Finances
- 1.5 Definitions
- 1.6 Abbreviations

Draft Manual for the Planning, Formulation, Evaluation and Contract Management of WTE Projects

EJEC

1. Rationale

2. Planning Phase

3. Formulation Phase

4. Evaluation Phase

5. Contract Management Phase

6. Dismantling of WTE-ACC

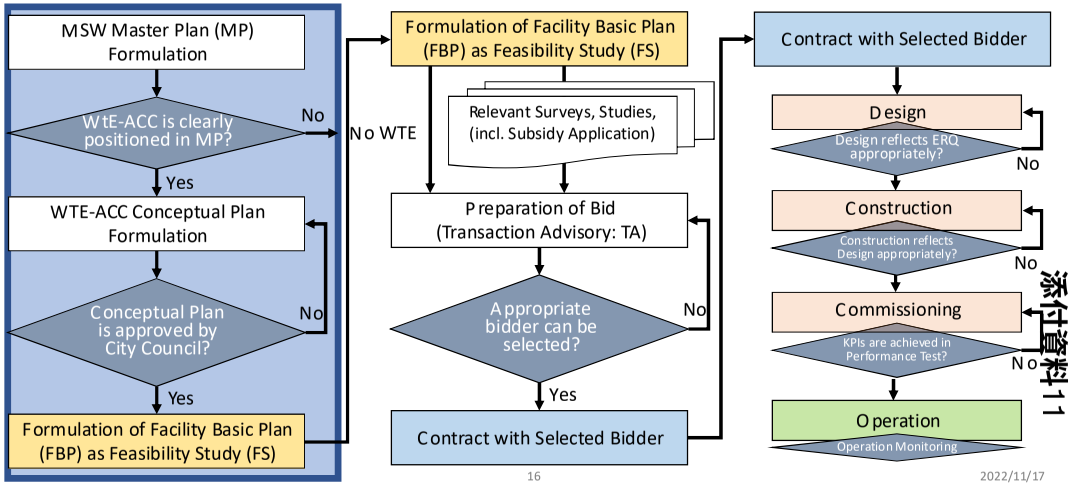
Appendix

Chapter 2 Planning Phase
- 2.1 Components of the Planning Phase
- 2.2 Legal requirement to LGUs in MSWM
- 2.3 Positioning of 10-year Solid Waste Management Plans
- 2.4 Facility Conceptual Plan
- 2.5 The selection of candidate construction sites

1. Planning Phase

EJEC

WtE Project Procedure



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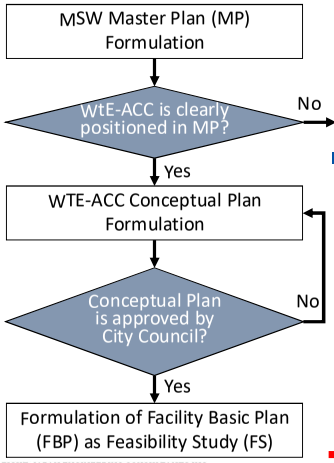
1. Planning Phase

(1) Procedure of WtE Project Planning



Since the Law clearly stipulates that "Local government is responsible for Waste treatment", even if LGUs contract out some parts to private, LGUs are still primarily responsible for waste. Therefore, WtE Project shall be led by local governments.

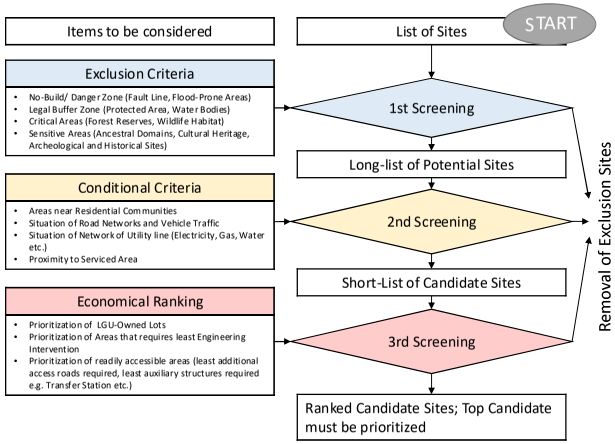
■ What to be decided by LG in Planning Phase

•	Ideal state of waste management	⇒ Set Political Priority for Zero Waste (100% material recovery) or Heat Recovery (WtE-ACC) considering recyclable market, land
•	Setting the service provision area	⇒ Single municipality or wide-area union (clustering)
•	Current and future waste volumes	⇒ Target volume for WtE, how to handle plastics,
•	Set up capacity of a WTE-ACC (t/day)	⇒ Annual Target waste volume for WtE ÷ Operating days
•	Project Formulation Timeline	⇒ For EIA ( ) yrs, Bidding ( ) yrs, Construction ( ) yrs, *Should be set in practical manner.
•	Appropriate Site Selection	⇒ Urban or Suburb, next to landfill, etc. *Recommend not to rely on private land.
•	Appropriate Capital and Operational Cost estimation	⇒ Market cost based on precedent studies

➡ The WTE-ACC Conceptual Plan must be approved by City Mayor/Council.

1. Planning Phase

(2) Recommended Site Selection Procedure for WtE (Tentative)



- *JET tried to combine **some WTE site selection procedures used in Japan** and **the SLFs site suitability assessment flow of NSWMC2013-64** as left.*
- *From the list of candidate sites, areas which are prohibited by law for the WTE-ACC construction are excluded in 1st Screening as mandatory exclusion criteria, supported by GIS, etc.*
- *After that, some conditions set force by the LG and local residents will be removed in the 2nd screening.*
- *Finally, the evaluation of cost attached to the shortlisted sites will be carried out. An additional iteration of screening considering cost/financial prior to final site ranking is recommended.*

➡ Transparent and Public Involved Process shall be required bcs WTE is NIMBY.

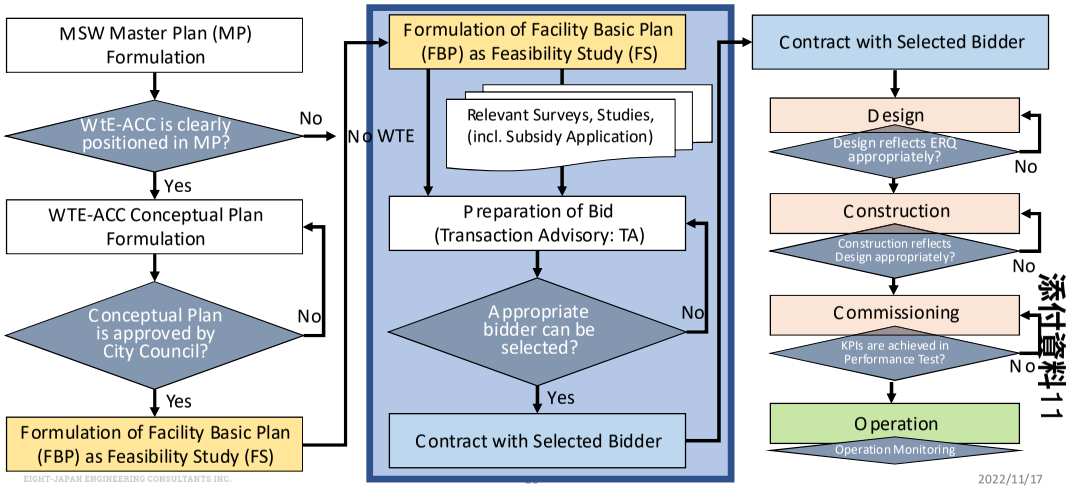
Draft Manual for the Planning, Formulation, Evaluation and Contract Management of WTE Projects

1. Rationale
2. Planning Phase
3. Formulation Phase
4. Evaluation Phase
5. Contract Management Phase
6. Dismantling of WTE-ACC
7. Appendix

Chapter 3 Formulation Phase
- 3.1 Formulation of Feasibility Study (F/S)
- 3.2 Technology selection
- 3.3 Target Waste Amount
- 3.4 Target waste quality
- 3.5 Pollution prevention standards
- 3.6 Waste heat utilization
- 3.7 Financial model (Case of BOT/BOO)
- 3.8 Business scheme
- 3.9 Role demarcation
- 3.10 Value Chain Analysis
- 3.11 Other Aspects

3. Formulation Phase

(1) WtE Project Procedure



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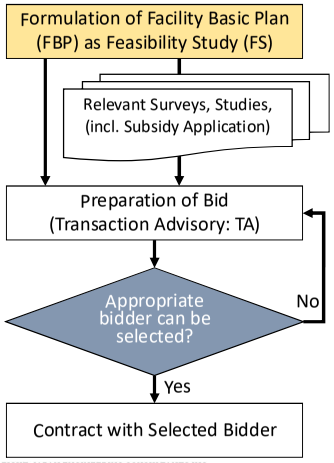
3. Formulation Phase

(2) Facility Basic Plan as LGU oriented Feasibility Study



■ What to be decided by LG in the FS Phase

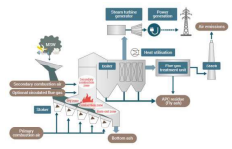
Technical	• Treatment Technology Selection	⇒	Thermal (Stoker, fluidized bed or gasification, etc.), or Non-thermal (Biomethanation, etc.)
	• Quantity / Quality of WTE Feedstock	⇒ ⇒	How much MSW can be "continuously" supplied to WTE? How much LCV can be guaranteed? (This is out of control of private proposer)
	• Pollution Control Standards (Exhaust gas, Wastewater, Residues, etc.)	⇒ ⇒	Under Clean Air Act (National Standards), International Standards, and/or Stricter Voluntary Standards? Monitoring frequency shall also be identified.
Financial	• Business Scheme	⇒	Study on applicability of PPP modality (BOT, BOO or DBO, Concession, JV, etc.)
	• Project cost estimation (Capex/Opex), Financial Model, Financing Plan	⇒	Total cost, amount of funds to be procured …
Project Boundary	Role demarcation (Scope of Work)	⇒	Basic concept of task demarcation shall be identified at this phase so that **gov. budget can be forecasted**.
	Value Chain Analysis (Treatment Process flow for upstream/ downstream)	⇒ ⇒	Upstream arrangement (Segregation classification, pretreatment, how to deliver segregated waste, etc.), Downstream arrangement (Handling of bottom ash and fly ash, disposed at TSD? Monofill?)

➡ Since there are NO "Zero T/F" WTE projects in the World, LGU shall concept out what LGU can provide and what LGU expects to Private Operator, in such aspect, security of annual expenditure for T/F through project period must be the most important point.

3. Formulation Phase

(3) Technical : Technology Selection

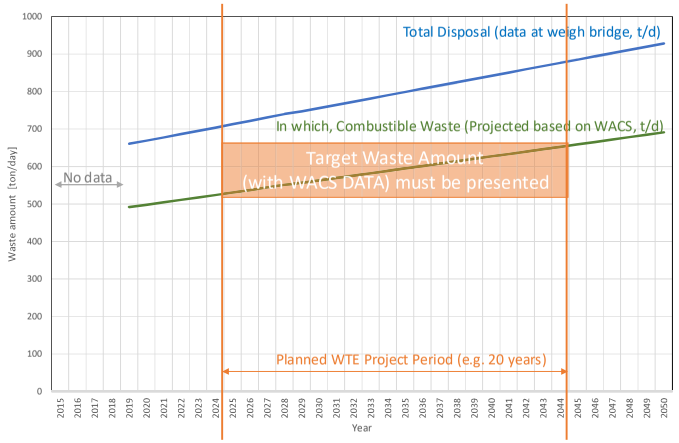
➡ Which kind of system is the most appropriate to address LGU's needs?
➡ It is necessary to avoid to choose "un-proven" technology/provider.

Thermal / Stoker Incinerator	Thermal / BFB Incinerator
	
• Widely applied in the world, • Mechanically driven stoker grates sequentially dry, combust and post-combust the waste for 1 to 2 hrs. • Bottom ash falls into the ash water-sealed conveyor from the tail end of the stoker together with the incombustibles, and after cooling, it is discharged by a conveyor. • Dust (fly ash) which captured in the exhaust gas treatment system contains poisonous components shall be collected, and treated before disposal.	• Widely applied in the world. • Crushed waste is fed into the fluidized bed of hot sand and dried, burned, and post-combusted almost at the same time (up to a dozen seconds). • The ash is discharged from the upper part of the furnace together with the combustion gas and collected as fly ash in the gas cooling chamber and dust collecting equipment.

Other MSW Treatment System	Explanations
	• A technology which the biodegradable waste is anaerobically fermented and obtain combustible biogas, • Segregated food waste will be crushed and separated to biodegradable fraction and non-bio fraction. Biodegradable fraction will be fed to digester after pulping, fermented in the digester for 3 weeks then collect digested gas (biogas), • Captured biogas can be used for fuel and digested sludge can be utilized after drying. Quantity of sludge might be the problem.
	• There are serval RDFs, following explains about RDF fluff; • A technology which the combustible waste is shredded and wrapped to be the alternative fuel, • Segregated paper and plastic waste will be further separated manually in the conveyor and air separator. Light combustible fluff will be shredded and wrapped as a cube shaped fuel (RDF fluff), • RDF fluff can be used as fuel at cement kiln, or WTE facility.
	• A technology which the biodegradable waste is aerobically fermented and converted to compost, • Segregated food waste will be manually separated, mechanically crushed (< 5cm) and piled up around 2.5m, add micro- organism for fermentation, • Pile will be mixed by wheel loader once in a couple of days and aged for 60 days. • Matured compost will be sieved by trommel to be the products,

3. Formulation Phase

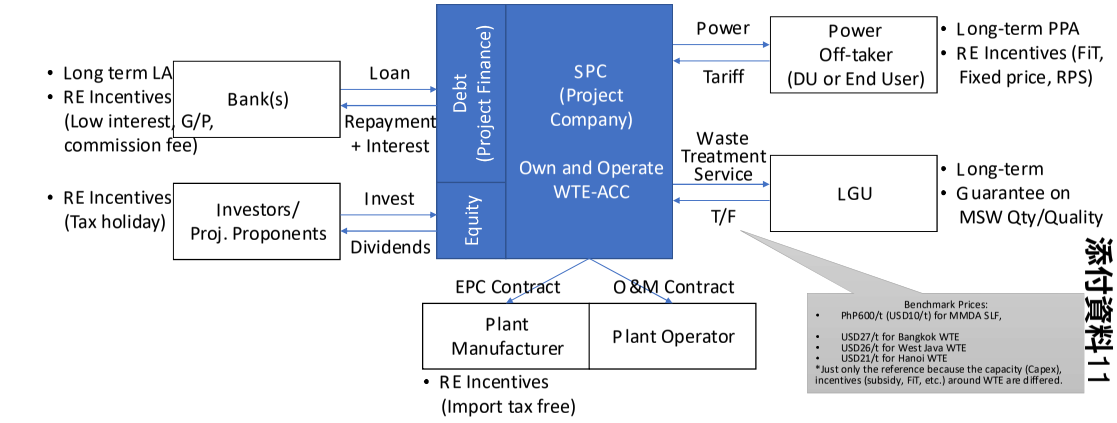
(4) Technical : Quantity and Quality of Target Waste (to be fed to WTE-ACC)



- **The planned waste amount is the basis for setting the scale/size of the facility,** and is important for the prediction of future amount, and must have high accuracy.
- This Planned waste amount (t/d) x Tipping Fee (PhP/t) must be budgeted in annual basis.
- Considering the recent plastic ban and plastic recycling tech innovation, several scenarios shall be developed and reflected to the WTE project FS.
- **In the PPP Contract for WTE, waste quantity as well as quality (LCV) usually guaranteed by LGUs.**

3. Formulation Phase

(5) Financial : Business Model (Case of BOT/BOO)



➡ To ensure "Bankability" of the Project which is composed of "Financial Viability", "Risk Optimization" and "Contractual Robustness"

添付資料11

3. Formulation Phase

(6) **Financial :** Business Scheme / PPP Modality

PPP Modalities		Role					Owner of Facility			Explanation
		Construction Period			Operation Period		Const. Period	Op. Period	After Op. Period	
		Design	Const.	Finance	Op.	Mt.				
PFI	BOO	Private	Private	Private	Private	Private	Private	Private	Private	PFIs cover BOO/BOT/BTO, which Private sector raise funds, design, construct, and operate the facility thru project period. [BOO] Ownership will not be transferred to the public even after the operation period. [BOT] Ownership will be transferred to the public at the end of operation period. [BTO] Ownership will be transferred to the public after completion of the facility.
	BOT	Private	Private	Private	Private	Private	Private	Private	Public	
	BTO	Private	Private	Private	Private	Private	Private	Public	Public	
Non-PFIs	DBO	Public	Public	Public	Private	Private	Public	Public	Public	The public sector raises funds through bonds and grants, and comprehensively outsources the design, construction, operation of the facility to the private.
	DBM	Public	Public	Public	Public	Private	Public	Public	Public	The public sector raises funds through bonds and grants, and comprehensively outsources the design, construction, maintenance of the facility to the private.
	Public Build + long term O&M contract	Public	Public	Public	Private	Private	Public	Public	Public	The public sector designs and constructs the facility, and the private is entrusted with the operation for multiple years.

3. Formulation Phase

(7) **Project Boundary :** Role Demarcation / Scope of Work in ASEAN BOT

Category	No	Role	Gov.	SPC
Land Acquisition	1	**Project Site and water supply facility**	✓	
Design and Construction (including commissioning & testing)	2	MSW Acceptance Facility (Weighbridge and Registration Office, etc.)		✓
	3	Sample sorting facility (Dumping box, etc.)		✓
	4	Processing system and visitor center		✓
	5	**Water supply piping**	✓	
	6	**Adherent Landfill and Leachate Treatment Facility**	✓	
	7	**Supporting Infrastructure (Road, rainwater drainage, etc.) in MSWM complex but outside of Waste Treatment Facility Plot**	✓	
	8	Supporting Infrastructure (Road, rainwater drainage, etc.) in Waste Treatment Facility Plot		✓
Operation and Maintenance	9	**MSW supply to site and Unsuitable Waste removal prior to site delivery**	✓	
	10	Processing system (from MSW weighbridge until residue loading station), visitor center		✓
	11	**Water supply**	✓	
	12	**Landfill and Leachate Treatment Site operation including residue transfer to landfill**	✓	
	13	**Supporting Infrastructure (Road, rainwater drainage, etc.) in MSWM complex but outside of Waste Treatment Facility Plot**	✓	
	14	Supporting Infrastructure (Road, rainwater drainage, etc.) in Waste Treatment Facility Plot		✓
Financing	15	**Land for Project Site**	✓	
	16	Weighbridge, Registration Office, Sample Sorting, Processing System, visitor center		✓
	19	**Water supply facility**	✓	
	20	**Supporting Infrastructure (Road, rainwater drainage, etc.) in TPPAS complex but outside of Waste Treatment Facility Plot**	✓	
	21	Supporting Infrastructure (Road, rainwater drainage, etc.) in Waste Treatment Facility Plot		✓

➡ Not fully relying on to the Private, roles where LG has specialty should be responsible for LG to secure bankability.

3. Formulation Phase

() **Project Boundary :** Role Demarcation / Scope of Work in Japanese DBO

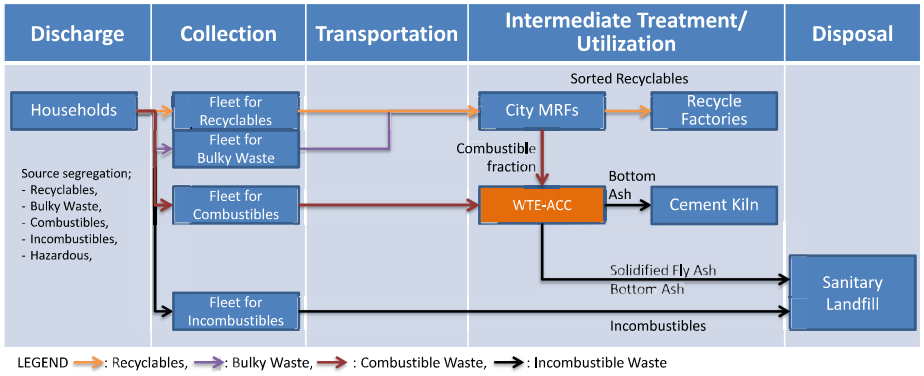
Phase	Responsibility of LG	Responsibility of Private Partner
Design and Construction Phase	✓ Security of Land ✓ Topographic Survey ✓ Geological Survey ✓ Obtain project approval from government agencies, ✓ EIA*, ✓ Application of the permission*, ✓ Supervision of Design/Construction*, etc.	✓ Support LG on Topo/Geo Survey, ✓ Support LG on the documentation for applications to gov. agencies, ✓ Design and Construction of WTE, ✓ Process and disposal of construction waste, ✓ Preparation of manuals for operation*, ✓ Provision of spare parts, etc.
Operation and Maintenance Phase	✓ Delivery of Waste Feedstock, ✓ Sales of Recovered Material, ✓ Monitoring of the operation, etc.	✓ Reception, weighing, collection of fee, ✓ Operation management (prepare plan, implement, etc.) ✓ Consumables management (prepare plan, procurement, etc.), ✓ Maintenance management (prepare plan, regular inspection, repair, back up, etc.),

Note: In DBO facility will be owned by LG so permissions including EIA usually be secured by LG.

3. Formulation Phase

(7) **Project Boundary :** Value Chain Analysis

Which parts of MSWM are you going to contract out to WTE partner? From Upstream to Downstream?



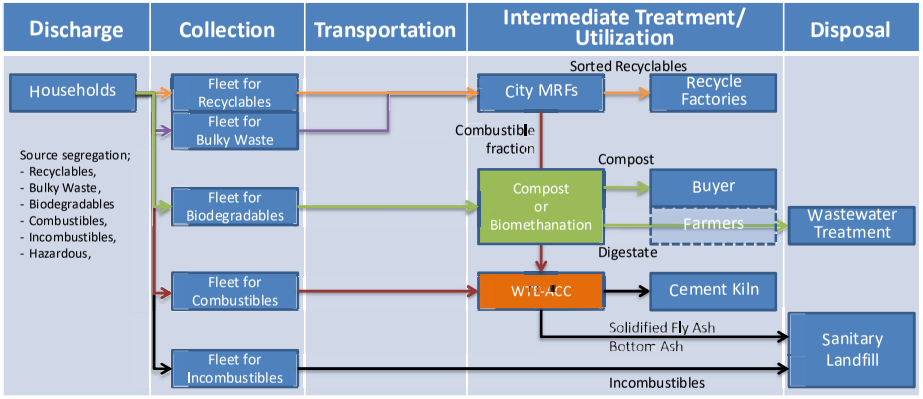
➡ Upstream arrangement (Segregation classification, segregated waste transport) is usually the role of LGU,
➡ Downstream arrangement (bottom/fly ash disposal) can be tasked to private but T/F must be increased.

添付資料11

3. Formulation Phase

(7) Project Boundary : Value Chain Analysis

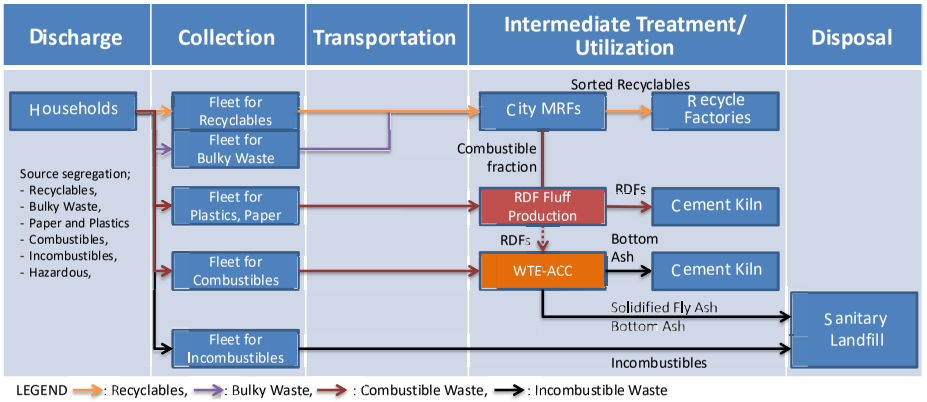
Which parts of MSWM are you going to contract out to WTE partner? From Upstream to Downstream?



3. Formulation Phase

(7) Project Boundary : Value Chain Analysis

Which parts of MSWM are you going to contract out to WTE partner? From Upstream to Downstream?

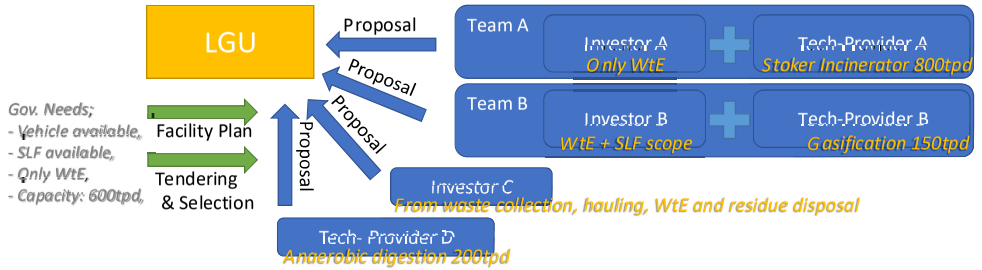


Draft Manual for the Planning, Formulation, Evaluation and Contract Management of WTE Projects

1. Rationale
2. Planning Phase
3. Formulation Phase
4. Evaluation Phase
5. Contract Management Phase
6. Dismantling of WTE-ACC
7. Appendix

4. Evaluation of Unsolicited Proposal

- ✓ How to evaluate "Unsolicited WTE-PPP Proposal"? is one of frequently asked questions,
- ✓ Unsolicited Proposal is usually the project based on the private investor's interest in terms on scope, capital size, applied technology, while existing status and effort/achievement of LGUs in MSW management is different in LGUs, so, simply it's quite difficult to evaluate,
- ✓ Simple comparison of different schemes / types / technologies of private proposals is not make sense,
- ✓ **LGU shall have own MSW MP-based FS or even WTE-ACC conceptual plan as "NEEDS"** to ease the evaluation and/or selection of the **better** private proposal,



➡ Solicited approach is widely applied for the WTE-PPP project development in the world. If unsolicited approach will be adopted, at least WTE-ACC conceptual plan should be formulated beforehand.

添付資料11

Draft Manual for the Planning, Formulation, Evaluation and Contract Management of WTE Projects

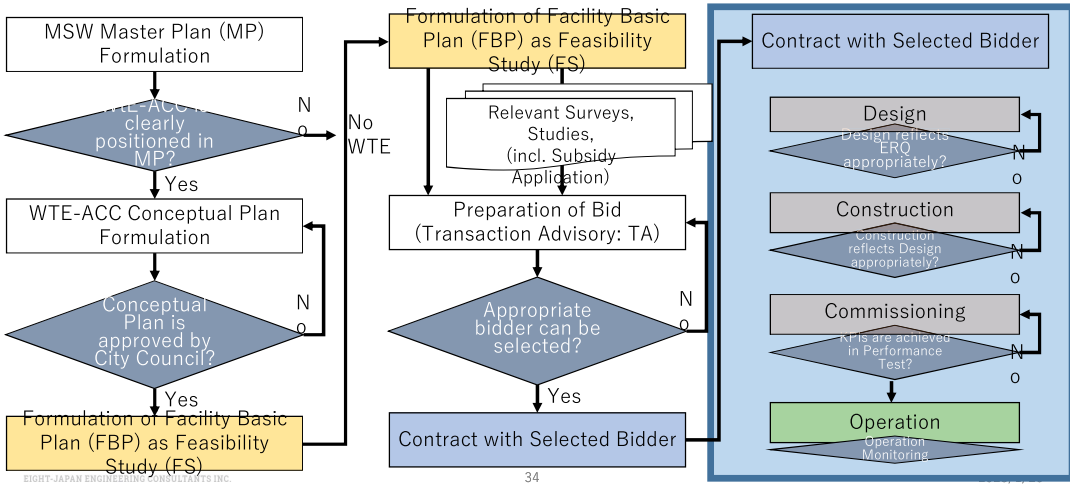
1. Rationale
2. Planning Phase
3. Formulation Phase
4. Evaluation Phase
5. **Contract Management Phase**
6. Dismantling of WTE-ACC
7. Appendix

Chapter 5 Contract Management Phase
- 5.1 Background
- 5.2 Purpose of Contract Management
- 5.3 Differences in Business Schemes and Contract Management between Japan and Philippines
- 5.4 Design and Construction Stage
- 5.5 Detailed Procedure in DBO Case and implication to BOT/BOO;
- 5.6 Operation Phase

5. Contract Management Phase

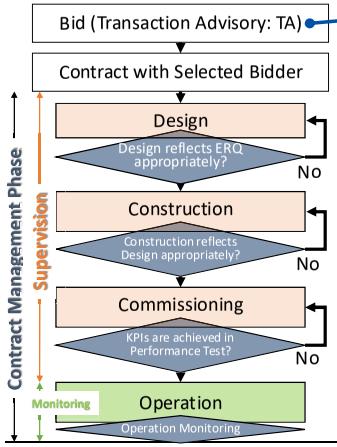
The Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/Innovative Technologies

(1) WtE Project Procedure



5. Contract Management Phase

(1) Procedure of Contract Management (in the aspect of LGU)



What to be specified in **"Bidding Document (Request for Proposal: RfP)"** by LG

•	Selection method	⇒ Number of Envelop, Evaluation method (Merit Point, QBS, CBS)
•	Instruction to Bidder (ITB)	⇒ Qualification criteria, Terms of payment, etc.
•	**Employer's Requirement (ERQ)***	⇒ **Conditions of Input and Output specifications** Everything shall be written in here
•	Evaluation criteria	⇒ Stability, economy, safety
•	Contract documents	⇒ Draft basic agreement, construction/operation contract

During Contract Management Phase, it is necessary to confirm that the facility is being designed, constructed and operated as desired by LGU.
=> In many cases, employ the Independent Consultancy to check the conformity.

•	Design Supervision (SV)	⇒ Review drawings for building & plant equipment
•	Construction Supervision (SV)	⇒ Checking progress, witness to the inspections and tests incl. performance test

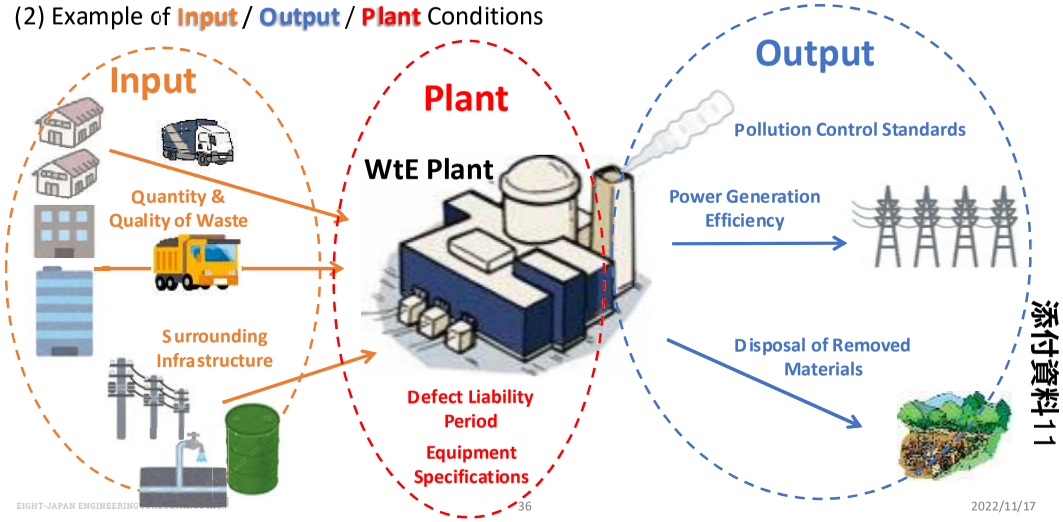
Operation Monitoring

•	Compliance Status with **Employer's Requirement***	⇒ Power generation/transmission amount, Pollution control standards, etc.
•	Facility maintenance status	⇒ Visual inspection, check self-inspection records, etc.

***Employer's Requirement (ERQ)** is defined as the document specifies the purpose, scope, and/or design and/or other technical criteria for the execution of the Works in FIDIC general conditions. It is used as "Technical Specification" in the Design-Build ordering system where the Employer specifies only some output/input conditions and let contractor to propose their best options.

5. Contract Management Phase

(2) Example of Input / Output / Plant Conditions



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5. Contract Management Phase

(2) Example of **Input** / **Output** / **Plant** Conditions

Main contents of "Employer's Requirement (ERQ)" in Bidding Document

(A) COMMON	(B) CONSTRUCTION	(C) OPERATION
1. Capacity of the Facility, Project scheme	1. Quantity and quality of waste	1. Project implementation structure
2. Construction Site, Area	2. Performance Guarantee Matters;	2. Development of manuals and plans
3. Project period, time schedule	(1) Power generation efficiency	3. Operation and maintenance contents;
4. Topography and geology conditions	(2) Pollution control standards, etc.	(1) Operation management
5. Surrounding infrastructure, city planning related matters	3. Performance guarantee method	(2) Inspection, testing, repair and renewal
	4. Defect Liability Period	(3) Disposal of removed materials
	5. Equipment specifications	(4) Information management
	(1) Mechanical equipment specifications	4. Handling after the Project Period
	(2) Electrical instrumentation equipment specifications	
	(3) Civil engineering and building works specifications	

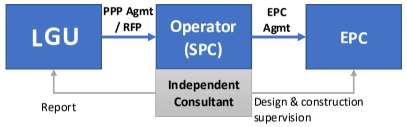
Source: Outline of WtE Technology and Requirements for WtE Project (JICA-TCP Online Training, 10Dec2021)

5. Contract Management Phase

(3) Relationship among LGU, Operator (SPC) and EPC contractor

Design/Construction Supervision;

- In the design/construction phase, LGU, the client of the Project, directly or indirectly through (SPC) monitor the design and construction of EPC contractor's drawings, as well as the work plan for commissioning and performance test.
- The purpose of monitoring is to confirm, **through approval and confirmation of drawings and implementation of inspections and tests, whether the construction work is planned and executed in accordance with the agreement, RFP, and the project proposal**.



Operation Monitoring;

- **In the operation phase**, the purpose of monitoring is to provide citizens with high-quality public services based on **an appropriate division of roles between the LGU and the Operator (SPC) by monitoring and confirming the implementation status of various tasks related to the operation and reflecting the results in the payment of fees.**

*Specific rules and procedures shall be designed in Contract Management Manual

➡ Even though BOT/BOO, LGU can design the level of intervention to the Private Partner's role bcs this is Public Project.

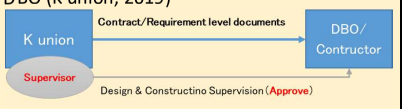
5. Contract Management Phase

Phase	Work	Contents
Construction	Design supervision	Checking whether there are any discrepancies between the requirements document/contract and the basic design/detailed design documents
	Construction supervision	Confirmation that construction work is being carried out in accordance with the requirements, contract, and design documents
Operation	Operation supervision	Confirmation that operation and maintenance are being carried out in accordance with the requirements and contract documents

5. Contract Management Phase

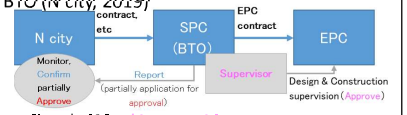
(3) **Design and Construction** Supervision / 4 PPP case studies in Japan

DBO (K union, 2019)



- No SPC. No monitoring on the business side.
- The union **supervisor approves** the various drawings and procedures. When the union lacks the capacity, it outsources the work.
- **The consent of the union** is a condition for proceeding to the next step.

BTO (N city, 2019)

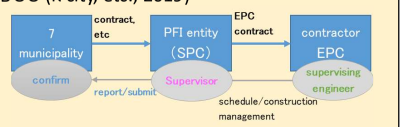


- City asks SPC to **hire supervising company**.
- The supervising company (supervisor) **approves** the various drawings.
- **Only the list of approved books and test procedures** are **approved** by the city.
- Other drawings are **reported*** by SPC **to the city**. When the city lacks the capacity, it outsources the work

BOT (M union, 2004)

- The union requests SPC to supervise the construction.
- **SPC approves** the various drawings.
- **Report and obtain confirmation*** of the approved documents from SPC to the city.

BOO (K city, etc., 2019)



- The city requests SPC to supervise the construction.
- **Supervisor of SPC approves** the various drawings.
- **Report and obtain confirmation*** of the approved documents from SPC **to the city**.

- While LGU directly supervise contractor's design and construction in DBO, LGU indirectly monitor SPC's supervisory works in BOT/BOO,
- Compare with DBO, public involvement for BOT/BOO is light touch,
- Items to be needed for the LGU's approval in BOT/BOO shall be designed and determined in the contract clearly.

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5. Contract Management Phase

(4) Design and Construction basic approach to construction monitoring

•In general, WTE-ACC facilities are ordered under the lump-sum design-build (performance order) system, so LGU shall confirm that the contents specified in the RFP are reflected in the design documents.

•LGU shall confirm that the work is being performed in accordance with the approved design documents.

•The facilities must be developed to reflect the intentions and requirements of the client, keeping in mind that they are environmental infrastructure facilities that provide public services over a long-term operational period.

•This is a public project led by the private sector, and the private sector's ingenuity and know-how must be used to the maximum extent possible.

•Quality control must be carried out by project operators to ensure that only economic efficiency is not pursued, such as the use of poor quality materials, poor quality construction, and economic design.

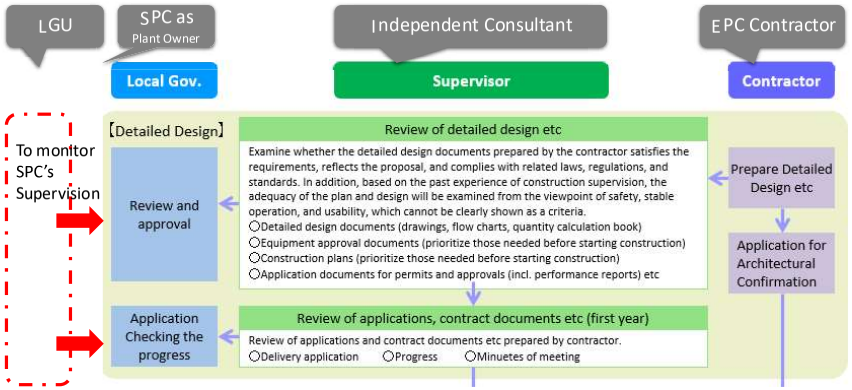
•Each process must be prevented from being delayed without clear and unavoidable reasons, and the provision of public services must be prevented from being delayed.

•When applying for subsidies, etc., the progress and completion of construction must be confirmed and reported in an appropriate and transparent manner.

•The commissioning of facilities, performance tests and various inspections and completion inspections must be carried out properly in accordance with predetermined methods.

3. Contract Management Phase

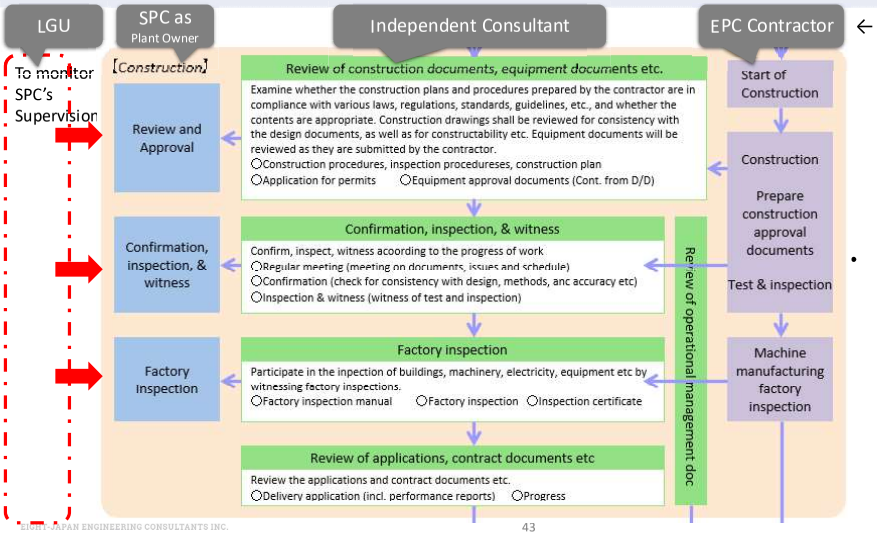
(5) Design and Construction Supervision / Detail Procedure in DBO Case / and implication of BOT/BOO;



- In BOT/BOO, detail review and approval for the design documents shall be done by SPC, and LGU shall/can review such supervisory results.

3. Contract Management Phase

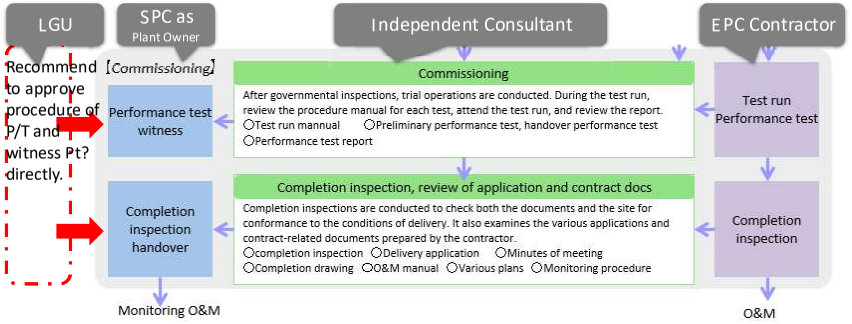
(4) Design and Construction Supervision / Detail Procedure in DBO Case / and implication of BOT/BOO;



- In BOT/BOO, detail review and approval of the construction documents, inspection, witness, etc. shall be done by SPC, and LGU shall/can review such supervisory results.

3. Contract Management Phase

(5) Design and Construction Supervision / Detail Procedure in DBO Case / and implication of BOT/BOO;



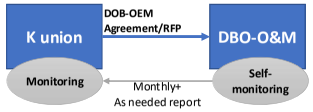
- Even in BOT/BOO, **approval of performance test procedure, and witness of performance test are recommended to be done by LGU directly.**

参考資料11

5. Contract Management Phase

(6) Operation Monitoring / 3 PPP case studies in Japan

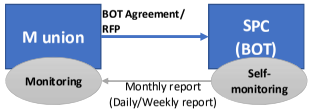
K union DBO



- Submission and **Approval** of the O&M manual.
- Submission and **Approval** of the annual biz plan.
- **Submission and Acceptance** of monthly/annual reports.

*Almost similar regulations will be applied to BTO because operation of BTO is after ownership transfer.

M union BOT / K city BOO



- **Submission** of O&M manual.
- **Submission** of annual business plan.
- **Submission and Acceptance** of monthly/annual reports.

*"Approval" is not specifically required.

- At the Operational Phase, **there is no significant difference in the RfP documents between DBO/BTO** where LGs own facilities, and BOT/BOO where private companies own facilities.
  ※As shown in above, there are differences in the expressions used for "Acceptance" or "Approval".
- Same as the Design and Construction Phase, it is a considerable matter if to assign experts who can check the SPC's self-monitoring and discuss countermeasures when any problems occur.

3. Contract Management Phase

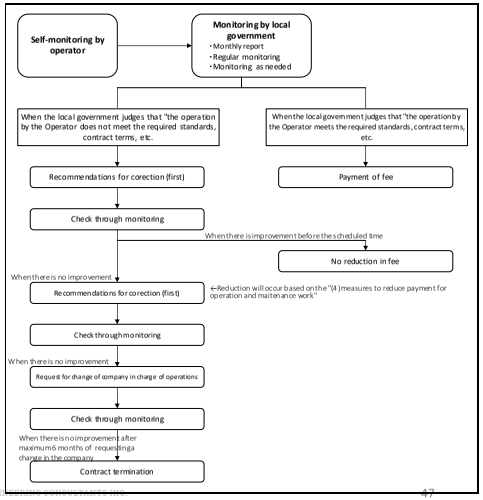
(6) Operation Monitoring / List of Documents to be requested to prepare to SPC

Documents to be prepared:	Manuals	Work Plans／Work Implementation Plans			Reports
Description	Procedural Standards	Work plans for the pre-determined period (all, annual, monthly) based on the requirement in Manuals			Reports correspond to the work plans
Name of Works / Period applied for	Thru Operation Period	Thru Operation Period	Annually	Monthly	* Correspond to the period in left;
1. Operational Management	Operational Management Manual				
(Operation Works)			Annual Operation Plan (AOP)	Monthly Operation Plan	Annual/Monthly Operation Report (A/MOR) *1
(Reception, Collection Charges)			(included in AOP)	(included in above)	(included in A/MOR)
(Delivery Control)	* Inspection, unsuitable MSW		(included in AOP)	(included in above)	(included in A/MOR)
(Efficient Utilization)	* Power generation and resource recovery plans		(included in AOP)	(included in above)	(included in A/MOR)
2. Maintenance Management	Maintenance Management Manual				
(Procurement)			Annual Procurement Plan	Monthly Procurement Plan	Annual/Monthly Procurement Report
(Check and Inspection)		(Overall) Check and Inspection Plan	Annual Check and Inspection Plan		Annual Check and Inspection Report
(Repair and Renewal)		(Overall) Repair and Renewal Plan	Annual Repair and Renewal Plan		Annual Reipair and Renewal Report
(Corrective Maintenance)		(Overall) Corrective Maintenance Plan			(Overall) Corrective Maintenance Report
(Functional Inspection)	*Required in Japanese reg.	(Overall) Functional Inspection Plan			(Overall) Funcitional Inspection Report
3. Environmental Management	Environmental Management Manual				
(Environmental Protection)		(Overall) Env. Protection Plan	(included in AOP)		(included in A/MOR)
(Working Environment Protection)		(Overall) Working Env. Protection Plan	(included in AOP)		(included in A/MOR)
4. Emergency Response	Emergency Response Manual	* Actions to accident prevention, emergency control, etc.			Accident and Disaster Reports
5. Others	Manuals for other tasks				
(Clean up)		(Overall) Clean-up Plan	Annual Clean-up Plan		Annual Clean-up Report (+every time)
(Planting Plan)		(Overall) Planting Plan	Annual Planting Plan		Annual Planting Report (+every time)
(SPC Management)		(Overall) SPC Management Plan	Annual Managemetn Plan		Annual Management Report
(Fire Prevention)		(Overall) Fire Prevention Plan	Annual Fire Prevention Plan		Annual Fire Prevention Report
(Guard Duty)		(Overall) Safety Management Plan	Annual Safety Management Plan		Annual Safety Management Report
(Residents' Response)		(Overall) Residents' Response Plan	Annual Residents' Response Plan		Annual Residents' Response Report
(Visitors' Response)		(Overall) Visitors' Response Plan	Annual Visitors' Response Plan		Annual Visitors' Response Report
(Education and Training)		(Overall) Education and Training Plan	Annual Education and Training Plan		Annual Education and Training Report

*1: Daily reports should be attached

5. Contract Management Phase

(7) Operation Monitoring / Monitoring and Corrective Action



- Flow of Monitoring and Corrective Action in Operation Phase (example of DBO project in Japan).
- Based on self-monitoring by business operator, the monitoring method/frequency and evaluation criteria for LGU are stipulated.
- Check-sheet (draft)

Draft Manual for the Planning, Formulation, Evaluation and Contract Management of WTE Projects

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6. **Dismantling of WTE-ACC**
7. Appendix

Chapter 6 Dismantling of WTE-ACC
- 6.1 Dismantling of WTE-ACC
- 6.2 Dismantling manual
- 6.3 Estimation of dismantling costs and financial resources

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6. Dismantling of WTE-ACC

Dismantling manual

・Revisions of the Occupational Safety and Health Regulations, Outline of Measures, and the Waste Incineration Facility Dismantling Work Manual

Method of dismantling

・Dismantling work must be conducted according to the stipulation, starting with the maintenance of the promotion system as described in the Dismantling Manual and notifying the Labor Standards Inspection Office of the plan

Estimation of dismantling costs and financial resources

・the number of companies dismantling and
the actual records of dismantling work are increasing,
and it is possible to estimate the appropriate level of cost.

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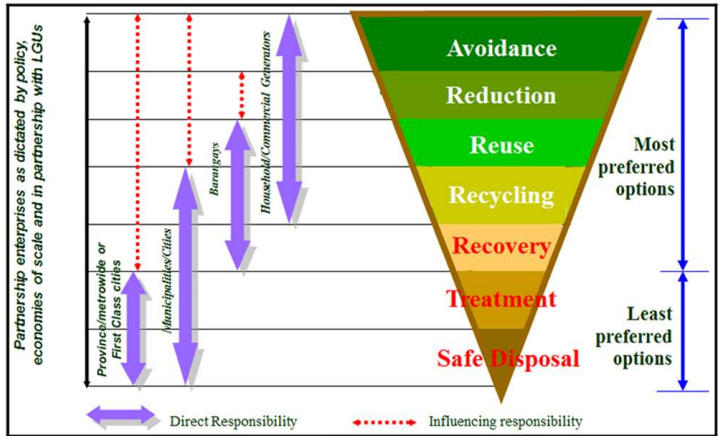
Chapter 7 Appendix
A: Consignment of Professional Engineer
B: Applications/Notifications to the Governments (Example in Japan)
C: General Structure of WTE/WTF
D: WTE-ACC as a Stable Power Source Cases in Japan
E: Safety Measures
F: Responsiveness to Disaster Waste

7. Appendix

The following sections consist of the Appendix, which highlight the examples and suggestable issues associated in the development of this guide

- **A: Consignment of Professional Engineer**
- **B: Applications/Notifications to the Governments (Example in Japan)**
- **C: General Structure of WTE/WTF**
- **D: WTE-ACC as a Stable Power Source Cases in Japan**
- **E: Safety Measures**
- **F: Responsiveness to Disaster Waste**

2. Planning Phase



Legal Requirement to LGUs in MSWM

- The key stakeholders in the implementing structure of the law include the National Solid Waste Management Commission (NSWMC), Department of Environment and Natural Resources (DENR), the Local Government Units (LGUs), and the Waste Generators including the citizens.
- Each one of these entities has its own role to play to ensure that SWM practices are properly and efficiently implemented.

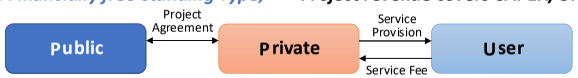
2. WTE Project Development, (2) Correct understanding of Waste Management PPP,

- ✓ There are 3 types of PPP projects, #1: Service provision, #2: Financially free-standing, and #3 Mixed,
- ✓ In general, waste treatment facilities are categorized in #1 and WtE is categorized in #3. They never fall into #2,
- ✓ However, in many private proposals say "no tipping fee", "power tariff covers all CAPEX/OPEX", etc. and never realize. LGUs shall have correct understanding of Waste-to-Energy financial situation in other countries.

#1: Service Provision Type; ***Public pays fee to Private partner's service provision incl. its CAPEX/OPEX***

School, Government Building, Jail, Waste treatment facility, etc.

#2: Financially free-standing Type; ***Project revenue covers CAPEX/OPEX / No financial support from Public***

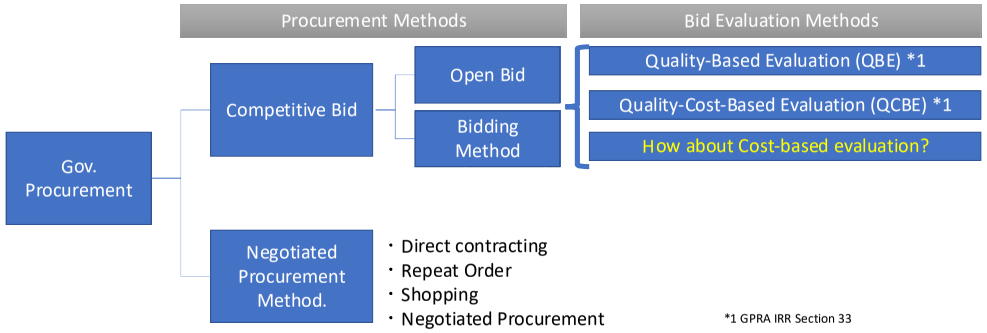


Toll Road, Airport, MRT, Parking, etc.

#3: Mixture Type (Waste-to-Energy Projects); ***Project revenue <u>is not enough</u> to cover CAPEX/OPEX***

Under development

EJEC



*1 GPRA IRR Section 33

添付資料11

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

7th INTER-AGENCY TECHNICAL WORKING GROUP (ITWG) MEETING

UPDATES/STATUS OF THE ENDORSED CASE STUDY ANALYSIS FOR BAT/BEP GUIDELINES

18 NOVEMBER 2022 | FRIDAY | 1:00 PM | MS TEAMS

UPDATES

- EMB-SWMD-PMO prepared a CSW for the endorsement of the IWTG and JCC approved Case Study Analysis for BAT/BEP Guidelines to EMB.
- The CSW, including the signed JCC Minutes, and the final copy of the Case Study Analysis for BAT/BEP Guidelines, was endorsed directly to the office of Undersecretary Jonas R. Leones and was signed on 29 June 2022.
- Signed/approved copy of the Case Study Analysis was emailed to DOE and JICA on July 1, 2022.
- The Case Study Analysis will be officially used by EMB as a guide document in preparing the formal policy on BAT/BEP Guidelines.
- Formal policy development – 1st quarter of CY 2023

THANK YOU

添付資料11

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

7th INTER-AGENCY TECHNICAL WORKING GROUP (ITWG) MEETING

FINALIZATION AND ENDORSEMENT OF THE JOINT ADMINISTRATIVE ORDER (JAO) ON THE GUIDANCE DOCUMENT FOR THE OPERATION OF WTE FACILITY ON APPROPRIATELY CONTROLLED COMBUSTION (ACC)

18 NOVEMBER 2022 | FRIDAY | 1:00 PM | MS TEAMS

UPDATES

- The ITWG and JCC-approved Guidelines for the T/S of WtE Facility was deliberated during the EPTWG Meeting last July 15, 2021.
- It was unanimously agreed by the EPTWG members that the document shall be formulated as a JAO, instead of a DAO, amongst DENR, DOE, and DOST noting that several provisions on the document were outside the mandates of EMB.
- The SWMD-PMO drafted the JAO and was able to receive concurrence from DOST and DOE on March 24, 2022.
- The final draft JAO was endorsed to EPTWG for further deliberation.
- On 12 August 2022, the draft JAO was presented to the EPTWG.
- Consultation/Write shop will be conducted with HWMS – tentatively scheduled last week of November 2022.

THANK YOU

添付資料11

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

7th Inter-Agency Technical Working Group (ITWG)

Output2 (OP2): Target LGUs' capacity on planning, evaluation, formulation & supervision of WTE projects is enhanced.

Updates on the Project Activities under OP2

November 18, 2022

Contents

1. Coordination with LGUs,

2. Coordination activities with PPPC,

1. Coordination with LGUs

- Meeting with Representatives of LGU Quezon City and LGU Cebu City

  – **Quezon City: August 5**, Meeting with Department of Sanitation and Cleanup Works
    - The decision on the WTE project is still being discussed in LGU
    - The invitations for the project activities are acceptable for the city. No commitment by the city to the TCP because MOU has not been signed.

  – **Cebu City: August 11**, Meeting with Mayor Rama
    - The MOU signed by former Mayor has to be reviewed and approved by the new City Council
    - Mayor acknowledged that activities and support of the TCP are beneficial to the city
    - Mayor instructed for Cebu City to continue to collaborate in the TCP activities through CCENRO

1. Coordination with LGUs

- Activity with LGU Davao City

  JET visited the LGU for meetings, discussions, and site visits

  – June 7
    - Discussion and confirmation of cooperation needs
    - The city expressed needs of JET support through provision of supplementary explanation materials to NEDA-ICC regarding their WTE project
    - Technical input to develop new sanitary landfill receiving WTE ash was discussed

  – July 12
    - Support to sanitary landfill procurement was confirmed.
      JET and DC highlights that the development of the Landfill for WTE ash is indispensable for the WTE operation.
      This cooperation is aligned to the objective of Output2, and also utilizes the result of Activity1-8.
    - Site reconnaissance at new sanitary landfill site

1. Coordination with LGUs

- Activity with LGU Davao City
  - September 14
    - Explanation of the Table of Contents (TOC), which serves as framework for the technical specifications to procure sanitary landfill in design-build scheme
    - Review of preliminary layout of sanitary landfill to be prepared by City Engineering Office (CEO) was requested by the LGU

→The layout plan has not been completed by CEO for JET review

2. Coordination activities with PPPC

JET's Technical Assistance	Specifics	Progress
Provide expertise on better management of SWM PPP Projects	Provide comments and inputs on the **development, evaluation, management and implementation** of solicited and unsolicited SWM PPP Projects	[DELIVERED] While JET/PPPC commented on a private proposal to LGU General Santos, the LGU did not respond to it and decided to put the project on hold in light of the elections. Same is also true for other projects in the PPPC pipeline.
Conduct capacity development activities	Facilitate **Knowledge Sharing Sessions (KSS)** and other relevant activities on SWM for PPPC, LGUs, and other implementing agencies	[ACCOMPLISHED] KSS was held in Nov. 2021. PMO and JET participated as resource persons, where JET discussed the Case Study for BAT/BEP Guidelines prepared under Output 1.
Assist in the preparation of PPP Guide on Unsolicited JV WTE Projects	Provide comments in the **PPP Guide on Unsolicited JV WTE Projects for LGUs** that PPPC is currently drafting	[DELIVERED] JET commented on the draft Guide in Oct. 2021. PPPC to update the Guide and consolidate with the other SWM-PPP materials.
Assist in the preparation of the Conceptual Framework on SWM	Review and Provision of Recommendations to **the Conceptual Framework** on Solid Waste Management PPPs	[DELIVERED] JET transmitted comments on the Conceptional Framework on October 19, 2022. PPPC to update the Framework accordingly and consolidate with the other SWM-PPP materials.

2. Coordination activities with PPPC

- Closing of the cooperation
  - JET and PPPC formalized the expanded cooperation through a Work Plan. This work plan covered the period June 2021-September 2022, after several deadline adjustments following delays due to the pandemic and of the recent elections.
  - JET prepared the Accomplishment Report to summarize the cooperation achievements, activity conclusions, and overall findings that were determined through the conduct of the activities.
    - **JET and PPPC were able to deliver all the needs and requests stipulated in the Work Plan** and left the implementation to PPPC to materialize the support provided by the team.
    - JET submitted the Accomplishment Report to PPPC last October 19, 2022.
    - The report is being finalized by PPPC.

Thank you for your attention!

7th Inter-agency Technical Working Group Meeting

Output 3

"Updates on the Project Activities under OP3"

18th November 2022 (Friday)

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

Contents

1. Progress of Activities
   a. Current Status
   b. Troubleshooting
   c. Training
   d. Achievements of the recent activities
2. Remaining Activities and way forward

1-a. Current Status of OP3

Activity	Contents	Status
3-1	Review of the current capacity and activities in central and regional EMB	Done
3-2	Analyze gap between the present capacity of the central EMB laboratory and required capacity and formulating training plans	Done
3-3	Prepare Standard Operation Procedures (SOP)	Done (SOPs are already prepared and being modified by ERLSD based on the results of the Activity 3-4.)
3-4	Conduct training of sampling, analysis and QA/QC of Dioxins and Furans	Now in the process of finalizing of the detailed analytical conditions
3-5	Prepare Sampling Plan (Design) for ambient air samples	Done (AQMS and ERLSD have already started the discussion. The plan has already been formulated.)
3-6	Implement sampling, analysis and QA/QC of Dioxins and Furans	Partially done (Sampling by AQMS and preparation for analysis (soxhlet extraction) by ERLSD have begun)

1-a. Current Status of OP3

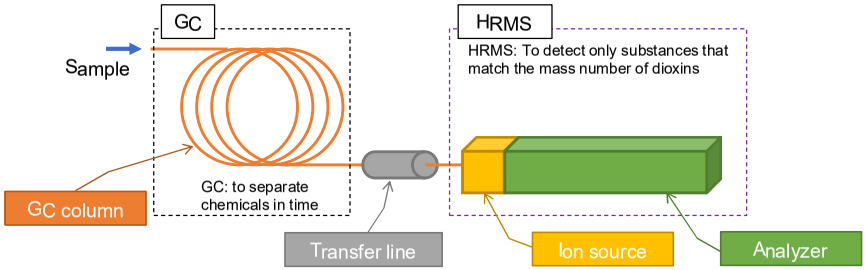
■ Resumption of JET visits

- JET was able to resume the visits to ERLSD lab from March 2022. GC/HRMS training was able to be started.
- Since March 2022, JET visited ERLSD lab for a total of 46 days. (March 4, 7-9, 11, 14-16, 18, 21, 24, 31, April 4, 6-8, May 13, 16-20, June 28-July 1, July 4-8, 11-15, Oct 10-14, 17-21)
- During the above period, intensive trainings were conducted. ERLSD and JET have continued to have meaningful discussions through the activities.
- After the resumption of JET visits, some unexpected troubles had occurred, but we have already overcome these troubles and continued the activities.

添付資料11

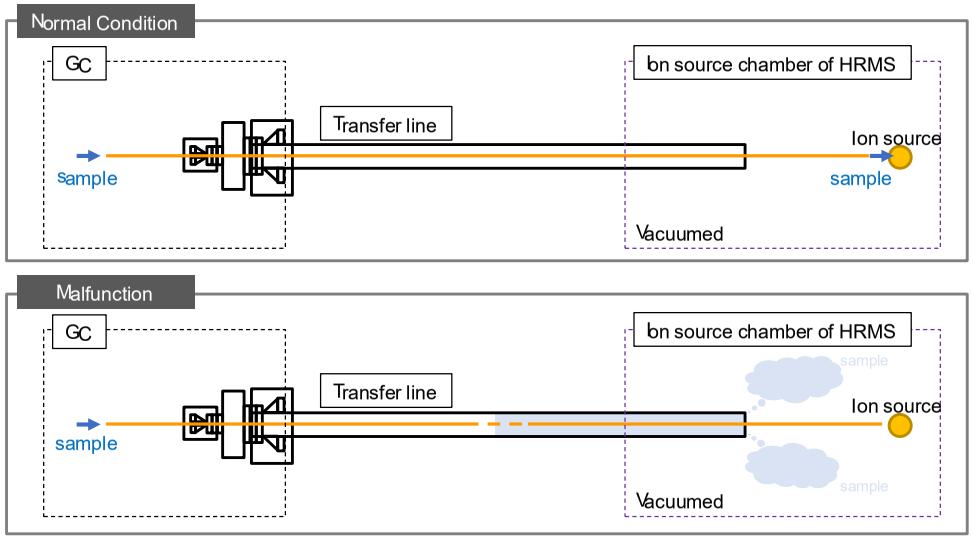
1-b. Troubleshooting

- GC/HRMS malfunction and repair
  - Sensitivity of GC/HRMS significantly lowered (≒ 1/200). The cause was the GC column had broken and clogged in the transfer line.



1-b. Troubleshooting

- GC/HRMS malfunction and repair
  - Sample did not directly reach the ion source, presumably.

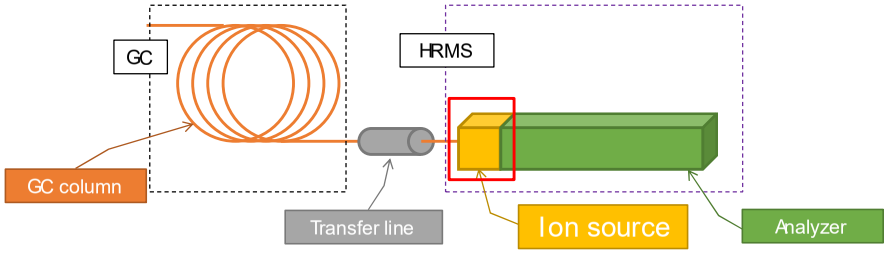


1-b. Troubleshooting

- GC/HRMS malfunction and repair
  - Due to EMB's procurement procedures and the local service provider's capability, it was difficult to perform the repair immediately.
  - Based on a request for assistance, JICA agreed to dispatch a JEOL engineer and shoulder the cost. Repairs were completed in June.

1-c. Training

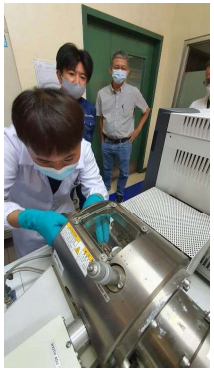
- Capacity enhancement on the GC/HRMS maintenance
  - Since there is only one GC/HRMS in the Philippines, it is difficult to learn maintenance skills especially for ion source part of HRMS such as cleaning, filament preplacement, GC column replacement. The local service provider is in charge of maintenance, but they are not easily available. Furthermore, their work has to be guided online by the Taiwanese distributor, resulting in prolonged GC/HRMS downtime.
  - These difficulties must be overcome to achieve a more frequent routine analysis.



1-c. Training

■ Capacity enhancement on the GC/HRMS maintenance

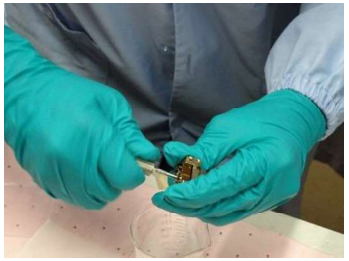
- Since it is inadvisable for ERLSD to continue to rely on local service providers for GC/HRMS maintenance, JICA approved an increase of JET input to enhance GC/HRMS maintenance technical capabilities. Trainings were conducted in May and July to capacitate the ERLSD staff on routine maintenance activities.




1-c. Training


Ion source removal/ installation


Ion source disassembly


Ion source cleaning


Ion source assembly

1-c. Training

■ Customize analytical conditions for GC/HRMS

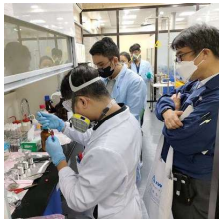
- The local service provider did not allow ERLSD to change the GC/HRMS conditions. However, JET emphasized the need to perform changes in the parameters to understand the best operating conditions for the equipment. Trial and error by changing the conditions is necessary to establish the analytical method. Trainings were conducted in July and October to capacitate the ERLSD staff in performing these changes.

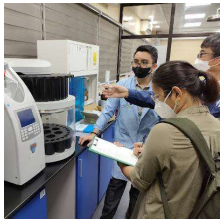

1-c. Training

■ Pre-treatment

- Some supports on key techniques for pre-treatment were provided for HCl treatment, soxhlet extraction, fraction test of automated cleanup equipment, manual cleanup, and preparation of test samples, etc. Trainings were conducted in October.





1-d . Achievements of the Recent Activities

- GC/HRMS operation (the biggest challenge to overcome)
  - The repair of the GC/HRMS has enabled the implementation of the activities due to the JICA's additional support.
  - ERLSD can now perform GC/HRMS maintenance work required in daily operations due to additional JET input approved by JICA.
  - ERLSD can now perform column exchanges at its own discretion and can successfully verify GC/HRMS operation and set GC/HRMS operating conditions. ERLSD has also successfully generated calibration curves and has been trying many tests to establish the analytical methods.
  - As a side effect, JEOL recognized the weakness of the technical support from the supplier side. JEOL showed its willingness to participate in bidding for preventive maintenance work for GC/HRMS.

- Sample pre-treatment
  - As indicated in the gap analysis conducted at the beginning of the project, ERLSD is already highly skilled through POPs analysis. The capacity for contamination control techniques, which are particularly important in dioxin analysis, has been strengthened.

2. Remaining Activities and way forward

- Activity 3-4
  - Completing the analytical method development: finalizing the settings for automated cleanup equipment, and then proceed to method blank, method detection limit, etc.

- Activity 3-5
  - Considering the current situation, there is no substantial necessity for assistance from JET. Moreover, MOEJ will provide the POPs sampling trainings in ambient air in November, it will also be a good opportunity for technical enhancement.

- Activity 3-6
  - Actual samples need to be analyzed in numbers, since different techniques are required for different sample characteristics. For stack emission, it will be difficult to obtain many samples. Measuring samples of fly ash, which has a similar dioxin composition, will also help enhance the ability to measure stack emissions.

添付資料 11-2:
成果1サブグループ会議

11-2-1 : 1st SG1
11-2-2 : 2nd SG1
11-2-3 : 3rd SG1
11-2-4 : 4th SG1
11-2-5 : 5th SG1
11-2-6 : 6th SG1
11-2-7 : 7th SG1
11-2-8 : 8th SG1
11-2-9 : 9th SG1
11-2-10 : 10th SG1
11-2-11 : 11th SG1
11-2-12 : 12th SG1
11-2-13 : 13th SG1

添付資料 11-2:
成果1サブグループ会議

11-2-1 : 1st SG1

Republic of the Philippines
Department of Environment and Natural Resources
ENVIRONMENTAL MANAGEMENT BUREAU
DENR Compound, Visayas Avenue, Diliman, Quezon City 1116

NOTICE OF MEETING

TO : **ALL SUB-GROUP MEMBERS (PROJECT OUTPUT 1)**

Selected Concerned Government Agencies

Mr. Nonilo Peña – DOST-PCIEERD
Mr. Romeo Galamgam – DOE-REMB
Atty. Ma. Rhodora Flores – DILG-BLGS
Mr. Carlo Mari Crisregienald C. Tan – DILG-BLGS
Mr. Aldwin U. Urbina - NEDA-IPG
Ms. Justine Padiernos - PPPC

Local Government Units (LGUs)

Mr. Vincent Ferdinand Paul G. Vinarao – EPWMD/LGU Quezon City

EMB Regional Focal Persons

Project Output Coordinators
Director Angelito V. Fontanilla – DENR-FASPS
Mr. Conrado A. Brabante, Jr. - DENR-FASPS
Ms. Marianica Phillina L. Obmerga - DENR-FASPS
Ms. Consolacion P. Crisostomo – EMB-PPPDD
Engr. Nolan B. Francisco – EMB-SWMD/PMO
Ms. Elvira S. Pausing – EMB-SWMD/PMO
Mr. Takahiro Kamishita – JICA/JET
Mr. Tomoyuki Hosono – JICA JET

All SWMD-PMO Staff

FROM : **THE EMB DIRECTOR**

DATE/TIME/VENUE: **18 February 2019 (*Tuesday*)/ 2:00 PM/EMB-AQMTC Bldg.**

SUBJECT : ***1st SUB-GROUP MEETING*: ENHANCEMENT OF NATIONAL GOVERNMENT'S CAPACITY FOR SUPPORTING AND COORDINATING OF LGU'S WTE PROJECT UNDER THE TECHNICAL COOPERATION PROJECT (TCP) RE CAPACITY DEVELOPMENT ON IMPROVING SOLID WASTE MANAGEMENT THROUGH ADVANCED/INNOVATIVE TECHNOLOGIES**

AGENDA:

1. Call to Order/Objectives of the Meeting
2. Presentation/Introduction of Sub-group Members for Project Output 1
3. Presentation on the Outline of the Specific Activities under Project Output 1 including deliverables based from the Inception Report
4. Presentation and discussions on the following:
    a. Implementation of Activity 1-1, Activity 1-2 (information collection and consolidation of BAT/BEP guideline)
    b. Implementation of Activity 1-4 and Activity 1-5 (Introduction of technical and O&M standards of WTE facility in Japan including management of bottom ash and fly ash)

    c. Proposed outline of the TCP Newsletter *(Sub-group members may provide proposals for the title of the Newsletter)*
    d. Capacity Assessment of Sub-group *members (Kindly fill up the attached checklist and send to the Secretariat via email by Friday 14 February 2020*)
    e. Participants to the Training in Japan
5. Finalization of Comments/Agreements/Timelines
6. Way Forward

Your participation/attendance is enjoined.

ENGR. WILLIAM O. CUÑADO

1st Sub Group Meeting

for

Output 1

"The Enhancement of National Government's Capacity for supporting and coordinating of LGU's WTE project"

18th February 2020 (Tuesday) 14:00

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

0. Agenda

1. Call to Order
2. Objectives of today's Meeting
3. **Outline of the Specific Activities under Project Output**
4. Presentation and discussions on the followings:
   i. Activity 1-1 (Prep. BAT/BEP GL for WTE),
   ii. Activity 1-2 (Study WTE policy/mechanism in other countries)
   ~~iii. Activity 1-3 (Seminar disseminate WTE tech),~~
   iv. Activity 1-4 (Prep. Tech+O&M Standards of WTE facility),
   v. Activity 1-5 (Prep. Manual for bottom/fly ash),
   ~~vi. Activity 1-6 (Prep. Procedural manual for introduction WTE),~~
   ~~vii. Activity 1-7 (Illustrate model procedure to introduce WTE),~~
   viii. Other Inter-output activities
   (Newsletter, Training in Japan, Kick-off Seminar, Capacity Assessment of Sub-group members)
5. Comments/agreements/Timelines
6. Way Forward

NIPPON KOEI EJEC

2. Objectives of the meeting

- **ITWG** (Inter-Agency Technical Working Group) was created under EMB SO 2019-347. ITWG shall serve as core group to undertake important tasks such as providing technical and operational guidance to the project.
- ITWG creates **4 Sub-Groups (SG)** within the members of ITWG that would take a lead in the implementation of TCP on a per Output basis.

No.	Objective of each Output
Output 1 (SG01)	**The enhancement of National Government's capacity *for supporting and coordinating* of LGU's WTE project**
Output 2 (SG02)	The enhancement of Target LGUs' capacity for Planning, Evaluation, Formulation and Supervision of WTE project.
Output 3 (SG03)	The enhancement of the National government's capacity of environmental monitoring for WTE project
Output 4 (SG04)	The enhancement of the National Governments and target LGUs' capacity to identify issues and provide suggestions/ recommendations for other SWM technologies other than WTE.

NIPPON KOEI EJEC

2. Objectives of the meeting

- SG Members for Output 1

Agency/Office		Members
Selected Concerned Government Agencies	DOST-PCIEERD	Engr. Nonilo A. Peña
	DOE-REMB	Mr. Romeo M. Galamgam
	DILG-BLGS	Atty. Ma. Rhodora Flores Mr. Carlo Mari Crisregienald C. Tan
LGUs	QC-EPWMD	Mr. Vincent Ferdinand Paul G. Vinarao
Project Output Coordinators	DENR-FASPS	Director Angelito V. Fontanilla Mr. Conrado A. Bravante, Jr. Ms. Marianica Phillina L. Obmerga
	DENR-PPPDD	Ms. Consolacion P. Crisostomo
	EMB-SWMD/ PMO	Engr. Nolan B. Francisco Ms. Elvira S. Pausing
	JICA Experts Team	Engr. Takahiro Kamishita
		Engr. Tomoyuki Hosono
		Engr. Satoshi Higashinakagawa
		Engr. Makoto Kosaka

NIPPON KOEI EJEC

添付資料11

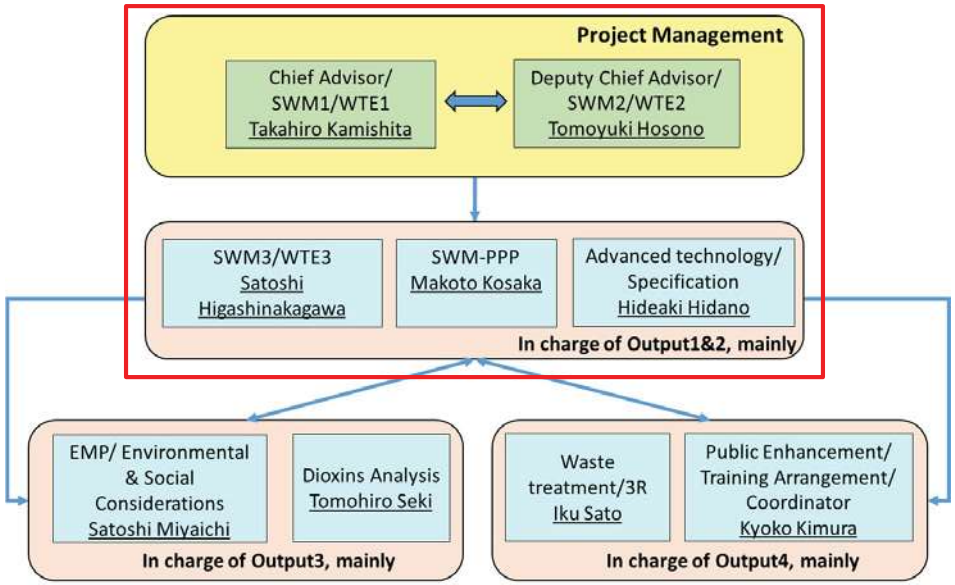
2. Objectives of the meeting

☐ Objectives of Today's Meeting:

- To kick-off Output1-SG meeting (total 6 times in CY2020),
- To reconfirm the activities under Output 1,
- To share the progress of activities up to now, and
- To discuss **future steps and to select person in charge (1Leader, 1 Sub-leader)** of each activity,
- To share other Inter-output activities of the Project,

3. Outline of the Specific Activities under OP1

☐ Composition of the JICA Expert Team



3. Outline of the Specific Activities under OP1

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

3. Outline of the Specific Activities under OP1

☐ Schedule

	2019	2020	2021
OP01: Enhancement of NG's capacity for supporting / coordinating of LGU's WTE project	1-1 BAT/BEP 1-2 Study WTE Policy/ Mechanisms in Neighbor Countries 1-4 Draft Tech Standards 1-5 Manual for Bottom/Fly ash	1-3 Seminar (July) 1-6 Procedural Manual for WTE 1-7 Model Procedure	1-3 Seminar (July)
SG-MTG		2/18 3/5 5/15 8/20 10/12 11/5	(To be continued)
Main Activity	No progress (up to now)	Data/Info gathering, + Discussion, Deliberation,	Finalization

☐ Deliverables

1) Project report, 2) Monitoring sheet, 3) BAT/BEP GL, 4) Tech and O&M Standard, 5) Manual for Bottom/Fly Ash, 6) Procedural Manual for WTE Introduction,

添付資料11

4. Presentation and discussions / Activities under OP1

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

a. Necessity of BAT/BEP Guideline

Requirement of NSWMC Resolution 669-2016 (shown below)

> Section 12. **Operational Control.** To ensure safe and effective operations of WTE facilities, the Commission, through the National Ecology Center, shall develop Best Available Technologies/Best Environmental Practices (BAT/BEP) guidelines for WTE technologies.

Purpose of BAT/BEP GL (Guess)

- ✓ *Working draft* of NSWMC resolution (WTE-GL) had more detail requirements for each WTE technology but they're finally removed. *(Reference: Comparison of final/working draft of NSWMC Resolution)*,
- ✓ Instead, BAT/BEP supplements more detail configurations by introduction of other advanced projects/practices to let LGUs have ideal project image.

b. Implementation Team

- ✓ National Ecology Center (NEC) shall be working for the draft of the BAT/BEP GL but *not functional in fact?*,
- ✓ Sub-group members of OP1 will work instead of NEC,

4. Presentation and discussions / Activities under OP1

Activity 1-1: Prepare BAT/BEP guideline

SG MTGs in 2020	1st	2nd	3rd	Seminar	4th	5th	6th	2021
Date	18Feb	05Mar	15May	July	20Aug	12Oct	05Nov	(cont.)
Team Setup	X							
Collection criteria of WTE BAT/BEP	X Draft	X Finalize						
Collection of WTE BAT/BEP	→	→	→	→	→	→		
Review collected WTE BAT/BEPs		X	X		X	X		
Report at Diss. Seminar				X				
Draft BAT/BEP Guidelines						X		
Finalization of BAT/BEP GL							X	X **Mar2021**

4. Presentation and discussions / Activities under OP1

Activity 1-1: Prepare BAT/BEP guideline

c. Collection criteria of BAT/BEP (How to select?)

Questions

- ✓ Which facility do you know/recognize as "Reputable/Good WTE"?
- ✓ What is the point of "Reputable/Good WTE"?
  - In the viewpoint of NG? Economy? Environment?
  - In the viewpoint of LGU? Residents?
  - (e.g.) Small gov. expenditure? Acceptability of residents?
  - Smooth implementation as planned schedule?
- ✓ How many WTE BAT/BEPs do we collect?
- ✓ Which area (SE Asia? All Asia? EU? US?) shall be covered?
- ✓ Which WTE tech will be covered (Incineration? Biogas? Other?)?
- ✓ Status of the Project (Only in operation? Still developing?)?
- ✓ Only good practice? How about learning from failed project?

4. Presentation and discussions / Activities under OP1

Activity 1-1: Prepare BAT/BEP guideline

d. Information to be gathered for each BAT/BEP case (Example)

Items	Selectable Options (extracted)	
Implementing Body	One Local Government?	Multiple LGs' Association? (Cluster)
Site	Country/ Location / Selected Reason	Footprint (ha) / Land Use
Target Waste	Source segregation only? MRF? Recyclables? Hazardous? C&D waste?	Who decide this target waste? Projection at target years with 3Rs
Capacity/Qty (t/d)	Daily/Annual Qty of "Target Waste"	Plant capacity ≠ Guaranteed Qty
Waste Quality (Feedstock)	Design value and Guaranteed value of "Target waste";	
	- Waste Characteristics	Composition by Category from WACS
	- Proximate analysis	3 components (water/ash/combustible)
	- Ultimate analysis	H, Cl, S, N, O, C (for exhaust gas)
	- Calorific Value (MJ/kg)	HCV and LCV (Kcal/kg)
Financial Scheme (Project Modality, Ownership)	Budget expenditure (financed by LG) DBO, DBM, Public Own & Operate, Public Own & Private Operate (separate),	Under PFI (Financed by Private) BOO, BOT, BTO, etc.
Dev. Approach	Solicited / Unsolicited?	

添付資料11

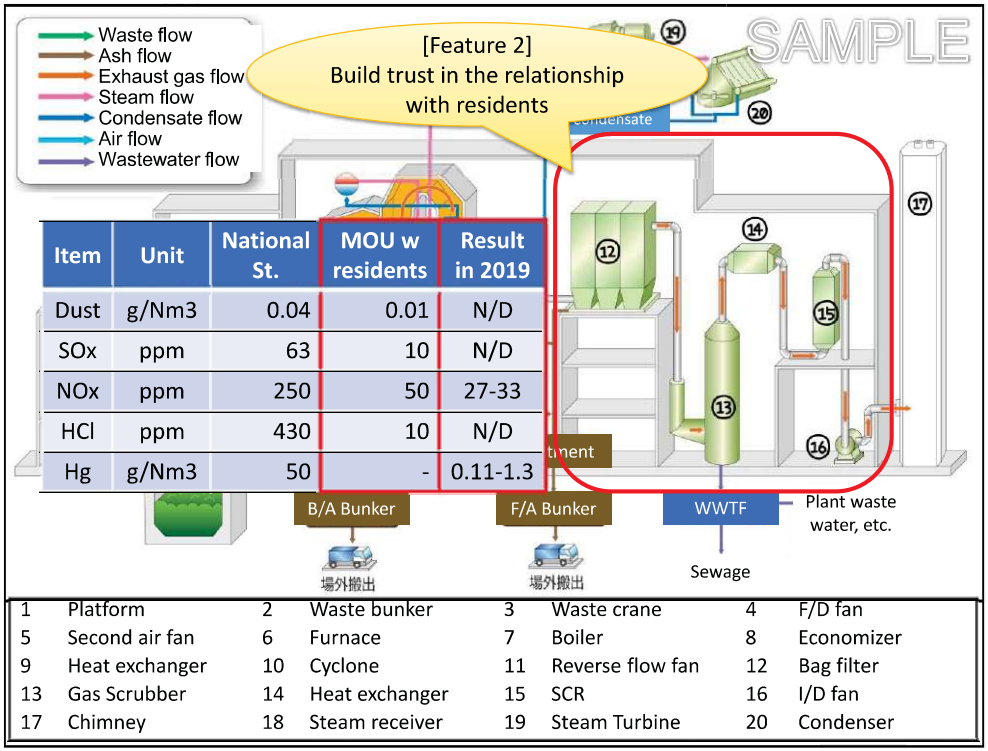
4. Presentation and discussions / Activities under OP1

Activity 1-1: Prepare BAT/BEP guideline

d. Information to be gathered for each BAT/BEP case (Cont.)

Items	Selectable Options (extracted)	
Coverage (Scope)	Only WTE (Reception to ash discharge)?	Covers collection? Ash Disposal?
Processing Type	Incineration, Gasifier, Biogas, MBT, etc.	Grate Type? Dry/Wet fermentation?
Pollution Control	Exhaust gas, Waste water, Solid waste (ash), Noise, Vibration, Odor, etc.	Apply National Standard? Or Stricter Voluntary Standard?
Ash Management	Bottom ash > Disposal / Utilization (cost)	Fly ash > Disposal (cost)
Heat Utilization	Power generation / District heating	Sell to grid, consumers, under FiT/RPS,
Tech Provider	EPC/ Incineration / Pollution Control	Patent? ETV Certify? Operator?
Citizen Involvement	Liaison meetings, explanatory meetings,	How to obtain prior consent?
Project Cost	Capex / Opex / Ash Treatment Cost, etc.	Rough scenario based estimation
Project Income	Power/ Gate Fee (Tipping Fee) / Other Government Subsidy in initial/annual , etc.	
Timeline / History	Facility can be constructed/commenced operation as originally planed?	
Reputation	Any problems during construction/operation?	

Recently many new WTE projects are developing in developing countries however proper evaluation for each project will be needed more 10 years.



Item	Unit	National St.	MOU w residents	Result in 2019
Dust	g/Nm3	0.04	0.01	N/D
SOx	ppm	63	10	N/D
NOx	ppm	250	50	27-33
HCl	ppm	430	10	N/D
Hg	g/Nm3	50	-	0.11-1.3

1	Platform	2	Waste bunker	3	Waste crane	4	F/D fan
5	Second air fan	6	Furnace	7	Boiler	8	Economizer
9	Heat exchanger	10	Cyclone	11	Reverse flow fan	12	Bag filter
13	Gas Scrubber	14	Heat exchanger	15	SCR	16	I/D fan
17	Chimney	18	Steam receiver	19	Steam Turbine	20	Condenser

4. Presentation and discussions / Activities under OP1

Name	Ota Incineration Plant	Location	Tokyo, Japan
Impl. Body	Clean Authority of TOKYO	Footprint	9.2ha
Capacity	600t/d (300 x 2l		
Target Waste	Source segrega… "Combustible Waste"		…tems

[Feature 1] Smooth Implementation (As planned)

History		Dev. Plan	Demolish	Bid	Const. St/Fin		Op. Start/Fin		Demolish
	Original	2006	-	2010	2010	2014	2014	2039	25 yrs
	Actual	2006 2010rev	2008.4 (H20.4)	2010 (H22)	2010.6 (H22.6)	2014.9 (H26.9)	2014.9	(25 yrs)	

Capex	18.797 B-JPY	Source ('12-14)	NG Subsidy (30%), Bond (50%), LG (20%)
Opex	1.486 B-JPY/yr (2019)	Source ('18-19)	LGs' share (57%), TF* (26%), Energy (17%)
Fin. Scheme	Public Build (DB) and Own	Dev. approach	Solicited

Coverage	Incineration	Pow…
(SC…	…G (DB)	
Pro…	…Tech	Takuma (…

[Feature 2] Build trust in the relationship with residents

[Feature 3] Strong ownership of LG (Solicited x Budget)

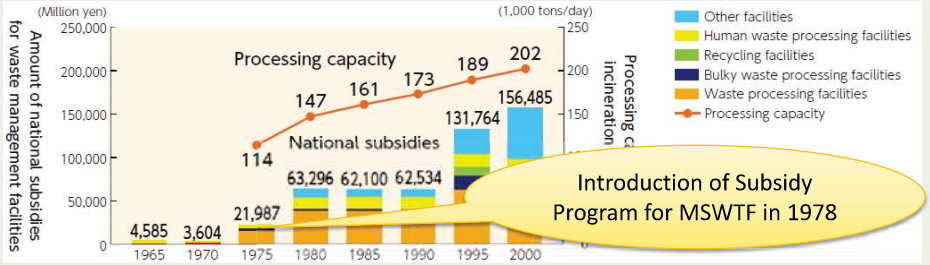
Pollution Control	Exhaust Gas	Wastewater	Bottom ash	Fly ash	Other
	Stricter Standard (Scrubber + SCR + Bag Filter)	Discharge to Sewage	Eco-cement	Provincial SLF	Comply with local ordinances

4. Presentation and discussions / Activities under OP1

Activity 1-2: Study policy and mechanism to promote WTE in neighboring countries incl. cost sharing scheme

Samples in Japan (Shared in Pre-JCC on 26June2019);

1. Japanese Subsidy Program for MSW Treatment Facilities in LGs



Objective	Support LGs for the Establishment of Circular Economy
Eligible Facilities	MRFs, WTEs (Power/Heat), Biogas, Human waste treatment, Septic tanks, Final disposal site (SLFs)
Grant rate	For CAPEX: 33% (Max. 50% for advanced/high efficiency facilities), For OPEX: Internal Revenue Allotment (IRA) incentives for MSWMF,

添付資料11

4. Presentation and discussions / Activities under OP1

Activity 1-2: Study policy and mechanism to promote WTE in neighboring countries incl. cost sharing scheme

Samples in Indonesia (Shared in Pre-JCC on 26June2019);

- ✓ Promotion of WTE projects in 12 Cities by PD35 (2018),
- ✓ National Subsidy for Capex of PPP projects as VGF (Viability Gap Funding),
- ✓ National Subsidy for Opex of PPP projects as AP (Availability Payment),
- ✓ Feed-in-tariff is set at USCent 13.35/kWh,
- ✓ NG guarantees by IIGF (Indonesian Infrastructure Guarantee Fund),

2. Indonesian Subsidy Program for WTEs in LGs

Objective	Support LGs for the Establishment of Circular Economy
Eligible Facilities	WTEs only?
Grant rate	For CAPEX: VGF part of PPP Project based on F/S???, For OPEX: Availability Payment (How to fix the rate???)

Need to study more

> Other countries (Singapore, Vietnam, etc.)?
> SWMD-EMB has Other Countries Information by Trainings/forums in past?

4. Presentation and discussions / Activities under OP1

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

- ✓ As explained, working draft of NSWMC resolution (WTE-GL) had **more detail requirements for each WTE technology but they're finally removed.**
  This is same with DAO2019-21,
  > Not specific in the National Guideline, But LGUs shall prepare them in RFP,
- ✓ In Japan, Functional Requirements as well as Operational Requirements are **regulated as the IRR** of "Waste Treatment and Public Cleaning Law" as follows;

Requirements for Incineration Facility	Structural/Functional Standard (Article 4 of IRR)	Operation & Maintenance Standard (Article 4-5 of IRR)
Combustion chamber;	✓ Capable to incinerate waste at more than 800dC of combustion gas, and keep it more than 2 seconds,	✓ Keep combustion gas temperature in combustion chamber above 800dC, ✓ Incinerate the waste completely as per Ignition loss can be less than 10%,
Cooling syst… before dust …		
Exhaust gas treatment sy…		
Measureme… recording sy…		
Ash discharge	✓ Capable to discharge fly/bottom ash separately.	✓ Discharge fly/bottom ash separately,

- ✓ How to regulate these minimum standards in addition to DAO2019-21?
  > such as Memorandum Circular, etc.?,
- ✓ Purpose of these additions is **to ensure** env. compliance (such as DXNs in exhaust gas) from the facility specification,
- ✓ At present, continuous DXNs monitoring is not commonly applied, so satisfying these functional and operational requirements can be a kind of security,

4. Presentation and discussions / Activities under OP1

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

- ✓ While "Activity1-3 Tech standards" specifies functional/operational requirements of WTE facility, reference document for treatment/disposal of incineration residue (fly/bottom ash) shall be necessary to guide LGUs,
- ✓ In Japan, it is specified in structural/operational standards of final disposal sites,
- ✓ In Philippines, EMB issued structural/operational requirements for SLFs in DAO10-2006, however, it is prepared for the disposal of MSW and not able to apply for the bottom/fly ash, latter contains heavy metals, in particular effluent standards of leachate treatment facility,
- ✓ In this concern, JET has discussed with HWMD (Hazardous Waste Management Division) of EMB about the categorization of bottom/fly ash several times, but yet to reach the conclusion,
  > Next page shows the point of discussion / progress of the meetings,

- ✓ **(Proposal) Until next SG-MTG on 05Mar, further discussion with HWMS and report its result in this regards,**

4. Presentation and discussions / Activities under OP1

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

Point of discussion / progress of the meetings with HWMS-EMB,

- ✓ How to categorize the residuals from WTE such as bottom/fly ash in the Philippines,
- ✓ RA6969, DAO1992-29, DAO2004-36, DAO2013-22,
- ✓ DAO2004-36 (Procedural Manual for Hazardous Waste),
  [Table1-1] Class D "Waste with inorganic chemicals"
  =>TCLP result determines it can be hazardous or non-hazardous waste,
  [Table1-1] Class K "Immobilized Waste" => Hazardous?,
  [Table1-2] "Exempted Waste" > can be disposed in 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, once it is chelated/immobilized and pass TCLP standards, it can be disposed at SLFs (with appropriate LTP),
- ✓ Standard for SLFs (incl. effluent) and/or TSD facility shall be examined,

添付資料11

6. Way Forward / Draft from Secretariat

☐ SG Members for Output 1

"*" Member

	Members	A1-1 B/B	A1-2 Policy	A1-4 T/St	A1-5 M/As
DOST-PCIEERD	Engr. Nonilo A. Peña	*	*	*	*
DOST-ITDI	Engr. Reynaldo L. Esguerra	Sub-L	*	Sub-L	*
DOE-REMB	Mr. Romeo Galamgam	*	Sub-L	*	*
DILG-BLGS	Atty. Ma. Rhodora Flores Mr. Carlo Mari Crisregienald C. Tan	*	*	*	*
QC-EPWMD	Mr. Vincent Ferdinand Paul G. Vinarao	*	*	*	Sub-L (tbc)
NEDA-IPG	Mr. Aldwin U. Urbina	*	*	*	*
PPPC	Ms. Justine Padiernos	* (tbc)	* (tbc)	* (tbc)	* (tbc)
DENR-FASPS	Director Angelito V. Fontanilla Mr. Conrado A. Bravante, Jr. Ms. Marianica Phillina L. Obmerga	*	*	*	*
DENR-PPPDD	Ms. Consolacion P. Crisostomo	*	*	*	*
EMB-SWMD/ PMO	Engr. Nolan B. Francisco Ms. Elvira S. Pausing	Leader	Leader	Leader	Leader (HWMS &AQMS)
JICA Experts Team	Engr. Kamishita (Chief) Engr. Hosono (Deputy Chief) Engr. Higashi (SWM/WTE) Engr. Kosaka (SWM-PPP)	Support in many tasks	Support in many tasks	Support in many tasks	Support in many tasks

4.c. Proposed outline of the TCP Newsletter

Newsletter on this project will be published twice a year for the following purposes:

- To disseminate and share the progress of the project
- To share the products of the project (such as manuals)

The Newsletter will be published on the website and distributed at the related events.

		Page	Writer	deadline
	Cover	1	JET	
1	Greeting	1	-	-
1.1	Greeting from EMB	0.5	EMB	21th-Feb.2020
1.2	Greeting from JET	0.5	JET	21th-Feb.2020
2	Outline of SWM-AIT Project	5	-	-
2.1	About SWM-AIT Project	0.4	PMO	21th-Feb.2020
2.2	About TCP	0.4	JICA	21th-Feb.2020
2.3	PDM	0.2	JET	21th-Feb.2020
(1)	Output 1	1	Sub-Group1	25th-Feb.2020
(2)	Output 2	1	Sub-Group2	25th-Feb.2020
(3)	Output 3	1	Sub-Group3	25th-Feb.2020
(4)	Output 4	1	Sub-Group4	25th-Feb.2020
3	The Menber of SWM-AIT Project	1	JET	21th-Feb.2020
3.1	Organization Chart		-	
(1)	JCC		-	
(2)	Project Team		-	
(3)	ITWG		-	
(4)	JICA Expert Team		-	
	TOTAL	8		

- Allocated 1 page
- Deadline: 28th Feb

4.c. Proposed outline of the TCP Newsletter

☐ Title of newsletter: (Examples)

- Road to Shokyaku ("combustion" in Japanese)
- Considering Waste to Energy as the 4th SWM Option,
- Road to the cleanest county of Philippines,
- xxxx,

☐ Article for the 1st newsletter

1 page for Output1

(Examples)

- ~~Political gap in the introduction of WTEs in Philippines;~~
  - ~~✓ Necessity of new regulations,~~
  - ~~✓ How to control LGUs' WTE procurement,~~
  - ✓ Role of National Government in terms of WTE (DENR&NSWMC/DILG/DOE/NEDA/(PPPC?),
- Expectations to TCP (What will you learn? What will you achieve?)

4.d. Participants in 1st Training in Japan

☐ Proposed period:

- May 24 –June 6 (including traveling from the Philippines to Japan)

☐ Number of trainees:

- LGUs:1person/LGU in total 3
- Laboratory (ERLSD): 3
- EMB central (SWMD) : 3
- EMB region: 1person/region in total 3
- DOE, PPPC, DOST: 3

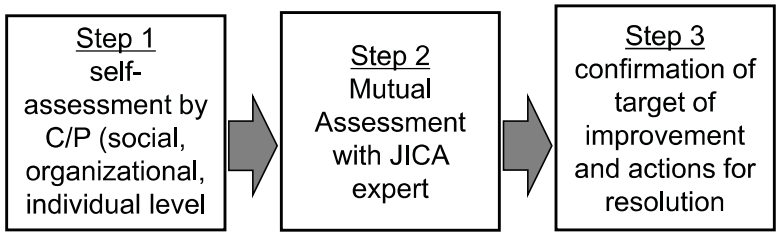
添付資料11

4.e. Kick off seminar

- Proposed date: February 27, 2020
- Draft Program: (distributed)

4.f. Capacity Assessment of Sub-group members

- Evaluation based on the Capacity Assessment Sheet
- Questions related with activities for outputs
- Evaluation may improve according to the execution of activities
- 3 times assessment in the project period (beginning, mid-term and end of the project)



5. Finalization of the comments/agreements/Timelines

PIs see the summary of meeting in attached MS word file

6. Way Forward

Schedule of JCC, ITWG and sub-group meetings

GROUPS	Ja	Fe	Mar	Ap	May	Jun	Jul	Au	Se	Oc	No	De
ITWG	24			23			16		16			
SUBGROUP												
OP1		18	5		15			20		12	5	
OP2		13		16			9		10			
OP3		10			14					8		
OP4		13				16						
JCC						18				15		

添付資料11

Draft agenda of next SG-MTG on 05March 2020

1. Call to Order
2. Objectives of today's Meeting
3. Activity 1-1 (Prep. BAT/BEP GL for WTE),
   - Finalization of Collection Criteria,
   - Progress of collection of BAT/BEP,
4. Activity 1-2 (Study WTE policy/mechanism in other countries),
   - Information Sharing from SWMD-EMB,
5. Activity 1-4 (Prep. Structural + O&M Standards of WTE facility),
   - Review/Comments for Japanese Standards,
6. Activity 1-5 (Prep. Manual for bottom/fly ash),
   - Result of discussion with HWMD from SWMD,
7. Way Forward

PROJECT ACTIVITY : **1ST SUB-GROUP MEETING FOR PROJECT OUTPUT 1 (ENHANCEMENT OF NATIONAL GOVERNMENTS' CAPACITY FOR SUPPORTING AND COORDINATING OF LGUs' WTE PROJECT)**
DATE/TIME : **18 February 2020/2:00 PM**
VENUE : **AQMTC Bldg., Conference Room B**

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
1.) Call to Order	• Establishment of the meeting that was duly called and the declaration of quorum.		
	• Adoption of the Agenda	➢ Agenda was moved for adoption by NEDA and seconded by DILG with no comments and suggestions from the participants.	
2.) Presentation & Introduction of Subgroup members for Project Output 1	• Recommendation of Ms. Pausing (SWMD-PMO) for the inclusion of NEDA and PPPC as members of the Sub-group due to involvements on project approvals, support to the preparation of manual for planning, evaluation, formulation and supervision of WTE projects and PPP financial scheme, respectively.	➢ Subgroup members welcomed the inclusion of NEDA and PPPC as members of the Subgroup for Output 1	➢ SWMD-PMO to include NEDA and PPPC in the supplemental SO as sub-group members for project output 1.
3.) Presentation of the Outline of the Specific Activities under Project Output 1 including deliverables based from the Inception Report	➢ Mr. Makoto Kosaka, SWM-PPP/JET presented the Outline of Specific Activities and deliverables under Project Output 1.	➢ No clarifications and/or alterations raised by the sub-group members.	
4.) Presentation and discussions on the topics under agenda item 4.			

Activity 1-1 Preparation of BAT/BEP Guidelines	(1) Operational Control, and other specific requirements had been removed in the Guidelines from the NSWMC Resolution No. 669-2016. (2) NEC is not functional, it is suggested that BAT/BEP Guidelines will be drafted by the Members of Subgroup for Output 1 instead. • How many BAT/BEP Project should the members of the Subgroup collect? • Which area (SE Asia? Entire Asia? EU? US?) shall be covered? • What WTE Technology (Incineration, Biogas, etc.) shall be covered? ➢ QC-EPWMD recommended MBT to be included in the coverage of the WTE Technology. ➢ The DOST-PCIEERD suggested to just focus on the incineration. ➢ The DOE-REMB suggested Technologies utilizing MSW. • Status of the Project • Only good practices or the failed WTE practices can be included as well (optional)	➢ Related information was discussed in the next slide presentation of JET ➢ DOST's suggestion is to focus on incineration and secondary on MBT and other technologies. ➢ One (1) Project per sub-group member ➢ Submission deadline to SWMD-PMO/JET: Next meeting (5 March 2020)	➢ JET/SWMD-PMO to follow-up with the sub-group members on the said commitments on or before the deadline.

添付資料11

	Confirmation of sub-group members re: Leader, Sub-Leader & members in the implementation of activity 1-1.	• Leader: SWMD-PMO (Engr. Nolan B. Francisco & Ms. Elvira S. Pausing) • Sub-Leader: DOST-ITDI (Engr. Reynaldo L. Esguerra) • Members: o DOST-PCIEERD (Engr. Nonilo A. Peña) o DOE-Renewable Energy Management Bureau (Mr. Romeo Galamgam & Ms. Charisse Jane D. Pascual) o DILG (Bureau of Local Government and Supervision): Atty.Ma. Rhodora Flores & Mr. Carlo Mari Crisregienald C. Tan) o LGU Quezon City (Mr. Vincent Ferdinand Paul G. Vinarao) o NEDA-IPG (Mr. Aldwin U. Urbina & Atty. Gilbert V. Kintanar) o PPPC (tbc) o DENR-FASPS (Director Angelito Fontanilla & Mr. Conrado A. Bavante, Jr./Ms. Marianica Phillina L. Obmerga) o EMB-PPPDD (Ms. Consolacion P. Crisostomo & Ms. Mary Esther D. Ofiaza) • JET (Support in many tasks): o Engr. Kamishita (Chief) o Engr. Hosono (Deputy Chief)	

	➢ Per requirement of JET, there is a need to gather information on WTE & BAT/BEP guidelines from other countries based from the trainings/forums attended by EMB personnel previously.	o Engr. Higashi (SWM/WTE) o Engr. Kosaka (SWM-PPP) ➢ SWMD-PMO to gather the required information from other countries that will be submitted to JET for evaluation purposes. ➢ Submission deadline: 28th February, 2020	➢ Required data will be submitted by SWMD-PMO to JET on or before the deadline.
Activity 1-2 Study policy and mechanism to promote WTE in neighboring countries including cost sharing scheme	➢ Confirmation of sub-group members re: Leader, Sub-Leader & members in the implementation of activity 1-2.	• Leader: SWMD-PMO (Engr. Nolan B. Francisco & Ms. Elvira S. Pausing) • Sub-Leader: DOE-Renewable Energy Management Bureau (Mr. Romeo Galamgam & Ms. Charisse Jane D. Pascual) • Members: o DOST-ITDI (Engr. Reynaldo L. Esguerra) o DOST- PCIEERD (Engr. Nonilo A. Peña) o DILG (Bureau of Local Government and Supervision): Atty.Ma. Rhodora Flores & Mr. Carlo Mari Crisregienald C. Tan) o LGU Quezon City (Mr. Vincent Ferdinand Paul G. Vinarao) o NEDA-IPG (Mr. Aldwin U. Urbina & Atty. Gilbert V. Kintanar) o PPPC (tbc) o DENR-FASPS (Director Angelito Fontanilla & Mr. Conrado A.	

		Bravante, Jr./Ms. Marianica Phillina L. Obmerga) o EMB-PPPDD (Ms. Consolacion P. Crisostomo & Ms. Mary Esther D. Ofiaza) • JET (Support in many tasks): o Engr. Kamishita (Chief) o Engr. Hosono (Deputy Chief) o Engr. Higashi (SWM/WTE) o Engr. Kosaka (SWM-PPP)	
Activity 1-4 Preparation of technical standards draft for WTE facility focusing on waste incineration with power generation	➢ No further clarifications and discussions regarding this topic.	➢ Suggestions from NEDA and DOST representatives for SWMD-PMO to take the lead in the implementation of all the activities in Activity 1-4. Ms. Pausing (SWMD-PMO) raised the issue on the lack of manpower of SWMD to undertake all the said activities. However, JET committed that they will provide full support to SWMD in the implementation of all the activities under Output 1.	➢ SWMD-PMO to work with JET on the preparation and finalization of all the requirements under Activity 1-4.
		➢ SWMD-PMO also requested that JET should provide at least an outline for the technical standards including BAT/BEP guideline to the SWMD-PMO.	➢ JET to provide the Outline/format for the preparation of the required technical standards including BAT/BEP guidelines within the week.
	➢ Confirmation of sub-group members re: Leader, Sub-Leader & members in the implementation of activity 1-4.	• Leader: SWMD-PMO (Engr. Nolan B. Francisco & Ms. Elvira S. Pausing) • Sub-Leader: DOST-ITDI (Engr. Reynaldo L. Esguerra)	

		• Members: o DOST- PCIEERD (Engr. Nonilo A. Peña) o DOE-Renewable Energy Management Bureau (Mr. Romeo Galamgam & Ms. Charisse Jane D. Pascual) o DILG (Bureau of Local Government and Supervision): Atty.Ma. Rhodora Flores & Mr. Carlo Mari Crisregienald C. Tan) o LGU Quezon City (Mr. Vincent Ferdinand Paul G. Vinarao) o NEDA-IPG (Mr. Aldwin U. Urbina & Atty. Gilbert V. Kintanar) o PPPC (tbc) o DENR-FASPS (Director Angelito Fontanilla & Mr. Conrado A. Bravante, Jr./Ms. Marianica Phillina L. Obmerga) o EMB-PPPDD (Ms. Consolacion P. Crisostomo & Ms. Mary Esther D. Ofiaza) • JET (Support in many tasks): o Engr. Kamishita (Chief) o Engr. Hosono (Deputy Chief) o Engr. Higashi (SWM/WTE) o Engr. Kosaka (SWM-PPP)	
Activity 1-5 Preparation of Manual for management of bottom & fly ash discharged from WTE facility	➢ Mr. Kosaka presented the "Introduction of technical and O&M standards of WTE facility in Japan" including management of bottom ash and fly-ash. He also shared the	➢ Mr. Kosaka suggested that further discussions with EQMD-HWMS will be conducted to gather more substantial information/data for the preparation of a more comprehensive report.	➢ JET/SWMD-PMO to set a meeting with HWMS next week. ➢ Provide/share results of discussions in the next sub-group meeting (05 March 2020)

	results of JET's initial discussions with HWMS. ➢ Confirmation of sub-group members re: Leader, Sub-Leader, & members in the implementation of Activity 1-5.	• Leader: SWMD-PMO (Engr. Nolan B. Francisco & Ms. Elvira S. Pausing) & HWMS (tbc) & AQMS (Engr. Jundy T. del Socorro) • Sub-Leader: LGU Quezon City (tbc) • Members: o DOST-ITDI (Engr. Reynaldo L. Esguerra) o DOST- PCIEERD (Engr. Nonilo A. Peña) o DOE-Renewable Energy Management Bureau (Mr. Romeo Galamgam & Ms. Charisse Jane D. Pascual) o DILG (Bureau of Local Government and Supervision): Atty.Ma. Rhodora Flores & Mr. Carlo Mari Crisregienald C. Tan) o NEDA-IPG (Mr. Aldwin U. Urbina & Atty. Gilbert V. Kintanar) o PPPC (tbc) o DENR-FASPS (Director Angelito Fontanilla & Mr. Conrado A. Bravante, Jr./Ms. Marianica Phillina L. Obmerga) o EMB-PPPDD (Ms. Consolacion P. Crisostomo & Ms. Mary Esther D. Ofiaza) • JET (Support in many tasks): o Engr. Kamishita (Chief)	

		o Engr. Hosono (Deputy Chief) o Engr. Higashi (SWM/WTE) o Engr. Kosaka (SWM-PPP)	
4.c Proposed outline of the TCP Newsletter	The following was executed by Mr. Kosaka: ➢ Presented the sample format of the TCP Newsletter including some ideas that will be considered for the preparation of the write-up for output 1. ➢ Requested the Sub-group members to provide proposals for the title of the Newsletter ➢ Sought commitment of the sub-group members to provide write-ups for Output 1 to be included as part of the articles in the Newsletter	➢ Each member shall provide proposals for the title of Newsletter by 28th February 2020. ➢ DENR/NSWMC, DILG, DOE, NEDA, & PPPC shall provide a page write-up on the Role of National Government in terms of the WTE Project ➢ Expectations to TCP (What will you learn? What will you achieve?) =**Optional** ➢ Suggestion from DILG representative to move the deadline for the submission of the Newsletter articles from the 25th of February to **28th of February 2020**	➢ JET/SWM-PMO to follow-up with the sub-group members on the said commitments on or before the said deadline.
4.d Participants to the 1st Training in Japan	The proposed travel period and the number of trainees were presented by JET	No comments/clarifications were raised by the sub-group members.	JET will remind JICA to send invite letters to all concerned agencies and other training participants.
4.e Kick-off seminar	➢ JET mentioned the date of the kick-off seminar and asked if SWMD-PMO already coordinated with PPPC's presentation during the said seminar. ➢ SWMD-PMO mentioned that invite letters for the participants including resource speakers were already endorsed to the EMB Director for approval.	Ms. Pausing (SWMD-PMO) mentioned that advanced copies of the invite letters will be sent to all participants this week while waiting for the signed invite letters.	➢ SWMD-PMO to send invite letters to the resource speakers and other participants within the week.

4.f Capacity Assessment of Sub-group members	Mr. Kamishita (JET) presented and explained the mechanics in filling up the forms for the Capacity assessment.	The members will send the Capacity Assessment via email to JET ( ) and/or SWMD-PMO within this week.	JET/SWMD-PMO to follow-up with the sub-group members the copies of filled-up capacity assessment form for submission this week.
5. Finalization of the comments/ agreements/timelines	➢ Ms. Rose Faylogna (JET) presented the draft matrix on the comments/ agreements/timelines. ➢ Various comments/inputs were raised by the sub-group members in the draft matrix. Hence, SWMD-PMO mentioned that the said matrix will also be sent to all sub-group members including copies of JET presentation for their further review and comments.	No comments/clarifications raised by the sub-group members	JET/SWMD-PMO to send the draft matrix of comments/agreements/ timelines to all sub-group members for further review/comments and inputs within the week.
6. Way Forward	Mr. Kamishita (JET) discussed the proposed agenda for the next Sub-group meeting for project output 1 which will be held on 05 March 2020. He also reiterated the readiness of the requirements particularly on Activities 1-1, 1-2, 1-4, & 1-4.	No comments/clarifications raised by the sub-group members	